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СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

МАТЕРІАЛИ

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НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ
СТУДЕНТІВ, АСПІРАНТІВ ТА ВИКЛАДАЧІВ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ
КАФЕДРИ ІНОЗЕМНИХ МОВ**

«TO MAKE THE WORLD SMARTER AND SAFER»

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FOREIGN LANGUAGES DEPARTMENT
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"TO MAKE THE WORLD SMARTER AND SAFER"

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To Make the World Smarter and Safer: Матеріали XV всеукраїнської науково-практичної конференції студентів, аспірантів та викладачів Лінгвістичного навчально-методичного центру кафедри іноземних мов СумДУ (31 березня 2021 р.) / за заг. ред. доцента Таценко Н.В. – Суми : СумДУ, 2021. – 96 с.

У матеріалах подані тези XV Всеукраїнської науково-практичної конференції студентів, аспірантів та викладачів Лінгвістичного навчально-методичного центру кафедри іноземних мов СумДУ. До збірника ввійшли наукові дослідження, присвячені актуальним проблемам сучасних інноваційних технологій та процесів у науці, техніці та різних сферах людської діяльності.

Для молодих науковців, викладачів і студентів усіх факультетів.

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За зміст статей і правильність цитування відповідальність несе автор

SECTION 1 INFORMATION AND ENGINEERING TECHNOLOGIES

TECH NAMES: DO WE KNOW THEM?

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People are known to be inventors and have ever been creating something new. It started with the simplest inventions like the wheel and now modern innovations have transformed the way we communicate, work, and all our live habits. Globalization has caused using the same devices and gadgets all over the world, therefore, scientists are fighting for the primacy and the right to give a name to their originations. Before, names that help us to define technological devices often came from ancient Greek and Latin roots. “Tele-” – over a long distance, “-logy” – from *logía* – branch of study, “micro-” –small or a factor of 10^{-6} , are the examples of such affixes.

Presently English is a global language, and foremost it is a language of science and technology. Many modern appliance names originate from English. To make life simpler for people who are not experts, scientists began to use acronyms to name devices. Acronyms, a type of abbreviations, first came in sight in Brockhaus dictionary in 1922, now are common among many languages. But do we know we are using them? We take a word “laser” for granted. But only few know that it is the acronym denoting “Light Amplification by the Stimulated Emission of Radiation”. The next one is the radar, which stands for “radio detecting and ranging”. Another example is the scuba, defined as “self-contained underwater breathing apparatus”. All these acronyms show how to reduce the speaking time in the conversation and economize space in documents. Although the word computer is not an acronym, it can also be termed as “Common Operating Machine Purposely Used for Technological and Educational Research”. The specific feature of acronyms is that we cannot translate them in a traditional way. They are like

fused words, thus, travel from the original language becoming international words.

In our modern tech world, we should learn foreign languages to feel a united world and promote mutual understanding. The knowledge gained by studying foreign languages helps to enhance logical, cognitive and analytical abilities and skills.

WHAT IT TAKES TO BE A C++ DEVELOPER

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The information technology (IT) field has been growing as well as a labor market. Companies require high-skilled professionals with knowledge of various programming languages. The C++ developers are among the most demanded professionals. C++ language is used all over the world to develop operating systems, browsers, games, etc. IT recruiters do a great job reading loads of resumes and interviewing applicants. What exactly are they looking for in a C++ developer?

To be a good programmer you need to have the proper educational background. You might need at least a bachelor's degree in Computer Science or Engineering. Good object-oriented programming, algorithms and data structure knowledge is mandatory. Understanding TCP/IP protocol and software lifecycle experience may become an advantage while job seeking. Besides, you need to have experience with different operating systems, such as Windows, Linux, Android, and iOS. All these skills are called hard skills. They relate to specific technical knowledge and training.

However, hard skills are not the only requirement for a good C++ developer. So-called soft skills are crucial to succeed. Developers work closely with other engineers and specialists to develop new products. Perhaps, the main soft skill is to be a good team player. The success of a product, and therefore a company, is

the result of the team's hard work and efforts. Soft skills such as open-mindedness, communication, and adaptability are a key to become recognizable for hiring managers and successful as a developer. Companies look for an employee with the ability to resolve issues proactively to deliver high-quality products.

A C++ developer needs strong hard and soft skills. Writing efficient and reliable C++ code is still the cornerstone of C++ developer's activities. But expectations from developers evolve, as they still interact with peers. Along with being excellent at writing codes, C++ developers need soft skills in their toolbox.

SMART HOUSE

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We all live in the 21-st century. So we can't imagine our life without modern technical inventions. One of them is a smart-house.

A smart-house is a system of invention that can independently perform certain tasks without human intervention. The first smart-house was made in 1984 by National Association of Home Builders. Disney studio introduced the idea of a smart-house to the general public in 1999. Nowadays Schneider Electric, ABB, Gira and Merten are the most common firms that make smart-houses.

All smart-houses consist of 3 parts:

1. A controller is a device that unites all the elements of the system into one aggregate and connects it with the outside world.

2. Sensors are devices that receive information about external conditions.

3. Actuators are devices that directly execute commands. This is the most numerous group which includes smart switches, smart sockets, smart valves for pipes, sirens and climate controllers.

People use smart-house for certain purposes. Firstly, a smart-house makes your house safer with the help of modern controllers. Secondly, you can control microclimate remotely. Thirdly, if you install a special application on your phone you can water your garden when you are out.

So this function is very comfortable for people, because they help to users manage the house.

Speaking about the price you can buy a smart-rosette Xiaomi Mi Smart Plug WIFI which is one of the devices in a smart-house for 485 UAH. A creation of a Smart House with a minimal set of functions will cost from 300 euro. These are examples of budget options.

The Premium option costs more than 1 500 euro.

Consequently, a smart-house is a great and necessary invention for modern people. For example, more than 45 million users use smart houses in Europe and the North America.

TESTING THE FRONT-END PART OF THE WEB-APPLICATION

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The correct operation of a developed Web-application is the main development goal of any company. To achieve this goal, additional modules are introduced at the development stage, but the developed application requires testing after the development as well, especially the front-end part, because the user interacts with it directly and the incorrect operation of the application has very serious consequences. Creation of unit-tests is a priority task after the development of the application, which will confirm or deny the correctness of the application. The problem with writing tests is that the classic approach has disadvantages when scaling, such as writing a very large web of checks for each mapping variation.

As an alternative, testing was done by developing special snapshots (benchmark snapshots of the display of components).

For each test, a snapshot was created that was considered as a benchmark snapshot, that is, one in which the correct operation of the application is guaranteed. When the corresponding tests are run, the result of the display is checked for consistency with the benchmark snapshot. If the benchmark does not yet exist, the first time the test is called, it will do so. The snapshot reflects how the component has changed during development and provides additional visual documentation. Using a snapshot allows to write several tests for a component to make a snapshot of different use cases and to build on the changes between the benchmark snapshot and the new implementation during refactoring. The generated snapshots are stored with the components in the version control system; this allows to control changes in the component code and consequently to control changes in the original results. The result are considered as an increased risk of errors, which can be caused by the lack of human attention. The entire team is required to keep a close eye on the status of snapshots. It is very important not to update snapshots "blindly," but to keep track of how new changes have affected test execution. A comparative analysis showed that the time spent on developing snapshots is less than the time spent on classic tests one and a half times less, and the speed of compiling snapshot tests is three times faster than the compilation of classic tests.

Snapshot is a very simple concept that minimizes the complexity of scalability when writing tests, making them easier and faster to write. However, it is important to note that this approach imposes an additional responsibility on their later support.

THE SENSING ELEMENT OF THE MAGNETIC FIELD
SENSOR BASED ON COMPOSITE MATERIALS SUCH AS
MAGNETIC - NON-MAGNETIC METAL

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Today, it is very important to conduct fundamental research on the physical properties of new nanoscale functional materials. This topic is relevant in the context of the development of the elemental base of spintronics. The aim of the work was to study the magnetoresistance properties of the sensitive element of a magnetic field sensor, formed in the form of film systems based on composite materials of the magnetic-non-magnetic metal type, and to study the influence of size and temperature effects on the nature and magnitude of magnetoresistance effects.

The task was to form a composite film material of the magnetic - non-magnetic metal type in order to form a sensitive element of a magnetic field sensor on its basis. The Permalloy $\text{Ni}_{80}\text{Fe}_{20}$ alloy was chosen as a ferromagnetic material, and silver as a non-magnetic component. The condensation of the samples was carried out by the method of simultaneous electron-beam evaporation. The study of the magnetoresistance properties of the existing systems was carried out in order to establish the features of the field dependencies of the magnetoresistance depending on the total thickness of the system and on the heat treatment process to determine the optimal parameters for the formation of thermostable magnetic field sensors.

In the samples obtained, the concentration of silver atoms is $c_{\text{Ag}} = 60$ at.%. For the samples obtained, the value of the magnetoresistance was measured at different temperatures, for different geometries. After determining the values of the magnetoresistance, the sensitivity of thin-film systems to the magnetic field was calculated. It was based on Permalloy $\text{Ni}_{80}\text{Fe}_{20}$ and Ag after thermal annealing to $T = 300, 500, 700$ K, for various geometries.

The magnitude of the magnetoresistance for freshly condensed samples does not depend on the measurement geometry, while the field dependencies of the magnetoresistance do not saturate even when an external magnetic field is applied up to 600 mTl. An increase in the total thickness of the samples from 60 to 100 nm leads to an increase in the MR value from 1.0 to

1.7%. The maximum sensitivity in the studied composite materials, 3%/Tl, was obtained for the sample after annealing with a total thickness of 100 nm. In the course of thermal annealing, a decrease in the S_B value was observed in all samples. In general, in terms of S_B value, composite materials of the ferromagnetic - nonmagnetic metal type meet the requirements for sensors with a high response rate to changes in magnetic flux, as well as for sensors whose main function is to detect weak magnetic fields.

WEB SIMULATORS FOR LEARNING OPENGL

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The main goal of the work is to develop a series of training web applications for the discipline "Computer Graphics" for the distance learning environment of SSU University on the subject of the OpenGL specification. The key issues are to simplify the process of studying the material, to retain the user's attention, to check the quality of learning the material.

The theory of the OpenGL specification is presented online only in a textual representation (manuals, articles), which very often has unpleasant design for the eye. Information, well structured, presented in a graphic decoration and supported by practical tasks, will definitely improve the quality of learning.

Web applications are developing with the help of using HTML web markup language, CSS cascading style language, JavaScript programming language, framework for web simulators of SSU distance learning environment. The interface is created by using the Bootstrap CSS-framework to speed up development.

The study resulted in almost developed series of web applications that combine the presentation of theoretical information with the parallel providing of practical tasks (tests). The result of the session is the display of the user's results (number of correct answers and time of session). Web applications, in the future, will be hosted in the course "Computer

Graphics" in the distance learning environment of the Sumy State university.

In conclusion, it should be stressed that the developed product will add variety to the learning process and make the process of studying the information of the OpenGL specification more interesting.

ANALYSIS OF STATIC STABILITY OF SYNCHRONOUS GENERATORS IN THE MATLAB SOFTWARE PACKAGE

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This paper describes the approach to energy modeling systems with a three - phase synchronous generator in the Matlab package, with in order to compare the obtained characteristics with the results calculations that were performed in the classical way.

The calculation of the steady state is carried out in relative units at disconnected ARZ generator, taking into account the selection of power own needs. The scheme of substitution of the transmission circuit is shown in figure 1 (base voltage and power $U_B = 115kV, S_B = 1000 MVA$).

