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THE EDUCATIONAL MUSEUMS OF I. HORBACHEVSKY TERNOPIL NATIONAL MEDICAL UNIVERSITY AND THEIR ROLE IN THE EDUCATIONAL PROCESS OF FUTURE NURSING SPECIALISTS

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НАВЧАЛЬНІ МУЗЕЇ ТЕРНОПІЛЬСЬКОГО НАЦІОНАЛЬНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ ІМЕНІ І. Я. ГОРБАЧЕВСЬКОГО МОЗ УКРАЇНИ ТА ЇХ РОЛЬ У ПРОЦЕСІ НАВЧАННЯ І ВИХОВАННЯ МАЙБУТНІХ СПЕЦІАЛІСТІВ МЕДСЕСТРИНСТВА

Abstract. An important place among a new approaches to the organization of educational activities occupied by museum pedagogy, that is an important factor in the education system and contributes to the comprehensive development of the student's personality. Among the variety of visuals, one of the first places should be occupied by natural objects and their images, which create the most complete picture of the structure of the human body. Given this, a certain place in the educational process should be occupied by museums. The purpose of educational museums is to create the fullest idea of wildlife around us, the morphology of man, animals, plants, as well as a centers of education and upbringing, because one of the first places should be occupied by natural objects and their images. The I. Horbachevsky Ternopil National Medical University has a number of educational museums: Museum of the Department of Human Anatomy, Museum of the Department of Pathologic Anatomy, Autopsy Course and Forensic Pathology, I. Yaremenko Educational and Biological Museum. The Museum of the Department of Human Anatomy contains a unique collection of anatomical macrospecimens, that reflect the shape of organs, their topographic relationships, projections of vessels and nerves, that serve as an integral theoretical basis for medical, dental and pharmaceutical students and also for students of the educational and scientific institute of nursing. To reach a high practical level of professional training is impossible and without the study of museum macrospecimens of the Department of Pathological Anatomy with a sectional course and forensic medicine. I. Yaremenko Educational and Biological Museum presents natural objects and their images, which create the most complete imagination of the human relationship with the surrounding natural environment. Thus, museums occupy an important place in the educational process of the individual, thanks to them, theory and practice give a high positive result in the formation of professionalism of the doctor.

Key words: educational museums; I. Horbachevsky Ternopil National Medical University; museum pedagogy.

Анотація. Значне місце серед нових підходів до організації навчальної діяльності посідає музейна педагогіка, що має важливе значення в системі освіти, сприяючи всебічному розвитку особистості студента. Важливе значення для навчання мають натуральні об'єкти і їх зображення, які створюють найповніше уявлення будови організму людини. З огляду на це, певне місце в навчально-виховному процесі займають музеї. Метою навчальних музеїв є створення найповнішої уяви змісту оточуючої нас живої природи, морфології людини, тварин, рослин, а також як осередку освіти й виховання. У Тернопільському національному медичному університеті імені І. Я. Горбачевського МОЗ України є ряд музеїв навчального профілю: музей кафедри анатомії людини, музей кафедри патологічної анатомії з секційним курсом і судової медицини, навчально-біологічний музей імені

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І. І. Яременка. Музей кафедри анатомії містить унікальну колекцію анатомічних препаратів, які відображають форму органів, їх топографічні взаємовідносини, проекції судин і нервів, що служать невід'ємною теоретичною базою для студентів медичного, стоматологічного та фармацевтичного факультетів, а також для студентів Навчально-наукового інституту медсестринства. Досягти високого практичного рівня професійної підготовки неможливо і без вивчення музейних макропрепаратів кафедри патологічної анатомії з секційним курсом та судової медицини. Навчально-біологічний музей імені І. І. Яременка представляє натуральні об'єкти і їх зображення, які створюють найповніше уявлення взаємозв'язку людини з оточуючим навколишнім природним середовищем. Отже, музеї ТНМУ займають вагоме місце в навчально-виховному процесі, завдяки їм теорія і практика дають високий позитивний результат у формуванні професіоналізму лікаря.

Ключові слова: навчальні музеї; Тернопільський національний медичний університет імені І. Я. Горбачевського МОЗ України; музейна педагогіка.

Introduction. In the current conditions of reforming the Ukrainian educational system, the question arises about new approaches to the organization and content of educational activities. An important place amongst them is occupied by one of the promising areas of modern pedagogy - museum pedagogy, which solves the problems of personality formation, namely: involving students in research activities through museum exhibits using information technology, development of their research skills and creative abilities to independent judgments and assessments, and critical thinking skills [8, 9]. Museum pedagogy is important in the education system and contributes to the comprehensive development of the student's personality [10].

