

University of Technology Katowice



**INNOVATIVE APPROACHES TO
ENSURING THE QUALITY OF
EDUCATION, SCIENTIFIC RESEARCH
AND TECHNOLOGICAL
PROCESSES**

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Innovative Approaches to Ensuring the Quality of Education, Scientific Research and Technological Processes

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5.9 Anal manometry as one of the diagnostic criteria of acute appendicitis in female children

Significant prevalence of pathology, unsatisfactory treatment results and clinically important and severe complications of the disease in children require a brief historical description of acute appendicitis. Regarding the history of acute appendicitis, it is necessary to mention the times of Hippocrates, when the anatomy and morphological structure of the appendicular process have already been described. However, there was no data on appendectomy at that time. Until the XVIII century there were no ideas about the role of the appendix in inflammatory processes of the abdominal cavity, and the first reports of typhlitis and paratyphlitis appeared only in the XIX century. [3].

The first known case of appendectomy in childhood is surgery performed by British surgeon K. Amiand on December 6, 1735. The procedure was performed without anesthesia in an 11 year-old patient with inguinal hernia, the contents of which were perforated with a metal pin appendix. The appendix along with the foreign object was removed, and the hernia containing the appendix has since become known as the Amianda hernia. The patient recovered after suturing the hernia and removing the perforated appendix [4].

Due to the emergence of scientific and technological progress in medicine and the introduction of new medical and diagnostic methods, the number of deaths associated with acute appendicitis has decreased significantly compared to the XIX century. However, even with the advent of high-tech tools, the surgeon's work with patients with abdominal pain remains very difficult. Acute appendicitis is one of the most common causes of pathological conditions of "acute abdomen" in children. The cause of acute appendicitis is currently unknown. Only in some cases, macroscopically during surgical operation you can detect fecal stones or the presence of helminths in the lumen of the appendix. Histological examination usually reveals epithelial hyperplasia, vascular thrombosis and other changes that may lead us to the cause of inflammation in the appendix. In children, inflammation of the appendix is one of the most common causes of laparotomy. This is due to the functional and morphological features of the processes of the child's body, the generalization of inflammatory processes, the severity of intoxication, the rapid development of destructive processes [5, 6, 7, 8, 9].

Timeliness of diagnosis and correct treatment and diagnostic tactics for acute appendicitis in children, differential diagnosis is the key to successful diagnosis, which allows to provide the child with adequate medical care in a timely manner – to make a correct diagnostic conclusion and develop individual surgical tactics [10, 8, 9].

The problem of timely diagnosis of acute appendicitis today is one of the most relevant, especially in cases of atypical location, as well as in cases of its occurrence in children of younger age. Also, great difficulties arise in female patients due to the close location of the genitals. The clinical picture of this disease is extremely diverse. It is also often possible to mask under the guise of other non-surgical diseases of the abdominal cavity and pelvic organs. Significant difficulties in the diagnosis of acute appendicitis also occur with its atypical location, which occurs in about 25% of cases of operated patients. [11]. In such ambiguous situations, surgeons use general laboratory and instrumental diagnostic methods such as general blood and urine tests, ultrasound, computed tomography of the abdominal cavity and pelvic cavity. However, even after the use of the above methods, the question of surgical tactic in some cases of children with abdominal pain remains uncertain for some time. In the case of acute appendicitis, this uncertainty causes inflammation to spread from the appendix to other organs and peritoneum, causing peritonitis and other complications, as well as delaying postoperative treatment and rehabilitation [12, 13].

Regarding the aggravating factors that cause negative dynamics of treatment, the following should be noted: late treatment, self-medication, difficulties and errors in diagnosis and treatment at the primary level, concomitant pathology, severe condition of the child. It is known that the inflammatory process in the appendix causes an increase in tone in adjacent segments of the intestine such as the ileum, right colon, as well as the sigmoid and rectum. It should also be noted an increase in the tone of the sphincters of the gastrointestinal tract. First of all, we are talking about the sphincter apparatus of the appendix, caecum, as well as the sphincters of the rectum, as a non-specific reaction to the inflammatory process in the abdominal cavity or pelvic cavity. Of the above sphincters, the most accessible for measuring pressure is the sphincter of the rectum. The study will be devoted to this anatomical area. In the study of anal pressure was based on the method Levin MD (2019) of this procedure by measuring the reactive and basal pressure levels of the sphincter of the rectum [14]. However, our study used a device that we developed for sphincterometry.

The aim of the study was to increase the efficiency of the diagnostic process in children with abdominal pain by using anal manometry.

Materials and discussion of the study.

The study included 60 female children who underwent inpatient treatment in the surgical departments of Vinnytsia Regional Children's Clinical Hospital (Ukraine). We examined children of the older age group. The age range of the surveyed girls was in the range of 3 – 17 years. The main reason for seeking medical help were abdominal pain of various localizations, mainly in the lower parts of abdomen. For anal manometry, patients were divided into three equal groups – 20 children each. The first group consisted of girls who were hospitalized in an inpatient department with abdominal pain (with suspicion of acute appendicitis), but in a further study, acute surgical pathology was excluded. The second group included female patients who underwent surgical operation for acute appendicitis. Girls from this group according to the intraoperative study had no complications in the form of peritonitis. Such patients were operated on for acute appendicitis without signs of destruction, or for appendicitis at the stage of phlegmonous inflammation without perforation. The third group consisted of girls who underwent surgical operation for acute appendicitis and had peritonitis of varying severity as a complication of appendicitis. The cause of complications were destructive forms (phlegmonous, gangrenous and gangrenous-perforative) of acute appendicitis.

All patients and/or their parents signed an informed consent before anal manometry after familiarizing them with the procedure. Anal manometry was performed immediately after a digital rectal examination, which is mandatory in children with suspected acute appendicitis according to local clinical protocols. Simultaneous digital rectal examination and anal manometry reduces the trauma of the child (especially psychological). Anal manometry was performed in the manipulation room in the position of the child on his back. The device we developed for anal manometry consisted of a standardized manometer, to which was attached a cuff made of an incubation tube (tube diameter without cuff 4.5 mm) and a supercharger with a clamp to create a constant pressure

in the circuit and a sensitive cuff. All modules of the device were connected by sealed rubber tubes (Fig. 1).



Fig. 1. Device for measuring the tone of the rectal sphincters. The components of the device are: 1– manometer (mm Hg); 2 – sensitive cuff, which is inserted into the rectum; 3 – clamp; 4 – pressure blower.

Before the procedure, up to 20 mm Hg of air was pumped into the device circuit by means of a supercharger, the tube lumen was closed at the clamp level to maintain constant pressure in the circuit and give the cuff sensitivity by fully straightening and creating a pressure gradient between the external environment and the cuff cavity. The cuff and anus were then lubricated with a solution of Vaseline to reduce soft tissue resistance and increase patient comfort during device insertion. The procedure was performed without general and local anesthesia, because in the straightened state the diameter of the cuff does not exceed the diameter of an adult's finger and does not cause significant pain and injury to the patient's tissues. The sensitive cuff was inserted into the rectum to a depth of 3 cm in order to establish it in the lumen of the anal sphincter. Immediately after the introduction of the cuff, the value of the manometer in millimeters of mercury was recorded. This indicator, the so-called reactive pressure, is the primary data, as it includes the passive tone of the sphincters, as well as the active conscious contraction of the sphincter apparatus in response to an external stimulus (cuff). To obtain the second more important indicator (basal pressure), which takes into account only the passive tension of the sphincter muscles, it is necessary to keep the cuff in the lumen of the sphincter for 60 seconds, which ensures the patient's habituation to the cuff and significantly reduces the element of active tension of the sphincter muscles. The diagnostic procedure was completed by determining the basal pressure. Measurement of basal pressure is a more important indicator than reactive pressure, because it more objectively reflects the constant tension of the sphincter muscles at rest stage. Primrose

After measuring the anal pressure, it was necessary to subtract from each value the value of the pressure that was created to straighten the cuff. That is, it was necessary to subtract 20 mm Hg from the value that was set during the pressure measurement. Statistical processing was performed using MS Statistica 5.0 software. Research results. In the course of our research, the following indicators were identified. In children of the first group (children with abdominal pain, in whom acute surgical pathology was excluded), the average value of reactive anal pressure was 59.65 ± 2.11 mm Hg, the average basal pressure was observed at the level of 50.35 ± 2.53 mm Hg. In patients of the second group (children with a postoperative diagnosis of acute appendicitis without peritonitis) sphincterometry data were as follows. The average value of the reactive pressure was at the level of 89.1 ± 3.27 mm Hg, after holding the cuff in the lumen of the sphincter, the pressure decreased to its basal level, the average value of which was 70.7 ± 1.94 mm Hg. The highest value of mean anal pressure, compared to the previous two groups, was observed in the third group (children with acute appendicitis complicated by peritonitis). The average value of anal pressure had the following indicators: reactive pressure – 106.4 ± 4.3 mm Hg, basal pressure – 77.85 ± 2.81 mm Hg. The overall mean value for patients with acute appendicitis was 97.75 ± 3 mm Hg – reactive pressure and 74.28 ± 1.78 mm Hg – basal pressure. Based on the results of the study, the dynamics was characterized by an increase in both reactive and basal pressures, which is directly

proportional to the degree of inflammation in the abdominal cavity, and hence with the strength of the pain syndrome (Table 1).

Table 1.
The average value of anal pressure in children hospitalized with abdominal pain.

Type of anal pressure	I group (mm Hg)	II group (mm Hg)	III group (mm Hg)	p
Reactive	59,65 ± 2,11	89,1 ± 3,27	106,4 ± 4,3	p ₁ <0.01 p ₂ <0.01
Basal	50,35 ± 2,53	70,7 ± 1,94	77,85 ± 2,81	p ₁ <0.05 p ₂ <0.01

* Footnote: p₁ – reliability of comparison of results between I and II groups;
p₂ – reliability of comparison of results between I and III groups.

However, given the above indicators, it should be noted a significant difference between the indicators in patients with acute appendicitis and patients without acute surgical pathology, which is of great clinical importance in the choice of treatment tactics. It is this difference in pressure that helps to decide whether to operate or refrain from surgical treatment. Indicators between groups II and III were not so significant differences. The difference between mean basal pressures in patients of the last two groups was less than 10 mm Hg. The difference between the average reactive parameters of the II and III groups of patients was similar, but more obvious (Fig. 2).

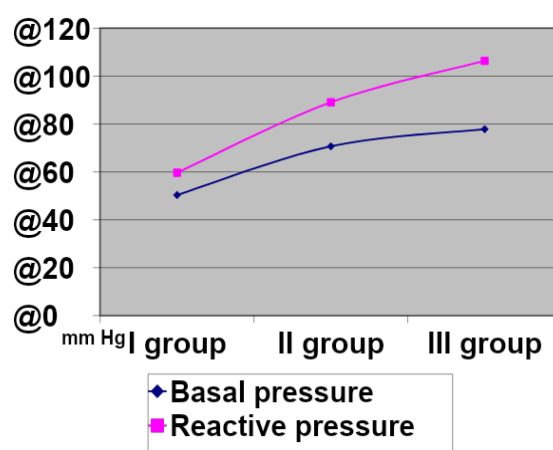


Fig. 2. Graphic representation of the direct proportionality of the increase in anal pressure to the expression of the inflammatory process and pain in the abdominal cavity.

The difference between the indicators of groups II and III is not clinically significant, because patients from these groups were diagnosed with acute appendicitis, and therefore they had to be operated on in any case.

Conclusions. Therefore, conducting a clinical study, which was based on the measurement of anal sphincter pressure in various pathologies of the abdominal cavity and pelvic cavity, we can say about the feasibility of introducing this technique in the clinical practice of surgeons. The above method demonstrates a fairly high informativeness. Therefore, it can be used as an additional diagnostic element in complex clinical cases, especially in girls with overweight, cases with complex anatomical structure of the right colon and atypical location of the appendix. This method clearly demonstrates the dependence of the tone of the rectal sphincters with the presence and extent of the inflammatory process in the abdominal cavity.

The proposed method does not require high-cost materials and can be used in medical institutions, where there are conditions of the examination room and the possibility of sanitation of the device. In addition to low cost, it should be noted the ease of use of the device. This procedure does not require special long-term training of medical staff. The best option for the use of sphincter

manometry is a combination of the technique described by us with a digital rectal examination, which is mandatory in children with suspected acute surgical pathology according to the current protocol of pediatric surgery Ministry of Health of Ukraine, (2004) [15]. Regarding the positive aspects of using the device to measure the tone of the rectal sphincters, it is necessary to emphasize its safety. The technique does not involve any mechanical damage to the skin and mucous membranes of the patient. When using this method of research, it is possible to have difficulties in measuring in younger children, such children need more meticulous selection of the cuff of the device for adequate pressure assessment. Also, in children of the younger age group, the basal pressure may be distorted due to negativity and general anxiety of the child during the procedure, which will make the moment of registration of sphincter pressure at rest stage an impossible task.

Contraindications to sphincterometry include the following: trauma to the perineum and rectum, inflammatory and oncological diseases of the rectum, congenital diseases of the anus and rectum, cases of reconstructive surgery on the rectum. Our study was not performed on patients whose general condition was severe or extremely severe. In our opinion, patients with long-term and widespread peritonitis may have paresis of the sphincter of the rectum due to depletion of the organism.

Thus, anal manometry can lead to erroneous results. In general, this technique can be recommended as an additional study in children with abdominal pain and can be used in combination with objective examination and other additional methods of examination of patients to exclude acute appendicitis.

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5.10 Structural difference of tissue changes and pathomorphological characteristics of factors of pilonidal disease in children and adults

СТРУКТУРНА РІЗНИЦЯ ЗМІН ТКАНИН ТА ПАТОМОРФОЛОГІЧНА ХАРАКТЕРИСТИКА ЧИННИКІВ ПІЛОНІДАЛЬНОЇ ХВОРОБИ У ДІТЕЙ ТА ДОРΟΣЛИХ

До теперішнього часу відсутня єдність поглядів на виникнення пілонідальної хвороби (ПХ). Вітчизняні дослідники здебільшого притримуються точки зору про вроджену етіологію захворювання, натомість, іноземні колеги в своїй більшості притримуються поглядів набутого походження ПХ.

Прихильники як набутого так і вродженого генезу розвитку ПХ приділяють велике значення певним конституційним особливостям організму, а саме: вузький таз та глибока міжсіднична складка (МСС), стан шкіри крижово-куприкової ділянки (ККД) і особливості волосся на ній, надмірному відкладенню жиру в сідницях тощо. Дотримання поглядів на етіологію ПХ згідно до конституційних особливостей вкрай важливе для осмислення факторіального значення різних складових патологічного процесу, адже конституція людини – це його генетичний потенціал, продукт спадковості та довкілля, що реалізує спадковий потенціал, і яка на відміну від фізичного розвитку є характеристикою конкретної особистості, що лишається постійною на протязі всього життя, тобто не має вікової періодизації. Із факторів зовнішнього середовища, під впливом яких реалізуються особливості конституції, особливо в дитячому та підлітковому віці, важливими є соціально – економічні умови розвитку, особливості харчування, перенесенні захворювання, заняття фізкультурою і спортом. Конституція, як узагальнена морфо-функціональна характеристика індивідуума визначає не тільки особливості тіла будови, але й психічної діяльності, метаболізму і функціонування вегетативних систем, адаптаційних, компенсаторних та патологічних реакцій людини.

Дослідники впродовж всього періоду вивчення причин виникнення ПХ велике значення надавали деяким особливостям конституції організму, таким як вузький таз та глибока МСС, що можуть стати причиною мацерації шкіри даної ділянки через яку можуть проникати волосяні стрижні; надмірна маса підшкірно – жирової клітковини в сідницях; гірсутизм (особливо первинний) та гіпертрихоз, неправильний ріст та деструктивні зміни волосся; характер епітелізації в ділянках пошкодження шкіри.

На користь вродженого генезу розвитку ПХ свідчить і той, факт, що деякі дослідники в її розвитку відмічають спадкову схильність в 10,4-38,0% випадків [1]. Крім того, D. Dool, (2009), визначив, що ПХ із частотою до 12%, спостерігається саме по першій лінії родинності [3]. Крім того, найбільш часто хворіють пацієнти молодого та працездатного віку – 15-30 років, що наближає до думки про вроджений генез патології [5].

ANNOTATION

PART 1. GENERAL ISSUES OF MODERN DEVELOPMENT OF SCIENCE

1.1 SCIENTIFIC BASIS FOR THE DEVELOPMENT OF THE NEWEST HIGH TECHNOLOGIES

1.1.1 Lazarenko Andrey Stepanovich JOINTS NANOPORES OF POLYCRYSTALS

The relaxation of butt stress concentrators of polycrystals due to the formation of butt nanopores is considered. The maximum size of the joint nanopore was determined using the energy criterion.

Key words. Polycrystal, boundary, joint, dislocation, concentrator, time.

1.1.2 Valeriy Beloshapka, O. Melnyk, G. V. Kurdyumov, V. Soolshenko, Dmytro Pimenov PROPERTIES OF NICKEL NANOWIRES BASED ON ICOSAHEDRAL STRUCTURE

One-dimensional atomic systems modelling nickel nanowires are constructed on the base of icosahedral structural motifs. The structure evolution of icosahedral nanoparticles and nanowires with temperature is examined by molecular dynamics simulations as a function of their shape and size. The drastic change of regular solid shape (shape transformation) detected in Ni icosahedral nanowires is interpreted as a specific type of solid state transformation in a one-dimensional system that is controlled by surface diffusion.

Key words: nanowire, nanoparticle, icosahedron, one-dimensional system, melting temperature, Rayleigh instability, surface diffusion.

1.1.3 Starodubtseva M., Tsukanava A., Shkliarava N., Starodubtsev I., Kondrachyk A., Matveenkov M., Nedoceikina M., Nadyrov E. NANOMECHANICAL PROPERTIES OF THE HUVEC CELL SURFACE STUDIED BY PEAKFORCE QMN MODE OF ATOMIC FORCE MICROSCOPY

Using nanomechanical mapping mode of atomic force microscopy (AFM) in air and machine learning approach for processing AFM data, the spatial heterogeneity in the distribution of the elastic and adhesive properties of the HUVEC endothelial cell surface has been established. The classification of the profiles of the microscale adhesive force maps by xgboost, k-nearest neighbours and decision trees methods showed the difference of high accuracy in the parameters of the spatial distribution of the mechanical properties of three cell zones (the nuclear, perinuclear and peripheral zones).