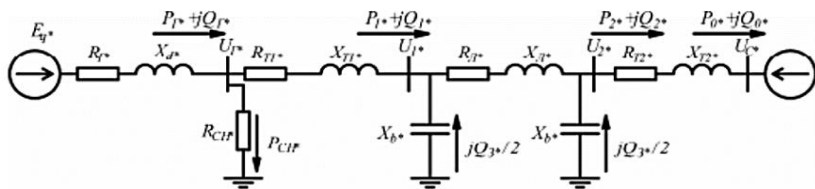


Figure 1 – Transmission circuit replacement scheme

Simulation in MATLAB / Simulink was performed in two stages. Initially, with the help of the "powergui" block steady network mode was calculated and synchronous mode parameters were determined for the generator, while setting both the active power and voltage on its outputs, or its active and reactive power.

Then the calculation of instantaneous values of currents and voltages in windings of circuit elements and other parameters depending on time was performed.

The collected program was checked for voltage compliance in nodes and power flows with values that were obtained for mathematical model. According to the results of their comparison it made possible conclude that the difference does not exceed 1%.

Modeling of generator operation modes with maintaining constant voltage at the terminals by adjusting its EMF was performed. The obtained curve (figure 2) is similar to the angular characteristic active power of the generator. The figure shows that the differences curves begin only at angles greater than 80° .

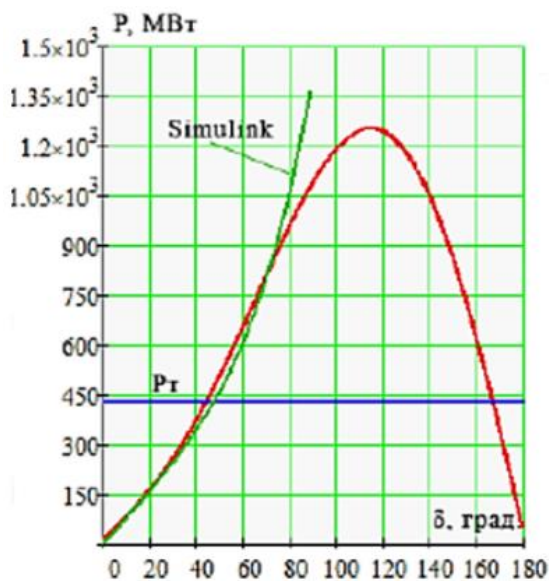


Figure 2 – Angular characteristic

Conclusions:

1) The MATLAB / Simulink package contains a simulation model of the system electricity transmission and simulated the established mode of its operation;

2) A comparison of mode parameters and angular characteristics of the active power of the synchronous generator, obtained in the model, can be calculated by the classical method.

APPLIANCE OF MAGNETOCALORIC EFFECT IN IRON-BASED THIN FILM SYSTEMS

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Today it is well known what impact magnetocaloric effect has on the physical parameters of the films, but there are no studies with a parallel presentation of the results and their practical application yet. The purpose of the work was experimental research of physical properties in thin-film systems based on precious metals and iron as well as their application in real devices.

The topic of the study was the influence of different metals in multilayer thin-film systems on the magnetocaloric effect, physical properties and using them in modern devices. The key issue considered, was the magnitude of the magnetocaloric effect in film alloys with using iron or precious metals.

Current studies do not contain information on the actual practical application in electronics of the physical properties obtained during the experiment. It is impossible to test all alloys but by choosing a few of them new results can be obtained.

Using a special installation allows to get the expected results. The specific feature of this study is that the thin-film systems, on the basis of which the measurement of physical quantities was carried out, were further used to build devices in electronics. They were and tested in real time.

As a result of the experiment, we can observe a significant magnetocaloric effect of ferromagnetic materials in a much wider temperature range. The greatest values it acquires in multilayer systems with the addition of iron and precious metals, which was confirmed by an increase in performance of devices based on

these materials. This allowed to increase the power of the device and reduce energy consumption.

Magnetocaloric effect has significantly higher values in ferromagnetic than in paramagnetic materials. This means that such materials are promising for their application in various magnetic devices. The results show that the devices based on this thin-film systems will significantly reduce the cost of production equipment in the future and give a boost to the development and improvement of various industries by improving their efficiency.

CREATION OF MODELS FOR INVESTIGATING RELAY PROTECTION SCHEMES

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Currently, the topical issue is the creation of virtual laboratory stands to determine the characteristics of the elements of relay protection in remote form. Also, many relay protection laboratories have outdated equipment, so during the experiments, there are significant deviations in the characteristics of devices and circuits. Some relay protection circuits cannot be assembled in the laboratory, so it is not possible to investigate the operation of the devices and the effects of different protection circuitry.

This paper uses the MatLab software package to create models for introducing the components of relay protection switching circuits and identifying the main characteristics of relays.

The first model demonstrates the operation of a current relay. The circuit consists of an AC voltage source to which a switch, rheostat, ammeter, and RT-40/2 relay are connected. The voltage, resistance, setpoint, and connection methods of the relay coils can be changed. The model takes into account the real characteristics of the RT-40 relay, which allows to find the return factor. The dependence of the operation time of the real relay is taken into account, which allows investigating the characteristic of the operation time of the RT-40/2 relay on the current multiplicity.

The following model simulates the operation of the RBM-171 power relay, switched on to the 90-degree circuit. The stand consists of two three-phase power supplies with a voltage of 10 kV, which are connected to the power line by switches that are part of the substations. Each of the substations has its consumers, which are connected by turning on the toggle switches. On the virtual stand, it is possible to adjust the full load power, phase shift, and change the direction of power flow. The model of the relay is based on its real technical data, which allows to experimentally obtain the characteristics (sensitivity, angular) and the angle of maximum sensitivity.

It should be also noticed that the models are compiled as files that run on a computer without using MatLab.

VISION OF THE FUTURE TECHNOLOGIES

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As you know, we invent new things faster and faster. And the times are not far off when we or our children will be able to see what we are shown in science fiction. Perhaps it will be a little different from what we imagined. But the fact of the realization of all this excites.

For example, holographic communication is possible in the future. Also, let's not forget about flying cars. They must appear because people will be able to find more beneficial energy sources. Modification of the human body will also be developed and widespread. With the help of technology people can become stronger and smarter by their will. This will open great horizons, but will cause some problems in society. People will wonder about the humanity of such extensions. By the way, at a certain level of development of the technological expansion, communication will move to a new level, namely communication directly to the brain (like telepathy but with the help of technology). After the stage of connection, people will be able to transfer their minds to objects that are not compliant with time.

This is just the smallest part of the technology that awaits us in the future. But we must not forget about the problems caused by some advancements of technology. The development of different energy sources will create even more dangerous weapon. The development of extensions and teleportation technology by means of fission and transfer will raise many questions about humanity leading to the rallies. And another way of teleporting using the wormhole method is dangerous by destroying space. Sounds terrible, doesn't it.

So, is it worth inventing all this high technology? YES. No other way. We, as people, cannot stop progressing. But before inventing something, we need to predict all the risks and whether it will be really useful to the mankind.

DOCA – APPLICATION FOR WORD ANALYSIS

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There is a lot of data in modern world. The data should be structured, understandable and easily processed by machine and a human. The accumulation of data is necessary to solve the problems of business and science. Every organization, institution, enterprise must process a large number of documents every day: receive and create new ones, view and edit existing ones, have access to documents from electronic archives. Optimization the search for the documents can use methods of analysis of unstructured data, which are contained, in particular, in Word-files. With the growing amount of information, and in particular the amount of unstructured data, there is a need to analyze them and improve the search for this data.

Doca is a system that allows you to upload documents for processing and search among processed documents. The system was developed with NodeJS, Python, Kotlin using database Elasticsearch, ui platform Kibana, React and message broker RabbitMQ. Doca has microservice architecture. It gives the opportunity to create a scalability system. VGG16 is used as a

neural network for imaging classification. We used TF/IDF to produce text classification and analysis.

The analysis result:

	relevant	no relevant
found	943	117
no found	57	883

The obtained results testify the suitability of the developed information system for practical use.

QUICK GUIDE TO A USER OF COLLABORATIVE FILTERING ITEM

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A recommender system is a system that generates proposals based on the analysis of relevant information obtained from a virtual data warehouse, which consolidates numerous sources. Its work is based on the analysis of the user behavior in the service or knowledge of the subject area. The main task of the recommender system is to provide the user with information about a product or service that may be of interest to him.

Recommender systems are used to increase profits, which is achieved by improving customer service by providing the right recommendations. Companies can also send personalized offers to the mail, and thus retain customers. Such actions encourage customers to use the company's services more often, which makes the company more competitive in the market.

Collaborative Filtering is a powerful mechanism of building recommender systems. The main approaches of Collaborative Filtering are User-Based and Item-Based. There are also hybrid approaches which combines the strengths of these two and removing the weaknesses.

User-Based approach recommends items based on ratings given to this item by other users whose rating pattern is close to the active user. If some people rated multiple items on the same level, then we can assume that they have similar tastes. Item-Based approach searches for items which were rated in the same way as items rated by an active user.

There are multiple problems in Collaborative Filtering: sparsity problem, cold start, gray sheep, shilling attack. This fact should be taken into account in the process of designing the recommender system.

Two approaches in Collaborative Filtering have good predictive power and don't require a lot of data. However, they also have limitations and problems in some situations.

TECHNOLOGIES FRIENDLY TO PEOPLE

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Many people think that good equipment and complicated systems are equal to high living standards, but others do not agree. Let's start by highlighting some aspects of high standards: safety, accuracy, availability, speed, simplicity and so on. We can analyze modern technologies that correspond to these aspects.

The first think is the drones. While the word “drones” still stands out as a bug in some text editors, in fact, these devised are widely used in military, rescue, cinematic, rural, inspection and police activities. Due to their small size and high mobility, they are often used where a human cannot pass or where it will take more resources.

The second technology, that worth highlighting is modern surgical equipment, such as a ventilator, which until this day helps save lives. The main aspects are accuracy and speed. Every surgery must be as low-risk as possible and for this, along with the experience of surgeon and the rest of the medical staff, suitable equipment is required. Thanks to modern technology has

advanced far ahead and learned to carry out the most complex operations that require incredible precision.

It is also worth considering the technologies that are designed to simplify our lives. Most of them are concentrated in one device - our phone. We have a huge number of built-in functions available that adapted to us, as well as a huge number of applications for any genre and for any purpose. For example, the possibility of contactless payment using the NFC module allows you to make transactions without the participation of cash or a bank card. There are a huge number of such applications, the only limitation is the capabilities of the phone.

In conclusion, there are also a huge number of other devices, such as self-driving, a smart home system, various kinds of sensors, and much more. Of course, there is an opinion that new technologies are replacing old professions, but they also create new ones. It is worth noting that there is a possibility of system errors or some functional flaws, which will entail unpleasant consequences. But if you count all the pros and cons, then there will be more pros. Just like we change technology, technology changes us.

ALGORITHMS OF CALCULATION AND ANALYSIS OF VOLTAGE HARMONIC FREQUENCIES.

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Today, operating electrical networks cause incidents that are characterized by the deviation of parameters from the nominal values. Particularly important are the deviations of the amplitude, frequency, and non-sinusoidal voltage and current of the network. Normal and limit acceptable values are standardized according to the State standard of Ukraine DSTU EN 50160: 2014.

To calculate the basic parameters of electricity quality, it is not enough to know the methods of their calculation according to DSTU. Additional algorithms are required to determine the voltage and frequency of the fundamental harmonic, as well as the

coefficient of the n -th harmonic component of the voltage and the coefficient of curvature of the sinusoidal voltage curve. This is a discrete Fourier transform (DFT) algorithm. This algorithm is developed to analyze signals. But the DFT has not been widely used in the calculation performed by modern software, because it takes considerable time to calculate the result. Therefore, it is better to use a fast Fourier transform (FFT) algorithm.

This algorithm uses the properties of the periodicity of the trigonometric function, which reduces the number of multiplication operations. The results of using the FFT algorithm are similar to the DFT, but the number of operations required for calculation in the FFT is smaller.

