

– ведення онлайн-трансляції лабораторних робіт із збереженням запису протягом певного проміжку часу, достатнього для ознайомлення та опрацювання матеріалу, у системі дистанційного навчання Moodle для забезпечення доступу студентів дистанційно. Причому студенти, які долучалися дистанційно мали змогу бути присутніми на лабораторній роботі як у режимі реального часу через онлайн-трансляцію, так і переглядаючи запис у зручний час після завершення заняття;

– формування звіту про проведенні лабораторні роботи у групах, дистанційний захист та обговорення отриманих результатів із обов'язковою участю всіх студентів незалежно від формату присутності на занятті.

Таким чином, всі студенти незалежно від формату участі у літній школі мали змогу ознайомитися із технікою проведення лабораторних робіт та були максимально залучені до обговорення та підготовки звіту. Застосування асинхронного та змішаного навчання є особливо актуальним питанням в умовах військового часу, оскільки дозволяє залучати до роботи студентів, які не мають змоги долучитися до очного навчання, як повноцінних учасників студентської групи, забезпечуючи формування практичних навичок.

## **BUILDING A COMPETENCE IN A FIELD OF NATURAL SCIENCES OF FUTURE PRIMARY SCHOOL TEACHER**

O. Rovenska<sup>1</sup>, L. Myronenko<sup>2</sup>

New Park Primary School, Liverpool, United Kingdom,

<sup>1</sup>Teaching assistant, [orovenska1@gmail.com](mailto:orovenska1@gmail.com)

State Biotechnological University, Kharkiv, Ukraine

<sup>2</sup>c.t.s., associate professor of the Biotechnology, molecular biology and aquatic bioresources department, [myronenko@btu.kharkiv.ua](mailto:myronenko@btu.kharkiv.ua)

There are studies devoted to the formation of the future primary school teachers' competence by means of innovative technologies, the effectiveness of information and communication technologies at lessons in contemporary educational institutions in the foreign scholars' works. In the scientific works of some certain scientists [1] revealed the essence of the concept of competence of the contemporary teacher and outlined the contemporary process of informatization in comparison with other European countries. Some of them proved that in the era of postmodern society the teacher must have the competencies necessary to master ICT. He paid attention to the need of borrowing foreign experience to the introduction of innovative technologies in primary education. Sorochinsky et al. [2] motivated the expansion and borrowing of experience in the implementation of innovative and interactive technologies in primary school. Foreign researchers stressed the need for e-learning to improve the educational process in postmodern society [3].

Tkachuk [4] identifies the following components in the structure of professional competence of primary school teachers as psychological and pedagogical, subject, methodological and personal competences.

Psychological and pedagogical competence for a primary school teacher is the basis of his professional activity. The teacher lays the foundation for the study of many disciplines and forms a worldview, attitude to themselves, to others, to educational work, which is impossible without a system of knowledge about the child of primary school age, its features, and social factors of development.

The subject competence of a primary school teacher is characterized by the presence of knowledge and skills in the subject areas necessary for a primary school teacher and the ability to operate with them.

Methodological competence is characterized by knowledge of classical and contemporary methods, forms, tools, techniques, technologies of teaching and education in primary school, the ability to apply them, creatively rework.

Personal competence is characterized by the development of personal functions of primary school teachers (motivational, reflective, orientation, creative and transformative), high level of empathy, possession of skills of self-education and self-development, readiness to carry out professional and pedagogical activity.

Sorochinsky et al. [2] and Barakhsanova et al. [5], believes that the structure of professional competence of primary school teachers should include pedagogical orientation, features of the humanistic pedagogical worldview, the system of professional integration knowledge and skills, the system of diagnostic and managerial professional actions.

The most important characteristic of professional competence is focus on the child. The pedagogical orientation of the teacher aims to develop motivation to learn, knowledge of the world, people, his student himself. It involves caring for the child, interest, love, promoting the development of the personality and maximum self-actualization of the personality.

Some researchers modernize the structure of professional competence for future primary school teachers. In her study, the concept of future primary school teachers' professional competence is perceived as a dynamic, procedural side of the training, professional growth characteristics, professional motivational and activity changes. She considers professional competence as a gradual professionalization of the future teacher. At the same time, the competence concept defines the professional activities of a mature teacher.