Natural objects and their images, which create the most complete picture of the structure of the human body, are important for learning. Given this, a certain place in the educational process is occupied by museums [15, 17]. The purpose of educational museums is to create the fullest idea of the content of the living nature around us, the morphology of man, animals, plants, as well as the center of education and upbringing [1, 12].

Museums at educational institutions hold events that provide educational work among students and the population, organize research activities in accordance with the theme of museums, systematically replenish the funds of museums by conducting expeditions, hikes, excursions, organize accounting of museum objects, ensure their preservation, create and replenish stationary expositions and exhibitions, provide the opportunity to use museum materials in the educational process and research work [4]. In addition to the traditional guided tour, educational museums make extensive use of specific forms and methods of working with collections. This is a demonstration of individual museum objects in lectures, scientific description and processing of field research materials during practical classes [14, 16].

Education and upbringing, as a function of the museum, is based on the content and expressive

influence of museum exhibits on visitors, which is accompanied by a large amount of information received. As a result of the implementation of this function, the museum stimulates and satisfies the cognitive and cultural needs of society.

The implementation of the interaction function by museums is due to the presence of institutions and public institutions that actively interact with museums and other public institutions - institutions of culture, education and science. The system of these connections must be diverse and effective, and first of all, this applies to preschool and school institutions, the entire system of secondary, special and higher education. First of all, these are group excursions. In addition, students and researchers are directly interested in interacting with museum exhibits that are objects of historical, cultural, social and natural heritage [6].

A full life exists in a museum when, by concentrating the material and preserving it, it transmits to people information that is a kind of tuning fork of science, morality, spirituality, worthy of all protection, preservation and strengthening. The purpose of the museum is to accumulate information and identify patterns related to the processes of cognition and transfer of knowledge through museum objects [1, 5, 11].

The aim of the work is to show the role of museums in the educational process of students of I. Horbachevsky Ternopil National Medical University.

Theoretical framework. Mastering medical training is impossible without integrating the teaching of the discipline with the study of museum drugs, as a thorough source base of knowledge of the invisible and scientific and methodological component of the educational process of the medical university. I. Horbachevsky Ternopil National Medical University (TNMU) has a number of museums of educational profile: the museum of the Department of Human Anatomy, the museum of the Department of Pathological Anatomy with a sectional course and forensic medicine, the educational and biological museum named after I. Yaremenko [2, 3].

TNMU is rightly proud of its anatomical museum [2]. This is probably not the largest of the anatomical museums in higher education institutions in Ukraine, but it is certainly one of the most orderly. Here is a unique collection of anatomical preparations that reflect the main aspects of the structure of the human body: the shape of organs, their topographic relationships, projections of blood vessels and nerves, the structure of individual organs that serve as an integral theoretical basis for students of medical, dental and pharmaceutical faculties and students of the educational and scientific institute of nursing.

The history of the museum is directly related to the history of the creation and formation of the Department of Human Anatomy, first the Medical Institute, and then the Academy and the University. The museum was sponsored by a number of its employees. First of all Professor M. Ya. Polyankin was one of the first heads of the department who laid the foundations of the museum and on whose initiative the first museum preparations were made. Initially, the museum had a small number of exhibits. Gradually, through the efforts of the staff of the department and members of the student scientific circle, the number of natural preparations in the museum's collection increased. Today there are almost 600 wet and dry drugs made from organs and parts of the human body.

A significant contribution to the development of the museum was made in different years by the then heads of the department: Professor V. G. Koveshnikov and Professor Ya. I. Fedoniuk. They paid maximum attention to the expansion of the museum, annually replenishing it with 30-40 new drugs from all sections of anatomy. Unified methods of manufacturing drugs of various organs and their descriptions were introduced into the museum business; the basis of modern museum equipment were developed.

As the department was formed and reconstructed, the museum was located in different rooms of the primary building. Today it occupies two spacious halls on the second floor of the Educational and Scientific Institute of Morphology and is part of the Department of Human Anatomy. The entire anatomical collection is formed on a systematic basis and is an integral museum exhibition. To accommodate the collection, special cabinets were made that meet the specifics of the exhibition. Most of the existing museum exhibits as visual aids are actively involved in conducting practical classes, as well as independent work of students. Therefore, the museum can rightly be called a center for practical training of students.