However, the FFT algorithm can give a significant error in determining the frequency estimation. This deviation is due to the multiplicity of time between the measurements of the signal and its period. In the case when the period of the analogue signal is not a multiple of the distance between the measurements of the sampled signal, the accuracy of determining the parameters of the harmonics by the FFT method will be reduced. In this case, it is better to use some other methods. It can be Jacobsen's Modified method, Quadratic Estimator, Quinn's Estimator, Quinn's Second Estimator, Macleod's Estimator, Grandke's method, Parabolic Interpolation, Gaussian Interpolation. The essence of these methods is to find the intermediate values of the series available. In other words, they are applied to complete building sine intermediate values, and the resulting correction does not change the structure of the signal.

In conclusion, it should be noted that the development of algorithms and software to reduce the number of calculations while maintaining the specified accuracy of the calculation for determining the main parameters of the harmonic signal is a really urgent task.

ALTERNATING CURRENT IN THE PAST AND FUTURE

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Oksana Gladchenko, Academic Supervisor

Alternating current is an electric current which periodically reverses direction and changes its magnitude continuously with the time in contrast to direct current which flows only in one direction.

Alternating current (AC) is one of the biggest inventions all over the world. That is why we must be grateful to Nikola Tesla, who has won the battle of the currents between him and Thomas Edison who was a DC follower.

The advantages of alternating current:

- Its voltage can be modified relatively easily using a transformer, which allows power to be transmitted at very high voltages before being taken down to safer voltages for commercial and residential usage.
- Maintenance costs of high speed alternative current motors are low.
- It is easy to interrupt the current due to the current going to zero naturally every $1/2$ cycle.

The disadvantages of alternating current are:

- The complexity of assembling the power of different generators.
- Increased load on dielectrics.
- It is more dangerous at usage.

Speaking about AC usage most devices which are directly connected to the electrical grid operate on alternating current, for example large factory dynamos. Electrical outlets in homes and commercial areas supply alternating current as well. Such devices as laptops that require direct current, usually have an AC adapter that converts alternative current into direct one.

Tesla's discovery had forever turned the imperialism of modern electricity. It goes without doubt that we must develop his

ideas and apply his knowledge to create something new and modern. Undoubtedly, this path is followed by one of the greatest minds of our time, Elon Musk.

As the co-founder and CEO of Tesla, Elon Musk leads all product design, engineering and global manufacturing of the company's electric vehicles, battery products and solar energy products.

“Tesla” produces different modern cars which use solar energy. Solar energy leaves alternating current behind due to its aforementioned disadvantages. Besides, “Tesla” became the world’s first vertically-integrated sustainable energy company with the acquisition of Solar City, the leading provider of solar power systems in USA.

Tesla's works inspire people to new inventions that will compete for the improvement of our world and lead to its development.

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THE RESULTS OF THREE-LAYER CALCULATIONS FILM SAMPLES OF SPIN-VALVE TYPE

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Magnetic sensors for recording /reading information have found wide application in computer technology. An important component in the development sensors are experimental and theoretical studies of thin-film structures in which the phenomenon of GMR is observed. These devices have a number advantages, such as energy dependence in information storage modes, compared a large number of cycles of writing /reading information, radiation resistance etc. GMR devices are also used in various fields of electronics - from computer equipment and automation devices to automotive, space industry and medicine. Thus it will be appropriate to find out the parameters they depend on and determine how the GMR varies depending on the material.

The main task was to determine the parameters of the spin-dependent scattering of electrons in three-layer structures. In the study the system Fe/Au/Fe/P was selected, where Fe - ferromagnetic layer, Au - non-magnetic layer. Different resources data enlisted in the research were used for calculation of magnetoresistivity properties (namely - magnetoresistance) for samples of two types: I - structures Fe(5)/Au(dAu)/Fe(5)/ Π (where P is the sieve substrate, dAu = 3- 10 nm - the thickness of the non-magnetic layer); II - film structure Fe(15)/Au(dAu)/Fe(15)/ Π (dAu =3-10 nm).

Then a number of the parameters were calculated, namely, volume asymmetry, resistivity of the majority and minimum charge carriers, the spin asymmetry parameter and analyzing the data for the parameter of volume asymmetry m . It should be noted that its value varies from 2.47 to 5.85 for Fe(5)/Au(dAu)/Fe(5)/ Π systems and from 2.71 to 3.85 for Fe(15)/Au(dAu)/Fe(15)/ Π systems. The calculated dependence of the spin asymmetry parameter β on the thickness of the non-magnetic layer d_n normalized to the thickness d_m of the base magnetic layer for the two types of samples is shown in Figure 1.

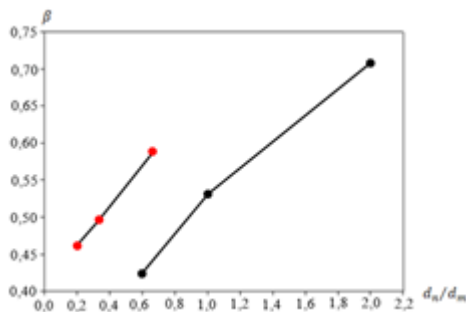


Figure 1 - Estimated dependence of the spin asymmetry parameter β on the thickness of the non-magnetic layer d_n normalized to the thickness d_m of the base magnetic layer for two types of samples

Analyzing the calculated data for the majority of charge carriers, we note that for the system Fe(15)/Au(dAu)/Fe(15)/ Π , in contrast to the system Fe(5)/Au(dAu)/Fe(5)/ Π , there is a decrease in the resistivity of the miniature charge carriers with increasing thickness of the nonmagnetic layer. Comparing the data of the

spin asymmetry of β , it should be noted that its value varies from 0.42 to 0.71 for Fe(5)/Au(dAu)/Fe(5)/II systems and from 0.46 to 0.59 for Fe(15)/Au(dAu)/Fe(15)/II.

ARTIFICIAL INTELLIGENCE RULES THE WORLD

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Artificial intelligence is a possibility of an engineering system to achieve knowledge, use it and its skills.

The creation of artificial intelligence begins with the annotation of data by graphic assistants. Specially trained people annotate pictures or videos by rules. The purpose is to make artificial intelligence understand the specification of a task. After these annotations, the system studies and does tasks by itself.

There are lots of spheres connected with artificial intelligence. Health care is one of the areas of applying artificial intelligence. In the past, doctors had to examine medical images themselves, such as CT scans, X-rays, MRI scans. The purpose is to determine problems to prevent something potentially harmful or life threatening. This process takes about 30 minutes to an hour. Artificial intelligence can give the same results in 15 seconds. Artificial intelligence systems may sometimes not be such accurate as humans, but they can do the same job much faster. It will save much time for hospitals and improve patient care, but it cannot replace medical personnel completely. Artificial intelligence-controlled robots can only increase the role of doctors, surgeons, nurses.

Another sphere is agriculture. Both artificial intelligence and robots are used in agriculture. For example, a robot for picking ripe peppers was designed. The robot must recognize the colour of the ripe pepper and distinguish it from other shades of that colour. It is necessary to denote a lot of pepper images because there are many possible shades of red, green, and yellow peppers. After denoting, the robot will distinguish ripe peppers from the rest and

help farmers to harvest. The technologies for which a person denotes data begin to save time and simplify life.

Another example is Grammar. Artificial intelligence makes writing easier by detecting and correcting mistakes avoiding plagiarism.

In most cases, people think that artificial intelligence is only robots, but these programs help specialists in different spheres and different ways as programs and as robots.

Artificial intelligence is well developed now and can solve big problems in the future.

The USB CONNECTION MONITORING SYSTEM FOR CYBERSECURITY AUDIT

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The small size and significant storage capacity make the USB drive an ideal tool for carrying out cyberattacks, prompting more and more companies to think about measures to protect against this threat.

The work aims to develop a system that will simplify the procedure for controlling the use of external media in the local network and will be able to meet the needs of small companies that cannot afford to purchase SIEM systems.

To achieve this goal, first of all, an analysis of the available solutions was conducted, which showed that free utilities do not have the required functionality to complete the task, and paid systems have redundant functionality and high cost. The next step was choosing technologies that meet project needs as a result of which C#, Python, JavaScript, HTML, CSS and PostgreSQL were chosen. The system was designed with a use of case diagram, activity diagram, deployment diagram, data flow diagram, and ER diagram. The last stage of the project was implementation and testing of the system.

The result of the work is the developed system, which consists of four software components. The first component is the

agent service. It allows to monitor the events of connection USB device to the computer, collect data about the events and the workstation and then sent them to the server service. The second component is the server service. Its main purpose is to receive information from workstations, check the data and write them into the database. The third component is a utility for configuring services. The final component is a web application that provides a user-friendly interface for data analysis.

As a result, a monitoring system for USB device connections that meets the needs of a small company was created. To achieve this goal an analysis of the available solutions was conducted, the means of implementation were selected, the system was designed, and software implementation and testing were carried out.

QUANTUM COMPUTERS

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A Quantum computer is a machine that uses the properties of quantum physics to store data and perform computations. It can be extremely advantageous for specific tasks where it could vastly outperform even the best supercomputers [1].

Unlike a personal computer, a quantum computer uses a qubit as the basic unit of information rather than a conventional (classical) bit. This alternative system's main characteristic is that it permits the coherent superposition of ones and zeros, the digits of the binary system around which all computing revolves.

In other words, a qubit can be both zero and one at the same time and in different proportions. This diversity of states makes it possible for a quantum computer with just 30 qubits, for example, to perform 10 billion floating-point operations per second (FLOPS), which is about 5.8 billion more than the most powerful PlayStation video game console.

This device has some advantages. There is a large amount of memory, a high level of information protection, increased data processing speed. Besides, it can perform too complicated

calculations. However, it also has disadvantages. First of all, designing a quantum computer is costly, and it requires knowledge of quantum physics. Secondly, parts, which are inside this device, need specific conditions: insulation from the magnetic field and atmospheric pressure, the ambient temperature inside the computer must be close to absolute zero, or -273° on the Celsius scale. Thirdly, quantum computing as a discipline isn't studied better.

According to the previous paragraph, people can't use a quantum computer at home. Still, it can be used in medicine for developing new drugs, in cybersecurity, in financial services, in traffic planning systems and route optimization, etc. [2].

To sum up, quantum computers can be used in different industries and science, but not in everyday life because designing is costly and needs specific conditions.

VERIFICATION IN OUR LIFE

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Oksana Gladchenko, Academic Supervisor

It is generally accepted that many people never think about how many infinite networks are embedded in ordinary user authentication. To make it easier to use, in the following thesis we want to explain user authentication details simply and succinctly.

Authentication is a procedure by which the system must give consent to enter into a particular system. This process is relevant because social networks, payment systems and others require high quality identity verification so that only the person with full access rights has an access.

There are two types of authentication: single-factor and two-factor. Single-factor implies using a single verification method and two-factor involves using multiple methods to more accurately verify the identity of the user. Two-factor is the most current method, as it is more secure, convenient and is the basis of many computer programs.

In addition, there are three types of cryptographic authentication protocols, the most relevant in each session is the request-response protocols. For example, once a user has received a request, he answers a secret question that he previously shared with the system. By demonstrating the knowledge of the answer, the identity of the subject is confirmed.

Speaking about the storage of passwords you are not allowed to store all of them in a plain text, because this can lead to a security breach. Hashes of entered passwords are stored in a database. They are a mathematical conversion of information into a string, which has a fixed length.

To sum up in view of the above arguments we assert that this procedure is an integral part of many systems and necessarily it usually requires user authentication. Consequently, it can help to keep sensitive data safe from intruders, especially in the case of using human biometrics.

SECTION 2 ECOLOGY, LAW AND ECONOMICS

THE IMPACT OF MILITARY CONFLICTS ON THE SOCIO-ECONOMIC SITUATION IN THE COUNTRY

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Gross domestic product (GDP) growth is probably the best indicator of how a country is developing and how its prosperity is changing. The faster a country's GDP grows, the faster the living standards of its inhabitants rise. Production is expanding, wages are rising, the state is increasing spending on various social programs and the needs of citizens. Leaders in many countries often talk about the need to increase GDP. But sometimes there are situations when the GDP rate begins to fall not due to the useless actions of citizens or government, but due to the actions of external political forces, such as sanctions or military intervention, various conflicts. Military conflicts affect the GDP of a country, and the welfare of these countries.