Key words. atomic force microscopy, elastic modulus, adhesive force, HUVEC, endothelial cell

1.1.4 Suchikova Yana, Bohdanov Ihor APPROACHES TO THE CLASSIFICATION OF NANOSTRUCTURES

The main approaches to the classification of nanostructures are analyzed. It is shown that nanostructures can be classified by size, dimension, morphological features, etc. Types of nanostructures and methods of their characterization are distinguished.

Key words: nanomaterials, classification, nanobase, nanoparticles, morphology

1.1.5 Suchikova Yana, Bohdanov Ihor ANALYSIS OF NORMATIVE DOCUMENTS IN THE FIELD OF NANOMATERIALS

The article analyzes the main normative documents in the field of nanomaterials. Approaches to determining the directions of standardization of nanomaterials are shown. The main standards of ISO synthesis, research of properties and environmental friendliness of nanomaterials are given

Key words: standards, nanomaterials, framework program, nanotechnologies, standardization

1.1.6 Nesterov Oleksandr ECONOMICALLY HARD STEEL FOR SYSTEMS OF UTILIZATION OF HARMFUL COMPONENTS IN ENERGY AND TRANSPORT

The optimal chemical composition of economically alloyed heat-resistant steels for products of different functional purposes, the alloying scheme of which provide sufficient level of heat resistance in aggressive environments at increased temperatures is determined. The wear resistance under conditions of corrosive-abrasive wear. The use of ion-plasma nitriding for improving the service properties of such products is offered.

Key words: heat resistant, wear resistance, corrosion resistance

1.1.7 Domantsevich N, Gotra Z, Yatsyshyn B. DIFFUSION CHARACTERISTICS OF MODIFIED POLYMERIC MATERIALS

The subjects of gas and vapor permeability of polymeric materials are considered. The analyses of changes in the barrier characteristics of polymer thin film during their modification with various additives and fillers and during long-term storage are performed. The results of researches of permeability properties of polymer film materials of different technical purposes are generalized.

Key words: polymers, modified polymeric materials, gas permeability, vapor permeability, aging.

1.1.8 Bondar Victor Alexandrovich, Cooper Lyudmila Viktorivna, Popovych Natalia Mykolayivna NON-DESTRUCTIVE METHODS FOR DETERMINATION OF CORROSION OF REINFORCEMENT OF REINFORCED CONCRETE STRUCTURES

Various methods for determining the corrosion characteristics of concrete structures' reinforcement are considered. A simple method for determining the anode sections along the length of the reinforcement by the values of the calculated function is given having previously performed measurements of stationary potentials and electrical resistance

Key words. Reinforcement, corrosion, corrosion indicators.

1.1.9 Sergey Bandurov, Gennadiy Shyshkin LINEAR ELECTRON ACCELERATORS, THEIR APPLICATION AND IMPROVEMENT

Abstract. The article presents the results of the analysis of the application of medium-energy linear electron accelerators in various industries. The purpose of this work is to identify promising areas for improvement of electron accelerators, taking into account the peculiarities of technological processes in each of their areas of application. Prospects for improving accelerators, which will improve the quality of irradiation of products and reliability of accelerators. The principles of operation of the proposed systems of protection of accelerators against burnout of titanium foil and electrical breakdown are described.

Key words: electron accelerators, radiation technologies, ionizing radiation, protection systems.

1.1.10 Starokadomsky D., Strukova K., Starokadomska A., EFFECT of MICRO-DISPERCED CEOLITE on STRENGTH and RESISTANCE of EPOXY-COMPOSITES for RESTORATIVE and BIO-MEDICAL DEVICES.

A study on the complex effect of the microdisperse fraction of zeolite (50 wt%) on the strength and stability of the polyepoxide composite. The results indicate the prospects of using zeolite to increase the compressive strength and Young's modulus, adhesion to steel, microhardness of composites. It is established that the filling significantly increases the resistance to abrasion, aggressive liquids (acetone and peroxide solutions), fire resistance.

Keywords. Epoxy composite, zeolite, copper powder, strength, stability.

1.1.11 Viktoria Bondarenko, Volodimir Bondarenko, Lazarenko Andrej LUMINESCENTAL POWER SPOLUK (MGO) X (P2O5) Y * DYED WITH MANGANESE

The problem of effective energy management in one of the keys. Zvazhayuchi for those who can reach a significant part of the energy vitracted for the consumption of illumination, thoroughly illuminated annexes and important technical and scientific projects. The statti presents the results of the analysis of the oxide of luscious earth metals doped with elements of the VII group, and manganese. In these robots, experimental pre-detection of luminescent powers in the visible region of the spectrum of oxide light-prominuvial (MgO) x (P2O5) y is carried out with a small amount of light manganese house (1 - 10%).

Key words: leguvannya, metal, luminescence, light, spectrum

1.2 HEAT EXCHANGE PROCESSES OF DRYING OF VEGETABLE RAW MATERIALS

1.2.1 Yurii Fedorovich Snezhkin, Vadym Michailovich Paziuk, Zhanna Oleksandrivna Petrova MATHEMATICAL PROCESSING OF EXPERIMENTAL STUDIES OF LOW-TEMPERATURE MODES OF DRYING OF CAPILLARY-POROUS MATERIALS OF SPHERICAL SHAPE

For a mathematical description of the duration of drying of capillary-porous materials, we use an orthogonal composite plan of the second order. As a result, the proposed mathematical model of the

process obtained regression equations and the response surface of the duration of drying of capillary-porous materials of spherical shape.

Key words: capillary-porous materials, regression equation, mathematical model, multivariate experiment.

1.2.2 Yurii Fedorovich Snezhkin, Vadym Michailovich Paziuk, Zhanna Oleksandrivna Petrova HEAT PUMP TECHNOLOGIES OF LOW TEMPERATURE DRYING OF CAPILLARY-POROUS MATERIALS SPHERICAL SHAPE

Heat pump technologies have become widely used in space heating and air conditioning systems, and the heat pump can be used for low-temperature drying of capillary-porous materials. Recuperative and condensing heat pumps, which allow both drying and cooling of the material, have become the most widespread.

Keywords: capillary-porous materials, heat pump, drying.

1.2.3 Zhanna Petrova, Yurii Snezhkin, Kateryna Slobodianiuk DRYING OF THE COMPOSITE PHYTOESTROGEN MATERIALS

The article presents studies of heat and mass transfer during drying of created plant compositions, in which the biologically active components are preserved as much as possible. Modes of preparation of soybean and rapeseed for drying with creation of compositions are developed: soybean - carrot (processed hydrothermally) and rapeseed carrot (without hydrothermal processing). The drying modes which allow to keep quality of the received product are developed. As a result of research, phytoestrogenic products based on soy and rapeseed were obtained for the first time.

Keywords: soy, rapeseed, phytoestrogen, drying, processes.

1.2.4 Zhanna Petrova, Kateryna Samoilenko, Vitaly Vishnevsky PROCESSES OF HEAT AND MASS TRANSFER DURING DRYING OF RED BEETROOT

An important emphasis in the processing of antioxidant raw materials by drying is to reduce energy consumption for the dehydration process, the maximum preservation of biologically active substances and reduce the cost of the final product. To optimize energy consumption during drying and selection of rational modes of dehydration, it is necessary to apply the calculated analysis of heat and mass transfer on the basis of adequate mathematical models. In general, the comparison of the results of numerical modeling of convection drying processes of the red beetroot sample with the experimental results showed their rather satisfactory qualitative agreement.

Keywords: heat of evaporation; heat and mass transfer; red beetroot.

1.2.5 Zhanna Petrova, Vitalii Vyshnievskiy, Yuliia Novikova, Anton Petrov INVESTIGATION OF THE DISPERSION PROCESSES OF COMPOSITE COLLOIDAL CAPILLARY-POROUS MATERIALS

The technology of drying colloidal capillary-porous materials to a final humidity of 6-8%, developed at the Institute of Engineering Thermophysics of the NAS of Ukraine, allowed to obtain a brittle state, in which it is possible to grind this product to small particles. The most suitable for industrial grinding of the dried composite colloidal capillary-porous materials is the impact method, because when wiping and crushing the material has accumulated, stuck to the working surface.

Keywords: composite colloidal capillary-porous materials, grinding.

PART 2. TOOLS AND MECHANISMS OF MODERN INNOVATIVE DEVELOPMENT

2.1 Berdychenko I, Dorohyi Ya, Bondarenko I. PROSPECTS OF INNOVATIVE TRANSFORMATIONS IN THE DEVELOPMENT OF A SAFE ENVIRONMENT. TECHNOLOGICAL AND LEGAL ASPECTS

The article examines the features of digital transformations in the field of safe living environment and as a result proposes approaches to creating an innovative product aimed at coordination and information interaction of actors involved in public safety and protection at the national level, technological and legal aspects of implementation such an innovative product.

Key words: safe country, innovation, information interaction, digitalization.

2.2 Sakhno Yevhenii Yuriiiovych, Chupryna Volodymyr Mykhailovych, Dmytriiev Volodymyr Anatolyevich NEW PRINCIPLES FOR THE DEVELOPMENT OF BRANCH SCIENTIFIC ASSOCIATIONS IN THE TRAINING OF SCIENTISTS AND APPLICANTS FOR

HIGHER EDUCATION FOR THE IMPLEMENTATION OF INNOVATIVE PROJECTS AND PROGRAMS

The section defines the main directions of development of branch scientific organizations and academies, which are the basis of scientific and technological progress, as well as the problems of adaptation of scientific institutions to the requirements of the present. The features of using the project approach in the training of higher education applicants are considered and an example of implementing a scientific project based on the principles of system analysis and teamwork is given.

Key words: academy, development directions, european engineer, project.

2.3 Gribkov Eduard Petrovich, Malyhin Sergey Olegovich, Merezhko Dmitry Vladimirovich AUTOMATED DESIGN OF POWDER WIRE DRAWING MODES IN METAL COVER

The paper determines the influence of technological parameters on the deformation of the metal shell and the powder core during the drawing of the flux-cored wire. The formulation of optimization criteria is performed and an algorithm is developed for automated design of technological modes of drawing to determine the minimum number of passes while meeting the requirements for the finished flux-cored wire. Based on the use of a finite element model, the density distribution over the cross section of the workpiece is determined.

Key words: drawing, flux-cored wire, metal shell, powder, computer-aided design, density

2.4 Malyhina Svetlana Valerievna, Kassov Valeriy Dmitrievich, Malyhin Nikolay Olegovich, Berezshnaya Elena Valerievna STRUCTURAL-FUNCTIONAL MODEL OF AUTOMATED CALCULATION OF WELDING MODES OF STRUCTURES OF HIGH PRECISION

The structural-functional model of the program-methodical complex on calculation of optimum technological parameters of welding on protective coverings of welded-cast designs is presented. Using SADT-diagrams, a description of the process of calculating the optimal technological parameters of welding of high-precision structures is developed. Based on the use of UML, a logical model of the software and methodological complex for automated calculation of the modes of formation of a welded joint on a protective coating has been developed.

Key words: software and methodological complex, welding, welded-cast structures, protective coating, context diagram, automated calculation.

2.5 Gevchuk Anna, Hryhoruk Iryna, Moskvichova Olena MANAGEMENT OF INNOVATION PROCESSES IN THE TOURIST COMPANY

The article proposes measures for the transformation of the organizational and economic mechanism for managing the innovation process of small and medium-sized science-intensive enterprises in the tourism industry; mechanisms for financing innovation projects and the composition of the subjects of examination of the prospects of the innovation project, which will more objectively determine its value, ensure high commercial efficiency and achieve reduction of transaction costs of small and medium innovative tourism enterprises.

Key words: innovation activity, innovation process, tourist business, innovation infrastructure, high-tech entrepreneurship.

2.6 Bondar Iuliia, Lehinkova Nina FORMATION OF THE MECHANISM OF INNOVATIVE DEVELOPMENT ECONOMY OF UKRAINE

Based on a systematic approach and generalizations of theoretical and scientific-practical approaches, the study considers the conceptual foundations of the formation of mechanisms and tools for innovative development at the state and enterprise levels. The main stages of economic and innovative development for the transition from low-tech to high-tech innovation economy are identified.

Key words: innovations, technologies, innovation activity, innovative development, mechanisms and tools of innovative development.

2.7 Tetiana Katkova, Barbara Stelyuk, Steblyanko Pavlo, Ulianovska Yuliia INNOVATIVE APPROACH TO MANAGEMENT OF ORGANIZATIONAL CHANGES BASED ON A COMPREHENSIVE SYSTEM OF INDICATORS

The direction of revealing ways of changes in the organization on the basis of the system approach is investigated. A mathematical model for determining the integrated "gap" is presented, which

allows to assess the effectiveness of organizational development and management of the organization as a whole.

Key words: organizational changes, system approach, efficiency improvement, situational analysis, integral "gap".

2.8 Metil Tetiana, Umanets Tetiana FEATURES OF FORMATION OF REGIONAL INNOVATIVE SYSTEMS IN UKRAINE

The study highlights the features of regional innovation systems in Ukraine. It is determined that the regional innovation system of the country includes the national innovation system (NIS) and the regional innovation system (RIS), which are based on the globalization of the world. The concept of «region» and its features in comparison with the concepts of «district» and «administrative-territorial unit» are revealed. The conditions and directions of RIS development are investigated.

Key words: region, district, administrative-territorial unit, national innovation system, regional innovation system.

2.9 Nadiia Stoliarchuk, Volodymyr Matviets, Oleksandr Kalinichenko, Nataliia Pavlovych, Georgii Khioni, Myroslav Kozak CONCEPT OF INNOVATIVE AND INVESTMENT DEVELOPMENT OF RURAL AREAS OF UKRAINE

The purpose of the publication is to investigate the mechanisms of innovation and investment support of the domestic agricultural sector of the economy, to analyze the current state and create promising areas of development. Research methodology. It is based on the dialectical method of cognition, the monographic method is used (in the process of analyzing approaches to innovation), empirical (when evaluating innovation and investment support of economic development), abstract-logical (theoretical generalizations and formulation of the conclusion). As a result of the study, the state of innovative development of Ukraine's economy was determined, the main sources of financing innovative activities of enterprises, the dynamics of capital investments by certain types of economic activity were analyzed, the comparison of specific weight innovations in Ukraine's GDP was compared. The total amount of areas of development of the domestic economy, including the use of innovative technologies, the introduction of modern equipment, investment in staff training, which contributes to the efficiency and competitiveness of production. The recommendations help to solve the problems of improving the efficiency of the national economy through the intensification of innovation processes, achieving greater sustainability of enterprise development and strengthening the competitive position of domestic producers in the market.

Key words: innovations, investments, rural areas, sustainable development, economic growth.

2.10 Kaplina Anastasia Ivanivna YOUNG ENTREPRENEURSHIP AS A FACTOR OF SUSTAINABLE SOCIAL AND ECONOMIC DEVELOPMENT

The article discusses the prospects for the development of youth entrepreneurship in Ukraine. Youth entrepreneurship is defined as a tool that ensures employment growth, involvement of young people in economic activities, their socialization and self-realization. The development of this institute allows the creative potential of young people in the interests of innovative development of the country. Additional reserves for stimulating youth entrepreneurship have been identified by improving the regulatory framework and development programs. A set of tools of socio-economic, normative, informational and educational nature is proposed, which contributes to the development of the system of state support and youth who want to create their own business.

Key words: entrepreneurship, youth, youth entrepreneurship, business.

2.11 Fedko Svetlana MODEL OF FORMATION OF ORGANIZATIONAL POLICY OF TECHNOLOGICAL DEVELOPMENT OF THE ENTERPRISE

Abstract. In modern market conditions, each company to maintain its competitive advantages must seek the introduction of more advanced forms of organizational and technological development of production processes, which guarantee it a favorable competitive position. In this regard, of great interest is the methodological approach and structuring of the process of using technological resources, organizational and managerial support of technological innovations, which provide the information basis for such a choice. The article is devoted to modeling the process of organizational and managerial actions of technological development of the enterprise.

Key words. Technological resources, forms of management, enterprise development, organizational and methodological approach, innovation strategy.

2.12 Krivoshapko Serhiy Borysovykh, Nekhaenko Natalia Mykolayivna MATHEMATICAL SIMULATION OF TRANSPORT FLOW

The article uses information from the theory of single-channel and multi-channel queuing systems with unlimited and limited waiting to calculate the probable values of lane intensity, the probability of arrival of the vehicle in the queue, the average number of cars in the queue, the average waiting time of the vehicle and the average the time of arrival of the car in the intersection area; probabilistic indicators of vehicle maintenance at gas stations.

Key words: random process, queuing system, service channels, incoming request flow, service request flow, queue length, queue and service time of the request, marginal probability.

2.13 Władysław Wornalkiewicz STRIVING TO FORM THE FOUNDATIONS OF GLOBAL LOGISTICS

We are currently witnessing great efficiency in the field of courier services. Production and shipping companies are being integrated in order to make logistics services more flexible and meet the changing tastes of customers. Not only are these activities observed in a given country, but also in the international arena. In the article, quotes discussions on the logistics of the future are quoted. In addition, it was mentioned that there is a need to create a theory of international logistics, which will be the basis to create a framework for the theory of global logistics. Employees are replaced by robots in logistics processes, especially in warehousing, more and more often. However, the improved mobile IT technology is conducive to automation in the area of shipping, storage and distribution of products.

Key words: international logistics, global logistics, drones, virtual warehouse, warehouse robots.

2.14 Suchikova Ya., Bogdanov I, Nestorenko T RETROSPECTIVE ANALYSIS OF SOURCES OF PATENT INFORMATION

Patents for inventions, industrial designs and utility models are one of the most widely used data sources for constructing various indicators of inventive activity. The study analyzes the patents of the database and sources of patent information. The main characteristics and criteria of patent databases are highlighted.

Key words: patents. Patent databases, Ukrpatent, search, inventions, utility models

PART 3. INNOVATIONS IN MODERN EDUCATION AND SCIENCE: THEORY, METHODOLOGY AND PRACTICE

3.1 THE USE OF INNOVATIVE TECHNOLOGIES IN THE TRAINING OF FUTURE PRESCHOOL EDUCATION SPECIALISTS

3.1.1 Nataliia Honchar, Larysa Zdanevych, Tetiana Tsehelnik HISTORICAL AND METHODOLOGICAL ASPECTS OF INTRODUCTION OF INTERACTIVE TECHNOLOGIES IN THE PROCESS OF TRAINING FUTURE EDUCATORS/TEACHERS OF HUMANITIES IN HIGHER EDUCATION INSTITUTION

Summary. Analysis the genesis of the formation and of using interactive technologies in the process of preparation of the future educators/teachers of humanities for professional activities has been done in the article (Internet resources, blogs etc.), are prior in conducting case-methods, workshops, SWOT-analysis as a method for preparation of the future specialists; the attention is concentrated on the fact that to media resources belong (forums and blogs, electronic libraries, WIKI), didactic abilities of video materials have been singled out.