In 2009–2010, under the leadership of Professor I. E. Herasymiuk and with the direct participation of Assistant Professor B. V. Hunger, Assist. R. V. Hovda and laboratory assistants E. M. Kocharovska and O. P. Danylevych were restored and replenished the museum exposition. All preparations of the museum were rationally systematized in cabinets-showcases on the functional-anatomical principle and in accordance with the curricula and programs of the discipline "Human Anatomy". During this period, the museum was fully equipped with sections of drugs and tables on osteoarthrology, splanchnology, angioneurology, peripheral and central nervous systems. The section of osteoarthrology is devoted to the structure of the musculoskeletal system and its passive (bones and ligaments that connect them) and active (muscles) contents. The bones of the skull are singled out and their age features are reflected. On the bones of the torso and extremities are marked with paint the places of attachment of muscles, which helps to understand the directions of displacement of fragments in practical traumatology. The section of splanchnology includes the anatomy of the digestive, respiratory, endocrine and urogenital systems, as well as the senses. The nervous and cardiovascular systems with peripheral nerves are presented by separate divisions. Each anatomical structure on museum preparations has a numerical designation, which corresponds to its nomenclature in Ukrainian and Latin as indicated on adjacent plates. This allows students to acquire knowledge of the subject directly next to the anatomical structures they study.

On drugs (wet and dry) you can see the natural shape of the organs, their topographic relationship and location, the projection of blood vessels and nerves and the structure of individual organs. Topographic sections of different parts of the human body are important for practice-oriented learning which makes it possible to compare them with modern clinical methods of examination: computed tomography and magnetic resonance imaging.

The collection of the anatomical museum also includes unique exhibits: a mirror arrangement of the organs of the thoracic cavity, a two-chambered heart and a horseshoe kidney (renal dystonia). Knowledge of such anatomical features will help future doctors in their practical work in making diagnoses.

In addition, the section on teratology – Malformations in children deserves special attention, which presents and describes in detail the original drugs with congenital malformations obtained from clinical institutions in Ternopil.

The museum is visited not only by university students. Every year, the anatomical museum receives a large number of other visitors, primarily high school students and medical students located in the Ternopil region and its neighbors. This contributes to the popularization of scientific knowledge, the formation of a natural worldview and moral and ethical education of youth.

At the present stage of development of medical pedagogy at the Department of Pathological Anatomy and Forensic Medicine, it is important to study the macroscopic and microscopic manifestations of the disease on the basis of which the clinical thinking of students is formed. The formation of pathological anatomy as an applied (clinical) medical science is associated with the development of anatomy, which is why the main slogan of the department is the statement of the Ukrainian philosopher G. Skovoroda, «From the visible to the invisible».

The museums of the Department of Pathological Anatomy and the Department of Forensic Medicine began to form from the first day of the founding of our university in 1957, at that time of the institute. They are the collective work of a number of generations of teachers. The first and direct founders were Assoc. B. I. Dubchak and assistant. S. S. Abramov, who made the first hundreds of macrodrugs [2, 3].

The equipment for the exposition of museum preparations, according to the order of the Ministry of Health of Ukraine, came from the Odessa Medical Institute. There is a curious case connected with it. Assistant Professor M. J. Valchuk ordered B. I. Dubchak to prepare unusable models of pathological processes that were at the department, and send a container to Ternopil. However, it so happened that they, as the founders of the newly created department, had to disassemble it. Therefore, the staff of the department refused to demonstrate pathological processes on the models and began to produce macrodrugs, mostly with the preservation of natural color.

In addition to the formation of the macro-museum, in the same 1957, the creation of the archive of microdrugs began. In practical classes, drugs used were made by laboratory assistants of the department: L. O. Chizhova, D. S. Babenkova, N. D. Khomenko, E. S. Kovaleva, I. Grebelkina, M. P. Panyuta, V. S. Izai. Moreover, each laboratory assistant had to master 1–2 methods of elective tissue dyeing annually.

M. P. Panyuta and V. S. Izai achieved special success in histological technique. Great importance was attached to illustrative material. B. I. Dubchak, who had an art education and headed the art studio of the

institute, as well as a student-circle member of the art studio of the institute and Ya. Ya. Bodnar were involved in the replenishment of the table fund.

The archive of micropreparations became the basis of the atlas of pathohistology, prepared for publication, created in cooperation with the Department of Pathological Anatomy of Ivano-Frankivsk National Medical University and the Institute of Clinical Pathology of Danylo Halytsky Lviv National Medical University.