GDP is affected by the consequences of the armed conflict: the destruction of production facilities, infrastructure, transport, loss of land because of shelling, mining, pollution. In addition, the moving of labour forces from the country, losses among the civilian population have a side effect on this indicator. Some examples from the history prove this statement:

1. On January 16, 2012, several rebel groups launched a military campaign against the Mali government for independence or greater autonomy for northern Mali, an area known as Azawad. The conflict has resulted in a “coup d'état”, French intervention that supported the president, financial assistance from many EU countries, and Islamist intervention by insurgents. At the beginning of the conflict, GDP per capita was \$ 739, and after 715, the total change is -3.24%.

2. The first civil war in Libya in 2011 - an armed uprising of the tribes of the province of Cyrenaica and some parts of the Libyan army against the country's leader Muammar Gaddafi. As a result Gaddafi was assassinated, there started military intervention of NATO countries, including the United States. Muammar himself was supported only by the state army, Belarus and Syria. At the beginning of the conflict, GDP per capita was \$ 13,400, and after it - 6,650, i.e. the total change is -50.37%.

3. The Algerian Civil War, an armed conflict between the Algerian government and Islamist groups began in 1991 and lasted until 2002. The conflict ended with the victory of the government. The Islamic Salvation Front (IFF) first declared the end of the war, and then in 2002 the Islamic Armed Group was defeated by government forces. Violence, although of relatively low intensity, is going on up to these days. At the beginning of the conflict, GDP per capita was \$ 2359, and after it - 1743, ie the total change is - 26.11%.

4. The Russian-Georgian war of 2008 was an armed conflict between Georgia, Russia and the separatist groups of South Ossetia and Abkhazia on the other. The war began around an armed confrontation in South Ossetia in August 2008. In addition to the regular armed forces of South Ossetia and Russia, militants from Russia and Abkhazia took part in hostilities against Georgia. The parties accused each other of provoking hostilities. As a result, the two regions are partially unrecognized, as it was in the DPR and LPR. At the beginning of the conflict, GDP per capita was \$ 2,900, and after it - \$ 2,446, i.e. the total change is -15.65%.

5. The Iraq War was a military conflict in Iraq that began with the invasion of an international coalition led by the United States and the United Kingdom on March 20, 2003, to overthrow Saddam Hussein's regime. The result was the death penalty for Saddam Hussein and the transfer of responsibility from the United States to the new government. At the beginning of the conflict, GDP per capita was \$ 691, and after it - \$ 637, i.e. the total change is -7.8%.

6. The war in eastern Ukraine or the war in Donbas is an armed conflict started by Russian troops who invaded the Ukrainian Donbass in April 2014 after the Russian Federation seized Crimea, and a series of pro-Russian demonstrations in Ukraine and the proclamation of "state sovereignty" of DNR and LNR. The conflict is international in nature and has become a continuation of Russia's armed aggression against Ukraine. Geographically, it is local and covers parts of Donetsk and Luhansk regions of Ukraine. The conflict is going on up to these days. At the beginning of the conflict, GDP per capita was \$ 3104, and in 2019 it was \$ 3659, i.e. the total change is + 17%.

7. GDP underwent some changes in three countries as well: the United States, Russia, France, because these countries are involved in conflict, or are the initiators of many conflicts for profit, such as access to oil fields, i.e. earning money and global influence. USA: GDP per capita in 2000 was \$ 36,334, in 2019 - \$ 65,254, change is + 79%. Russia: GDP per capita in 2000 was \$ 1171, in 2019 - 28184, change + is 2306%. France: GDP per capita in 2000 was \$ 22,364, in 2019 - \$ 49,799, change is + 122%.

Countries like the United States, France and Russia, are profiting from the conflicts. They start and keep the domestic economy, which leads to GDP growth.

The data also show that Ukraine, unlike other countries, regulates its economy well during the conflict. This is an extremely important indicator that must be maintained in the future, but we must also wait for the end of the conflict so that the nation's well-being is felt in real life, and not only in economic indicators.

MARKETING: DÉFINITION, QU'EST CE QUE C'EST? EST-CE UTILE OU NON?

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De toutes les définitions sur le marketing, je préfère son approche étymologique: "marketer" qui veut dire mettre sur le marché. Cela correspond pour moi à toutes les analyses et les

actions nécessaires pour mettre un produit ou un service sur le marché et le vendre. Le marketing est donc l'essence même de l'entreprise et de l'entrepreneuriat. Ça n'est donc pas que de la communication.

L'analyse stratégique est une composante essentielle du marketing. Elle consiste à évaluer la pertinence d'adresser un nouveau marché ou de lancer un nouveau produit. Souvent, quand vous créez votre entreprise, vous faites du marketing stratégique sans le savoir, vous partez d'une conviction, d'une connaissance forte de votre secteur et vous vous contentez d'un business plan pour commencer, sans évaluer nécessairement la pertinence stratégique de votre projet. Une fois que votre entreprise devient plus importante ou parce que vous avez besoin de pivoter car votre première intuition n'était pas la bonne, il devient nécessaire de professionnaliser votre approche stratégique et de ne pas vous contenter de suivre vos intuitions: il faut étudier vos nouveaux marchés et comprendre leurs attentes et créer un véritable plan marketing. Cette dimension du métier est très souvent oubliée alors qu'elle a un impact direct sur la rentabilité et qu'elle ne s'improvise pas. Elle permet de déterminer le juste prix pour maximiser la rentabilité. Il s'agit de ne pas vendre trop cher au risque de perdre des clients, ni de vendre pas assez cher au risque de dégrader les marges. Il faut trouver le bon équilibre, modéliser et tester pour y arriver. Le marketing est essentiellement connu sur cette dimension-là et souffre aussi souvent d'un a priori par rapport à la communication. Qui d'entre vous n'a jamais entendu que les communicants étaient des manipulateurs, qu'ils vendaient du vent? Il y a quelques années, je me suis révolté contre un numéro de Cash Investigation qui ne traitait le sujet du marketing que sous l'angle de l'arnaque. Pourtant cette dimension de la discipline est tout aussi importante que les autres, elle fait plus part à la subjectivité que les autres plus rationnelles, mais peut aussi être évaluée, mesurée pour générer un véritable retour sur investissement. Au-delà de la communication, il y a le marketing opérationnel, la mise en oeuvre opérationnelle de votre stratégie

marketing, il s'agit du trade marketing qui traite de la relation entre une marque et son distributeur, du marketing relationnel, qui adresse tous les points de contact courrier, email, SMS, des opérations de promotion, de packaging, du street marketing, des événements, etc. Le marketing est devenu beaucoup plus riche et diversifié avec l'arrivée du digital et la possibilité pour chaque marque de devenir son propre média, de communiquer sur des canaux multiples beaucoup moins onéreux qu'avant. La TV, la radio, la presse étaient et sont toujours beaucoup plus chers qu'un site, qu'un blog ou qu'une présence sur les réseaux sociaux.

Si vous vous lancez ou si vous êtes déjà une marque établie, il vous est donc possible aujourd'hui de faire du marketing pour beaucoup moins cher qu'avant, de multiplier vos leviers d'action pour faire des opérations beaucoup plus rentables et moins dépendantes des médias traditionnels.

MODERN TECHNOLOGIES SAVE ENVIRONMENT FOR FUTURE GENERATIONS

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Modern world doesn't allow us to waste resources any more. Recently, more and more people have started to think and to understand that nature and its resources are not endless. People start to realize that animals are not entertainment for circuses or zoos, that buying new plastic bag every day really causes harm.

There exist the alternative energy sources. Everybody knows about wind farms or solar energy. But what about Pavegen paving slabs generating electricity? It was invented by an engineer Laurence Camball-Cook, the director of the British Pavegen Systems Ltd in 2009, when he was studying kinetic solutions for power grids.

He managed to create Pavegen paving slabs that generate and store electricity from the kinetic energy of walking pedestrians.

Every time someone steps on a tile, the renewable energy is collected from under their feet. The scheme of operation of such

slabs is like a doorbell: while there is a pressure, there is a sound signal. The tile consists of a flexible waterproof material, the surface of which deflects under the pressure of the foot (up to 5 mm). As a result of this process energy is generated, which is converted into electricity by means of a mechanism.

Besides, Lawrence is convinced that disruptive technologies are opening the door to changing people's relevance towards energy and reducing their dependence on fossil fuels and electrical grids. When he received funding, he began to make small batches of five tiles in order to test them in different ways: in schools, on the busy streets he threw green slabs on the floor to see if people would even want to walk on them. Fortunately, the answer was yes.

It should be mentioned that the original idea was to power lanterns and signs on city streets with the energy of people's footsteps. And in just three years, the company reached a level where its products could already be found in cities around the world.

This technology best fits to crowded pedestrian streets in modern metropolitan areas. This is the first considerable step for people to generate clean energy wherever paving slabs are accessible. The top surface of the tile block is made from 100% recycled rubber. The base of the tile is 80% recycled. The system allows you to upgrade existing sidewalk surfaces, and can be used in the construction of new sidewalks. Many industrial design professionals are confident that Lawrence Cambell-Cook's electrical paving slabs will soon be available worldwide.

CLIMATE CHANGE AT THE GLOBAL AND LOCAL LEVELS

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S.V. Podolkova, Academic Supervisor

Global climate change has become the greatest environmental problem of all people today. The consequences of this process are rapid changes in weather, hazardous and extreme weather events,

hail, drought, flooding and even more, it is causing great economic and environmental losses. During the last twenty-five years the average temperature in Ukraine has grown approximately by 1.5° C and the last 10 years have been the hottest in Ukraine.

The main reason for the temperature rise is considered to be human activity, namely, excessive consumption of fossil fuels, which causes the increase of greenhouse gases in the atmosphere. These gases include: carbon dioxide (CO₂), methane (CH₄), nitric oxide (N₂O), ozone (O₃) and water vapor. The increase in the concentration of these gases leads to the "greenhouse effect". Global climate change will lead to unpleasant consequences such as ice melting, droughts, sawing storms, changes in rainfall amounts, the emergence of climate fugitives, a decrease in biodiversity, and the spread of diseases characteristic for hot climates. What about minimizing the impact of global climate change, it is important to distinguish between some aspects such as counteracting climate change (interventions aimed at reducing greenhouse gas emissions) and adaptation (interventions aimed at increasing the resilience of ecosystems to climate change and the necessary changes in the management structure).

To minimise climate change at a global level, the starting point should be local actions. At the level of the country, or even a city, you can act in the following ways:

- 1) to develop a climatic characteristic of the territory and investigate changes in climatic conditions over the last 10 years;
- 2) to develop a plan of action to fight against climate change in various sectors of the economy;
- 3) to use the alternative energy sources;
- 4) to limit the space occupied by landfills (polluted areas);
- 5) to reduce emissions of greenhouse gases from the landfills and stock rising.

A contribution can be made by each of us by:

- 1) reducing the amount of waste production;
- 2) sort waste for recycling;

- 3) giving priority to local products;
- 4) buy products with a low carbon footprint;
- 5) change the use of packaging (buy as little as possible, use luggage boxes).

Having analyzed these facts, we can say that knowing how greenhouse gases are emerged, we can eliminate the sources of their origin in order to stop global warming and other negative consequences of greenhouse effect. Compared with other years, now there are much more inhabitants of the planet who will preserve the environment. The main thing should be remembered that even one person can make their contribution.

SECTION 3 ADVANCEMENTS IN MEDICINE

MEDICAL ETHICS

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The medical profession has been one of the most humane, and it remains so nowadays. Everyone knows that mutual respect and trust between a doctor and a patient is an important factor that affects the treatment process. When choosing a medical profession, you need to understand that it has a number of ethical standards, which, in turn, apply to different groups of medical professionals and medical institutions. Medical Ethics helps maintain a balance between a doctor and a patient by describing the moral principles on which this relationship should be built.

