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TRANSVERSAL FOCUS OF STEM EDUCATION

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The dynamic development of Ukrainian society requires improvement and transformation of the educational process through the transverse focus of innovative pedagogical and information and communication technologies [2, p. 34]. The concept of the New Ukrainian School, the National Strategy for the Development of Education in Ukraine are orientated the pedagogical staff of higher education to the graduate preparation of an innovative type of thinking and culture, an innovator who is able to change the world [1, p. 6; 3, p. 78]. The synergic combination of these challenges requires a thorough study and use of innovative pedagogical and information-communicative technologies, creative search for new or advanced principles, approaches to education, significant changes in content, forms and methods of teaching. Modern innovative elements of STEM-strategies of learning provide health-saving and natural-biological education of certain development, and STEM education in a higher education institution

becomes an alternative means of successful preparation of higher education applicants who are capable of learning throughout life.

For the successful acquisition of knowledge in the natural field, it is necessary to simply describe phenomena and processes, it is necessary to be able to operate a lot of different data, to have modern technologies and to know how to apply your abilities in real life [5, p. 184]. The biological component within the STEM approach to teaching provides assimilation of higher education by the knowledge of the patterns of functioning of living systems, their development and interaction, mastering the basic methods of knowing wildlife, understanding the biological picture future professional activity, assessing their role for social development, prospects for the development of biology as a science and its importance in ensuring the existence of the biosphere and humanity.

A method such as modeling biological phenomena and objects contributes to the formation of professional competences and creative initiative. Modeling is a visual -practical method of teaching [7, p. 109]. Real objects and processes are so multifaceted and complex that the best way to study them is often creating a model that reflects a certain limit of reality. The performance of virtual laboratory work allows, in addition to consolidating knowledge and skills, to significantly reduce the time of the practical part, to eliminate the disadvantages of the material base (devices, reagents, reagents, etc.).

In the turbulent times of today, virtual excursions have become widespread in educational practice, the organization of which provides a wide variant spectrum, and which has all the advantages of modern digital tools and technologies. This work form involves a visual demonstration by digital means of virtual display of real existing objects (parks, museums, galleries, resorts, production or natural objects, monuments), with the purpose of self -familiarization, observation, study, description of these objects , collecting the necessary visual information to meet the permit-entertainment, scientific-cognitive or educational needs. The use of virtual excursions makes it possible to significantly expand the outlook of higher education applicants and facilitates understanding of the patterns of environmental functioning and its problems [4, p. 240].

The professional activity of a specialist in physical therapy and ergotherapy aims to optimize the functional state and the general healing of the human body with the use of physical culture and natural factors [3, p. 79]. The content of vocational training of these specialists is characterized by the following vectors: humanitarian orientation, reflexive ambiguity, individualized style, interdiscipline, expression, situationality,

technology [1, p. 14]. Successful solution to the problems of professional interaction requires a physical therapist and ergotherapist of a developed professional culture, which is manifested by personal and individual qualities, formed by the value-semantic sphere. The specialist of this field picks up the means and forms of therapeutic physical culture, develops the method of applying physical exercises in the early stages of treatment, plans and performs the program of further functional recovery and physical capacity of the patient, identifies and expands the reserve capabilities of the body, trains it and prepares for physical activity at work. In everyday life, he returns to active participation in society.

The method use of information and structural modeling made it possible to dismember the complex problem of human health into quality blocks containing information about the structure and functioning of the modeling subject, a description of the general organization of these blocks and their problem-oriented verbal components. On the basis of the use of this method, the modern trend of natural science is substantiated, which determines the modern information model of human health, which consists of at least three blocks: the information field of knowledge of the main subject areas; information and technological base of research; information and organizational means of management [8, p. 112; 9].

Makery is an innovative approach to STEM education. A maker is a person who creates something. Maker abilities – to do something with your own hands – there is almost everyone. Just in some, they need to be developed, and in others – to support. An effective educational method that allows you to develop maker, a versatile creative personality is lepbushing [6]. We start working on the creation of a leapbuk with the choice of the topic. The theme of the book can be both common (the topic of the section) and narrow (the topic of one lesson or lecture). The next step is planning, that is, what should be in the lepbook. It's not just a book with drawings. Its content must creatively reveal the topic. The content of the future laptop should be clearly laid out on the shelves, so you need to create a layout. The next stage is the preparation of the components of the homemade (the more – the more interesting the lamp), and the work on the book combination of the main components and the presentation of the work ends.