Assistant professor V. K. Steshyts in 1958, having received an invitation to work at the Ternopil Medical Institute, made a lot of effort to develop the Department of Forensic Medicine. It was achieved under his leadership and direct participation of assistants. S. A. Abramov began to fill the educational forensic museum with new exhibits, which today has about 1,000 different exhibits from all branches of forensic medicine and is one of the richest in the exposition of specialized medical museums in Ukraine.

Thanks to the artistic abilities of assistants S. A. Abramov and I. O. Yukhimets, a unique small forensic museum was created, which has no analogues in any higher medical institution in Ukraine. In it, along with the expositions of the scene, stands original samples of various traumatic objects, cold steel and firearms all displayed. This exposition of the museum for educational purposes gives students the opportunity to better master the diagnostic signs of sharp and blunt objects according to the classification of Assistant Professor A. I. Mukhanov and the algorithm for describing the crime scene.

The Museum of the Department of Pathological Anatomy with a sectional course and forensic medicine is constantly used to form attitudes to a healthy lifestyle of school and student youth, combating bad habits, clearly reproducing the consequences and complications of alcoholism, drug addiction, smoking and more.

At the Department of Medical Biology, located there is its pride – Educational-Biological Museum founded in 1957 by the first Chief of the Department of Biology, Ternopil Medical Institute, Candidate of Biological Sciences, Assistant Professor, Ivan Ivanovych Yaremenko [7, 13].

In a short guide about the Educational Museum written as far back as in 1974 Ivan Ivanovych noted: “Amidst the variety of visual aids one of the first places should be occupied by natural objects and their images as they create a complete conception of the nature surrounding us. Due to this fact museums should be

on a special position in the educational process. It is especially valuable and important while learning one of the fundamental sciences - Biology”.

While organizing the exhibition of the Museum including more than 2000 exhibits, Ivan Ivanovych paid special attention to the demonstration of integrity between the organisms and environment, the origin of living matter from non-living one, a great diversity of the plant and animal worlds, modern principles of organism structure, processes of reproduction and development, issues of heredity and variability. Formal opening ceremony took place in 1967 coinciding with the 10th anniversary of foundation of Ternopil Medical Institute.

In 2012–2013 the staff of the Department of Medical Biology on the initiative of its Chief, Professor Larysa Yaroslavivna Fedoniuk, conducted a huge work to reorganize the Educational-Biological Museum and named it after I. I. Yaremenko. The main purpose of the reorganization was a common idea to prevent the phenomenon when museums become a collection of monotonous unsystematized exhibits, facts and objects. A general aim of simultaneous separation and integration of biological, nature conserving, ecological, evolutionary and medical directions enabled to create a complete conception about our environment and give medical-biological content to living nature.

There are two units in the Educational-Biological Museum: “EVOLUTION OF THE EARTH, BIOSPHERE AND MAN” – 2012 and “WILDLIFE – A MULTILEVEL SYSTEM OF THE EARTH” – 2013. Every unit includes a number of exhibitions. In particular, the unit “EVOLUTION OF THE EARTH, BIOSPHERE AND MAN” includes three exhibitions: “CHRONOLOGY OF WILDLIFE EVOLUTION”, “THE WAY OF HUMAN EVOLUTION BY DARVIN”, “WILDLIFE IN GEOLOGICAL PAST”.

The unit “WILDLIFE – A MULTILEVEL SYSTEM OF THE EARTH” consists of 8 exhibitions: “THE PROMINENT BIOLOGIST AND FOUNDER OF THE DEPARTMENT – I. I. YAREMENKO”, “ANIMAL KINGDOM IN EUKARYOTE EMPIRE”, “POISONOUS ANIMALS”, “MEDICAL-BIOLOGICAL ASPECTS OF PARASITISM”, “REPRESENTATIVES OF INSECTS CLASS”, “THE CONCEPTION OF ECOSYSTEM IN MODERN ECOLOGY”, “THE RED BOOK PLANTS AND ANIMALS OF TERNOPIIL REGION”, “WILDLIFE PRESERVATIONS OF TERNOPIIL REGION”.

The exhibition “CHRONOLOGY OF WILDLIFE EVOLUTION” is presented by a geochronological

scale reflecting the main way of the organic world evolution, geologic history of the Earth, and all the stages of life development.