In Medical Ethics, there are several concepts that medical professionals rely on when choosing their future actions: consequentialism, utilitarianism, and deontology. Consequentialism asserts that the morality of an action depends only on its consequences, that is, "the ends justify the means". For example, your patient, having an incurable disease, agrees to surgery, but there is a small chance that he/she will live after it. Time passes before the planned operation, everything is already prepared, the operating theatre, instruments, medical staff, it remains only to put the patient in a state of anaesthesia and when the anaesthesiologist wants to perform the necessary actions, the patient asks: "Will everything be all right after the operation? Will I live?". Consequential ideology confirms that telling a lie in such circumstances is acceptable, although concealing the truth itself is not a moral act. An opposite concept to consequentialism is deontology. It states that whatever the consequences, you must always tell the truth. Therefore, if we consider the example given above, according to the ideology of deontology, the patient would be told the truth. The concept of utilitarianism implies providing more utility by choosing the best course of action. For example, you have the necessary amount of money to purchase some very

expensive laboratory equipment to replace the outdated ones, or to purchase a CT scanner that the hospital lacks. According to the utilitarian concept, it is necessary to purchase a CT scanner, because in the future it will be more useful, it will be used to diagnose almost every third patient, than to purchase some new laboratory equipment for replacement, and so as a result, the overall utility increases due to an increase in the number of diseases detected in time.

Nowadays, Medical Ethics has several main relevant topics, including abortion, transplantation, euthanasia and solving the issue of providing care in the context of a pandemic. Each of these topics is already resonant and causes a lot of controversy among healthcare workers, scientists, politicians, and common people. Each of the representatives has their own opinion on these issues, so it is extremely difficult to come to a common opinion so far.

In order for any system to work smoothly, it needs an appropriate algorithm of actions; the same is with medicine too. The moral principles provide medical professionals with the necessary algorithm of actions when interacting with the patient. Whatever the problems or innovations in the treatment, diagnosis or care of patients, the development of the latest biotechnologies or the modern equipment, the principles of moral norms and moral qualities of medical professionals, as well as their attitude to the profession will occupy the most important positions. On the other hand, moral principles guarantee the patient to be provided with information about their health status, treatment method, possible concomitant risk, as well as available alternatives to this treatment. And most importantly, any interventions or medical manipulations shall be carried out only after receiving the written consent of the patient. Therefore, Medical Ethics guarantees awareness of actions and their compliance with legal norms, both for the medical professional and for the patient, and also helps them come to an agreement in choosing treatment tactics.

THE USE OF HATE SPEECH AGAINST HIV-POSITIVE PEOPLE IN ARTICLE TITLES

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Hate speech is a common problem for Ukrainian society. It is one of the most powerful weapons of discrimination and humiliation. Its use leads to stigmatization of vulnerable groups and consolidation of stereotypes that are difficult to get rid of. In most cases, this stereotypical thinking is shaped by journalistic texts.

Let us consider how often journalists use hate speech against certain vulnerable groups on the example of titles of some online publications.

Journalists grossly violate ethical standards when they use the word “sick” in their materials. For example, “The number of sick with HIV / AIDS has increased in Lviv region” [1], “China has reported an increase in the number of sick with HIV and AIDS” [2]. Moreover, journalists make a big mistake when they write in their texts about the “terminally ill” category of people living with HIV. For instance, “HIV in Sarny: how many terminally ill people are in the area and where to get help” [3], “A hospice for terminally ill people will appear in Zaporizhia region” [4]. This wording is inappropriate because it reinforces the notion that HIV-positive people are helpless. It also automatically excludes such people from the community. We must remember that HIV is a virus, not a tool for instant self-destruction. Thanks to modern methods of treatment, this disease can be considered chronic, because it can be controlled.

Also, no less common is the use of the phrase “HIV-infected” in journalists’ materials. We can see such examples in the following article titles. “There are more than 1.3 thousand new HIV-infected people per month in Ukraine” [5], “In Eastern Europe, the number of HIV-infected people has increased by a third” [6]. In this case, the use of the passive participle is incorrect

because it involves infection against the will. That is, it makes a person a victim.

In conclusion, we can say that the use of hate speech is a big problem today. It is especially dangerous when employed by media representatives. We have identified the following reasons for their behavior: insufficient level of knowledge, lack of tolerance, attempts to increase readers' interest in the publication, and their own attitudes towards a certain category of the population. Such actions indicate non-compliance with ethical standards and low professionalism, so they should be condemned by the community. Currently, this problem is only in its infancy. Our society lacks educational background on this topic. However, we should pay as much attention to it as possible and not allow increasing the stigma of vulnerable groups.

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OUTWIT DEATH

D. Hrin – Sumy State University, group MCM-002
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Nowadays, the fight against aging is a popular topic. It is known that the maximum life expectancy can be 120 years. Moreover, who doesn't want to live longer? Of course, everyone wants to prolong their life. Therefore, medical professionals are trying to prevent aging.

Fifty years later, genetics has opened up the prospect of optimizing one's genetic potential and the way to prolong one's youth. This is due to the fact that with each cell division, the telomeres shorten, which ultimately leads to loss of cell capacity for division, physiological aging and death. Another important aspect is the quality of telomeres. They are easily affected and need to be restored, but do not have powerful repair mechanisms, as in other parts of DNA. This leads to the accumulation of partially damaged and poorly functioning telomeres, the low quality of which does not depend on their length.

For the first time in the history of medicine rejuvenating gene therapy was tested on humans (44-year-old Elizabeth Perrish). She began to undergo two rejuvenation programs at once. The first was aimed at preventing the loss of muscle mass that occurs with age. To do this, Elizabeth introduced the gene for follistatin: animal experiments have shown that it increases muscle mass by blocking myostatins, which inhibit the growth of muscle tissue.

The aim of the second program was to increase the level of telomerase production. An enzyme called telomerase is able to complete short telomeres, returning the cells to a second youth. Leukocytes in Elizabeth's blood became biologically younger, and "telomeres extended" by 20 years.

Finally, experts want to reverse aging in other organs and tissues. It is planned to use similar technologies to combat the external signs of aging, including skin aging. Compared to cloning, this method more humane and worthy of further development, so in one life a person can do a lot, and in two even more.

HEALTH-MONITORING NANOTECHNOLOGIES

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Carbon nanotubes have been the subject of research in the field of monitoring the condition of composite materials due to their best characteristics and excellent mechanical properties.

A polymeric material made of carbon nanotubes was used to create a piezoresistive strain gauge for structural condition monitoring applications. The polymer improves the interfacial connection between nanotubes. Previous sensors with a single-layer film of carbon nanotubes gave distorted measurements of deformation, because the gravitational force of Van der Waals allowed axial sliding of smooth surfaces of nanotubes. The polymer sensor uses larger multi-walled carbon nanotubes, which improve the deformation transmission, reproducibility and linearity of the sensor. The electric model of the nanotube deformation sensor was obtained on the basis of electrochemical impedance spectroscopy and deformation tests. The model is useful for the development of sensor systems from nanotubes.

A biomimetic artificial neuron was developed by increasing the length of the sensor. The neuron is a long sensor of continuous deformation, which has a low cost, easy to install and lightweight. The neuron has a low bandwidth and adequate sensitivity to deformation. The neural sensor is particularly useful for detecting large deformations and cracks and can reduce the number of data acquisition channels required to monitor the condition of large structures.

Carbon nanotubes can be widely used in monitoring the condition of polymer composites due to their excellent electromechanical properties. Advances in the detection of carbon nanotubes in polymer composites are considered: a filler of carbon nanotubes, a fiber coated with carbon nanotubes, a yarn of carbon nanotubes and paper of carbon nanotubes.

Paper with carbon nanotubes can solve problems such as hard dispersion when mixing carbon nanotubes and resins, co-

deformation of the fiber coated with carbon nanotubes, and monitoring the entire yarn structure of carbon nanotubes. Carbon nanotube paper provides the conditions for engineering applications to detect carbon nanotubes. Engineering application of carbon nanotube sensors for monitoring the condition of polymer composites is a future area of research.

With the development of nanotechnology in recent years, there have been concerns about the health effects of nanoparticles. Carbon nanotubes are fibrous nanoparticles with micro dimensional length and nanoscale diameter, which have excellent physical properties and are widely studied in terms of their potential application in medicine. However, it has historically been shown that asbestos causes malignant mesothelioma of the pleura and lung cancer when inhaled. Because carbon nanotubes are also fibrous nanotubes, some are concerned about their possible carcinogenicity.

THE ROLE OF MEDICAL INNOVATIONS AND CURRENT STATE OF MEDICINE IN UKRAINE

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N.O. Symonenko, EL Adviser

The innovation is a result of scientific and technological achievements with the aim of improving efficiency, effectiveness or competitive advantage.

There are some benefits from the investment into the advanced medical technologies. They are the following:

- 1) the quality of treatment;
- 2) the effective treatment of the patient;
- 3) the shortening of the patient's stay in the hospital;
- 4) carrying out diagnostics in a short period of time.

Health care institutions in Ukraine are equipped with medical equipment. Unfortunately the majority of medical equipment is rather old and out of date. It is necessary to create certain innovative medical technologies to provide an effective diagnostics.

Private scientific and medical institutions make a great contribution into the development and implementation of medical innovations. But they are not financed by the state. That is why our country is not poised to significantly grow its health technology development sector.

Despite this, Ukrainian specialists have developed the advanced medical technologies that improve people's health. Our doctors use them for providing cheaper, faster and more effective solutions for disease. Such achievements prove their significance and necessity. The majority of the equipment has been tested extensively and quite successfully.

Unfortunately only a few innovative projects in medicine have emerged in our country for a decade.

I would like to tell you about one of the breakthrough innovative technology that has emerged recently in Ukraine and that we believe will make a real difference in solving important problems in treatment and prevention of cardiovascular diseases.

It is a device is made for protection from heart attacks and strokes. The portable device Cardiomo can prevent from more than 40 different diseases, especially the diseases of the cardiovascular system. It always monitors the vital indicators of human health, controls exercising and the user's daily routine, recommends the time and place of walks, and reminds of taking medicine. Moreover, the device signals the relatives of the patient and the doctors about changes in health.

This device is attached to the body under the human heart with adhesive electrodes and monitors the electrocardiogram. All data from the sensor are transmitted to the «cloud service» The system analyses the incoming information concerning the condition of the patient and transmits the signals to the relatives or doctors about the changes in patient's health. Besides, the electronic device can find the best recovery strategy according to the pathology by sending professional recommendations to the mobile app. In any critical situation, it is recommended to consult a doctor.

The Institute of Cardiology and Okhmatdyt (Ukrainian Specialized Children's Hospital) were the first to buy this device. Nearly 700 orders were from foreign medical universities and nursing homes. The inventors consider that this device can save the lives of 16 million people annually.

In conclusion I would like to say that:

- 1) the innovative technologies will have a great chance for funding not only in Ukraine but abroad as well;
- 2) it is necessary to open the state centers to support the innovation technologies;
- 3) the important factor is the formation of innovative culture, training of specialists at the state level.

All the participants of the project will get benefits from the experience. The inventor gets payment for his project and funding for the further development of the project.

The state receives profit for further development and subsequent investments. The medical institutions will get modern efficient technologies for ensuring the quality and provision of various medical services and improving the quality of life for some patients and saving the lives of others.

VIRUS IDENTIFICATION

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V.S. Kurochkina, Academic Supervisor

There are a large number and variety of viruses that live in the gut. It is impossible to count them because their number is continually changing as scientists discover more and more new species and subspecies. It is common knowledge that our microbiome imbalance in the intestine can contribute to severe conditions and diseases. Therefore, it is crucial to know the pathogens of these diseases to understand how to treat these diseases and normalize the microflora.