According works of some researchers, professional competence of primary school teachers is multidisciplinary. The main idea of her future primary school teacher training concept is a radical change in the role and content of her psychological training, which must be integrated with all aspects of learning in a single, professionally meaningful space for the developing student. This future teacher's activity provides up-to-date level of professional competence, which allows to perform complex professional activities for predicting the goals and objectives of children's mental development in the learning process, creating productive conditions for their solution, developing diagnostic programs.

The structure of professional competence of the future teacher, according to Melnyk [6], includes:

1. Motivational component, which is manifested in the gradual development of a special focus of educational and professional activities of the student.

2. Professional-activity component, which contains a system of educational and professional actions, which involves mastering:

- 1) specific analytical skills that allow to perceive and evaluate the pedagogical situation as a multidimensional, constantly innovative pedagogical reality;

- 2) special professional-diagnostic actions that allow the future teacher to turn educational subject material into diagnostic.

Introduction of the principle of building natural sciences competence of a future primary school teacher by means of innovative technologies provided for definition of basic organizational and pedagogical conditions of its realization among which we will name the following:

- innovative potential of the educational establishment;

- innovative environment;

- innovative pedagogical activity of student and teacher.

Under the organizational and pedagogical conditions, we understand the totality of objective possibilities of content, forms, methods and means of building and development of natural sciences competence of a future primary school teacher. The selection of organizational and pedagogical conditions was carried out taking into account the social order, analysis of scientific literature and pedagogical experience on the research problem, as well as the structure of the concept of – natural sciences' competence.

We consider that the first condition is *the innovative potential of the educational establishment*, i.e., the ability of the higher educational establishment to perceive, create and implement innovations in the educational process and get rid of the outdated, pedagogically inexpedient in a timely manner.

Analysis of the scientific literature shows that the problem of innovative potential of an educational establishment is elaborated in the works of Bilyk et al. [7], Mhlaba et al. [8], Lutsan et al. [9], Kobernyk et al. [10] and some other researchers.

Despite a considerable attention of the researchers to improvement of the educational process through implementation of innovative changes, today there is no single interpretation of the concept of innovation potential.

In particular, some researchers insist that the innovative potential of an educational establishment is manifested in an array of resources that are shown in scientific, informational and technical, organizational, material and financial components.

Researchers define an innovation potential as ability to achieve the goals of innovative development, where ability is the presence and balance of the structure of potential's components.

According to some scientific works, the innovative potential of an educational establishment is the ability of an educational establishment to create, perceive, implement innovations and dispose of the outdated, pedagogically inexpedient elements in a timely manner.

Sharing the opinion of some researchers, we understand the innovative potential of an educational establishment within our abstracts as a totality of different types of resources and opportunities for their use in the process of building and development of natural sciences' competence, which are directly related.

Registration of a University on electronic remote platforms, prospectively focused on expanding opportunities to improve the process of training a competent specialist. Development of electronic courses in distance environments, aimed at systematization of educational materials, improving the process of self-education of students. The advantage of such complexes is availability of grouped materials containing lectures, practical classes and independent educational activities, examination questions, methodical recommendations, a list of recommended literature on the subject, etc. Therefore, one of the important organizational and pedagogical conditions for building natural sciences' competence of a future primary school teacher by means of innovative technologies is development and implementation of electronic methodological complexes in the Moodle environment.

The second condition for a successful building of natural sciences' competence of a future primary school teacher is development of an *innovative environment*. We believe that development of an innovative environment will allow to effectively build the natural sciences' competence of a future primary school teacher, in accordance with the contemporary society's demands and using our previously identified innovative learning technologies.

Creating an innovative environment, in our opinion, should be focused on building and development of the natural sciences' competence with future primary school teachers. The essential condition for creating an innovative environment is development and implementation of electronic methodological complexes.

The third condition is *the innovative potential of the teacher*, i.e., a set of socio-cultural and creative characteristics of the teacher's personality, which expresses a willingness to improve pedagogical activities, as well as availability of internal tools and methods that ensure this readiness.

In our opinion, the innovative potential of the teacher should include additional value-semantic understanding of the goals and significance of natural sciences' competence in further professional activities and a gradual formation and development of the competence in question.

To a large extent, this condition is provided by expediently introduced course – "Fundamentals of work in the Moodle environment", the purpose of which is to provide skills in creating and configuring e-courses and recommendations for their use in the educational process.

The course covers the main theoretical aspects of work in the Moodle environment, combined with the direct creation of electronic methodological complexes within the practical classes' framework.