Key words: future educators, future teachers, professional preparation, interactive technologies, case-methods, workshops, method SWOT-analysis, foresight-games, blog.

3.1.2 Nataliia Havrysh, Larysa Zdanevych, Nataliia Myskova PEDAGOGICAL TRAINING AS A FORM OF PREPARING THE FUTURE PROFESSIONALS OF PRESCHOOL EDUCATION

The article, based on the analysis of the scientific literature, presents the interpretation of the concept of «soft skills» and different approaches to their classification. The definition of pedagogical training is given, its structure and tasks of each structural part are given. According to

the authors, the most effective methods of interactive learning are highlighted and their using is illustrated. Methods of development of critical thinking and variants of graphic organizers of information structuring are presented.

Key words: pedagogical training, interactive teaching methods, soft skills, future specialists of preschool education.

3.1.3 Nataliia Kazakova, Leonida Pisotska, Olha Furman INTERACTIVE TECHNOLOGIES OF TRAINING OF THE FUTURE EDUCATORS TO WORK WITH CHILDREN IN THE CONDITIONS OF THE MODERN PRESCHOOL EDUCATION INSTITUTION: FROM THE EXPERIENCE OF WORK

The article focuses on the interactive technologies that are proposed for the students to be used in the educational process in work with preschoolers in the conditions of preschool institutions for the successful implementation of the conceptual foundations of the New Ukrainian School. The criteria for classification of interactive technologies and their content: didactic, educational, developing, socializing have been defined and disclosed.

Key Words: interactive technologies, training of the future educators, competencies, didactic technologies, educational technologies, developing technologies, socializing technologies, New Ukrainian School.

3.1.4 Olena Novak, Maryna Savchenko, Olesia Mysyk INTERACTIVE METHODS AS A MEANS OF TRAINING OF FUTURE EDUCATORS FOR THE IMPLEMENTATION OF INCLUSIVE EDUCATION IN UKRAINE

The article is devoted to the problem of preparation of future educators of preschool children to the implementation of inclusive education. The informative characteristic of inclusive education is given, the meaning of professional training of the future educators for inclusive education is considered in the article. The main focus is on the use of interactive methods in the process of formation of inclusive competence in future educators, which helps in the development of their creative potential and formation of their cognitive interest in professional self-realization.

Key words: inclusive education, children with special educational needs, professional training of future educators of preschool children, interactive methods.

3.1.5 Lily Onofriichuk THE ACTIVE METHODS AS A CONDITION OF THE SUCCESSFUL LEARNING BY THE FUTURE PRESCHOOL EDUCATION PROFESSIONALS OF THE CONTENT OF CHILD'S PSYCHOLOGY

The article considers the expediency of using active teaching methods in the training of future specialists in preschool education. Emphasis is placed on the importance and necessity of using active learning methods in mastering the content of child psychology. The peculiarities of separate methods which are used for activation of knowledge, development of cognitive activity and fixing of the mastered theme are revealed. Examples of their use and significance in the educational process are given.

Key words: specialist of preschool education, methods of activation of knowledge, student activity, child psychology

3.1.6 Pavlushkina Olena Vasylivna USING INTERACTIVE TECHNOLOGIES IN TEACHING PRESCHOOL PEDAGOGY

The topicality and the meaning of interactive technologies of education are studied in the article, modern researches on the problem mentioned are analysed, the peculiarity of using of interactive technologies in the process of study of pre-school pedagogy is revealed.

Key words: technology, interactive technologies, active methods of teaching, system of teaching.

3.1.7 Viktoriia Rozghon, Elena Sas, Nadiia Frolenkova THE USING OF INTERACTIVE TECHNOLOGIES IN THE PROCESS OF PREPARATION THE FUTURE TEACHERS FOR ACQUAINTANCE OF PRESCHOOL CHILDREN WITH NATURE

The article reveals the specifics of the use of interactive technologies in higher education. The essence of group, collective, and frontal innovative technologies is substantiated. The experience of introducing interactive techniques in the process of studying the discipline "Fundamentals of Natural Sciences with Teaching Methods and Workshops" is highlighted. Emphasis is placed on the

expediency of using interactive learning technologies in the training of future educators of preschool children.

Key words: interactive technologies, interactive methods, students, practical classes, educational process.

3.1.8 Pakhalchuk Natalia Oleksandrivna, Hroshovenko Olga Petrivna, Holiuk Oksana Anatoliivna USE OF EDUCATIONAL TECHNOLOGIES IN WORK WITH CHILDREN OF PRESCHOOL AND SCHOOL AGE

The authors highlight the peculiarities of the use of Edubal training balls in order to form children's educational competencies. Skillful use of Edubal in the educational or therapeutic process becomes a very useful tool in the comprehensive preparation of the child for adult life, as well as in the social aspect, because due to the specifics of classes involved the whole field of physical, mental and social experience. The article also presents examples of the use of the Bapne method and its influence on the formation of personality.

Key words: EDUball, Bapne method, body percussion.

3.1.9 Omelianenko Alla Volodymyrivna LINGUODIDACTIC TECHNOLOGY OF FORMATION IN CHILDREN OF SENIOR PRESCHOOL AGE ABILITY TO COMPOSE STORIES ACCORDING TO VISUAL MODELS

The article considers modeling as a tool in the linguodidactic technology of forming the ability of older preschool children to compose stories. The analysis of scientific sources containing information of modeling as a means of linguodidactic technology is carried out. The essence of the concepts "model", "modeling" is highlighted. Types of models are characterized. The importance of using models in teaching older preschool children to compose stories is revealed.

Key words: speech development, model, modeling, preschool children.

3.1.10 Svitlana Ivakh, Violetta Gorodyska POLYCULTURAL UPBRINGING OF SENIOR PRESCHOOL CHILDREN IN MODERN PRESCHOOL EDUCATIONAL INSTITUTIONS

The article elucidates the essence of the concepts "polycultural education", "polycultural upbringing", "polycultural environment" in the modern educational world. The authors have performed a deep analysis of the legislation base to determine the essence of the above-mentioned concepts, have outlined their content, have emphasised the fact that national education is dominant in the educational process of preschool institutions, and international education is considered to be one of the priorities of modern preschool education; have highlighted the age peculiarities of social development of senior preschoolers concerning the formation of polycultural education. It has been proved that the polycultural environment is not only its multinationality, but also the interaction of cultural ways of activity in different spheres of society.

Key words: polycultural education, polycultural training, polycultural environment, senior preschoolers.

3.1.11 Kateryna Kruty, Larysa Zdanevych, Oksana Popovych NECESSITY FOR THE MULTIDISCIPLINARY APPROACH TO THE DEVELOPMENT OF EDUCATIONAL PROGRAMS FOR THE PREPARATION OF BACHELORS FOR HABILITATION ACTIVITIES

The article reveals the relevance and necessity of timely psychological and pedagogical examination of the child, designing the program of early intervention and correction of attention deficit and hyperactivity disorder (ADHD). The authors propose the new approach to the development of the educational program for undergraduate students majoring in "Pre-School Education. Speech Therapy" to carry out habilitation activities with children of early and pre-school age.

Key words: habilitation, habilitation environment, habilitation activity.

3.1.12 Hanna Oleksandrivna Lopatina DIDACTIC VISUALIZATION AS A MEANS OF FORMING THE SPEECH PERSONALITY OF A CHILD WITH A SPEECH DISORDER

Based on the study of domestic and foreign experience of using didactic visualization in teaching preschool children with speech impairments, the methodology of using didactic visualization aimed at developing and correcting children's speech was determined, the types of didactic visualization,

visual methods that are most often used in speech work with preschoolers were characterized. The article presents scientific conclusions about didactic visualization as a means of forming the speech personality of a child with speech impairment.

Key words: clarity, didactic visualization, speech personality, speech disorders.

3.2 DEVELOPMENT OF CREATIVE ABILITIES OF PRIMARY SCHOOL STUDENTS IN THE MODERN CONTEXT

3.2.1 Inna Stakhova PEDAGOGICAL TECHNOLOGIES of FORMATION OF ECOLOGICAL COMPETENCE OF THE FUTURE PRIMARY SCHOOL TEACHER

The article covers definitions of “competence” and “ecological competence of the primary school teacher”. The content of modern pedagogical technologies (design, interactive, information-communicative, aesthetic-ecological, STREAM) of formation of ecological competence of future primary school teachers is revealed. Our research is aimed at elucidating the criteria and levels of the ecological competence of teachers. The article presents innovative methods of work with future teachers, for example, a pedagogical poster, a logo of the educational potential of nature, and other items that contribute to the formation of the teacher's ecological competence.

Key words: pedagogical technologies, competence, ecological competence, future teacher of primary school, graphic artistic and creative activity.

3.2.2 Vanda Vyshkivska, Oleksandra Shykyrynska, Olena Malinka EDUCATIONAL ROBOTICS AS A MEANS OF DEVELOPMENT OF BASIC LEARNING SKILLS OF YOUNGER STUDENTS

The article deals with topical issues of introducing educational robotics technologies into the educational process. The means of educational robotics which are used for work with younger students are characterized (such sets as LEGO Education, LEGO Education Early Learning, LEGO Mindstorms, etc.). The article proves the effectiveness of their use for the development of logical, algorithmic and structural thinking of children, for obtaining by senior preschool children initial ideas of sequence, cycles and formation of constructive, projective, communicative and research skills of students, as well as for teaching programming basics.

Key words: robotics, educational robotics, learning motivation, construction sets, programming, constructing.

3.2.3 Marianna Ostrovska INNOVATIVE TECHNOLOGIES OF PEDAGOGY PRIMARY SCHOOL PARTNERSHIPS

The article shows that in the context of reforming general secondary education in Ukraine, the transition from the knowledge to the competence paradigm, much attention is paid to changes in primary school. It is important that a renewed and reformed primary school education process has a teacher who has relevant general professional competence. To implement this idea, the joint educational activities of the school, family and student should be based on the principles of partnership pedagogy.

Key words: educational activities, primary school, competencies, pedagogy of partnership.

3.2.4 Turchyn Tamara Mykolayivna APPLICATION OF NATIONAL MUSIC ART IN MODERN PRIMARY SCHOOL

The article clarifies that one of the strategic directions of modernizing the content of music education in primary school should be to create a strong foothold in the national culture. The reproduction of Ukrainian musical culture should dominate the educational repertoire of elementary school children, determining the guidelines of their musical and figurative thinking. The educational repertoire in a modern school must meet not only aesthetic criteria and artistic norms, but also promote the crystallization of features of national consciousness and the Ukrainian mentality of elementary school students.

Key words: national, culture, repertoire, consciousness, mentality.

3.2.5 Iryna Pinchuk , Olena Vyshnyk INTERNATIONALIZATION AS A TOOL FOR PREPARING FUTURE TEACHERS FOR PRIMARY SCHOOL PUPILS' COMPETENT PERSONALITY FORMATION

The paper deals with the project “Training future teachers for primary school pupils’ competent personalities building”, developed in Oleksandr Dovzhenko Hlukhiv National Pedagogical University by means of the courses created by the teachers’ staff of Primary Education Theory and Methods Chair. The purpose of the project is to reveal the theoretical aspect of future primary school teachers’ professional training and to implement it into the practice of professional training of Ukraine and EU countries with the courses in order to increase primary school teachers’ professional competence.

Key words: internationalization, project, professional training, future primary school teachers.

3.2.6 Molnar Tetiana Ivanovna THE CONCEPT OF CREATING INTERCULTURAL SPACE PRIMARY SCHOOL IN TRANSCARPATHIA

The article raises the issue of intercultural space of primary school. The essence of the concepts "space", "educational space", "intercultural space of primary school" is specified. A conceptual approach to the possibilities of creating an intercultural space of primary school in Transcarpathia is proposed. Some principles on which the Concept developed by us is built are outlined.

Key words: space, educational space, intercultural space of primary school, intercultural dialogue, tolerance.

3.2.7 Nadiya SHCHERBAKOVA, Katerina SHCHERBAKOVA PREPAREDNESS OF FUTURE PRIMARY SCHOOL TEACHERS FOR PARTNERSHIP COOPERATION WITH STUDENTS' PARENTS

The article shows one of the current problems of higher school pedagogy, namely the preparation of future primary school teachers for partnership with parents of students. The key concepts of the researched problem are substantiated, it's condition is characterized, components, criteria, indicators and levels of readiness of future teachers for partnership interaction with parents are defined. The dependence of the development of a primary school student on the content and style of the relationship between teachers and parents is revealed.

Key words: interaction, partnership interaction, readiness of primary school teacher to cooperate with parents.

3.3 TRAINING SPECIALISTS IN NATURAL SCIENCES, MATHEMATICS AND TECHNOLOGY ON THE BASIS OF MODERN TEACHING TECHNOLOGIES

3.3.1 Yaroslav Chkana, Olena Martynenko, Inna Shyshenko PREPARATION FUTURE TEACHERS OF PHYSICAL AND MATHEMATICAL DISCIPLINES FOR PROFESSIONAL ACTIVITY IN THE NEW UKRAINIAN SCHOOL: MATHEMATICAL COMPETENCE PROBLEMS

The article presents a set of principles for building a system of competency tasks and identifies methodological requirements for its effectiveness, outlines the main pedagogical conditions for students to be ready to solve competency problems. The purpose of working with competency tasks is to show the role of mathematical knowledge, skills and abilities in everyday life and future professional activities, providing opportunities to express their interests and develop educational material at a level that meets individual learning needs of students.

Key words: competency task, future teacher, physical and mathematical disciplines, professional training.

3.3.2 Troyan Anatoliy STEM - EDUCATION AND MODERN LEARNING TECHNOLOGIES

Teachers work in a new model of education, the implementation of the concept of "New Ukrainian School", the introduction of new approaches, including STEM-education. Time requires the teacher to work for the future, ahead of his time, which involves improving professional skills, constant analysis of pedagogical activities and making adjustments in accordance with social needs throughout the professional activity. Resources such as STEM education should be developed and disseminated, as the experience of implementing this area has shown: there is an order, there is a need, there is a demand for the resource.

Key words: model of STEM-education, "New Ukrainian school", professional skill

3.3.3 Bohar Natalia Vasylivna, Kohut Tetyana Petrovna FORMATION OF STEM-COMPETENCES OF PARTICIPANTS OF THE EDUCATIONAL PROCESS IN THE EDUCATIONAL INSTITUTION

The article defines the essence, aspects and principles of STEM-education, presents the model and organizational and pedagogical conditions for the formation of STEM-competences of participants in the educational process, describes the experience of high school in the implementation of STEM-learning.

Key words: STEM-education, STEM-competences, organizational and pedagogical conditions.

3.3.4 Dzyna Larysa OPPORTUNITIES OF ONLINE RESOURCES FOR IMPLEMENTATION OF THE CONCEPT OF STEM-EDUCATION

The paper presents the theoretical aspects of using online resources to implement the concept of STEM-education as a component of modernization of the educational environment. The possibilities of some of them existing today are considered.

Key words. STEM-education, online resources, educational process.

3.3.5 Alexander School TEACHING THEORETICAL PHYSICS OF FUTURE TEACHERS OF PHYSICS THROUGH THE PRISM OF A PERSONALLY-ORIENTED APPROACH

The article considers the question of realization of personality-oriented approach in teaching theoretical physics of future physics teachers as a conceptual aspect of improving the quality of their fundamental and professional training in modern educational conditions. The analysis of specific features of traditional and personality-oriented educational models is carried out, the general features of realization of the methodological approach in teaching of physics are covered, the basic conceptual bases and principles of personality-oriented teaching of theoretical physics in pedagogical university are offered.

Key words: theoretical physics, future physics teacher, personality-oriented approach.

3.3.6 Zavrazhna Olena, Saltykova Alla, Saltykov Dmytro MODERN APPROACHES TO THE ORGANIZATION AND CONDUCT OF PEDAGOGICAL PRACTICE OF FUTURE PHYSICS TEACHERS

The article shows the place of pedagogical practice of future physics teachers in the system of higher pedagogical education. It is emphasized that it is a necessary component of preparing students for innovative professional activities. The purpose, tasks of practice are formulated, conditions and principles of improvement of the organization of pedagogical practice are allocated. The curricula of Ukrainian universities are analyzed and the system of knowledge and skills that students acquire during the practice is determined.

Key words: pedagogical practice, future physics teachers, organization, modern approaches.

3.3.7 Natalia VAHINA PROFESSIONAL TRAINING OF FUTURE MATH TEACHERS FOR THE IMPLEMENTATION OF MULTIMEDIA SUPPORT OF THE EDUCATIONAL PROCESS

The author substantiates the urgency of the problem of training future mathematics teachers on multimedia support of the educational process. The work discusses the directions of training organization and examines in detail both organizational and pedagogical prerequisites of implementation and content of the elective discipline "Multimedia Technologies in Mathematical Education" for applicants of the first level of higher education in the specialty 014 Secondary Education (Mathematics). The effectiveness of its study has been thoroughly analyzed.

Key words: training of future math teachers, use of multimedia technologies, mathematical education.

3.3.8 Valentyna Perehudova VISUALIZATION TECHNOLOGY IN THE TRAINING OF A TEACHER OF LABOR EDUCATION

The article reveals the possibilities of visualization technology during the study of disciplines of the technical and technological cycle by future teachers of labor education. Approaches to the interpretation of terms and concepts are defined, some methods of visualization are characterized, methods of structuring educational material are offered; quality criteria for visualization technology.

Key words: pedagogical technology, visualization technology, teacher of labor training.

3.3.9 Svitlana Kucher, Marina Dyachenko INNOVATIVE EDUCATIONAL TECHNOLOGIES IN PREPARATION OF FUTURE TEACHERS TO AFTERSCHOOL

The article considers the methodical bases of application of innovative technologies in the process of preparation of future teachers for work in out-of-school education of art and technical direction. The future teacher of technology, as the head of the circle, must apply certain mechanisms, choose such pedagogical innovative technologies that would contribute to the formation of relevant key competencies in students.

Key words: afterschool education, out-of-school education, innovative educational technologies, professional training of future teachers.