The exhibition “THE WAY OF HUMAN EVOLUTION BY DARVIN” deals with the existing evolution theories, the aspects of formation of evolutionary Biology as an independent branch of science. The exhibition presents illustration material about the origin of the man as well as plaster casts of the craniums of fossil men.

The exhibition “WILDLIFE IN GEOLOGICAL PAST” presents geological materials, minerals, rare mineral compounds found in different periods of the Earth formation on the territory of Ternopil region. The exhibition contains an interesting information about deleted species of plants and animals existed in Ternopil region dozens and hundreds million of years ago.

The exhibition “THE PROMINENT BIOLOGIST AND FOUNDER OF THE DEPARTMENT – I. I. YAREMENKO” deals with the life, scientific achievements and labour activity of the first Chief of the Department of Biology – Ivan Ivanovych Yaremenko.

The exhibition “ANIMAL KINGDOM IN EUKARYOTE EMPIRE” occupies a central part of the museum. It is contained in 18 glass stands demonstrating a great variety of invertebrate and vertebrate animals. The biggest taxons are contained in separate glass stands with a detailed information concerning the systematization, morphology, ecology and life cycle of animals. In particular, the appearance of one exhibit of this exposition, namely, “a large spotted python” is as follows: back in 1959 a circus came to Ternopil on tour. After a few days in Ternopil, the actors turned to a veterinarian about the fact that the python refuses to eat, feeling bad. After a while, the python died. After sending the animal’s body for autopsy to a veterinary clinic, the cause of death was established - intestinal obstruction due to helminth parasitism (according to the memoirs of Mykola Yakovlevich Yakovenko, Assistant Professor of medical biology, Candidate of Biological Sciences, 2014). Therefore, the body of the python, as well as the helminths themselves were transferred to the museum, where they are still in formalin and surprise visitors.

The history of the exhibition “POISONOUS ANIMALS” has very deep roots in the history of the Department, as I. I. Yaremenko paid much attention to the study of poisonous animals. One of his monographs deals with these creatures “Poisonous Animals”. The exhibition presents wet specimens, stuffed poisonous

animals and information stands containing the materials concerning general characteristics of poisonous animals, their classification, way of existence. A certain stand contains the information dealing with the clinical manifestation of toxic action of poisons, rules to give the first aid in case of bites/stings of poisonous animals as well as peculiarities of snake venom and its use in medicine.

The exhibition “MEDICAL-BIOLOGICAL ASPECTS OF PARASITISM” is grouped by the principle of interaction of a parasite and host, demonstrates nature-mediated character of parasitic diseases, presenting a clear notion about interaction of the way of living of animals and signs of parasitic diseases, forming clinical thinking of future medical specialists. The exhibition is located on the wall with the size of 30 m². Special containers considering biological systematization presents stuffed animals of the following classes: Canciforms, Cartilaginous and Osseous Fish, Birds, Rodents, Lagomorphs, Insectivores, Feral animals, Cloven-Hoofed animals and Primates. Under these containers with stuffed animals on special places fixed on the stands of the central exhibition there is the information about 13 diseases which causative agents, carriers or hosts are the animals presented. Systematic position, morphology, the developmental cycle of a causative agent, ways of infection, clinical signs, methods of laboratory diagnostics and prevention are indicated and illustrated on 7 infectious and 6 invasive diseases.

The exhibition “REPRESENTATIVES OF INSECTS CLASS” is created on the basis of the collection compiled by the Chief of the Department of Normal Physiology, Doctor of Medical Sciences, Professor, Kovanov Kostiantyn Vasyliovych, and granted to the Educational-Biological Museum in 1992. During 2013 204 its exhibits were identified, systematized and signed according to up-to-date requirements. The collection is located and put in special containers ensuring a long storage of insects. 177 representatives of Lepidopterous insects are grouped by the directions “Variability” and “Species Diversity of Butterflies”.

The exhibition “THE CONCEPTION OF ECOSYSTEM IN MODERN ECOLOGY” is presented by the examples of freshwater and surface ecosystems according to the scheme: producers, consumers of the I, II and III order. The exhibition is organized by the level order with the aim to visualize the chains of supply and rules of ecological pyramid.