Using DNA sequencing (metagenomics), researchers from the Wellcome Sanger Institute and the European Institute of Bioinformatics EMBL (EMBL-EBI) investigated the biodiversity

of viral species. They found them in 28,060 human intestinal metagenomes and 2,898 genomes of bacterial isolates from the human intestine. The researchers discovered more than 140,000 viral species, half of which had been still unknown. These samples were obtained from mostly healthy people who did not have any chronic or acute diseases. It is well known that not all viruses are harmful; a considerable number are useful viruses. Among the detected viruses was discovered a new group of viruses, called Gubafage. It is the second most common virus in the human intestine after crAssphage, according to research.

Scientists have reconstructed viral genomes. The results of the study formed the basis of the Gut Phage Database (GPD). This discovery, the phage genes, will be interesting and necessary for those who study bacteriophages because they are involved in regulating our intestinal bacteria's health, and so on.

According to Dr. Trevor Lowley, the researcher at the Wellcome Sanger Institute: "Bacteriophage research is currently in a renaissance. This high-quality, large-scale catalog of human intestinal viruses arrives at the right time to serve as a plan to guide ecological and evolutionary analysis in future virome research."

MACHINE LEARNING IN MEDICINE

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Machine learning is the most inspiring technology of the 21st century. It allows us to teach the computer to do a particular job. Today, machine learning emerges in many areas - from finance to automotive. But quite new opportunities are likely to arise to use such a powerful tool in medicine.

According to world analysts, this decade will be a time of development of medicine and biotechnology. We rely on traditional treatments, but the time has come for new ones. The use of new tools and new disciplines helps improve existing

methods and creates complex systems that can help us detect diseases.

We associate the increase in knowledge and understanding of diseases with a rise in information and data. The world now generates hundreds of terabytes of data every minute. Although it is usually web data, the amount of medical data is also growing extremely fast. Hospitals around the world are moving to electronic accounting.

It has entailed significant advantages because it allows you to manipulate this data. And this is the time of machine learning. With the help of various algorithms, we can do important things that will change the world of medicine. With many tools such as neural networks, computer vision, different types of regression, machine learning looks like the best possible solution to many existing medical problems. Machine learning systems have already been developed to predict cancer, and a recent example is a personalized treatment. Another example of using machine learning in medicine is the prediction of disease outbreaks. It is now of vital importance during the Covid-19 pandemic. We need to be aware of the possibility of new viruses that can be harmful to humanity.

We have many successful examples of the use of machine learning in medicine. Although this is a new area of research, I believe in it. I hope that such technologies will accelerate the development of medicine and help treat millions of people worldwide.

REGENERATIVE DENTISTRY

S. Starosta – Sumy State University, group SM-901
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Teeth are not something a normal person can do without. Imagine not being able to taste your favorite steak, eat a piece of cake or even smile at a passerby. Will you be happy? No. Unfortunately, over the years, our teeth lose their strength and everyone knows that one day they will have to stuck an implant or

wear a denture. Progress is not standing still, and scientists are also trying to make a great discovery that will completely change dentistry. Probably, it's already happened.

2020 was a very productive year for the Karolinska Institutet: they proved that a human tooth can be completely restored biologically! Some people believe that this is impossible, but the example for solving this problem scientists have borrowed from nature, namely, studied mice's teeth, which are known to recover and grow throughout life. An atlas with microphotographs was created, which describes the similarities and differences in the cell composition of the tooth of mouse and human. For experiments all mice were kept under SPF conditions in 12/12 light / dark cycle, 18–23 ° C and 40–60% humidity. Further they were used: for genetic tracing of outer enamel epithelium progenitor cells, visualization of alveolar bone, lineage tracing dental epithelial stem cells in cervical loop, to enrich epithelial stem cells population for single-cell sequencing and for lineage tracing of dental mesenchymal stem cells. Before these animals were given a very large dose of isoflurane, in general 51 mice were used. Human teeth (7 wisdom molars) were provided for the experiment by various dental institutions (Clinic of Stomatology, St. Anne's Faculty Hospital, Brno, Czech Republic or Department of Oral Surgery, Medical University of Vienna, Austria).

For the study mice's the lower jaws were extracted, which then underwent multi-stage preparation (keeping in formalin, decalcification, cryopreservation). Next, the samples were cut on a cryostat into sections 14 µm thick. Human teeth were also soaked in paraformaldehyde then decalcified and embedded in paraffin. Samples 2 µm thick were cut on a microtome. Then the areas were stained with Masson's Trichrome and examined under a laser scanning microscope. Scientists have found that the organization of populations of mouse tooth cells is much more complex than human. All cell types from stem to mature were studied and this greatly helped to understand the system of ameloblast differentiation and reproduce their development in

vitro to grow dental organelles in future. It turned out that some mouse tooth cells after damage can turn into ameloblasts and regenerate an enamel. This is due to the unusual transcription in the nucleus of the stem cells of the tooth. Scientists were able to map a complete differentiation pathway of odontoblasts differentiation which was subsequently implemented by in situ hybridization. It is amazing that human teeth contain mesenchymal stem cells similar to mesenchymal stem cells of the mouse incisor. And even after complete emergence of the human tooth, the pulp-like aspects associated with the development and regeneration of the tooth persist in it.

So, scientists proved a person will be able to completely restore the tooth after the disease by stimulating stem cells in the future. Many scientists now are working on methods to create conditions for tooth regeneration. Moreover, researchers from the University of Nottingham and Harvard University developed dental fillings that allow teeth to heal themselves. In addition, such fillings contain substances that destroy the inflammatory process in the pulp.

We hope that a new stage in the field of dentistry will begin soon and people will no longer associate their old age with the lack of teeth.

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THE ROLE OF INSTINCTS IN THE MEDICAL FIELD

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V.S. Kurochkina, Academic Supervisor

Instincts are an integral part of our daily lives. People can perform actions under their influence, and they do not even suspect it, such as trying to keep warm in the cold or, conversely, cool off in the heat. Therefore medicine uses instincts to improve the doctor-patient relationship and improve certain aspects of the medical field. However, for this, we need to understand the mechanism of instincts.

First, we need to know what instincts are and their formation mechanism because most may assume that instincts and reflexes are the same. Instinctive activity is closely related to unconditional reflexes. Still, the main difference between instincts and simple unconditional reflexes is that they are stimulated by internal motives, regulating which hormonal and nervous influences play an important role. This inner need results from the excitation of many nerve centers under the influence of blood metabolites or the metabolism of nerve cells, or certain external factors. Thus, when danger arises, the instinct of self-preservation is activated. When a person is internally tense (feared), he mobilizes the forces of his body. Nevertheless, reflexes are already responsible for actions in this situation. Execution of reflex acts, which constitute instinct, aims to satisfy the corresponding need that arises due to the violation of internal homeostasis or the organism's complex interaction with the environment.

Now, let's describe some types of instincts. First, I would like to analyze the instinct of self-preservation. The instinct of self-preservation develops in the body's behavioral response to save a life in an extreme situation. This instinct can appear in various conditions, such as excessive cold (a person tries to warm up) or vice versa, heat and hot sun (people use sunscreen, protecting their bodies, thus saving their lives). This instinct has several forms of its manifestation:

A) Biologically unconscious - unconscious acts of behavioral behavior. They are aimed at avoiding indirect or immediate danger to life. Unconscious avoidance of objects or phenomena that can cause pain says the same desire to stay alive.

B) Biologically conscious – is a form of hidden considerations of benefit or safety. Usually, under the feeling of danger, a person controlling his mind tries to find a way out of a situation that threatens his life.

The second is the instinct of procreation. It is an instinct that controls sexual behavior. But in humans, the instinct of procreation is not the main thing now, unlike the animal world. Jung argues that the more developed the body is, the more critical factors suppress the sexual instinct.

Nor can we miss the maternal instinct, which some scientists also subordinate to the category of instincts of procreation. Physical and emotional contact with the baby in the first hours after birth causes hormonal changes in the mother's body. Early application to the breast serves as a kind of "signal" to the mother's hormonal system that the birth was normal. The body actively produces a complex of hormones that affect milk production (prolactin), uterine contractions (oxytocin), and the mother's emotional background (oxytocin). The hormone acts on dopamine receptors and helps the mother enjoy interacting with the baby. Reduces the level of anxiety of the mother, makes her calm and happy. Besides the critical time, a particular role is played by the appearance of the object of maternal love, which automatically causes the adult a surge of tenderness, the desire to love the baby.

The previously mentioned information confirms that instincts in modern life are closely related to instincts in medicine. This knowledge can be used in the medical field for better understanding such aspects as the relationship of mother and child - in gynecology and obstetrics; problems of social adaptation and aggression in society - psychotherapy or psychology.

MECHANISM OF FOOD BEHAVIOURAL FUNCTIONING

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N.O. Symonenko, EL Adviser

Food Behavior – Normality and Pathology

Food behavior is connected with the choice of products or cooking, the way food is cooked, the emotions that accompany meals and one's condition after eating. All the facts mentioned above are interconnected with the work of nervous system and psyche. It should be noted that all severe eating disorders are always associated with different psychotherapeutic disorders. The symptoms of the most common eating disorders are anorexia and bulimia.

Anorexia can be suspected in a man who rapidly loses energy or is highly disturbed by the nutrition issues, choice of food, and the amount of fat in food, calories and dietary intake; refuses to eat with family and friends, skips meals, gets nervous about eating with other people. The early symptoms of bulimia can be suspected when a person is deeply concerned about loss of weight and body shape, is interested in diets and eating issues in general; is reluctant to eat in public; uses certain rituals, doesn't allow other people to touch his\ her food etc. The advanced symptoms can be suspected in a man who frequently visits the toilet after eating for vomiting.

Food Behavior, Appetite and Hunger as a Physiological Phenomenon

The food center is a set of neurons located at different levels of the CNS that regulates the activity of the gastrointestinal tract and ensures food-eating behavior. Food center levels are:

1. spinal – nerve nuclei that innervate the entire gastrointestinal tract;
2. PNS centers (pelvic nerve) – innervate the part of the colon, including the rectum.

Functions of the Food Centre:

1. regulates the secretory, motor, and intestinal functions of gastrointestinal tract;
2. provides eating behavior and nutritional motivation;
3. provides the main senses (hunger, energy, appetite and thirst).

Appetite is a desire to eat, an emotional feeling associated with food intake. It occurs at the level of the cortex of the large hemispheres as a reflex and not always in response to hunger. Sometimes it responds to a decrease of nutrients in blood (mainly glucose).

There are several theories to explain hunger.

Glucostatic theory – the feeling of hunger is due to a decrease in blood glucose levels.

Aminoacid-static – hunger is caused by a decrease in amino acids in blood.

Lipostatic – the neurons in food center are agitated by the lack of fatty acids and triglycerides in blood.

Metabolic – the irritant of the neurons of the food center are the products of metabolism of the Krebs cycle.

Thermostatic – a drop in blood temperature causes hunger.

Local theory – the feeling of hunger is the result of impulses from the mechanoreceptors in the stomach during "hungry" contractions.

Centers of the Hypothalamus and Their Role in the Regulation of Life Processes

The hypothalamus receives signals from receptors in the stomach and duodenum and registers the concentration of amino acids, glucose and fatty acids that get to the stomach with blood. The hunger and satiety centers contain receptors for neurotransmitters and stimulating hormones (neuropeptide Y, melanin-concentrating hormone, galanin, glutamate, cortisol, and ghrelin – satiety hormone produced in the stomach) or inhibit food behavior (cholecystokinin, insulin, melanocytestimulatory hormone, corticoliberin, leptin which is produced by fat cells and penetrates the blood-brain barrier). The paraventricular, dorsomedial and dorsopodibular nuclei of the hypothalamus are also involved in the regulation of food behavior in part due to the hormones that influence energy balance and metabolism (thyroxine, glucocorticoids, insulin).