3.4 USE OF INNOVATIVE APPROACHES TO TRAINING SPECIALISTS IN PHYSICAL EDUCATION AND SPORTS

3.4.1. An Olena Vitaliyivna ANALYSIS OF THE SPECIFICS OF PROFESSIONAL TRAINING OF FUTURE TEACHERS OF PHYSICAL EDUCATION IN MODERN CONDITIONS

The article analyzes the requirements for professional training of future professionals in the system of higher professional education and, in particular, for future teachers of physical education. The interpretation of the concepts "professional training", "professional training" and the difference between them are considered. Specific features of the work of physical education teachers are revealed. The necessity of professional training of future teachers of physical education for research activity is substantiated.

Key words: professional training, professional training, physical education, physical education teachers, research activity.

3.4.2 Olga Shevchenko, Anastasia Melnik THEORETICAL FUNDAMENTALS OF PREPARATION OF FUTURE TEACHERS OF PHYSICAL CULTURE FOR INTRODUCTION OF HEALTH-SAVING TECHNOLOGIES IN PRACTICAL PRACTICE

The article is devoted to the theoretical foundations of training future physical education teachers for health in the practice of physical education. An analysis of the literature has shown that modern education plays an important role in the implementation, formation and development of health technologies. Health care is defined as a pedagogical phenomenon that characterizes the systemic focus of the efforts of all subjects of the educational process to ensure physical, spiritual, mental and social well-being. It has been proven that the professional development of a future physical education teacher is designed to promote the implementation of health technologies in the education system.

Key words: physical education teacher, health care, technologies, components, professional activity.

3.4.3 Yaroslava Logvinova, Olena Radionova FORMATION OF HEALTH COMPETENT COMPETENCE OF STUDENTS OF THE FACULTY OF PHYSICAL EDUCATION BY MEANS OF PHYSICAL CULTURE

The concept of "health-preserving competence of the individual" is analyzed. The pedagogical possibilities of means of physical culture in the formation of motivational, cognitive and activity components of the health-preserving competence of the personality of the student of the faculty of physical education are considered. The process of formation of health-preserving competence should be implemented in a planned, purposeful, step-by-step manner, taking into account the peculiarities of mental, physiological and social development of the individual.

Key words: health competence, competence approach, physical culture.

3.4.4 Valentyna Chernii, Olena Nievorova, Viktor Salasenko PATRIOTIC EDUCATION OF STUDENT YOUTH BY MEANS OF PHYSICAL CULTURE

The problem of patriotic education of young people in the process of extracurricular work in physical culture is considered in the article. The purpose of the scientific research was to experimentally substantiate the feasibility of using the means of physical culture in the patriotic education of high school students in the process of extracurricular activities. The positive changes

that took place during the extracurricular activities of the sports and patriotic group confirmed the effectiveness of the proposed program.

Key words: extracurricular activities, patriotic education, high school students, physical culture, physical culture and patriotic group.

3.4.5 Oleksii Stasenko, Irina Sundukova, Svetlana Kutsenko FEATURES OF METHODS TEACHING GYMNASTICS EXERCISES WITH THE APPLICATION OF THE LATEST TECHNOLOGIES

The problem of teaching gymnastic exercises in modern conditions of higher education institutions of physical education is extremely important and relevant, as it involves the use of the latest techniques and technologies. This article substantiates the use of programmed training in gymnastic exercises, stages and sequence, principles and conditions of the educational process in gymnastics.

Key words: technologies, gymnastic exercises, training.

3.4.6 Olena Markova, Anatolii Turchak CHARACTERISTICS OF THE MOTIVES OF FITNESS CLASSES OF GIRLS OF SENIOR SCHOOL AGE

The article describes the content, types, classification of fitness technologies, the structure of fitness classes and the method of using fitness means in physical education lessons at school. The motives of girls of senior school age for physical exercises and fitness in particular are analyzed. It was found that fitness programs that are popular among high school girls have different opportunities for the degree of influence on the indicators of the development of physical qualities.

Key words: fitness, motives, girls of senior school age, physical education lesson

3.4.7 Olena Markova, Alexey Kravchenko COORDINATION ABILITIES AND THEIR ROLE IN SPORTSMANSHIP OF YOUNG FOOTBALL PLAYERS

The article describes the content, classification, types and methods of research of human coordination abilities. Emphasis is placed on specific manifestations of coordination in athletes of playing sports, including football players. The principles, methods and means of developing coordination abilities in young football players are analyzed. The problems of development of coordination of movements in the training process of football players are revealed.

Key words: coordination, coordination abilities, young football players

3.4.8 Iazlovetska Oksana, Chelalo Svitlana, Shcherbatiuk Nataliia SPORTIZATION OF PHYSICAL EDUCATION AS AN INNOVATIVE DIRECTION OF MODERNIZATION OF PHYSICAL AND SPORTS PRACTICE IN THE EDUCATION SYSTEM OF UKRAINE

The article presents a theoretical and methodological justification of the innovative direction of modernization of physical culture and sports practice in the education system - sportization of physical education of children and youth, which involves the introduction and adaptation of sports training technologies to manage the process of individual psychophysical development based on modification of sports exercises, principles and methods of their application.

Key words: innovation, innovative technology, sportization, sports culture, conversion, general school.

3.4.9 Belkova Tetyana Oleksandrivna PECULIARITIES OF USING INNOVATIVE PHYSICAL EDUCATION IN THE EDUCATIONAL PROCESS FOR PHYSICAL EDUCATION OF STUDENTS OF MEDICAL UNIVERSITIES

The article analyzes the importance of using fitness as an innovative method in achieving the harmonious development of the personality of a modern specialist. Relevance of the study is due to the objective need for quality modernization of the education system on the basis of innovative physical culture and health approaches to the needs of student youth. Implementation of the complex of game technologies into the educational process of students of physical education faculties nowadays has a sufficient advantage over other means of conducting classes from the cycle of disciplines of professional training and is at the highest level of their interests.

Key words: fitness, student youth, personality, health, physical education.

3.5 FEATURES OF INNOVATIVE APPROACHES INTRODUCTION IN PREPARATION OF SOCIAL SPHERE SPECIALISTS

3.5.1 Danyliuk Olena, Melnyk Zhanna USING OF INTERDISCIPLINARY CONNECTIONS IN HIGHER EDUCATION IN PROFESSIONAL TRAINING OF MANAGERS IN THE SOCIAL SPHERE

In the context of the introduction of interdisciplinary connections, the problems of professional training of managers in the social sphere are analyzed. On the basis of the analysis of requirements to professional qualities of managers in the social sphere the competences which cannot be formed in the conditions of isolation of subject branches are defined. The effectiveness of interdisciplinary integration in the training of future managers in the social sphere is proved by the example of teaching disciplines of social economic orientation.

Key words: interdisciplinary connections, interdisciplinary approach, interdisciplinary integration, manager in social sphere.

3.5.2 Liudmyla Melnyk ORGANIZATION OF INDEPENDENT WORK OF THE FUTURE SPECIALISTS IN THE FIELD OF SOCIAL WORK AS THE BASIS OF THEIR PROFESSIONAL TRAINING

Summary: The organization of independent work of students can be attributed to effective forms of professional training of the future experts in the field of social work. Independent work encourages students to be active, independent, responsible, organized and apply creative abilities. The considered forms of methods of the organization of independent work of students consider modern requirements and conditions of training and form the general and professional competences of future experts.

Keywords: independent work of students, methods of organizing independent work of students, general and professional competencies, specialists in the field of social work.

3.5.3 Opaliyuk Tetiana INDIVIDUAL TRAJECTORY OF THE PROFESSIONAL SELF-DEVELOPMENT OF THE FUTURE SOCIAL WORKER

The article is devoted to the issues of the individual educational trajectory of professional self-development of a student, future social worker. It is proved that the formation of professional skills of a social worker is a step-by-step process of reaching the highest level of professionalism, which is accomplished by the student himself, and then, by the employee on an individual-oriented basis, which means to program an individual way to reach a potentially possible level.

Key words: individual educational trajectory, professional self-development, practical training of a future social worker.

3.5.4 Opaliyuk Oleh PECULIARITIES OF INNOVATIVE TRAINING OF SOCIAL WORKERS IN THE PROCESS OF DISTANCE LEARNING

The article is dedicated to the issues of innovative peculiarities of training social workers in the distance learning process. The moral-aesthetic interaction of a social worker in the distance learning process is considered, where the distance learning programs should search for creative solutions to the set goals, which are embodied in the traditional system of education.

Keywords: social worker, moral-aesthetic interaction, organization of training, pedagogy of cooperation, distance learning.

3.5.5 Serbaliuk Yuriy FORMATION OF PROFESSIONAL LEGAL CULTURE OF SOCIAL SPECIALISTS

The conditions of future specialists' professional legal culture formation in the social sphere in the conditions of higher education institutions are considered. Difficulties in mastering legal knowledge are indicated, the ways of effective control over the changing legal base are suggested. The classification of legal acts is carried out. The main social groups in need of social protection and basic laws and sub-laws to ensure it are identified.

Key words: education, legal culture, social protection

3.5.6 Gevchuk Natalia SOCIAL AND PSYCHOLOGICAL SUPPORT OF FAMILIES RAISING CHILDREN WITH SPECIAL EDUCATIONAL NEEDS

In order to organize social and psychological assistance to families raising a child with special educational needs, we have developed a comprehensive rehabilitation program "Rainbow". The program aims to enable children with physical and intellectual disabilities to overcome

developmental difficulties, learn household and social skills, develop their abilities, fully or partially integrate into society; to help parents raising a child with special educational needs to really understand the essence of children's problems, to help them master the methods of individual education of the child; prove that children with disabilities can overcome or reduce their disabilities, that they can live and study in a peer group.

Key words: support, rehabilitation, children with special educational needs.

3.5.7 Didyk Nataliia Mykhailivna THE APPLICATION OF GAME TECHNOLOGIES IN THE PROFESSIONAL TRAINING OF SOCIAL SPHERE

The study reveals the experience of introducing game technologies in the training of future social professionals in higher education. The results of the study of the motivation of educational activities of students are analyzed. The relevance of the use of innovative technologies, in general, and games, in particular, for the formation of a competent specialist in the social sphere is substantiated. Examples of business and board socio-psychological games that have been tested in the educational process are given.

Key words: game technology, innovative technology, social worker, professional training

3.6 DEVELOPMENT OF THE STUDENT'S PERSONALITY BY MEANS OF MODERN MEDIA EDUCATIONAL TECHNOLOGIES

3.6.1 Onkovych Hanna HIGH SCHOOL MEDIA DIDACTICS DEVELOPMENT: UKRAINIAN EXPERIENCE

Media literacy plays an important role in understanding how young people are media educated today. Its development is facilitated by media didactics as a component of media pedagogy focused on the technology of using media for educational purposes. This section of didactics examines the patterns of mastering knowledge, skills, forming beliefs with a reliance on media sources and the use of media products. At the moment, there are no sources in the educational process that students should refer to from the first steps of getting a professional education. The experience of such educational activities is discussed in the article.

Key words: media literacy, media educational technologies. media didactics of higher school, professional-oriented media education, Internet didactics, blog didactics,

3.6.2 Hanna Onkovych, Maryna Boholiubova, Olga Lialina, Natalia Flegontova MEDIA EDUCATION AS A TECHNOLOGY IN THE STUDY OF THE UKRAINIAN LANGUAGE FOR PROFESSIONAL DIRECTION

Media education technologies, combined with the term "media didactics", today involve engaging in the educational process as traditional media (periodicals, radio, television, cinema, etc.), as well as the latest information technologies, namely, software and hardware. operating on the basis of computer technology; also use modern methods and systems of information exchange. The presence of media education technologies encourages their active propaganda, but media education itself can be considered as an educational technology of modern media didactics. The authors illustrate this with an example of bringing media education tools to the study of some topics of the course "Ukrainian Language for Professional Purpose".

Key words: media educational technologies, media education as a technology, media didactics, professional-oriented Ukrainian language, medical term system.

3.6.3 Artem Onkovych, Hanna Onkovych, Olga Lialina, Leslava Redko-Shpak WIKI DIDACTICS: THEMATIC WIKILESSON – A WAY TO NEW EDUCATION

The article analyzes the essence, aspects and features of a new type of studies – wiki lessons. Researchers distinguish them from other forms of classroom studies by using online resources. It goes about using Wikipedia materials for educational purposes. Based on the analysis of scientific and methodological literature types of lessons supported by Wiki resources are identified, the definition of the concept of "wikilesson" is proposed. The authors offer a set of classes aimed at the development of students' media literacy and socio-cultural competencies of students.

Key words: media education, high school media didactics, wiki didactics, wiki lesson, Internet resource, social network.

3.6.4 H. V Onkovich, A.D Onkovich NEW IN MEDIA EDUCATION: BLOG DIDACTICS AND Its COMPONENTS

In the article, the authors analyze the problem of using social networks in the development and self-development of a teacher's professional competence. This is demonstrated by the example of a pedagogical blogodidaktika, which is now flourishing and embodies the national media education facts. It develops new tools and technologies for using the social network in the educational process.

Key words: social network, media education technologies, media didactics, Internet didactics, blog didactics

3.6.5 Onkovych Hanna Volodymyrivna, Kyiv Medical University, Onkovych Artem Dmytrovych NEW IN MEDIA EDUCATION: WEBINAR DIDACTICS

Webinars are one of the most progressive, effective and popular distance learning tools. With the development of the World Wide Web, humanity has gained many unique opportunities and conditions for virtual learning and communication. Already today, webinars are confidently entering our lives and will soon become an integral part of education and self-education, which gives us reason to talk about the development of webinar didactics. This latest form of education and self-education requires further observations, generalizations and recommendations.

Key words: information network, media education technologies, media didactics, webinao, webina didactics, distance education, self-education.

3.6.6 Hanna Ihnatenko, Bohdan Vovk, Yevhen Yermolenko INNOVATION IN THE STUDENTS INDEPENDENT WORK ORGANIZATION

The article substantiates the place of independent work in the educational process of the university. The ways of organizing independent work by means of information and communication technologies are outlined. Possibilities of using sign-symbolic clarity in the development of didactic tools taking into account the cognitive needs of generation Z are described. The content of the Web-multimedia encyclopedia "Tractors and cars" and the method of its use in the process of future teachers of vocational training independent work organization are also presented.

Key words: independent work, information and communication technologies, sign and symbol teaching aids.

3.6.7 Inna Kurlishchuk, Oksana Oleksieieva, Olena Otravenko VIRTUAL LEARNING ENVIRONMENT OF HIGHER EDUCATION INSTITUTION AS THE INNOVATIVE RESOURCE OF NATIONAL AND PATRIOTIC EDUCATION OF STUDENTS IN THE CONTEXT OF COVID-19

The study describes the content and purpose of national and patriotic education of students of modern higher education institutions, in particular by the means of virtual learning environment. Considering the age, psychological and social characteristics of student youth as a leading socio-demographic group of modern society, the authors proved the high level effectiveness of educational potential of virtual learning environment, especially in the context of COVID-19 pandemic.

Key words: virtual learning environment of higher education institution, national and patriotic education, student youth

3.6.8 Hanna Onkovych, Artem Onkovych SCIENTIFIC AND PRACTICAL CONFERENCE AS A VARIETY OF INNOVATIVE MEDIA EDUCATIONAL TECHNOLOGIES

The development of innovative approaches to the organization of education, the interactivity of the educational process is now taking place using the media. Media education technologies include the inclusion of various media products in the education system, the development of new methodological and technological forms of education. The article considers various "genres" of scientific conferences. They are united by the umbrella term "interactive media education technology".

Key words: media literacy, media educational technologies, conference as a genre, conference as a media product, information literacy, media information literacy, interactive media educational technology.

3.6.9 Matvienko Lesya Hryhorivna POSSIBILITIES OF VIDEO SCRUBBING IN TEACHING A FOREIGN LANGUAGE OF NON-PHILOLOGICAL SPECIALTIES

The article considers the methodological and technological aspects of the use of video scribing technology in the study of a foreign language in a higher educational institution of non-philological profile. Scribing is considered as a technique of visualization of information in the form of diagrams and drawings. The classification of scribe-presentations and ways of their application in foreign language classes are singled out. The advantages and disadvantages of the introduction of elements of scribe technologies in the educational process of the university are analyzed.

Key words: video scribing, foreign language, scribe-presentation, scribe-technologies, higher educational institution.

3.6.10 Mahdysiuk Liudmyla Ivanivna, Demchuk Violeta Borysivna COMPUTER DEPENDENCE AS A FORM OF ADDICTIVE BEHAVIOR OF PERSONALITY

The main characteristics of addictive human behavior are considered. Also, the leading three scientific directions of research of addictive behavior of the person - biomedical, social and psychological are analyzed. There are five main types of Internet addiction. Psychological and physical symptoms caused by excessive computer use are described. Mental disorders, on the basis of which computer addiction develops, include personality disorders, anxiety disorders, psychotic diseases, substance abuse.

Key words: addictive behavior, Internet addiction, computer addiction, personality, mental disorders.

3.6.11 Pohvalit Julia Anatoliyivna VISUALIZATION OF THE EDUCATIONAL PROCESS WITH THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES AS AN INNOVATIVE TEACHING TOOL

The use of information and communication technologies to visualize the educational process in chemistry lessons is due to the fact that currently there is an increase in the impact of media technology on humans. Given the current realities, the teacher must introduce into the educational process new methods of presenting information. Visualization of the educational process in chemistry lessons allows us to intensify the activities of teachers and students; to improve the quality of subject teaching; display the essential sides of chemical objects. The advantages of multimedia technologies, in comparison with traditional ones, are various: visual presentation of material, possibility of effective check of knowledge, variety of organizational forms in work of pupils and methodical receptions in work of the teacher.

3.6.12 Lilia Borysivna Kulinenko PROBLEMS AND PROSPECTS OF KNOWLEDGE SOCIETY DEVELOPMENT IN SOLVING MODERN INFORMATION CHALLENGES

The article analyzes the philosophy of the knowledge society, which must find adequate answers to new information challenges of the modern era, in particular, the problems of information security, manipulation of consciousness, "information explosion", manifested in a huge increase in information, information quality, overcoming digital inequality.", Where in the context of the central problem of modern educational policy is the establishment of the philosophy of creativity.

Key words: modernization, personality, information, innovation, praxeology, pedagogical process, knowledge society, philosophy of education.