The exhibition “THE REDBOOK PLANTS AND ANIMALS OF TERNOPIL REGION”, occupying

2 glassstands, presents herbal specimens of 29 rare species of plants collected in the outskirts of Ternopil close to the towns of Kremenets and Husiatyn. It also contains threatened species of animals of Ternopil region with stuffed animals made by the staff of the Department under the leadership of Yaremenko I. I. A real decoration of the exhibition is herbarium specimens of three attended species of plants in Ternopil region granted to the Museum by the staff of the Department of Botany, Volodymyr Gnatiuk Ternopil National Pedagogical University in 2013. A valuable treasure of the exhibition is “The Red Book of Ukraine” – the principal document summarizing the materials about contemporary state of rare species of plants and animals and those which are under the danger of extinction. On the basis of this nature-conservative document scientific and practical measures are worked out directed to preserve nature and its rational use. The copies of “The Red Book of Ukraine (Animal World)” and “The Red Book of Ukraine (Plant World)” are granted to the Museum by the authors of this edition – the workers of the Institute of Zoology of the National Academy of Sciences of Ukraine in 2012.

The exhibition “WILDLIFE PRESERVATIONS OF TERNOPIL REGION” presents regional map-diagram of the territories and objects of an ecological network of Ternopil region possessing a recreation value. Already existing wildlife preservation territories and perspectives for them objects are presented there.

A stylized exhibition of birds – representatives of the fauna of the western region of Ukraine is organized on one of the windowsills of the Museum.

Today the Educational-Biological Museum occupies the territory of 44 m², including 2155 exhibits, in particular: 345 stuffed animals, 263 wet mounts, 64 animal skeletons, 5 collections of representatives of insects including 500 species, about 260 molds, diagrams and models.

Educational-Biological Museum is an exhibition project and remains a teaching resource of the Department. It reflects not only the history of the organization and establishment of the Museum, but the history of the Department, Institute, Academy and University in the whole. The Museum was and still remains a pride in honour of those people who laid its foundations.

Conclusions and Prospects for Research. TNMU museums occupy an important place in the educational process. Thanks to them, theory and practice give a high positive result in the formation of professionalism of the doctor. Museum pedagogy actively contributes to the process of educating the individual, the forma-

tion of a new way of thinking, moving away from authoritarian principles and increasing motivation for educational activities, which corresponds to modern trends in education.

Mastering medical training is impossible without integrating the teaching of the discipline with the study of museum drugs as a thorough source base of knowledge of the invisible, scientific, and methodological

component of the educational process of the medical university. Active use of TNMU museums in practical classes will provide an opportunity to deepen knowledge of the subject, expand the picture of research objects, which as the basis of museum pedagogy, will contribute to the comprehensive development of the student's personality.

List of literature

1. Вербицька П. В. Музей як комунікативний та освітній простір : навч. посіб. / П. В. Вербицька, Р. Е. Пасічник ; Нац. ун-т «Львів. політехніка». – Львів : Вид-во Львів. політехніки, 2017. – 229 с.

2. Кризь призму минулого до сьогодення / [М. М. Корда, Л. Я. Федонюк, А. І. Паламарчук та ін.] ; за ред. М. М. Корди, Л. Я. Федонюк. – Тернопіль : ТДМУ, 2017. – 480 с.

3. Майбутнє твориться сьогодні (2007–2012) / [М. А. Андрейчин, С. М. Андрейчин, Л. С. Бабінець та ін.]. – Тернопіль : ТДМУ, 2012. – 428 с.

4. Музеї Тернопільського державного медичного університету імені І. Я. Горбачевського – багатство історичної спадщини навчального закладу / Л. Я. Федонюк, А. І. Паламарчук, В. В. Файфура [та ін.] // Медична освіта. – 2019. – № 1 (81). – С. 176–180.

5. Музейна педагогіка в науковій освіті : зб. тез доповідей учасників II Всеукр. наук.-практ. конф., м. Київ, 26 листоп. 2020 р. / за наук. ред. С. О. Довгого. – К. : Національний центр «Мала академія наук України», 2020. – С. 61–64.

6. Музейна справа у закладах освіти. Методичні рекомендації / [уклад. О. М. Вагеннік]. – Запоріжжя, 2020. – 76 с.

7. Педагог і дослідник біологічного циклу / [Л. Я. Федонюк, Л. Н. Рибіцька, О. Т. Тусик та ін.]. – Тернопіль : ТДМУ, 2013. – 20 с.

8. Прожога В. М. Музейна педагогіка: залучення молоді до вивчення та збереження історичної спадщини / В. М. Прожога // Педагогічна майстерня. – 2018. – № 2. – С. 23–27.

9. Удовиченко І. В. Музейна педагогіка: теорія і практик : наук.-метод. посіб. / І. В. Удовиченко. – К. : Лотос, Національний музей історії України, 2017. – 72 с.