Therefore, the integration of information and communication technologies and the application of STEM education principles in teaching allow you to bring the content of educational components closer to higher education applicants, such as the health-saving and natural-biological fields, to facilitate learning, to ensure quickly and appropriate use of scientific materials. Transversal focus of learning and teaching with a combination

of traditional and innovative technologies has many advantages: encouraging higher education applicants to show a creative approach to solving the problems of health-saving and natural-biological direction, to turn their individual work into a collective, to learn to organize and plan their educational and research work independently; to be able to increasing tasks for assimilation and mastery. Axio-pedagogical component of using STEM content elements in the professional training of health-saving and natural-biological field that before scientific-pedagogical staff one of the main tasks is the organization and maintenance of purposeful cognitive activity, formation of skills, research skills, preparation of educational and teaching materials that contain integrated information of educational components with STEM technologies.

References:

1. Базильчук О. В. Теоретичні і методичні засади професійної підготовки майбутніх фахівців з фізичної терапії, ерготерапії до роботи з відновлення здоров'я спортсменів : автореф. дис. … д-ра пед. наук : 13.00.04. Хмельницький, 2019. 43 с.

2. Використання елементів STEM-освіти у підготовці студента-медика / Бірюкова Т. В., Олар О. І., Федів В. І., Микитюк О. Ю. *Наукові записки [Центральноукраїнського державного педагогічного університету імені В. Винниченка]. Серія : Педагогічні науки.* 2018. Вип. 173(2). С. 34–36.

3. Волошко Л. Б. Основні компоненти та характеристики професійної взаємодії фахівців з фізичної реабілітації. *Молодь і ринок*. 2017. № 9(152). С. 77–81.

4. Дробін А. А. Віртуальна екскурсія як форма організації освітнього процесу при родничої дисципліни: методичні особливості. *Інноваційна педагогіка.* 2022. Вип. 46. С. 239–243.

5. Інноваційні педагогічні технології у системі неперервної професійної освіти : монографія / за ред. С. С. Вітвицької. Житомир : Полісся, 2015. 368 с.

6. Лебедєва І. А. Мейкерство як інноваційний підхід впровадження STEM-освіти. *STEM – світ інноваційних можливостей* : матеріали наук.-практ. конф. у рамках IX Міжнар. виставки «Інноватика в сучасній освіті» та VI Міжнар. виставки «WorldEdu – 2017». URL: meykerstvo_yak_innovaciynyy_pidhid_vprovadzhennya_stem._1.docx

7. Машевська А. С., Єрмейчук Т. М. Моделювання в біології як засіб підвищення результативності навчального процесу. *Моделювання у навчальному процесі* : матеріали Всеукр. наук.-практ. Інтернет-конф.

(23-27 лютого 2015 р.) / укл. Н. А. Головіна. Луцьк : Вежа-Друк, 2015. С. 109–112.

8. Христова Т. Є. Інформаційно-структурна модель фізичного статусу здоров'я. *Науково-методичні основи використання інформаційних технологій в галузі фізичної культури і спорту :* зб. наук. праць. Харків : ХДАФК, 2019. Вип. 3. С. 112–115.

9. Information concept of the human health phenomenon as a guarantee of bioecosystem stability / Pyurko V. E., Khrystova T. E., Pyurko O. E, Kazakova S. M. *IOP Conf. Series: Earth and Environmental Science*. 2022. Vol. 1049(1), 012070.

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IMPROVING THE PERFORMANCE MANAGEMENT OF THE HIGHER EDUCATION SYSTEM

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In recent years, very practical directions have been launched in our country to radically improve the system of higher education, improve its quality, train competitive specialists and create a competitive environment in this area. Improving the efficiency of quality management of education in higher educational institutions today is of great importance [1, p. 26; 2, p. 43]. The economic efficiency of education is a concept expressing the importance of education in the growth of national income. The total amount of financial costs for education is understood as the ratio of the share of the increase in national income received by raising the level of education and skills of workers in the production of material goods [3, p. 156]. In practice, the influence of the external environment on efficiency has not been studied. Therefore, Sh.N. Zainutdinov and A.O. Ochilov consider it expedient to measure the results (external and internal environment of the institution) through the necessary (not specified in the project) profit when assessing management efficiency [4, p. 113]. Because through this you can evaluate the strength of relationships when designing an organizational