3.6.13 Katherina Margitich, Andrey Pevse, Oleksandr Ostrovski NEW FORMS AND METHODS OF CONDUCTING LESSONS IN THE UKRAINIAN LANGUAGE IN SCHOOLS WITH HUNGARIAN AS THE LANGUAGE OF INSTRUCTION

The way to a high level of national consciousness lies through education and upbringing in the process of which the state language is learned, the millennial history of the nation is studied, Ukrainian culture, traditions, habits are perceived and appropriated, a sense of citizenship and a sense of belonging to everything in the country.

Key words: Transcarpathia, traditions and customs, educational process, innovative approach in educational process, didactic material.

3.6.14 Larysa Prokhorova, Svitlana Hryshko, Oleksandr Nepsha THE USE OF MODERN INNOVATIVE EDUCATIONAL TECHNOLOGIES IN THE SCHOOL COURSE OF GEOGRAPHY

Geographical education of the school is aimed at forming in students a spatial idea of the earth's surface and the development of skills to consciously navigate the socio-economic, socio-political and environmental events taking place in the state and the world. Informatization of the educational process significantly affects the content, organizational forms and methods of teaching and management of educational and cognitive activities, and causes significant changes in the activities of students. Thanks to the use of multimedia, interactive technologies, the Internet, the possibilities of a modern lesson are significantly expanded.

Key words: educational technology, information and communication technologies, students, school course of geography, teacher of geography.

3.6.15 Olena Okhrimenko, Olena Semenikhina, Inna Shyshenko READINESS OF FUTURE TEACHERS FOR DIGITAL MODERNIZATION OF INCLUSIVE EDUCATION

The article focuses on the problem of preparing bachelors of special education for the use of digital teaching aids in professional activities in an inclusive educational environment. The analysis of scientific researches covering the introduction of digital technologies in the educational inclusive environment, their advantages and risks is carried out. The points of contact between inclusive education and the use of digital technologies in the education of people with disabilities are considered.

Key words: digitalization, inclusive education, educational process, special educators, formation of readiness.

3.7 RESULTS OF INTRODUCING DISTANCE LEARNING TECHNOLOGIES INTO THE EDUCATIONAL PROCESS

3.7.1 Helesh Andriy Bohdanovych, Kurylets Oksana Hryhorivna, Bukliv Roksoliana Liubomyrivna IMPLEMENTATION OF INNOVATIVE METHODS OF DISTANCE LEARNING OF STUDENTS OF LVIV POLYTECHNIC NATIONAL UNIVERSITY DURING THE COVID-19 PANDEMIC

The article considers the problems of implementation and use of innovative methods of distance learning during the COVID-19 pandemic. The experience of Lviv Polytechnic National University in the implementation and use of virtual learning environment on the LCMS Moodle platform is analyzed. The features of LCMS Moodle are shown and recommendations for integration of Google cloud technologies and video conferencing in it are provided.

Key words: COVID-19, distance learning, LCMS Moodle, Google cloud technologies.

3.7.2 Alla Lialiuk, Nataliia Kolenda, Svitlana Begun DISTANCE LEARNING: RESULTS, PROBLEMS AND OPPORTUNITIES

Synchronous and asynchronous modes of distance learning are characterized; the results of students survey «the level of organization of distance learning at the faculty of Economics and Management of Lesya Ukrainka Volyn National University» are showing in article; the advantages and disadvantages of distance learning, problems of assessment of knowledge and ways to overcome them are described; the question of psychological features of interaction between participants of distance learning is raised; the measures for future effective implementation of distance learning in higher education institutions were proposed.

Keywords: distance learning, higher education institutions, synchronous and asynchronous learning modes.

3.7.3 Drahiiieva Liudmyla DEVELOPMENT OF CREATIVE ACTIVITY OF STUDENTS IN THE CONTEXT OF DISTANCE LEARNING

This article examines the features of the development of creative potential in the framework of distance learning. It is known that distance learning has endless possibilities not only in the educational field, but also in the creative one. Consequently, the development of a harmonious personality can be organized within the framework of distance learning.

Key words: distance learning, motivation, reflection, information technology, creativity.

3.7.4 Olga Ivliieva FEATURES OF STUDENT KNOWLEDGE TESTING DISTANCE LEARNING

The special features of the organization of the conversion of students' knowledge in the case of distance learning will be achieved. To see the message of the Izmailovsky Sovereign Humanitarian University on the availability of the Moodle remote knowledge platforms for the organization and management of remote knowledge. Proposed butts of technologically implemented tests for different types of control.

Key words: education, knowledge testing, distance learning, test knowledge testing.

3.7.5 Ludmila DANNIK INTRODUCTION OF REMOTE PRESENTATION IN THE SOVIET PROCESS OF THE HIGH SCHOOL

The statistics have highlighted the main problems of introducing distance learning into the educational process of high school in Ukraine. The distant possibilities of organizing lessons in technology at the pledges of out-of-home middle education are seen. A selection of forms and methods in educational communes for the formation of key competencies among senior pupils was considered. A fragment was introduced to the lesson of technologies in the minds of remote sensing. Resources and platforms for organizing remote technological navkazannya are viewed.

Key words: distance learning, technology education, teacher of technology, technology, high school.

3.7.6 Inna Akhmad, Galyna Mikhnenko, Viktoriia Chmel THE PROBLEM OF TEACHING ENGINEERING STUDENTS A FOREIGN LANGUAGE IN THE DISTANT MODE

This paper deals with the improvement of students' language skills as well as the development of socio-cultural and communicative competences of engineering students in the distant mode. The ability to communicate with business partners abroad and to negotiate without translation services comes to the forefront of the study of foreign languages. The paper outlines the classroom activities, proposes ways of overcoming difficulties in teaching engineering students a foreign language distantly.

Key words: academic situation, spontaneous communication, a foreign language competence, teaching stages.

3.7.7 Volodymyr Cherniakov, Yurii Maidikov. Viacheslav Tytarenko, Maryna Suproniuk FEATURES OF USING IT-TECHNOLOGIES IN THE PROCESS OF PROVIDING DISTANCE STUDYING

Compliance with quarantine restrictions in the world pandemic COVID-19 in order to prevent the spread of coronavirus disease motivate scientific and pedagogical staff of the higher educational institution to find new ways to provide the formation professional competence of future physical therapy and ergotherapy specialists. The purpose of the research is showing the features of using modern IT technologies in the process of distance studying at the National University «Chernihiv Polytechnic» by the example of the discipline «The Basics of Kinesiology».

Keywords: distance learning, IT technologies.

3.7.8 Lyudmila Timofieva, Iryna Dyuba, Iryna Konelska DIDACTIC AND METHODOLOGICAL FUNDAMENTALS OF INNOVATIVE ACTIVITY OF TEACHING STAFF OF KRYVYI RIH GYMNASIUM №49 IN DISTANCE EDUCATION

The article is devoted to the topical problem of using modern information technologies in the conditions of distance education. The authors characterize the modern system of using digital tools introduced in the institution on the basis of the latest didactic and methodological principles of organization of the educational process in crisis conditions.

Key words: Innovative activity, distance education.

3.7.9 Oksana PALELULKO, Inna HUMENIUK, Nataliia STOROZHUK THE FEATURES OF ORGANIZATION AND ADAPTATION OF PARTICIPANTS OF THE EDUCATIONAL PROCESS TO NEW SOCIAL CHALLENGES IN THE CONDITIONS OF A PANDEMIC

Over the past two decades the world has experienced a number of outbreaks of infectious diseases that have demonstrated high rates of transmission. Concerns are growing about the continued

growth of COVID-19 in some parts of the world and its ability to sustain the rate of decline in others. The COVID-19 pandemic has caused and continues to cause many social changes and transformations. When discussing them, first of all, they mean the negative economic consequences, the problems of the health care and medical system, the problems of a psychological nature, which are caused by the sharp restriction of social contacts. To a lesser extent, but quite noticeably the issues of education are discussed, especially in the angle of its transition to a distance format and the resulting problems for parents, students, teachers.

Key words: COVID-19 pandemic, adaptation, health, social distance, economic psychology

3.7.10 Gennadiy Shykin, Bondarenko Lyudmila, Romanovska Oksana, Pimenova Tatyana Anatoliyivna, Huseynov Samandar INTRODUCED BY THE PROBLEMS OF REMOTE INSURANCE IN THE BOOKS OF THE MIDDLE ESTABLISHMENT

Analyze the prospects for the development of distance education in Ukraine. Look at the options for the singing platforms of the remote navigation for holding. Respect for serious problems and problems in the minds of distance learning.

Key words: distance learning, physics education, initial experiment, middle education

3.7.11 Olha ILISHOVA MODERN PRACTICE OF DISTANCE EDUCATION IN THE CONDITIONS OF INCLUSIVE GROUPS PRESCHOOL INSTITUTIONS

The article presents the modern practice of distance education in terms of ensuring the organization of an inclusive environment of preschool education. The basic conditions and mechanisms, roles and responsibilities of all participants of distance learning with preschoolers with special educational needs are defined. The importance of using relevant forms of organization of the educational process, which will promote the cohesion of pedagogical and parental teams, will help to overcome barriers in the communication of a child with special educational needs.

Key words: distance education, inclusive groups, preschool education.

3.8 COMPETENCE-BASED APPROACH AS A DIRECTION OF MODERNIZATION OF EDUCATION AND SCIENCE

3.8.1 Vitalii Opanasenko, Tatiana Samus MODEL OF FORMATION OF RESEARCH COMPETENCE OF TEACHERS OF PROFESSIONAL EDUCATION IN THE PROCESS OF THEIR PROFESSIONAL TRAINING

The article considers the organization of the educational process of professional training of teachers of professional education in the context of integration of educational and cognitive and research work of students on the basis of competent and research approaches. The model of formation of research competence of future teachers of professional training during studying of disciplines of a cycle of professional training with a substantiation of necessity of involvement of various forms of classroom classes on the basis of integration of full-scale and virtual experiments and according to stages of scientific knowledge is offered.

Key words: teacher of professional education, research competence, research activities, research skills, stages of scientific knowledge.

3.8.2 Dzikovska, Larysa INTERDISCIPLINARY LINKS IN THE EDUCATION SYSTEM: TYPOLOGY AND FORMS OF IMPLEMENTATION

The article considers the concept of interdisciplinary links, their phenomenon of compatibility and typology, as well as elements of methods of their implementation, which will ensure the effective solution of pedagogical and educational problems. Due to the exchange of interdisciplinary information and their comprehensive connection, knowledge and skills in the history of literature and related disciplines (history of culture, world history) are deepened and generalized, which contributes to the formation of scientific and cognitive and research competencies. The materials of the study are the basis for making adjustments to the content of curricula and updating them on the basis of interdisciplinary links, as well as for optimizing the educational process of philological training of higher education.

Key words: interdisciplinary connections, compatibility, interdisciplinary tasks, competence, professionally-oriented approach, communication technologies, elective courses.

3.8.3 Yakovenko Olena FORMS, TYPES AND REGULATORY ENVIRONMENTAL DEVELOPMENT OF PROFESSIONAL COMPETENCE OF SCIENTIFIC AND PEDAGOGICAL WORKERS

The author defines the tasks of professional development of pedagogical and scientific-pedagogical workers. The regulatory and legal framework is analyzed and the analysis of the latest research by scientists on the use of certain types of advanced training and competence of scientific and pedagogical workers is presented. Within the framework of legally defined forms, effective types of advanced training and professional competence of teachers of HEIs are considered.

Key words: competence, scientific professional competence teacher, competence-based approach, professional development teachers of the HEI, development of the competence of teachers of the HEI.

3.8.4 Oleksandr Nepsha, Tatyana Zavyalova, Valentina Ivanova, Mykhailo Sazhniev PROBLEMS OF FORMATION OF INFORMATION ICT-COMPETENCE OF THE TEACHER BY MEANS OF MODERN INNOVATIVE TECHNOLOGIES

During the transition to the information society, it is necessary to prepare the teacher for the rapid perception and processing of large amounts of information, mastering modern tools, methods and technology of working with information resources. Information competence deserves special attention because it allows the teacher to be modern, to act actively in the information environment, to use the latest advances in technology in their professional activities.

Key words: teacher, information and communication technologies, innovative pedagogical technology, information competence.

3.8.5 Tetiana Grabovska, Oleksandr Grabovskyy THE FORMATION OF STUDENTS' COMPETENCES BY MEANS OF INNOVATIVE LEARNING TECHNOLOGIES

The article deals with the peculiarities of the formation of students' competencies during the reforms in education. The article reveals the content of the concept, structural elements and effective means of forming students' key competencies in a modern educational institution. The factors that determine the latest approaches to the educational process, the method of using innovative pedagogical technologies in the formation of students' competencies as a requirement of the day are identified.

Key words: educational process, pedagogical innovations, innovative technologies, competence approach, competences.

3.8.6 Voronovska Liudmyla Hryhorivna, Ivashchenko Oksana Alimivna, Nenko Juliia Petrivna FORMATION OF MODERN CONCEPT OF THE SPECIALIST FOR CIVIL PROTECTION SERVICE

Modern world is constantly changing and various fields of economy are developing rapidly. It means that the requirements to modern specialists are also changing. At present they don't only have to be highly qualified in their own profession, but to be able to conduct self-education using a variety of information sources. That is why the current stage of development of higher education should be characterized by the new forms and methods of teaching, education, professional training.

Key words: modern information technologies, information society, techno meritocratic culture, netocrats, personality, competence, specialist for civil protection service.

3.8.7 Oleksandr Ihnatenko RESEARCH WORK AS A FACTOR IN PREPARING FUTURE TEACHERS TO IMPLEMENT INNOVATIONS IN EDUCATIONAL PROCESS

The paper analyzes the content and technology of research work with students in Ukraine's pedagogical institutes of higher education. The structure of the readiness of future teachers to the research work and its criterias are defined. The pedagogical conditions of formation of future teachers' readiness for research work are determined. The ways of implementing innovative technologies in the organization of research work are proposed.

Key words: research work, teacher, pedagogical conditions, readiness, науково-дослідна робота, вчитель, педагогічні умови, готовність.

3.8.8 Olga Rogozina SCIENTIFIC RESEARCH ACTIVITY AS A COMPONENT OF SELF-EDUCATION AND SELF-REALIZATION PERSONALITY

Research activity is a generally recognized mechanism of self-development and self-perfection of the individual and makes it, on the one hand, a creative personality, and on the other, an active participant in the development of society. Research activity stimulates the rate and level of development of the human brain, which continuously and intensively develops in the process of assimilation, search and development of new information. It is also worth noting that everyday work as a means of subsistence becomes creative for many people due to the research and research character.

Key words: research activity, organization, personality, self-education, pedagogue.

3.8.9 Inga Pasenko STRUCTURE AND CONTENT OF THE MODEL OF APPLICATION OF CONTEXT EDUCATION OF FUTURE BACHELORS IN LAW IN PROFESSIONAL TRAINING.

The article defines the structure and content of the model of using contextual education of future bachelors in law for professional training. The model of application of contextual learning includes the following blocks: motivational, organizational-procedural, effective-diagnostic.

Key words: bachelors of law, contextual education, professional training, model of application of contextual education.

3.8.10 Dzikovska Larysa INTERDISCIPLINARY LINKS IN THE EDUCATION SYSTEM: TYPOLOGY AND FORMS OF IMPLEMENTATION

The article considers the concept of interdisciplinary links, their phenomenon of compatibility and typology, as well as elements of methods of their implementation, which will ensure the effective solution of pedagogical and educational problems. Due to the exchange of interdisciplinary information and their comprehensive connection, knowledge and skills in the history of literature and related disciplines (history of culture, world history) are deepened and generalized, which contributes to the formation of scientific and cognitive and research competencies. The materials of the study are the basis for making adjustments to the content of curricula and updating them on the basis of interdisciplinary links, as well as for optimizing the educational process of philological training of higher education.

Key words: interdisciplinary connections, compatibility, interdisciplinary tasks, competence, professionally-oriented approach, communication technologies, elective courses.

3.8.11 Tsubanova Natalia, Chernyavsky Elina STUDY OF THE INFLUENCE OF AROMATHERAPY WITH ESSENTIAL OILS OF LEMON, ORANGE AND GRAPEFRUIT AS AN INNOVATIVE ELEMENT OF OPTIMIZATION POSTGRADUATE TRAINING OF PHARMACISTS

The influence of aromatherapy on the quality of training of pharmacists-interns has been experimentally investigated. It is established that the use of aromatherapy with essential oil of orange, lemon and grapefruit increases the efficiency of assimilation of the material, according to the indicator - correct answers to test tasks, by 53-57%. According to the methods of Dembo-Rubinstein and "Proofreading" proved a significant positive effect of essential oils on attentiveness, efficiency, vigor, mood. It should be noted a probable reduction in psychological stress.

Key words: aromatherapy, psychological and pedagogical research

3.8.12 Zolotukhina Svitlana, Kin Olena, Matviychuk Yuliia THE USE OF CONTROL AND ASSESSMENT OF LEARNING RESULTS OF APPLICANTS OF THE THIRD (EDUCATIONAL-SCIENTIFIC) LEVEL OF HIGHER EDUCATION WITHIN THE EDUCATIONAL PROGRAM IN SPECIALTY 011 "EDUCATIONAL, PEDAGOGICAL SCIENCES"

The article presents the information about organization of the system of control and assessment, the conducted procedures to verify the learning results of applicants of the third (educational-scientific) level of higher education in H. S. Skovoroda Kharkiv National Pedagogical University. The authors have characterized the standards and procedures of observance of academic virtue as they are consistently followed by all participants of the educational process when implementing the educational program.

Key words: control, assessment, checking, academic virtue.

3.8.13 Antonina Chernychko INNOVATIVE FORMS IN WORKING WITH TEACHERS AS AN EFFECTIVE MEANS OF DEVELOPMENT OF CREATIVE POTENTIAL OF THE TEACHER

The purpose of the project: to theoretically substantiate the actuality of the formation of professional competence of teachers as a means of developing the professional skills. Objectives: to create the favorable conditions for improving the professional growth of teachers; to introduce the modern forms and methods in the work with pedagogical staff as an effective development of creative potential of the teacher; to modernize the content and forms of scientific and methodical work, effective ways to ensure the professional competence of the teachers.

Key words: professional competence, innovation, modernization, competitive ability, self-improvement, pedagogical skill.

