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IMPLEMENTATION OF IDEAS FROM THE AMERICAN EXPERIENCE DURING NATURAL SCIENCES TEACHERS TRAINING IN UKRAINE

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The problem statement. In today's world, when science and technology are the major factors in the development of society, the importance of quality education in the field of natural sciences is of particular importance. Natural sciences teachers are key figures in shaping the future of our country, influencing the development of students' intellectual and practical skills.

In recognition of this important role, Ukraine is committed to continuously improving its system of natural sciences teachers training by adapting the best practices and ideas from around the world. Among the countries that stand out for their achievements in this area, the United States of America holds a special place [2].

This work aims to study and adapt the most effective ideas of natural sciences teachers training taken from the American experience for further implementation in the Ukrainian educational system. This will help improve the quality of natural sciences education in our country, prepare a new generation of teachers who will be able to meet the challenges of today and prepare young people for a successful future.

The results and discussion. The American experience in natural sciences teachers training is an important source of innovative approaches and methodologies that allow the effective adaptation of educational programs to the needs of the modern world. This experience includes not only academic knowledge, but also practical

methods that promote the development of critical thinking, creativity and research approach.

In order to introduce American experience into the natural sciences teachers training in Ukraine, we have identified progressive ideas for its implementation and created the elective course “Science teachers training in US universities” which is taught in English. The course was developed for second-level (master’s) students specializing in Secondary Education (Natural Sciences) and Secondary Education (Biology and Human Health) at the Faculty of Chemistry and Biology of Ternopil Volodymyr Hnatiuk National Pedagogical University.

Lectures encompass the study of general issues related to the organization and content of future natural sciences teachers training in the United States, as well as the forms and methods of professional training and quality monitoring of natural sciences education in US universities. The course covers a number of topics among which are: “Formation of the future natural sciences teacher’s professionalism and their professional and methodological competence,” “Content, forms, and methods of natural sciences teachers’ professional training for the beginning of pedagogical activities,” “Peculiarities of the organization of future natural sciences teachers’ professional training in the USA and Ukraine,” “Structure and standards of natural sciences education in US universities” and others.

Having analyzed pre-service natural sciences teacher training programs in the USA, we came to the conclusion that American universities offer three types of training: undergraduate successive training programs, undergraduate integrated training programs, graduate programs [1].

One of the peculiarities of modernizing pre-service teacher education in Ukraine is enhancing practical natural sciences teachers training. M. Nahach claims that one of the problems of practical pre-service teachers training in Ukraine is lack of coordination between theoretical and practical components of professional education training. This causes the other problem such as students’ inability to put the theoretical knowledge into practice and unreadiness for teacher performance. In addition, there is no effective collaboration between the secondary schools and universities in organizing and realizing practical pre-service teacher training [3].

There exist the ways of solving this problem in the USA. One of these ways is clinical experience. It is a pre-student teaching field experience which includes observation, simulation lab exercises, professional meeting, non-instruction assisting, microteaching and others. The clinical experience takes place in off-campus clinical teaching centers, in local schools, in professional development schools, in campus laboratory schools, etc.

The other positive side of undertaking teaching practice is student teaching at professional development school. It is an innovative educational institution that has been established as a result of a partnership between schools or colleges of education and public schools. One of the tasks of such schools is improving pre-service teacher

training through extensive clinical experience and student teaching. At professional development schools the studies continue for 32 weeks during the last year of study.

Among other progressive ideas of natural sciences teachers training in the USA which we have identified are the following: inclusion of professional development competencies in the list of natural sciences teachers competencies; increasing the practical and reflective orientation of natural sciences teachers training; elimination of identified personal shortcomings and speech defects; studying natural sciences in the context of engineering, technology and mathematics; applying an integrated approach to checking the level of professional competence (knowledge of natural sciences, methods of teaching them, mathematics, English); introduction of virtual laboratories into the educational process; development of educational standards etc.

Conclusions. It is essential to incorporate positive experiences from professional natural sciences teachers training abroad, particularly in the USA, to effectively address the continuous improvement of professional training in higher pedagogical educational institutions in Ukraine. The implementation of the progressive ideas of the American experience of natural sciences teachers training that we have identified will allow us to improve the national system of teacher education, to implement the idea of continuous education, to bridge the gap between the theoretical and practical components of teacher training, to ensure the process of targeted formation and continuous development of professional competence of natural sciences teachers and to improve the effectiveness of students' learning activities.

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