10. Удовиченко І. Принципи музейної педагогіки в період переосмислення ролі музею в суспільстві / І. Удо-

виченко // Музейна педагогіка в науковій освіті : зб. тез доповідей учасників I Всеукр. наук.-практ. конф., 28 листоп. 2019 р. – К. ; Біла Церква : Вид-во «Авторитет» ФООП Курбанова Ю. В., 2019. – С. 99–102.

11. Федонюк Л. Я. Життя для науки : монографія / Л. Я. Федонюк, О. М. Ярема, С. С. Подобівський. – Тернопіль : ТДМУ, 2018. – 72 с.

12. Федонюк Л. Я. Музеи ТНМУ – ценное наследие и гордость университета / Л. Я. Федонюк, О. М. Ярема, Е. И. Скиба // Экологическое образование и устойчивое развитие. Состояние, цели, проблемы и перспективы : материалы Междунар. науч.-метод. конф., Республика Беларусь, г. Минск, 25–26 февраля 2021 г. – 2021. – С. 351–353.

13. Федонюк Л. Я. Навчально-біологічний музей кафедри медичної біології – цінний скарб і гордість університету / Л. Я. Федонюк, С. С. Подобівський, О. М. Ярема // Медична освіта. – 2018. – № 1 (77). – С. 141–145.

14. Федонюк Л. Я. Эстетика живой природы – ценность учебно-биологического музея кафедры медицинской биологии / Л. Я. Федонюк, И. Д. Быць // Stav, problému a perspektívy pedagogického štúdia a sociálnej práce : materiály наук.-практ. конф., Словацька республіка, Sládkovičovo, 28–29 жовтня 2016 р. – 2016. – С. 67–71.

15. Філіпчук Н. О. Музейна педагогіка в оптимізації культурно-освітнього процесу / Н. О. Філіпчук // Духовність особистості: методологія, теорія і практика. – 2017. – Вип. 2. – С. 256–265.

16. Fedonyuk L. Ya. Biological Educational Museum Collection Value of I. Horbachevsky Ternopil State Medical University for Learning About Wildlife / L. Ya. Fedonyuk, I. V. Pryvrotska // Біологічні системи. – 2018. – Т. 9, вип. 2. – С. 29–36.

17. The creative potential of museum pedagogy within the modern society / K. Milovanov, E. Nikitina, N. Sokolova, M. Sergeeva // Education. – 2017. – Vol. 38, No. 40. – P. 11.

References

1. Verbytska, P.V., & Pasichnyk, R.E. (2017). *Muzey yak komunikatyvnyy ta osvitynyy prostir: navch. posib. [Museum as a communicative and educational space: textbook. way]*. Lviv : Vyd-vo Lviv. politekhniky [in Ukrainian].

2. Korda, M.M., Fedonyuk, L.Ya., Palamarchuk, A.I., Mysula, I.R., Avdeev, O.V., Andreychyn, M.A., ... Ya-

shan, O.I. (2017). *Kriz pryzmu mynuloho do sohodennya [Through the prism of the past to the present]*. Ternopil: TDMU [in Ukrainian].

3. Andreychyn, M.A., Andreychyn, S.M., Babinets, L.S., Banadyha, N.V., Bedenyuk, A.D., Bodnar, Ya.Ya., ... Yashan, O.I. (2012). *Maybutnye tvorytsya sohodni (2007–2012)*

[*The future is created today (2007–2012)*]. Ternopil: TDMU [in Ukrainian].

4. Fedonyuk, L. Ya., Palamarchiuk, A. I., Fajfura, V. V., Lototska, O. V., Bondarenko, Ju. I., & Palasiuk, B. O. (2019). Muzeji Ternopilskoho derzhavnogo medychnoho universytetu imeni I. Ya. Horbachevskoho – bahatstvo istorychnoy spadshchyny navchalnoho zakladu [Museums of Ternopil State Medical University named after I. Horbachevsky – the richness of the historical heritage of the educational institution]. *Medychna osvita – Medical Education*, 1, 176-180 [in Ukrainian].

5. Dovhyi, S. O. (Eds.). (2020). *Muzejna pedahohika v naukoviy osviti: zbirnyk tez dopovidey uchasnykiv II Vseukrayinskoyi naukovo-praktychnoyi konferentsiyi* [Museum pedagogy in scientific education: a collection of abstracts of participants of the II All-Ukrainian scientific-practical conference]. Kyiv: Natsionalnyy tsentr «Mala akademiya nauk Ukrainy» [in Ukrainian].