3.8.14 Tetiana Mykolaivna Alforova, Tetiana Mykolaivna Lezhnieva, Stanislav Volodymyrovych Chernopiatov INSTITUTIONALIZATION OF LEGAL ENTITY OF LEGAL CLINICS IS A PREREQUISITE OF THEIR EFFICIENCY AS INNOVATIVE FORMS OF EDUCATION

The issues of legal clinics and legal regulation states in Ukraine are considered. It is shown that legal clinics efficiency depends on their activities legal regulation. Authors propose ways for fuller institutionalization of legal clinics' legal personality as subjects of legal services, in particular via establishing legal clinics as legal entities and their cooperation with traditional participants in the legal services market.

Key words: legal clinic, higher legal education, legal aid, legal services, legal entity, structural subdivision, legal personality.

3.8.15 Nataliia Sushyk COMPETENT APPROACH TO REALIZATION OF TECHNOLOGY OF SOCIAL EDUCATION OF PERSONALITY

In this chapter of monograph is explained the capability of personality to activate and utilize also effectively use values, knowledge, beliefs, skills in order to meet requirements in the specific contest. It also highlights a sense, structure and steps of healthy, communicative, lawful, social, economic, curriculum competence of personality. Stated objective, subjective, goal, task, structure, content, steps, forms and methods of technology of social education "Profession. Education. Career. Success" of teenagers and technology of social financial education "Creating the future budgeting responsibly". Described effective forms and methods of creating the technology of social education of personality: video lecture, training, tutoring with usage of educational board games, brain storms, discussions, case methods and exercises.

Key words: social education, technology of social education, competent approach, competence: health sufficient, communicative, lawful, social, economic, curriculum. Values, valuable points, knowledge, beliefs, skills, forms, methods of social education of personality

3.9 MANAGEMENT AND MARKETING IN EDUCATION AS NECESSARY TOOLS FOR INNOVATIVE MANAGEMENT OF EDUCATIONAL INSTITUTIONS

3.9.1 Kristina Derevenchuk MARKETING STRATESIES AS A MECHANISM TO ENSURE THE COMPETITIVENESS OF HIGHER EDUCATIONAL INSTITUTIONS

The paper considers the main issues of marketing in the activities of higher education institutions, identifies the tasks of marketing management, considers the main problems of higher education and the need to use a marketing approach in the management of educational institutions, and identifies the main types of marketing strategies that can be used to ensure the required level of competitiveness of higher education institutions.

Key words: marketing, education, strategy, higher education, educational services, management, marketing research

3.9.2 Kulikov Petro, Bondar Elena, Lutsiv Ihor, Zelenskyy Kostyantyn METHODOLOGY OF COMBINATORY MODELING OF SEQUENCES OF EDUCATIONAL DISCIPLINES OF COMPETITIVE CURRICULUM

This paper examines the effect of the normative and managerial factors influence on the structure of the curriculum. Phased use of the normative and managerial factors reduces many of the studied

curricula on the subsequent stages of design. Developed mathematical models calculate the great number of the designed curricula on the appropriate stages using combinatorial approaches. Methodology and examples of construction of disciplinary, horizontal, vertical and combined sequences of educational disciplines are offered

Key words: curriculum; educational discipline; normative factor; managerial factor; sequence; competitive.

3.9.3 Sas Nataliia CONCEPT OF INNOVATIVE MANAGEMENT OF EDUCATIONAL INSTITUTIONS

The author substantiates the relevance of developing the concept of innovative management of educational institutions. Institutional documents, theoretical components and sources of the author's concept of innovative management of educational institutions are indicated. The author's concept of innovative management of educational institutions reflects the concept, subject, objects, purpose, tasks, process, principles and tools of innovative management of educational institutions.

Key words: concept, innovation management, educational institution, concept, subject, objects, purpose, tasks, process, principles and tools of innovative management of educational institutions.

3.9.4 Wanda Ivasuyk, Nina Myronets, Irina Petrichenko THE INNOVATIVE ACTIVITY OF THE LYCEUM IS A WAY TO EUROPEAN EDUCATION OF HIGH QUALITY

The introduction of information and communication technologies, a wide range of innovations, scientific and methodological support of the educational projects (the lyceum is a basic establishment as for the methodological work in our town) are the main factors to get the education of high quality. Besides there is one more factor, it's the teachers' creativity.

3.9.5 Oksana Kotyrlo MAIN ASPECTS OF STRATEGIC MANAGEMENT TO ENSURE INNOVATIVE DEVELOPMENT OF HIGHER EDUCATION INSTITUTIONS

The innovative nature of higher education institutions is one of the central factors for characterizing the success and efficiency of the institution in a market environment, its financial stability and competitiveness. The strategic success of higher education institutions depends on the implementation of strategies for their innovative development. The art of strategy is not only to formulate the mission of the institution, but also to successfully manage the process of strategic plans, changes and development of the institution.

Key words: strategy, management, higher education institution, planning.

3.9.6 Tiron Oksana INNOVATION OF EDUCATION AND EDUCATIONAL INNOVATIONS IN CONDITIONS OF MODERN HIGHER EDUCATION INSTITUTION

The article describes the different approaches to the interpretation of educational innovations and innovations in education. Higher education institutions that have chosen an innovation-based development, become competitive leaders on the education market. The formation of new forms of education and the use of perfect controlling mechanisms at each educational institution will give the opportunity to create single educational space, which is able to meet the needs of society in quality education with specific opportunities of customers in the educational market.

Key words: innovations, education, higher education institutions, innovation development, education market.

3.9.7 Olga STAROKOZHKO, Julia KONDRATENKO, Nataliya DANILOVA PREPARATION OF EDUCATIONAL MANAGERS FOR A GUIDANCE MISSION IN A POLYPARADYGMAL ENVIRONMENT

The complexity of education management tasks is determined by the nature of innovative approaches to the training of education managers in master's programs. The main factors of the innovative vision of the methodology, curriculum and technologies of preparation of the new generation of managers, capable of multivariate, scenario of professional activity in the conditions of poly paradigmatic saturation of the education system are determined. Tectonics of changes in the methodology of training masters of management is offered by resources of the guidance's idea.

Key words: preparation, poly paradigm, scenario, adaptability.

3.9.8 Zamelyuk Maria, Boremchuk Lilia, Tsaryk Tetyana, Levitska Valentyna CERTAIN ASPECTS SCIENTIFIC AND PEDAGOGICAL MOBILITY OF TEACHERS HIGHER EDUCATION INSTITUTION

The article provides a theoretical analysis of the problem of scientific and pedagogical mobility of teachers of higher education. Substantiated methodological approaches to the study of the format of creative research, which is based on the achievements of traditional methods and contains innovative elements. The authors tried to characterize professional mobility as a movement of the individual forward, while radically changing the environment, in order to change themselves for further development based on experience, self-improvement in order to live in a new environment.

Key words: mobility, teacher of higher education institution, self-development, creativity.

3.9.9 Demchenko Nataliia Mykhailivna THEORETICAL ASPECTS OF INTERNATIONALIZATION OF HIGHER EDUCATION IN UKRAINE

The article covers the issues of internationalization of higher educational institutions in Ukraine. The problem of terminological definition of the internalization phenomenon by national researchers is considered. Different approaches to the interpretation of the internationalization process in higher educational institutions are determined. The features and trends of the internalization development of higher education in the national dimension are singled out in the paper.

Key words: internationalization, internalization of higher education, higher educational institutions.

3.9.10 Eduard Pleshakov, Tetiana Tepla, Dariusz Mierzwiński, Lidiia Bohun INTERNATIONALIZATION OF HIGHER EDUCATION THROUGH DOUBLE DIPLOMA PROGRAMS: PROSPECTS AND CHALLENGES

Creation and implementation of joint educational programs with foreign universities is an urgent task for higher education institutions of Ukraine. Their implementation stimulates the growth of the level of professional training and competitiveness of graduates, increases their professional mobility and promotes the internationalization of universities. In this study, an attempt is made to analyze the problems and challenges in the implementation of the double degree program

Key words: higher education, internationalization, double diploma.

3.9.11 Marynchenko Inna Vitaliyivna DIGITALIZATION OF HIGHER EDUCATION INSTITUTION IN THE CONTEXT OF THE DEVELOPMENT OF THE INFORMATION SOCIETY IN UKRAINE

The article highlights the results of the analysis of the experience of digital technology implementation in higher education institutions of Ukraine. The basic principles of digitalization of higher education institutions are formulated. A survey was conducted among teachers of higher education institutions of Ukraine on their use of digital technologies in the educational process. The implementation of digitization of higher education institutions is proposed through the use of a virtual board in the educational process, the creation and use of game applications in the educational process, the creation of a teacher's course in Google Classroom.

Keywords: digitalization of higher education institutions, information society, digital technologies, virtual Padlet board, gamification, Google Classroom.

PART 4 QUALITY ASSURANCE OF INNOVATIVE PRODUCTS AND TECHNOLOGIES

4.1 Olha Shtofel, Viktor Golovko, Tetiana Chyzhska FRACTAL AND METALLOGRAPHIC ANALYSIS AS AN INNOVATION IN QUALITY GUARANTEE OF METAL PRODUCTS

The feasibility of using the method of fractal analysis to diagnose the metal, describe the structure, compare properties and search for an extended triad "composition - structure - property" has been explained in the article. Emphasis is placed on the concept of synergetics and linear fracture mechanics, there are one of the basic arguments for the application of fractal to the structural components of the metal.

Key words: metallography, steel, fractal, analysis, structure, metal

4.2 Petrova Zhanna Oleksandrivna, Pazyuk Vadym Mykhailovych, Samoilenko Kateryna Mykolayivna CREATING INNOVATIVE PROCESSING TECHNOLOGIES OF PUMPKIN

The creation of innovative technologies for processing vegetable crops is primarily associated with obtaining high-quality seed material. Particular attention in the presented work is paid to the definition of drying regimes of pumpkin seeds for seed use with the justification of the rational regime. Rational drying regime was determined by quality parameters: growth energy, germination and seed growth intensity. However, the work also presents a technological scheme of complete processing of pumpkin to obtain three components: seed, seeds for food consumption, pumpkin powder for food.

Key words: pumpkin seeds, drying kinetics, drying mode, drying stand, innovative technology, quality.

4.3 D'omin Dmytro, Kulyk Maksym, Rozhko Iona AGROECOLOGICAL FUNDAMENTALS OF CREATION OF ARTIFICIAL PHYTOCOENOSIS OF ENERGY CROPS FOR RECULTIVATION

The publication provides a scientific justification for the necessity to use energy crops in order to improve marginal lands through recultivation. The biological description of energy crops that can be used as the components of grass mixtures and peculiarities of their cultivation are given. An attempt has been made to optimize the structure of the phytocoenosis on the basis of the best placement of energy crops in the area for reclaimed lands. That will enable to get the sustainable yield of energy crops, improve the environment and achieve sustainability of raw materials to produce biofuel.

Key words: energy crops, biological features, marginal lands, reclamation, environment.

4.4 Viktor Tymchuk, Volodymyr Matviiets, Liudmyla Biliavska METHODOLOGY OF EVALUATION THE OWNER OF THE OBJECT OF INTELLECTUAL PROPERTY RIGHTS IN THE MARKET OF SELECTION-SEED INNOVATIONS

Challenges of assessment methodology the owner of the object of intellectual property at the market of innovation in breeding and seed production are discussed. Currently, only few originators are ready for appropriate innovative transformations and support of high-intensive product transfer. Therefore, it is rather important to choose active and efficient owners of innovative products and with their subsequent functioning as scientific-methodological and transfer centers.

Key words : assessment methodology, innovations in breeding and seed production, technology transfer

4.5 Kosenko Nadiya AGROBIOLOGICAL ESTIMATION OF DIFFERENT METHODS OF GROWING CARROT SEEDS (*Daucus carota* L.) UNDER DRIP IRRIGATION IN SOUTHERN OF UKRAINE

Planting mother roots-stacking of carrot at the scheme of planting 70x15 cm under the conditions of drip irrigation in the south of Ukraine provides a higher level of seed yield compared to mother roots of standard sizes. The optimal sowing period for growing seeds without transplanting is the first half of August and the density of growing seed plants is 250 thousand plants /ha. Seeds obtained from planting and by non-transplanting methods of growing carrot seeds correspond to the requirements of the state seed standard of Ukraine.

Key words: carrot, steckling, seed productivity, quality of seed, drip irrigation.

4.6 Mykola Savka, Nataliia Matviiets, Olha Polulikh TECHNOLOGY OF SCIENTIFIC AND ADVISORY SUPPORT FOR AGRO FORMATIONS AND RURAL POPULATION OF THE CARPATHIAN REGION

In modern conditions of agriculture an important task and requirement of time is the improvement of technologies of scientific-consulting and information support of agricultural formations, agricultural producers and rural population, development of new technologies and methods of profitable management, study of developed methods of scientific-consulting and information transfer of complex technologies and innovation. activities. The implementation of measures in the system of scientific and consulting support provides an effective link between agricultural science and education with production, facilitates the transfer of new technologies to the producer and prepares the producer for the perception of technology, improving their working conditions and living standards, and environmental protection.

Key words : innovative activity, information support, scientific-consulting support

4.7 Natalia Ostanina, Julia Lysenko, Raisa Stovpovska ENSURING THE RELIABILITY OF TEST RESULTS DURING QUALITY CONTROL IN TESTING LABORATORIES

The importance of implementing a quality management system in organizations seeking to organize and confirm their activities in accordance with the requirements of regulatory and technical documentation (standards, norms, etc.) and meet customer requirements is analyzed. Methods of ensuring the reliability of test results are considered.

Keywords: quality, quality management system, ensuring the reliability of test results

4.8 Ostanina Natalia Vadimovna, Kuznetsova Olena Mykhaylivna, Ocheretyana Natalia Mikolaivna PROBLEMS OF QUALITY OF DIETARY SUPPLEMENTS ON THE MARKETS OF UKRAINE AND POLAND AND WAYS OF THEIR DECISIONS

Significant actual problems with the quality of dietary supplements in Ukraine and Poland. It was revealed that the legislation of both countries gives the possibility of a hope for the market of some Dietary supplements. The proponents of the adoption of the given problem and the introduction of amendments to the legislation in the sphere of the provision of Dietary supplements and the approval of the warehouse of active ingredients of dietary supplements.

Key words. Dietary supplements, legislation in the production of food supplements, safety and quality of food supplements, common food supplements in Ukraine and Poland, control of food supplements.

4.9 Ostanina Natalia Vadymivna, Briazkalo Vadym Vadymovych, Cheremenko Anatolii Mykolayovych, Vlodek Oleksandr Borysovych, Gumeniuk Alexey Arnoldovich MODERN ASPECTS OF APPLICATION OF INFORMATION TECHNOLOGIES IN LABORATORIES FOR QUALITY CONTROL OF MEDICINES

Taking into account modern approaches to the introduction of information technology allows laboratories for quality control of medicines in the use of computerized systems to ensure their effective work, as well as increase the probability of obtaining reliable test results.

Key words: quality control, medicines, laboratory, computerized system

4.10 Oshovsky Victor, Dotsenko Sergii, Kairov Alexiy INCREASE OF RESISTANCE AGAINST WEAR OF A CRANKED SHAFT WITH BABBITT BEARINGS BY NANODIAMOND SATURATION OF FRICTION SURFACES

Defects of crankshaft friction surface treatment, which reduce their wear resistance, are analyzed. The technology of processing of friction surfaces of a shaft and babbitt sliding bearings which increases their geometrical accuracy and wear resistance and reduces coefficient of friction is developed and investigated. The essence of the main technology in the grinding and penetration of diamond grains based on disulfide-molybdenum oil in the surface during their friction and compression. The absence of surface wear for a long time of operation of the crankshaft has been experimentally confirmed.

Key words: a crankshaft, babbitt, diamond, waterproofness.

4.11 Anna Konstantinovna Bedradina, Sergey Georgievich Nezdoinov DIRECTLY IMPLEMENTATION OF INTERNATIONAL STANDARDS IN THE SPHERE OF MANAGEMENT OF THE YAKIST OF TOURIST SERVICES

The process of transformation of the economic system in general and in tourism in particular, which is currently taking place in Ukraine, is accompanied by a number of problems. Solving most of them will lead to significant positive changes and shifts

Key words: standard, management, travel services

4.12 Soroka Larysa, Ivanenko Iryna JUSTIFICATION OF THE NECESSITY OF IMPLEMENTATION OF THE QUALITY CONTROL SYSTEM AT RESTAURANT ENTERPRISES OF UKRAINE

This article examines the content of the quality management system and food safety – HACCP. In particular, the definitions of the definition of “HACCP system” available in scientific sources are analyzed and the one that, in the opinion of the authors, best reveals the meaning of this concept and corresponds to the purpose of this study is selected. The legislative preconditions for the

introduction of HACCP at restaurant enterprises are considered. The algorithm of introduction and realization of the HACCP system in restaurant establishments is formed, the author's variant of definition of critical control points is offered.

Key words: quality management system, HACCP system, critical control points, risks, risk management, restaurant business.

4.13 Anna Volodymyrivna Boiarska-Khomenko, Dmytro Volodymyrovych Sotnikov, Kateryna Volodymyrivna Shmatko ENSURING THE QUALITY OF HIGHER EDUCATION THROUGH ACCESS OF ENTRANTS TO THE EDUCATIONAL AND SCIENTIFIC PROGRAM AND RECOGNITION OF LEARNING RESULTS

Quality assurance in higher education is based on the European Quality Assurance Framework. It is a benchmark in controlling the continuous improvement of education and professional growth systems on the basis of pan-European reference levels. The quality assurance system of higher education includes the following stages: planning, implementation, evaluation and review of the higher education system. Each of the stages operates with common criteria, indicative descriptors and quality indicators. The purpose of ensuring the quality of higher education is to achieve such development of higher education and training, which guarantees high quality results that will meet the social and economic needs of society, the individual needs of students. The objectives of the quality assurance system of higher education are: to create conditions for continuous improvement of the quality of higher education; ensuring rapid employment of graduates; achieving a high degree of commitment of participants in the educational process to the purpose of learning; creating conditions for the formation of a culture of quality that supports the achievement of educational goals; high quality of different levels of higher education and management, which contributes to the achievement of socio-economic development goals. In KhNPU pans effective system of quality assurance of educational activities and quality of higher education operates. It provides for the implementation of the following procedures and measures: monitoring and periodic review of educational programs; annual evaluation of applicants for higher education, scientific and pedagogical and pedagogical staff of higher education institutions; providing advanced training of pedagogical, scientific and scientific-pedagogical workers; ensuring the availability of the necessary resources for the organization of the educational process, including independent work of students, for each educational program; ensuring publicity of information about educational programs, degrees of higher education and qualification and others. Ensuring high quality of education is carried out through the access of entrants to educational and scientific programs, in particular the specialty 011 «Educational, pedagogical sciences» through openness and availability of information, definition of admission criteria, exams and interviews in the field. Defining the procedure for recognizing the results of non-formal and informal learning contributes to the promotion of lifelong learning and self-development of applicants, which is the key to efficiency and diversity of the educational process, ensures the formation of individual educational trajectory.