Nutrition can play an important role in behavior, learning and mood. Scientific evidence shows that it is important to convey accurate and consistent messages on food packages via health professionals.

SECTION 4 SOCIAL, PEDAGOGICAL AND LINGUISTIC SCIENCES

WHAT WILL THE BAN OF ABORTION IN UKRAINE LEAD TO?

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Oksana Gladchenko, Academic Supervisor

Unfortunately, during the various stages of human development, a woman's choices and actions became the subject of universal condemnation. First of all, this happens due to the inadequate reaction of other people often even relatives. This report talks about the life of a woman in difficult life circumstances, namely it touches the problem of abortion.

Imagine a situation where Ukraine introduced a law banning abortion. First, it will not improve population growth, but rather worsen it and contribute to the deterioration of economic status, because is it possible to have a normal and mentally healthy family for a young couple who do not have stable financial resources for raising a child, and a mother does not want to give birth? One the one hand it is good when the baby is a loved one, but on the other hand what if this baby is an abuser or it is just an unplanned pregnancy? In this case women have no choice but to have an abortion. Secondly, there are physiological contraindications to pregnancy and childbirth, but we should not forget about the negative consequences, because artificial abortions, even those performed by a doctor in a medical institution, have a negative impact on women's health. The most common complications are inflammatory diseases which often lead to impaired reproductive function.

It should be noted that there is one more painful topic not only for women but also for the whole country: underground abortions. No one is insured against pregnancy, but there is always a need for abortions so the concept of "illegal abortions" is also included. In this case a doctor performs an abortion illegally and receives very large sums for this procedure which leads to

corruption. The worst thing that can happen but the most realistic thing for an ordinary woman is trying to have an abortion at home and this can be fatal. Another problem is an adolescence girl's relationship with her parents. It is no secret that for most children it is not easy to share their personal lives with adults and the ban on abortion will lead to a deterioration of complicated relationship with parents. A girl will have even more feelings of fear of pregnancy. This reveals another problem of our society - the lack of proper sex education. Remember that there are abusive relationships (violations of personal boundaries, humiliation, cruelty, aggression and manipulation) that can affect a woman throughout her life. It is incredibly difficult to have a child from such a person, and it is even more difficult to live with her in the future. This is an acute social problem and it should be noticed. It should be understood that abortion is not a murder but a woman's right to dispose her body and future destiny.

For example in Poland, abortion procedure is one of the most difficult in Europe. However, the UN Human Rights Committee has criticized the country's abortion law. According to the UN it is too strict. In Poland abortions are allowed only when the pregnancy is the result of a rape or serious medical reasons. Polish women also break the law and resort to criminal abortions risking their health and lives.

From the point of view of legal theory, legal abortion is a legitimate denial of the right to life, the first fundamental and inalienable human right. Therefore, abortion should be equated to the crime of homicide with all the consequences in the form of penalties under the Criminal Code of Ukraine, which should be amended accordingly. However, given the specific status of the embryo, the existence of such a possibility as abortion is justified in some cases (rape, serious medical problems) and therefore we believe that abortion should not be prohibited at all.

As for the economy, the young family will lack financial resources for the bringing of a child and as a result the economic crisis will increase. In 2016, about 150,000 abortions were

performed per year. 80% of women terminate their pregnancies voluntarily due to their insecurity, for example the lack of housing, work, financial hardship, family troubles, unstable situation in the country, uncertainty about the future. There will also be more cases of domestic violence due to an unwanted child. The best decision that a woman can make in an unplanned pregnancy is a deliberate abortion. It is necessary to remember about the negative consequences, to think first of all not about improving population growth, but first of all about the happy life of people.

Therefore, a well-established system of preparing young people for family life is necessary, including the formation and maintenance of a healthy lifestyle, family planning and reproductive health. Such a system must be ensured not only through the efforts of non-governmental organizations, but also at the state level. The intervention of social services is mandatory to conduct preventive talks and help in difficult situations. Whatever the positive effects of banning abortion are it is important to keep in mind that a child is a joy and he always bring positive emotions into a family life.

THE ROLE OF INTERCULTURAL COMMUNICATION IN MODERN SOCIETY

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Today, a large number of people are learning foreign languages. In today's community it is very important to know not only their customs and traditions, but it is very important to know about intercultural communication. Because of rapid technology development and formation of a "global village" on the Internet, language is becoming a means of bringing nations and cultures closer together, and people increasingly want to interact with each other. With the rapid economic development of in many areas of human activity any country can not work without certain skills, and especially without knowledge of other languages. When we

talk about travel and aspects that are not just about work, we need to look at the language barrier in communicating with other cultures. It is necessary not only to understand a foreign language, but also to understand, at least, roughly the behavior of the interlocutor. Without knowing some facts about a foreigner, we can unconsciously offend him, which can easily be resulted in a conflict. The *purpose* of our study is to determine the role of international communication in modern human life.

Intercultural communication as a phenomenon was studied by E.T. Snitsa, A. Kozak. The latter has defined this concept in the context of dialogue between two cultures. L.P. Deyneka, A.V. Postygan and L. Afanasyeva considered intercultural communication from different points of professional activity.

According to V.M Shcherbina, intercultural communication is the "culture" interaction of two subjects (actors) or an individual from a group (group from a group), as a result of which some value orientations and norms of behavior are involved in others, their mutual influences, absorption or displacing and replacing each other.

Through the questionnaire, we determined how relevant intercultural dialogue is for students. The answers to the question: "How many languages do you know?" have showed that half of the respondents know two languages, 40.9% - three languages, and 9.1% have learned 4 or more languages. Most often people learn Russian (100%) and a significant percentage (63.6%) masters or already knows English, 13.6% speak other languages. "Do you use a foreign language in everyday life?" - 63.6% speak a foreign language in everyday life. We can assume that these people speak Russian, because it has historically developed in this way. The purpose of learning foreign languages is different for everyone. The majority of students use non-native language: 63.6% for learning, 59.1% for their own development, the same number studied the language, because it was required, first of all, by school; 27.3% and 13.6% aimed to know another language for travel and work, respectively. The survey allowed us to find out

what percentage of students see their future in combination with other languages: 90.9% are convinced that any foreign language is needed in later life for travel and new acquaintances. The role of intercultural communication today for 63.6% of respondents is an important element for work and successful life; 13.6% learn about the world and culture through such communication, and 18.2% do not consider intercultural dialogue important.

Thus, the study allows us to conclude that a foreign language affects and develops in all areas of human activity. It gives you the opportunity to have a successful career and new acquaintances. Intercultural communication plays a significant role in students' lives. Because, for them it is an opportunity to learn about the world, about another culture and build a promising future. Only for a small percentage of people intercultural communication doesn't matter at all.

THE VIOLATION OF THE TOLERANCE PRINCIPLE IN JOURNALISM

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Compliance with the principle of tolerance in journalism today is not only a time requirement but also the main condition for the popularity and image of the media resource. Tolerance is manifested in the absence of hate speech and the observance of journalistic ethics standards, which primarily concern respect for other people's feelings, views, beliefs, customs, etc.

The presence of hate speech in modern media discourse is possible for various reasons. The manifestation of aggression against people of certain social groups is primarily related to the political and economic situation: the hybrid war waged by neighboring Russia against Ukraine creates an excuse for the manifestation of national intolerance, first of all, towards the Russian people. Studies conducted by numerous NGOs record cases of tolerance violations even by leading Internet resources. They concern the identification of Russians with the head of the

Russian Federation, giving them names with a negative connotation, such as “vatnyky”, “rashisty”, “moskali”, “putinoidy”, “putincy”.

Researching this problem in Internet resources materials, we have noticed cases of unethical coverage of information. "Rashisty" return to Ukraine." – the publisher "High Castle" writes (18.01.2020). "Time X" was at the beginning of March. Thus, on March 1, the "rashists" tried to storm the regional state administration after a rally in Odessa." We read this information on the page of the publisher "Novynarnia" (03.03.2020).

The violation of the tolerance principle through hate speech is not a mass phenomenon in the media. Still, the cases of such use indicate the presence of racial and national discrimination. "For the first time in 173 years, a black architect received the RIBA International Award" ("Khmarochos", 02.10.2020). The journalist focuses on the color of human skin and emphasizes that previously the award was given to white skin people.

We meet an adverse reaction in the media to HIV-positive people. "Living with HIV: the story of a woman who feels happy" ("Tochka dostupu", 14.05.2020). The journalist uses stereotypes that people living with HIV cannot be happy.

According to the analysis of Internet resources, the violation of the tolerance principle, which takes place in the Ukrainian media space, concerns the coverage of the military conflict, racial, ethnicity, and life of people with disabilities. Hate speech breeds hatred and intolerance towards various social groups. This fact should be taken into account by the media community when preparing materials for publication.

THE IMPORTANCE OF STUDYING FOREIGN LANGUAGES IN THE MODERN WORLD

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S.H. Zolotova, EL Adviser

In the modern world, people and companies are switching to communication using the international language. Nowadays, the

international language is becoming more and more popular and is used in the world as a means of communication. It is the knowledge of foreign languages that gives people huge advantages in modern world.

Communication and processing of huge amounts of information is of great importance. Knowledge of any foreign language makes a person more universal in society. The main thing is to find an application for his knowledge. Such knowledge facilitates communication with other people, business partners, and also helps to quickly adapt in society. In general, it is necessary since English is now used almost everywhere.

People who know foreign languages can be considered as versatile personalities, they, in turn, not only have good learning skills, but are more self-confident.

The more common trend is that the languages of countries with high economic growth and success are the most popular. There are several languages in modern world, that are currently in demand and the knowledge of these languages will undoubtedly bring a lot of advantages in your life.

For example, English is currently the official language of international business and trade. About 80% of all communications in this area are conducted in English. German is the language of technology and finance. Recently, the demand for this language has grown significantly as numerous German investor partners have appeared. It is necessary to highlight the great demand for the Japanese and Chinese languages. Many oriental firms open branches in other countries and are looking for specialists who are fluent in these languages. If we take into account that learning these languages is an incredibly time-consuming and complicated process, then the value of people who know these languages increases several times.

In conclusion, it is estimated that knowledge of foreign languages is a huge advantage for a person, and the very process of learning languages is a good exercise for our brain. It is the

study of any foreign language that opens up many new opportunities for us, and enriches our inner world.

Having a good command of only English in our world, a person moves to a higher social level, as this makes him a competitive candidate for a highly paid profession in the future.

SCAFFOLDING AS A TEACHING STRATEGY

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Mikhno S.V., a senior teacher

Scaffolding is an educational technique during which progressive steps are taken to move students towards increasing autonomy in the learning process. Psychologist and instructional designer Jerome Bruner first used 'scaffolding' in this context back in the 1960s. His theory is that when students are given the support they need while learning something new, they stand a better chance of using that knowledge independently.

In the learning process teachers use scaffolding to support the construction of new learning for individual and groups of students. It provides students with the just right supports they need to participate in learning. For example, complete a challenging task or learn a new concept. Besides, It also encourages students to continuously grow and develop to a level that is just above their current one. Scaffolding is a way to gradually transfer the responsibility for learning from the teacher to the students and help learners become more independent.

General scaffolding process in the classroom begins when a teacher explains information at the right level for his or her students to understand. After this, the teacher shares his way of getting the solution by explaining or the process step by step.

The most popular ways to implement this are:

1. Breaking an activity into smaller parts
2. Using examples, prompts, coaching, etc
3. Sharing your ways of getting this knowledge, tips, and background knowledge
4. Promoting cooperative learning with peers

5. Verbalizing the process

Scaffolding can be a successful way to teach and learn, but it has its own challenges. Some of them are:

1. Teachers must be very patient and properly trained
2. Scaffolding requires sufficient personnel
3. It can be time consuming

Furthermore, exist a lot of different scaffolding strategies which teachers can use during their lessons:

1. Show and tell.

Modelling provides an example to be folloed thus being one of the best ways to teach.

2. Talk time.

To remember what students learn requires time, so giving this time to soak up knowledge and chance to talk about it is a powerful learning technique.