Building educational competence in natural sciences is based on the following principles:

- scientificity (embodied in curricula and manuals, in the selection of materials for study, as well as in the fact that students master elements of scientific research);
- consistency (constant comprehensive work on improving knowledge, skills, abilities and building competencies, rational combination of traditional and innovative learning technologies, introduction of innovative technologies in all components of the process of building natural sciences' competence, relationship of goals, objectives, organizational and pedagogical conditions, theoretical and practical training in the process of building natural sciences' competence);
- accessibility (submission of information at an accessible level, development of methodological materials aimed at facilitating the process of perception);
- consciousness (conscious assimilation of knowledge for further practical use);
- organic unity of theoretical and practical training (orientation of theoretical training on practical activity and future professional activity).

In addition to improving lecturing of educational materials, there is a need for comprehensive support of practical work of the primary education faculty students, as the available student manuals and textbooks are mostly focused on theoretical presentation of educational materials.

To work in the Moodle system, students sign up, get personalized access to it and can get acquainted with the proposed materials. The test system is protected by additional passwords, which allows to ensure test performance by students at a clearly defined time. The results of training achievements are reflected in an electronic register, which allows to timely adjust the level of mastery of educational material.

The process of building natural sciences' competence include theoretical, practical and personal training of a future primary school teacher. The main forms of theoretical training is multimedia lecture, distance lecture, lecture-visualization, lecture-press conference, webinar, scientific and practical student conferences.

Practical training was carried out in the process of practical classes with solution of problem situations, didactic games, problem discussion, attending and discussing natural sciences' lessons in primary school, project activities, pedagogical practice.

To summarize, this abstract describes the content of organizational and pedagogical conditions for the model of natural sciences' competence formation of future primary school teachers by means of innovative technologies, and concludes that it involves determining the main organizational and pedagogical conditions for its implementation. They are the innovative potential of the educational institution, i.e. the ability of the higher educational institution to perceive, create and implement innovations in the educational process and get rid of obsolete, pedagogically inexpedient, and innovative environment, as creating an innovative environment will effectively shape natural sciences' competence, in accordance with the modern demands of society and using our previously identified innovative learning technologies; innovative pedagogical activity of a student and a teacher, which is a set of socio-cultural and creative characteristics of the teacher's personality, which expresses a willingness to improve pedagogical activities, as well as the availability of internal tools and methods that ensure this readiness.

## REFERENCE

1. Zaporozhchenko, T., Shvardak, M., Stakhiv, L., Kalyta, N., Sadova, I., Illyash, S. // Revista Romaneasca Pentru Educatie Multidimensionala. 2022. 14(4): 01-20. <https://doi.org/10.18662/rrem/14.4/626>
2. Sorochinsky, M. A., Barakhsanova, E. A., Vlasova, E. Z., Prokopyev, M. S, Burnashev, A. E. // Propósitos y Representaciones. 2020. 8(3).

3. Meniailo, V., Shapran, Y., Shapran, O., Serhiichuk, O., Bahno, Y., Kanibolotska, O. // Revista Romaneasca Pentru Educatie Multidimensionala. 2021. 13(2): 288-303. <https://doi.org/10.18662/rrem/13.2/422>
4. Tkachuk, S. // International Journal of Computer Science and Network Security. 2021. 21(9): 99-102.
5. Barakhsanova, E. A., Vlasova, E. Z., Golikov, A. I., Kuzin, Z. S., Prokopyev, M. S., Burnachov, A. E. // Education. 2018. 38(55): 25.
6. Melnyk, Y. // International Journal of Computer Science and Network Security. 2021. 21(4): 75-79.
7. Bilyk, V., Udovychenko, I., Vysochan, L., Kyrylenko, K., Stetsula, N., Gvozdii, S. // Revista romaneasca pentru educatie multidimensionala. 2022. 14(1): 25-48. DOI10.18662/rrem/14.1Sup1/535
8. Mhlaba, R. E. Rankhumise, M. P. // South african journal of education. 2022. 42(1): 1-13. DOI10.15700/saje.v42n1a2003
9. Lutsan, N., Chernenko, N., Vertuhina, V., Rudiuk, T., Ruchkina, M. // AD ALTA-Journal of interdisciplinary research. 2022. 12(1): 115-119. SI 27.
10. Kobernyk, O., Yashchuk, S., Yermakova, S., Chmyr, V., Bukina, T., Romanenko, V. // Revista Romaneasca Pentru Educatie Multidimensionala. 2022. 14(1Sup1): 453-471. <https://doi.org/10.18662/rrem/14.1Sup1/561>