6. Vahennik, O. M. (Eds.). (2020). *Muzejna sprava u zakladakh osvity. Metodichni rekomendatsiyi* [Museum business in educational institutions. Methodical recommendations]. Zaporizhzhya [in Ukrainian].

7. Fedonyuk, L. Ya., Rybitska, L. N., Tusyuk, O. T. (2013). *Pedahoh i doslidnyk biolohichnoho tsykladu* [Educator and researcher of the biological cycle]. Ternopil: TDMU [in Ukrainian].

8. Prozhoha, V. M. (2018). Muzejna pedahohika: zaluchennya molodi do vyvchennya ta zberezheniya istorychnoy spadshchyny [Museum pedagogy: involving young people in the study and preservation of historical heritage]. *Pedahohichna maysternya – Pedagogical Workshop*, 2, 23-27 [in Ukrainian].

9. Udovychenko, I. V. (2017). *Muzejna pedahohika: teoriya i praktyka: naukovo-metodychnyy posibnyk* [Museum pedagogy: theory and practice: scientific and methodical manual]. Kyiv: Lotos, Natsionalnyy muzey istoriyi Ukrainy [in Ukrainian].

10. Udovychenko, I. (2019). Prynysy muzejnoyi pedahohiky v period pereosmyslennya roli muzeyu v suspil'stvi [Principles of museum pedagogy in the period of rethinking the role of the museum in society]. *Muzejna pedahohika v naukoviy osviti: zbirnyk tez dopovidey uchasnykiv I Vseukrayinskoyi naukovo-praktychnoyi konferentsiyi – Museum pedagogy in scientific education: a collection of*

abstracts of the participants of the I All-Ukrainian scientific-practical conference. (pp. 99-102). Kyiv; Bila Tserkva: Vydavnytstvo «Avtorytet» FOP Kurbanova Yu. [in Ukrainian].

11. Fedonyuk, L. Ya. (2018). *Zhyttya dlya nauky: monohrafiya* [Life for science: monograph]. Ternopil: TDMU [in Ukrainian].

12. Fedonyuk, L. Ya. (2021). Muzej TNMU – tsennoe nasledye y hordost' unyversyteta [Museums of TNMU – a valuable heritage and pride of the university]. *Materialy Mezhdunarodnoy nauchno-metodycheskoy konferentsiyi «Ékologicheskoe obrazovanye y ustoychivoe razvytye. Sostoyanye, tsely, problemy y perspektyvy» – Materials of the International scientific-methodical conference “Environmental education and sustainable development. Status, goals, problems and prospects”.* (pp. 351-353). Minsk, Respublika Belarus [in Russian].

13. Fedonyuk, L. Ya. (2018). Navchalno-biolohichnyy muzey kafedry medychnoyi biolohiyi – tsinnyy skarb i hordist universytetu [Educational and Biological Museum of the Department of Medical Biology – a valuable treasure and pride of the university]. *Medychna osvita – Medical Education*, 1 141-145 [in Ukrainian].

14. Fedonyuk, L. Ya., & Byts, Y. D. (2016). Éstetyka zhyvoy pryrody – tsennost uchebno-byolohicheskoho muzeya kafedry medytsynskoy byolohyy [Aesthetics of living nature – the value of the educational biological museum of the department of medical biology]. *Materialy naukovo-praktychnoyi konferentsiyi «Stav, problémy a perspektyvy pedagogického štúdia a sociálnej práce» – Materials of the scientific-practical conference «Stav, problémy a perspektyvy pedagogického štúdia a sociálnej práce».* (pp. 67-71). Slovatska republika, Sládkovičovo [in Russian].

15. Filipchuk, N. O. (2017). Muzejna pedahohika v optyimizatsiyi kulturno-osvitnoho protsesu [Museum pedagogy in the optimization of the cultural and educational process]. *Dukhovnist osobystosti: metodolohiya, teoriya i praktyka – Spirituality of Personality: Methodology, Theory and Practice*, 2, 256-265 [in Ukrainian].

16. Fedonyuk, L. Ya., & Pryvrotska, I. B. (2018). Biological Educational Museum Collection Value of I. Horbachevsky Ternopil State Medical University for Learning About Wildlife. *Biolohichni systemy – Biological Systems*, 9(2), 29-36.

17. Milovanov, K. (2017). The creative potential of museum pedagogy within the modern society. *Education*, 38(40), 11.

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