Key words: quality of education, continuing education, higher education, educational and scientific program, non-formal education.

4.14 Natalia Ostanina, Julia Lysenko, Raisa Stovpovska ENSURING THE RELIABILITY OF TEST RESULTS DURING QUALITY CONTROL IN TESTING LABORATORIES

The importance of implementing a quality management system in organizations seeking to organize and confirm their activities in accordance with the requirements of regulatory and technical documentation (standards, norms, etc.) and meet customer requirements is analyzed. Methods of ensuring the reliability of test results are considered.

Keywords: quality, quality management system, ensuring the reliability of test results

PART 5 INTERDISCIPLINARY APPROACHES IN RESEARCH AND EDUCATION

5.1 Piminov Olexandr, Shulga Luydmila, Faizullin Olexandr, Bezkrivna Kateryna NANOTECHNOLOGIES IN MEDICINE – INDUSTRY TRENDS

Data on the development of nanotechnologies and their practical use in medicine were generalized. In the light of modern advances in nanotechnology, the prospects for designing diagnostic and treatment tools were discussed. The achievements of nanobiology are presented, allowing the

progress of new medical concepts such as theranostics. It is proved that creating artificial organs and analogues of physiological systems with the help of nano biotechnological methods will allow for further development and testing of new methods and therapeutics.

Keywords: nanotechnologies, nanomedicine, theranostics, nanomaterials

5.2 Ilnytska Liubov METHODOLOGY FOR STUDYING THE EDUCATIONAL VALUE OF REHABILITATION PROCESSES BASED ON THEORETICAL AND EXPERIMENTAL INDICATORS OF SCIENTIFIC MEDICAL INFORMATION

The study is devoted to the analysis of a specialized applied method of understanding the educational value of rehabilitation processes by establishing the methodological component of specialized theoretical medical information. For scientific medical and informational activities, it is proposed to use an educational strategy of theoretical and experimental principles of verification, research explication, the indicators of which have an impact on the formation of values of the educational space.

Key words: methodology, educational purpose, rehabilitation, experimental indicators, scientific medical information.

5.3 Konoplitskyi Viktor Serhiiovych, Pasichnyk Oleh Vadymovych THE DEGREE OF RADICALISM IN THE REMOVAL OF PIGMENTED NEVI IN CHILDREN

The proposed method of determining the radicalism of removal of pigmented skin nevi by mathematical calculation of the ratio of areas of removed tissues at the skin level and at the level of the aponeurosis, taking into account the thickness of the hypodermis in different parts of the body allows to calculate individual surgical wound parameters. The use of the proposed calculation model in the treatment of 120 patients on the basis of the Department of Oncohematology of Vinnytsia Regional Children's Clinical Hospital (Ukraine) with pigmented nevi for the period 2018 – 2020 allowed to avoid recurrence of the pathology in all cases.

Key words: nevus, children.

5.4 Volodymyr Tkach, Marta Kushnir, Yana Ivanushko, Silvio S. de Oliveira, Petro Yagodynets, Zholt Kormosh, Yulia Bredikhina, Olga Luhanska, Adriano O. Da Silva THEORETICAL DESCRIPTION OF THE ELECTROCHEMICAL DETERMINATION OF ABAMETAPIR TOGETHER WITH THE PESTICIDE DIKVAT ON A NICOLE (II) OXIDE MODIFIED ELECTRODE

Electrochemical determination of the drug abametapir in the presence of the pesticide diquat on the cathode modified with Nicole (II) oxyhydroxide) was first described theoretically. A mathematical model describing this process was developed and described using linear stability theory and bifurcation analysis. Analysis of the model confirms the effectiveness of Nicole (II) oxide as an electrode modifier for the determination of abametapir and diquat. The linear relationship between the electrochemical parameter and the concentration of both drugs is easily established and maintained. On the other hand, the oscillatory behavior in this system is more likely to be realized than in the simpler case.

Key words: abametapir, diquat, Vanadium (III) oxyhydroxide, electrochemical sensor, steady steady state

5.5 Viktoriya Gryshchenko, Viktor Tomchuk BIOCHEMICAL AND PHYSIOLOGICAL BASIS OF THE PROCESSES OF ABSORPTION AND SECRETION IN THE SMALL INTESTINE OF MAMMALS

The small intestine is one of the main organs of the digestive canal and performs a number of different functions: metabolic, secretory, transport-evacuation, depositing, hormonal, protective, which to varying degrees ensure the implementation of the two leading processes – hydrolysis and absorption of nutrients. The variety of these functions is due to the uniqueness of the structure of the intestinal mucosa. Therefore, it is rational to outline the main features of the structure of the small intestinal mucosa and its role in the processes of hydrolysis and transport of nutrients of mammals.

Key words: small intestine, structure of the intestinal mucosa, processes of absorption and secretion, biochemical and physiological basis, mammals.

5.6 Mnushko Zoia Mikolaivna, Pestun Iryna Volodymyrovna, Parfyonova Irina Ivanovna, Draganova Olena Mikolaivna, Oganezova Ganna Viktorivna, Rohova Olena Gennadiyvna STUDY OF PHARMACEUTICAL PROVISION OF POPULATION ON THE CYCLES OF THEMATIC IMPROVEMENT OF DOCTORS IN MANAGEMENT AND ECONOMICS IN HEALTH PROTECTION

The practical significance of studying by doctors on cycles of thematic improvement in management and economics such issues as: legal regulation of health care facilities (PHC) and the population with medicines (drugs), features of social programs to ensure the availability of medicines, state regulation of prices for Drugs, procurement provisions for budget funds and determining the need for drugs, etc.

Keywords: medicines, health care facilities, legislation and regulations, doctors, training programs

5.7 Nikolaieva Yana Yuriyvna, Ostanina Natalia Vadimovna, Levin Mikhail Grigorovich DEVELOPMENT OF NEW APPROACHES TO THE CHOICE OF GENERIC MEDICINES ON THE BASIS OF THEIR BIODEGRADABILITY BASED ON THE BIOPHARMACEUTICAL CLASSIFICATION SYSTEM

There is no database in Ukraine that separates different types of drugs according to the degree of evidence-based efficacy and safety. This fact establishes the need to develop a methodology for selecting generic drugs to provide the population with quality drugs. To effectively organize the quality control of medicines, it is necessary to use the concept of Biopharmaceutical Classification Systems (BCS), taking into account the data of permeability and solubility of active pharmaceutical ingredients (API). It has been proven that certain APIs can have abnormal bioavailability, ie they are absorbed not from the intended place - the small intestine, but from the stomach, which in turn leads to a negative impact on human health.

Key words: Active pharmaceutical ingredient. Generic. Biopharmaceutical Classification System. Solubility. Permeability. Abnormal bioavailability.

5.8 Sakhno Larysa, Pyatchanina Tetiana, Shapran Oleksandr MARKET RESEARCH ON COMMERCIALIZATION OF INNOVATIVE PRODUCTS OF PHARMASECTOR: ADSORPTIVE CARBON DRESSING

Ensuring the expansion of innovative products requires the use of comprehensive marketing tools and approaches to sales. Purpose: market research and analysis of the competitiveness of the adsorptive carbon dressing, developed at the RE Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of the National Academy of Sciences of Ukraine (IEPOR) for application-sorption therapy of wounds and burns.

Key words: innovation, carbon sorbent bandage, commercialization, competitiveness, pharmaceutical sector.

5.9 Konopliitskyi Viktor Serhiiiovych, Korobko Yurii Yevheniiiovych ANAL MANOMETRY AS ONE OF THE DIAGNOSTIC CRITERIA OF ACUTE APPENDICITIS IN FEMALE CHILDREN

This article is devoted to measuring the pressure of the sphincter apparatus of the rectum in female children with acute surgical pathology. Namely, the article considers clinically important indicators of anal pressure in cases of acute appendicitis, as well as the possibility of differential diagnosis between acute surgical pathology and other non-surgical diseases of the abdominal cavity, using a device for sphincterometry.

Key words: anal manometry, acute appendicitis, children.

5.10 Konopliitskiy Viktor Sergievych, Shavliuk Ruslan Volodymyrovych STRUCTURAL DIFFERENCE OF TISSUE CHANGES AND PATHOMORPHOLOGICAL CHARACTERISTICS OF FACTORS OF PILONIDAL DISEASE IN CHILDREN AND ADULTS

Relevance: to date, scientists have been debating the congenital or acquired genesis of pilonidal disease, especially among children. Purpose: to accurately determine the causes of pilonidal disease in children. Materials and methods: the work was performed on the basis of analysis of morphological data of groups of children from 36 and 37 people who underwent histological

examination of removed preparations of pilonidal cysts. Conclusion: pilonidal disease has a congenital genesis, which is realized under the influence of external factors.

Key words: pilonidal disease, children, morphology, histology, etiology.

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PART 3. INNOVATIONS IN MODERN EDUCATION AND SCIENCE: THEORY, METHODOLOGY AND PRACTICE

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Nataliia Myskova – Khmelnytskyi, Khmelnytskyi Humanitarian-Pedagogical Academy

3.1.3 *Nataliia Kazakova*– Khmelnytskyi Humanitarian-Pedagogical Academy

Leonida Pisotska– Khmelnytskyi Humanitarian-Pedagogical Academy

Olha Furman– Khmelnytskyi Humanitarian-Pedagogical Academy

3.1.4 *Olena Novak*– Khmelnytskyi Humanitarian-Pedagogical Academy

Maryna Savchenko– Khmelnytskyi Humanitarian-Pedagogical Academy

Olesia Mysyk – Khmelnytskyi Humanitarian-Pedagogical Academy

3.1.5 *Lily Onofriichuk*– Khmelnytsky humanitarian and pedagogical academy, Ukraine

3.1.6 *Pavlushkina Olena Vasylivna*– Khmelnytskyi Humanitarian-Pedagogical Academy

3.1.7 *Viktoriia Rozghon* – Khmelnytsky Humanitarian Pedagogical Academy

Elena Sas– Khmelnytsky Humanitarian Pedagogical Academy

Nadiia Frolenkova– Khmelnytsky Humanitarian Pedagogical Academy

3.1.8 *Pakhalchuk Natalia Oleksandrivna*–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine

Hroshovenko Olga Petrivna–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine

Holiuk Oksana Anatoliivna–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine

3.1.9 *Omelianenko Alla Volodymyrivna* – Berdiansk State Pedagogical University

3.1.10 *Svitlana Ivakh* – Ivan Franko State Pedagogical University of Drohobych

Violetta Gorodyska – Ivan Franko State Pedagogical University of Drohobych

3.1.11 *Kateryna Kruty*–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University

Larysa Zdanevych–Khmelnyskyi Humanitarian-Pedagogical Academy

Oksana Popovych–Mukachevo State University

3.1.12 *Hanna Oleksandrivna Lopatina*–Berdyansk State Pedagogical University

3.2 DEVELOPMENT OF CREATIVE ABILITIES OF PRIMARY SCHOOL STUDENTS IN THE MODERN CONTEXT

3.2.1 *Inna Stakhova*–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University

3.2.2 *Vanda Vyshkivska*– Dragomanov National Pedagogical University (Ukraine Kyiv)

Oleksandra Shykyrynska–Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University (Ukraine Vinnytsia)

Olena Malinka –Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University (Ukraine Vinnytsia)

3.2.3 *Marianna Ostrovska*–Candidate of Pedagogical Sciences, Associate Professor of Pedagogy and Psychology

3.2.4 *Turchyn Tamara Mykolayivna*– Nizhyn State University named after Mykola Gogol

3.2.5 *Iryna Pinchuk*– Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Ukraine

Olena Vyshnyk– Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Ukraine

3.2.6 *Molnar Tetiana Ivanovna*–Mukachevo State University, Ukraine

3.2.7 *Nadiya SHCHERBAKOVA* – Mariupol State University

Katerina SHCHERBAKOVA– Berdyansk State Pedagogical University

3.1 TRAINING SPECIALISTS IN NATURAL SCIENCES, MATHEMATICS AND TECHNOLOGY ON THE BASIS OF MODERN TEACHING TECHNOLOGIES

3.3.1 *Yaroslav Chkana*– Makarenko Sumy State Pedagogical University, Sumy, Ukraine

Olena Martynenko– Makarenko Sumy State Pedagogical University, Sumy, Ukraine

Inna Shyshenko–Makarenko Sumy State Pedagogical University, Sumy, Ukraine

3.3.2 *Trojan Anatoly Grigorovich*– State professional and technical pledge "Lebedinske vishche professional school of the fossil government"

3.3.3 *Nataliia Bohar*– Communal Institution «Educational Upbringing Complex: Comprehensive School of I-III stages-gymnasium 23 of Vinnytsia City Council»

Tetiana Kohut– Communal Institution «Educational Upbringing Complex: Comprehensive School of I-III stages-gymnasium 23 of Vinnytsia City Council»

3.3.4 *Dzyna Larysa*– State Higher Educational Establishment “Donbas state pedagogical university”

3.3.5 *Oleksandr Vasilovich School*– Berdyansk State Pedagogical University

3.3.6 *Zavrzhna Olena*– Sumy State Pedagogical University named after A.S. Makarenko

Saltykova Alla– Sumy State Pedagogical University named after A.S. Makarenko

Saltykov Dmytro– Sumy State Pedagogical University named after A.S. Makarenko

3.3.7 *Natalia VAHINA*– Berdyansk State Pedagogical University

3.3.8 *Valentyna Peregudova*–Berdyansk State Pedagogical University

3.3.9 *Svitlana Kucher*– Kryvyi Rih State Pedagogical University, Kryvyi Rih

Marina Dyachenko– Municipal out-of-school educational institution «center for children and youth creativity «Harmony» of kryvyi rih city council Kryvyi Rih State Pedagogical University, Kryvyi Rih

3.4 USE OF INNOVATIVE APPROACHES TO TRAINING SPECIALISTS IN PHYSICAL EDUCATION AND SPORTS

3.4.1 *An Olena Vitaliyivna*– Berdyansk State Pedagogical University

3.4.2 *Olga Shevchenko*–Central Ukrainian State Pedagogical University, Kropivnitsky, Ukraine

Anastasia Melnik– Central Ukrainian State Pedagogical University, Kropivnitsky, Ukraine

Volodymyr Vynnychenko– Central Ukrainian State Pedagogical University, Kropivnitsky, Ukraine

3.4.3 *Yaroslava Logvinova*– Volodymyr Vynnychenko Central Ukrainian State Pedagogical University

Olena Radionova–Volodymyr Vynnychenko Central Ukrainian State Pedagogical University

3.4.4 *Valentyna Chernii* – Volodymyr Vynnychenko Central Ukrainian Pedagogical University, Kropyvnytskyi, Ukraine

Olena Nievorova– Volodymyr Vynnychenko Central Ukrainian Pedagogical University, Kropyvnytskyi, Ukraine

Viktor Salasenko– Volodymyr Vynnychenko Central Ukrainian Pedagogical University, Kropyvnytskyi, Ukraine

3.4.5 *Oleksii Stasenko*– Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko, Kropyvnytskyi, Ukraine

Irina Sundukova– Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko, Kropyvnytskyi, Ukraine

Svetlana Kutsenko– Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko, Kropyvnytskyi, Ukraine

3.4.6 *Olena Markova*– Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko

Anatolii Turchak–Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko

3.4.7 *Olena Markova*– Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko

Alexey Kravchenko–Central Ukrainian State Pedagogical University named after Volodymyr Vynnychenko

3.4.8 *Iazlovetska Oksana*– Volodymyr Vynnychenko Central Ukrainian State Pedagogical University

Chelalo Svitlana– Volodymyr Vynnychenko Central Ukrainian State Pedagogical University

Shcherbatiuk Nataliia–Volodymyr Vynnychenko Central Ukrainian State Pedagogical University

3.4.9 *Belkova Tetyana Oleksandrivna* –Donetsk National Medical University

3.5 FEATURES OF INNOVATIVE APPROACHES INTRODUCTION IN PREPARATION OF SOCIAL SPHERE SPECIALISTS

3.5.1 *Danyliuk Olena* – Kamianets-Podilskyi Ivan Ohienko National University, Ukraine

Melnyk Zhanna– Kamianets-Podilskyi Ivan Ohienko National University, Ukraine

3.5.2 *Liudmyla Melnyk*–Kamianets-Podilskyi National Ivan Ohienko University

3.5.3 *Opaliyuk Tetiana*– Kamianets-Podilskyi Ivan Ohienko National University, Ukraine

3.5.4 *Opaliyuk Oleh* – Kamianets-Podilskyi Ivan Ohienko National University, Ukraine

3.5.5 *Serbaliuk Yuriy* – Kamianets-Podilskyi Ivan Ohienko National University, Ukraine

3.5.6 *Gevchuk Natalia*–Kamianets-Podilskyi National Ivan Ohienko University

Zhyliak Nataliia– Podilsky Special Educational and Rehabilitation Socio-Economic College

3.5.7 *Didyk Nataliia Mykhailivna*– Kamianets-Podilskiy National Ivan Ohienko University

3.6 DEVELOPMENT OF THE STUDENT'S PERSONALITY BY MEANS OF MODERN MEDIA EDUCATIONAL TECHNOLOGIES

3.6.1 *Onkovych G. V.* – Kyiv National University of Culture and Arts

3.6.2 *Hanna Onkovych*– Kyiv Medical University Kyiv, Ukraine

Maryna Boholiubova– Kyiv Medical University Kyiv, Ukraine

Olga Lialina– Kyiv Medical University Kyiv, Ukraine

Natalia Flegontova–Kyiv Medical University Kyiv, Ukraine

3.6.3 *Artem Onkovych*– Kyiv Medical University Kyiv, Ukraine

Hanna Onkovych– Kyiv Medical University Kyiv, Ukraine

Olga Lialina– Kyiv Medical University Kyiv, Ukraine

Leslava Redko-Shpak– Kyiv National University of Culture and Arts Kyiv, Ukraine

3.6.4 *H. Onkovich* – Kyiv Medical University Kyiv, Ukraine

A Onkovich – Kyiv National University of Culture and Arts , Kyiv, Ukraine

3.6.5 *Onkovych Hanna* – Kyiv Medical University

Onkovych Artem – Kyiv National University of Culture and Arts

Bogolyubova Maryna – Kyiv Medical University;

Lyalina Olga – Kyiv Medical University

3.6.6 *Hanna Ihnatenko*– Oleksandr Dovzhenko Hlukhiv national pedagogical university

Bohdan Vovk– Oleksandr Dovzhenko Hlukhiv national pedagogical university

Yevhen Yermolenko– Oleksandr Dovzhenko Hlukhiv national pedagogical university

3.6.7 *Inna Kurlishchuk*– SI “Luhansk Taras Shevchenko National University”, Ukraine

Oksana Oleksieieva– SI “Luhansk Taras Shevchenko National University”, Ukraine

Olena Otravenko– SI “Luhansk Taras Shevchenko National University”, Ukraine

3.6.8 *Artem Onkovych*– Kyiv Medical University Kyiv, Ukraine

Hanna Onkovych– Kyiv Medical University Kyiv, Ukraine

3.6.9 *Matvienko Lesya*–Poltava State Agrarian University

3.6.10 *Mahdysiuk Liudmyla Ivanivna*– Lesya Ukrainka Volyn National University

Demchuk Violeta Borysivna–Methodist of the Department of Postgraduate Education of Volyn Medical Institute

3.6.11 *Pohvalit Julia Anatoliyivna*–"Secondary school № 34" of Kamyanka city council

3.6.12 *Lilia Borysivna Kulinenko*– Izmail State University for the Humanities

3.6.13 *Katherina Margitich*– Ferenc Rakoczi II. Transcarpathian Hungarian Institute

Oleksandr Ostrovski– Ferenc Rakoczi II. Transcarpathian Hungarian Institute

Andreya Pevse– Ferenc Rakoczi II. Transcarpathian Hungarian Institute

3.6.14 *Larysa Prokhorova*– Bogdan Khmelnytsky Melitopol State Pedagogical University

Svitlana Hryshko–Bogdan Khmelnytsky Melitopol State Pedagogical University

Oleksandr Nepsha–Bogdan Khmelnytsky Melitopol State Pedagogical University

3.6.15 *Olena Okhrimenko*– Makarenko Sumy State Pedagogical University, Sumy, Ukraine

Olena Semenikhina– Makarenko Sumy State Pedagogical University, Sumy, Ukraine

Inna Shyshenko–Makarenko Sumy State Pedagogical University, Sumy, Ukraine

3.7 RESULTS OF INTRODUCING DISTANCE LEARNING TECHNOLOGIES INTO THE EDUCATIONAL PROCESS

3.7.1 *Helesh Andriy*– Lviv Polytechnic National University

Kurylets Oksana –Lviv Polytechnic National University

Bukliv Roksoliana –Lviv Polytechnic National University

3.7.2 *Alla Lialiuk*– Lesia Ukrainka Volyn National University, Lutsk

Nataliia Kolenda– Lesia Ukrainka Volyn National University, Lutsk

Svitlana Begun–Lesia Ukrainka Volyn National University, Lutsk

3.7.3 *Drahiieva Liudmyla*–Izmail State University of Humanities

3.7.4 *Volodymyr Cherniakov*– Chernihiv Polytechnic National University, Chernihiv, Ukraine

Yurii Maidikov– Chernihiv Polytechnic National University, Chernihiv, Ukraine

Viacheslav Tytarenko– Chernihiv Polytechnic National University, Chernihiv, Ukraine

Maryna Suproniuk–Chernihiv Polytechnic National University, Chernihiv, Ukraine

3.7.5 *Ludmila DANNIK*–Berdyansk State Pedagogical University

3.7.6 *Inna Akhma*– National Technical University of Ukraine ‘Igor Sikorsky Kyiv Polytechnic Institute

Galyna Mikhnenko– National Technical University of Ukraine ‘Igor Sikorsky Kyiv Polytechnic Institute

Viktoriia Chme–National Technical University of Ukraine ‘Igor Sikorsky Kyiv Polytechnic Institute

3.7.7 *Olga Ivliieva*–Izmail State University of Humanities

3.7.8 *Lyudmila Timofieva*– Kryvyi Rih gymnasium №49

Iryna Dyuba– Kryvyi Rih gymnasium №49

Iryna Konelska–Kryvyi Rih gymnasium №49

3.7.9 *Oksana PALELULKO*–Podilsky Social and Economical College

Inna Mykolaivna HUMENIUK–Podilsky Social and Economical College

Nataliia Romanivna STOROZHUK– Podilsky Social and Economical College

3.7.10 *Gennadiy Shykhin*– Berdyansk State Pedagogical University

Bondarenko Lyudmila–Volnovakha secondary school № 4, Volnovakha, Ukraine

Pimenova Tatyana– Berdyansk polydisciplinary gymnasium №2, Berdyansk, Ukraine

Romanovska Oksana– Volnovakha secondary school № 4, Volnovakha, Ukraine

Huseynov Samandar– Slavic multidisciplinary regional vocational education center. Slavyansk. Ukraine

3.7.11 *Olha ILISHOVA*–Berdyansk State Pedagogical University

3.8 COMPETENCE-BASED APPROACH AS A DIRECTION OF MODERNIZATION OF EDUCATION AND SCIENCE

3.8.1 *Vitalii Opanasenko*–Oleksandr Dovzhenko Hlukhiv national pedagogical university

Tatiana Samus–Oleksandr Dovzhenko Hlukhiv national pedagogical university

3.8.2 *Yemelyanova Yevgeniya* – Kharkiv Petro Vasylenko National Technical University of Agriculture

Panteleeva Olena –National Academy of National Guard of Ukraine

3.8.3 *Yakovenko Olena*–Izmail State University of Humanities

3.8.4 *Oleksandr Nepsha*–Bogdan Khmelnytsky Melitopol State Pedagogical University

Tatyana Zavyalova–Bogdan Khmelnytsky Melitopol State Pedagogical University

Valentina Ivanova–Bogdan Khmelnytsky Melitopol State Pedagogical University

Mykhailo Sazhniev–Bogdan Khmelnytsky Melitopol State Pedagogical University

3.8.5 *Tetiana Grabovska*– Zakarpattia Institute of Postgraduate Pedagogical Education

Oleksandr Grabovskyy–Zakarpattia Institute of Postgraduate Pedagogical Education

- 3.8.6 *Voronovska Liudmyla Hryhorivna*– Cherkasy Institute of Fire Safety named after Chernobyl Heroes of National University of Civil Defense of Ukraine
- Ivashchenko Oksana Alimivna*– Cherkasy Institute of Fire Safety named after Chernobyl Heroes of National University of Civil Defense of Ukraine
- Nenko Juliia Petrivna*– Cherkasy Institute of Fire Safety named after Chernobyl Heroes of National University of Civil Defense of Ukraine
- 3.8.7 *Oleksandr Ihnatenko*– Education Methods of Oleksandr Dovzhenko Hlukhiv National Pedagogical University
- 3.8.8 *Olga Rogozina*–Berdiansk State Pedagogical University
- 3.8.9 *Inga Pasenko*–NVK Prestige at IAPM
- 3.8.10 *Dzikovska Larysa*–Izmail State University for the Humanities
Izmail, Ukraine
- 3.8.11 *Tsubanova Natalia*– Institute for Advanced Training of Pharmacy Specialists National University of Pharmacy, Kharkiv, Ukraine
- Chernyavsky Elina*– Institute for Advanced Training of Pharmacy Specialists National University of Pharmacy, Kharkiv, Ukraine
- 3.8.12 *Zolotukhina Svitlana*– H. S. Skovoroda Kharkiv National Pedagogical University
- Kin Olena*– H. S. Skovoroda Kharkiv National Pedagogical University
- Matviychuk Yuliia*– H. S. Skovoroda Kharkiv National Pedagogical University
- 3.8.13 *Tetiana Alforova*– Higher educational private institution “Dnipro Humanitarian University
- Tetiana Lezhnieva*– Higher educational private institution “Dnipro Humanitarian University
- Stanislav Chernopiatov*– Higher educational private institution “Dnipro Humanitarian University
- 3.8.14 *Nataliia Sushyk*–Lesya Ukrainka Volyn National University
- 3.8.15 *Antonina Chernychko*–Vasylivka Comprehensive School of I-III Grades Devladvivska village council of Dnipropetrovsk region.
- 3.9 MANAGEMENT AND MARKETING IN EDUCATION AS NECESSARY TOOLS FOR INNOVATIVE MANAGEMENT OF EDUCATIONAL INSTITUTIONS**
- 3.9.1 *Kristina Derevenchuk*– Izmail State University of Humanities
- 3.9.2 *Kulikov Petro*– Kyiv National University of Construction and Architecture
- Bondar Elena*–Kyiv National University of Construction and Architecture
- Lutsiv Ihor*–Ternopil Ivan Pul’uj National Technical University
- Zelensky Kostyantyn*– Husyatyn vocational College of Ternopil Ivan Pul’uj National Technical University
- 3.9.3 *Sas Nataliia*–Poltava V.G. Korolenko National Pedagogical University, Ukraine
- 3.9.4 *Wanda Ivasuyk* – Berdychiv lyceum№15, Zhytomyr region
- Nina Myronets* –Berdychiv lyceum№15, Zhytomyr region
- 3.9.5 *Oksana Kotyrlo*–Kyiv Professional Pedagogical College Anton Makarenko
- 3.9.6 *Tiron Oksana*–Izmail State Human University
- 3.9.7 *Olga STAROKOZHKO*– Berdyansk State Pedagogical University
- Julia KONDRATENKO*– Berdyansk State Pedagogical University
- Nataliya DANILOVA*– Berdyansk multidisciplinary gymnasium №2
- 3.9.8 *Zamelyuk Maria*– Municipal institution of higher education "Lutsk Pedagogical College"
- Boremchuk Lilia*– Municipal institution of higher education "Lutsk Pedagogical College"
- Tsaryk Tetyana*– Municipal institution of higher education "Lutsk Pedagogical College"
- Levitska Valentyna*–Municipal institution of higher education "Lutsk Pedagogical College"
- 3.9.9 *Demchenko Nataliia Mykhailivna* –Nizhyn Mykola Gogol State University
- 3.9.10 *Eduard Pleszakow* –Uniwersytetu Narodowego „Politechnika Lwowska”, Lwów, Ukraina
- Tetiana Tepla* – Uniwersytetu Narodowego „Politechnika Lwowska”, Lwów, Ukraina *Dariusz Mierzwiński* – Politechnika Krakowska im. Tadeusza Kościuszki
- Lidia Bohun*–Uniwersytetu Narodowego „Politechnika Lwowska”, Lwów, Ukraina
- 3.9.11 *Marynchenko Inna Vitaliyivna*– Oleksandr Dovzhenko Hlukhiv National Pedagogical University

PART 4. QUALITY ASSURANCE OF INNOVATIVE PRODUCTS AND TECHNOLOGIES

4.1 **Olha Shtofel**– National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

Viktor Golovko– E.O. Paton Electric Welding Institute of the National Academy of Sciences of Ukraine

Tetiana Chyzhska– National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

4.2 **Petrova Zhanna Oleksandrivna**– Institute of Technical Thermophysics of the National Academy of Sciences of Ukraine.

Pazyuk Vadim Mikhailovich– Institute of Technical Thermophysics of the National Academy of Sciences of Ukraine.

Samoylenko Katerina Mykolaivna–Institute of Technical Thermophysics of the National Academy of Sciences of Ukraine.

4.3 **Kosenko Nadiya**– Institute of Irrigated Farming of NAAS, Kherson

4.4 **Viktor Tymchuk**– *Luhansk National Agrarian University*

Volodymyr Matviets– *Precarpathian state agricultural experimental station of the Agricultural Institute in Carpatian Region of NAAS*

Liudmyla Biliavska–*Poltava State Agrarian University*

4.5 **D’omin Dmytro**– Poltava State Agrarian University

Kulyk Maksym– Poltava State Agrarian University

Rozhko Ilona– Poltava State Agrarian University

4.6 **Mykola Savka**– Agricultural Institute in Carpatian Region of NAAS

Nataliia Matviets– Precarpathian state agricultural experimental station of the Agricultural Institute in Carpatian Region of NAAS

Olha Polulikh– Agricultural Institute in Carpatian Region of NAAS

4.7 **Olena Khrebtan**– Chernihiv Polytechnic National University

Zhanna Zamai– Chernihiv Polytechnic National University

Oksana Gumeniuk– Chernihiv Polytechnic National University

4.8 **Ostanina Natalia**– State Institution “O. M. Marzeyev Institute for Public Health of the National academy of medical sciences of Ukraine”, Kiev

Kuznetsova Olena – State Institution “O. M. Marzeyev Institute for Public Health of the National academy of medical sciences of Ukraine”, Kiev

Ocheretyana Natalia– State Institution “O. M. Marzeyev Institute for Public Health of the National academy of medical sciences of Ukraine”, Kiev

4.9 **Ostanina Natalia** – State Institution “O.M. Marzelev Institute for Public Health of the National academy of medical science of Ukraine”

Briazkalo Vadym– State Institution “O.M. Marzelev Institute for Public Health of the National academy of medical science of Ukraine”

Cheremenko Anatolii – State Institution “O.M. Marzelev Institute for Public Health of the National academy of medical science of Ukraine”

Vlodek Oleksandr– State Institution “O.M. Marzelev Institute for Public Health of the National academy of medical science of Ukraine”

Gumeniuk Alexey – State Institution “O.M. Marzelev Institute for Public Health of the National academy of medical science of Ukraine”

4.10 **Oshovsky Victor**– Pervomayska branch of the National university of shipbuilding of the name of admiral Makarova

Dotsenko Sergii– Pervomayska branch of the National university of shipbuilding of the name of admiral Makarova

Kairov Alexiy– Pervomayska branch of the National university of shipbuilding of the name of admiral Makarova

4.11. **Ganna Bedradina**– Odessa National Economic University

Sergiy Nezdoymynov– Odessa National Economic University

4.12 *Soroka Larysa*– Izmail State Human University

Ivanenko Iryna– Izmail State Human University

4.13 *Anna Boiarska-Khomenko*– H. S. Skovoroda Kharkiv National Pedagogical University

Dmytro Volodymyrovych Sotnikov– H. S. Skovoroda Kharkiv National Pedagogical University

Kateryna Volodymyrivna Shmatko– H. S. Skovoroda Kharkiv National Pedagogical University

4.14 *Natalia Ostanina*– State Institution “O.M. Marzeyev Institute for Public Health of the National Academy of Medical Sciences of Ukraine”

Julia Lysenko– State Institution “O.M. Marzeyev Institute for Public Health of the National Academy of Medical Sciences of Ukraine”

Raisa Stovpovska–State Scientific Research Laboratory for Quality Control Medicines

PART 5. INTERDISCIPLINARY APPROACHES IN RESEARCH AND EDUCATION

5.1 *Piminov Olexandr*– National University of Pharmacy Institute of Pharmacy Professionals Qualification Improvement, Kharkiv

Shulga Luydmila– National University of Pharmacy Institute of Pharmacy Professionals Qualification Improvement, Kharkiv

Faizullin Olexandr– National University of Pharmacy Institute of Pharmacy Professionals Qualification Improvement, Kharkiv

Bezkrivna Kateryna– National University of Pharmacy Institute of Pharmacy Professionals Qualification Improvement, Kharkiv

5.2 *Ilnytska Liubov*– Ukrainian Humanitarian Institute

5.3 *Konoplytskyi Viktor*– department of pediatric surgery National Pirogov memorial medical university, Vinnytsia, Ukraine.

Pasichnyk Oleh – department of pediatric surgery National Pirogov memorial medical university, Vinnytsia, Ukraine.

5.4 *Volodymyr Tkach*–Chernivtsi National University named after Yuriy Fedkovich, Ukraine

Marta Kushnir–Chernivtsi National University named after Yuriy Fedkovich, Ukraine

Yana Ivanushko –Bukovina State Medical University, Ukraine

Silvio S. de Oliveira– Federal University of the State of Mato Urosso do Sul, Brazil

Petro Yagodinets–Chernivtsi National University named after Yuriy Fedkovich, Ukraine

Zholt Kormosh –Volynskiy National University IM. Lesi Ukrainka, Ukraine

Yuliya Bredikhina –Melitopolsky State Pedagogical University IM. Bohdan Khmelnytsky, Ukraine,

Olga Luhanska –Zaporizhzhya National University, Ukraine

Adriano O. Da Silva– Federal University of the State of Pará, Brazil

5.5 *Viktoriya Gryshchenko*– National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

Viktor Tomchuk–National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

5.6 *Mnushko Zoia* – Kharkiv Medical Academy of Postgraduate Education National University of Pharmacy

Pestun Iryna – Kharkiv Medical Academy of Postgraduate Education National University of Pharmacy

Parfyonova Irina – Kharkiv Medical Academy of Postgraduate Education National University of Pharmacy

Draganova Olena – Kharkiv Medical Academy of Postgraduate Education National University of Pharmacy

Oganezova Ganna – Kharkiv Medical Academy of Postgraduate Education National University of Pharmacy

Rohova Olena –Kharkiv Medical Academy of Postgraduate Education

National University of Pharmacy

5.7 **Nikolaieva Yana**– State Institution “O.M. Marzieiev Institute for public health” NAMSU, Kiev

Ostanina Natalia – State Institution “O.M. Marzieiev Institute for public health” NAMSU, Kiev

Levin Mikhail –State Institution “O.M. Marzieiev Institute for public health” NAMSU, Kiev

5.8 **Sakhno Larysa** –RE Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of the NAS of Ukraine, Kyiv, Ukraine

Pyatchanina Tetiana –RE Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of the NAS of Ukraine, Kyiv, Ukraine

Shapran Oleksandr –Kyiv National Economic University named after Vadym Hetman, Kyiv, Ukraine

5.9 **Konoplitskyi Viktor**– department of pediatric surgery National Pirogov memorial medical university, Vinnytsia, Ukraine.

Korobko Yurii – department of pediatric surgery National Pirogov memorial medical university, Vinnytsia, Ukraine.

5.10 **Konoplitskiy Viktor** – Department of Pediatric Surgery, National Pirogov Memorial Medical University, Vinnytsya

Shavliuk Ruslan –Department of Pediatric Surgery, National Pirogov Memorial Medical University, Vinnytsya

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Monograph 43

Innovative approaches to ensuring the quality of education, scientific research and technological processes

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Victoria Bondarenko

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MONOGRAPH

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