3. Use visuals.

Visuals can help students prepare for changes, because knowing how much time is available or when there will be a change in activity can help alleviate the anxiety which some students feel.

4. Describe concepts.

At first, the teacher may describe the idea, then the teachers may ask students to illustrate this concept by themselves. In this way, students not only receive different ways of learning, but also the teacher can check what they understood.

So, scaffolding is just one of the methods teachers can teach their student and, if done properly, it increases learners' autonomy and facilitate studying.

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IMAGE CHARACTERISTICS OF THE UKRAINIAN FOOTBALL PLAYER IN THE MATERIALS OF THE BRITISH INTERNET MEDIA

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Image characteristics are shown through the Internet media that are very popular today. The study is urgent due to the popularity of football player O. Zinchenko in Ukraine and the rapid development of PR technologies around the world.

Coverage of image characteristics on web resources is formed in the consciousness of a certain social groups (for example, fans) and has the character of a stereotype emotionally colored symbolic image of a certain subject of sports life [1].

The purpose of our study is to determine and compare the image characteristics of Ukrainian football player Oleksandr Zinchenko in the materials of the Internet media "Sky Sports" and "The Guardian".

«Sky Sports» writes that one of the main features of Oleksandr is his interpretation of the game - "his decisions are always perfect, because of his intelligence".

One of «The Guardian» articles characterizes Oleksandr as a "good guy", highlights his kind character, ability to overcome difficulties and tolerance to his teammates. Also, this media characteristic "to alchemise gold from what appeared a base-metal player " indicates a high dedication and desire to work on training, which bears fruit" [2].

To sum up, both medias define Oleksandr as a hard-working, kind guy who, due to the right approach to work and high intelligence, quickly acquires new skills and becomes a high-level player.

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CLICKBAIT HEADLINES ON THE WEBSITE «SUMY DEBATES»

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Today, creating a clickbait headline is a common way to promote media posts. In general, the term “clickbait” describes the creation of attractive headlines, which “provides a positive dynamics of visits to the web resource and, accordingly, material income” [3, p. 133]. Facebook, for example, explains clickbait as headlines that deliberately hide important information, or as headlines that mislead the users and force them to go to the target site [2, p. 44].

J. Sydkevych explains that clickbait works because of information gaps that the brain constantly wants to fill [3]. For this reason, clickbait arouses curiosity, which makes the reader click on interesting headlines.

A. Nikolaeva gives such features of clickbait: “the use of indicative pronouns (“this”, “that”, “these”) for creation of feeling of dialogue with the reader; address to the reader with “you”; the contradiction between the ordinary and the strange; unmotivated use of dots, question marks, and exclamation marks; a large number of bright epithets; amplification, exaggeration of the described; inclusion of phraseology and expressions from the common language in the title; incomplete sentences, usually conveying surprise or delight; imperative; constructing the title in such a way as to intrigue the reader, but not to reveal the essence of the information opportunity” [2, p. 45].

Materials posted on the “Sumy Debates” website from March 7 to 11 were taken as the material for the analysis. During this period, we analyzed clickbait headlines and revealed the following characteristics.

The “Sumy Debate” website used clickbait headlines at least 4 times during the period, employing phraseology and expressions from the vernacular. For example, “Glukhivchanka bought a loaf of bread with a “bug”, “Glukhiv biathlete “in points” at the IBU

Cup”, “In Sumy region, a young man “ripped off” the cottage”, “In Sumy, the house is cracking at the seams”. Such headlines are emotionally saturated due to the use of phraseology or expressions from the common language, and therefore arouse interest.

Besides, “Sumy Debate” used question sentences in the headlines at least 5 times during this period. And this is also a feature of clickbait. For example, “How much longer will the huge logo of a non-existent bank hang in the centre of Sumy?”, “How much does a toilet under the City Council cost to Okhtyrka?”. “What were the traditions of celebrating Shrovetide in Sumy region before?”, “What facilities will be repaired in Sumy region at the expense of the State Fund for Rural Development”, “How many patients with COVID-19 are in Sumy hospitals?”. These headlines do not contain information, but are intriguing and force you to follow the publication page.

Another feature of clickbait, which is found in the headlines of the “Sumy Debate”, is an intriguing, but not revealing headline. During this period, it was used at least once. For example, “The new concert program of Shchepkin conquered women's hearts”.

Thus, the analysis shows that the Sumy website “Sumy Debates” sometimes uses clickbait headlines. Most often they fall under the following features: the use of phraseology and expressions from the common language (4 times); the use of interrogative sentences (5 times); the construction of an intriguing headline that does not reveal the information opportunity (1 time).

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HOW ADVERTISING AFFECTS PEOPLE

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How much time do we spend on the Internet? On the average about 4 hours a day. When we look at the screen of a computer or smartphone, our brain is busy not only with reading news and watching feeds on social networks. When we try to focus on content, pop-up advertisement images or banners from the top, bottom or side will be transmitted to the brain. Advertising is designed to inform the customer about a product or service. Most often, the target of advertising is human emotions. For example, Coca-Cola advertisement, where the family are gathered at a large table for a holiday and Coca-Cola bottle is standing on the table. Because of this, we subconsciously, without realizing it, can buy this product for a festive dinner. If you take Coca-Cola Zero, without calories, a person who is ashamed of their weight is likely to take it because it will not add extra pounds, in their opinion. These examples illustrate the mechanism of the advertising effect on the general public and allow people to understand that modern advertising, makes it possible to sell things that are really of no value.

There are various ways of influencing people with the only aim – to make a customer buy a product or service. One of them is *information method*. This is the most neutral method of influence. The information has no emotional impact and cannot satisfy someone's needs and interests. The primary purpose of the information is to capture the memory with advertising material.

The other one is *persuasion method*. Its main task is to convince potential buyers in the advantages and uniqueness of the advertised product and the necessity of the product's purchase. The product is characterized from the best side, the distinctive features and opportunities to satisfy the desires of customers are revealed. However, persuasion is just useful when consumers are interested in the product. *Purchase incentive method* is also very common. All advertising techniques and methods of

psychological impact on the consumer ultimately boil down to one thing: a person's incentive to buy. This method aims to elicit the desired reaction to the advertised product or service, which will ultimately induce the buyer to purchase the product.

To summarize, we can say that advertising has become an integral part of our life. Its main target is human emotions, as well as our subconscious. It affects emotions and makes us buy goods we don't need.

PROBLEM-BASED TASKS AT THE LESSONS OF FOREIGN LANGUAGE

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The consequence of the rapid development of various educational reforms in many countries around the world is a significant increase in the level of education of the nation, the ability to maximize its intellectual potential, as well as to develop advanced technologies.

As our country's education system is gradually modernized, the role of foreign languages in the education of a fully developed personality is significantly increasing. And as requirements change, education must be changed and be reformed, along with its methods and technologies. One of such methods is the application of problem-based learning.

English has become firmly entrenched in our lives and has become a mandatory requirement for every graduate of a school or university. And as requirements change, education must be changed and be reformed, along with its methods and technologies. One of such methods is the application of problem-based learning.

Problem-based learning is a form of developmental teaching, the purpose of which is a system of problem tasks of different levels of complexity, through which students gain new knowledge and experience, and through this is the development and formation of creative abilities.

It provides a new structure of the lesson, which gives a lot of space to the independent work of students. However, the role of the teachers does not decrease, but increases, as they need to clearly manage the learning process and give students specific tasks and also monitor their progress.

Compared with traditional learning, problem-based learning methods have many advantages:

- teach the student the ability to think critically, creatively, or logically;
- create more evidence-based learning material that helps to change knowledge into beliefs;
- evoke emotional feelings, such as joyful satisfaction and a sense of confidence in the limitlessness of the capabilities and strengths; this is what arouses interest among students and forms their serious fascination with scientific knowledge.

Speaking about problem-based learning methods in learning a foreign language, we can point out three ones, which are the most effective.

Method of educational-thematic discussion: the discussion has a certain pace, in which three stages are clearly distinguished: connection, collective discussion, and summarizing. The topic is presented in the form of a mental task. Tasks must meet the interests and age needs of students. Only then the discussion is perceived as vital, relevant and meaningful.

Round table method: collective exchange of ideas, joint search for truth is recognized as one of the effective methods of learning a foreign language. This method is usually used in meetings with native speakers, with people who have visited tourist trips in different countries. Students are involved in preparing questions for the round table. The event is planned so that everyone present took part, not just the host and invited guests.

The case study is an interactive method of teaching based on problem-situational analysis and solving specific learning situations by students. The structure of the case study method is

built in such a way that students are faced with a specific situation that is directly related to the practical aspect of everyday life.

It is worth noting that the application of the method of problem-based learning in foreign language teaching is a difficult task for any teacher who decides to experiment.

At first glance, it seems that the method of problem-based learning is more suitable for disciplines that have a close connection with the real world and everyday life. However, how paradoxically would not it be; there is nothing more real and daily than human communication and language.

LE RÔLE DE LA PUBLICITÉ DANS LA PERCEPTION DES NOUVEAUX PRODUITS PAR LES CONSOMMATEURS

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Presque chacun dans le monde moderne est influencé, à des degrés divers, par la publicité et d'autres formes de promotion de certains produits et services. La publicité en tant qu'outil de marketing majeur joue un rôle presque décisif pour s'assurer que les nouveaux produits sont acceptés dans un marché cible potentiel. Des exemples d'exceptions aux règles sont des marques comme Starbucks et Google, qui ont réussi à gagner en popularité sans recourir à la publicité.

À eux seuls, les gens ne veulent pas chercher de nouveaux produits, de sorte que le marketing auprès des consommateurs devrait les informer que cette marque existe, et aussi susciter de l'intérêt à leur égard, ce qui peut encourager les gens à essayer un nouveau produit.

L'impact énorme de la publicité sur le jugement humain peut s'expliquer en partie par les recherches de Daniel Kahneman, qui ont montré que les gens ne sont en grande partie pas motivés par un raisonnement irrationnel et un désir de profit. Il a proposé au monde un modèle en deux étapes basé sur des principes simples de la conscience humaine. Avec ce modèle, Kahneman a prouvé non seulement l'universalité de l'absurdité humaine, mais aussi

qu'ils peuvent être réalisés par même les personnes les plus intelligentes.

Malgré la nature inconsciente de l'influence des messages publicitaires, le chercheur Stephen J. Genco, avec ses collègues, a identifié dans son livre 2 voies (directes et indirectes) pour mesurer l'efficacité de la publicité. De plus, chacun d'eux a une chance de réussir dans des circonstances différentes.

Lorsqu'un produit ou une catégorie de produit est nouveau, une voie directe est utilisée, ce qui implique l'utilisation d'un modèle de consommation rationnel. Le but de cette voie est de présenter un argument simple et logique qui persuade les consommateurs d'acheter un produit soit en améliorant leurs préférences actuelles, soit en modifiant leurs préférences par rapport à un produit concurrent. Et l'accent est mis sur la pleine conscience, le traitement conscient, le raisonnement logique, la réponse claire et les ventes immédiates.

Les racines historiques de la voie directe vers l'efficacité de la publicité se trouvent dans les modèles de persuasion classiques qui incluent le modèle AIDA. Mais il est plus important de se concentrer sur trois questions principales concernant la publicité:

- Attire-t-il l'attention des gens?
- Sont-ils convaincus par l'argument?
- Se souviendront-ils d'elle?

Par conséquent, le premier levier est l'attention. Une grande attention est accordée à l'identification de la nouveauté. La surprise est le principal mécanisme pour déplacer l'attention, et nous sommes naturellement enclins à nous concentrer consciemment sur des choses et des situations que notre cerveau considère comme nouvelles.

Suivant - persuasion. Il est généralement utilisé dans les publicités de précaution, mais lorsque le produit ou la catégorie est nouveau ou lorsque le but de la publicité est de persuader le spectateur de prendre une action directe, comme faire un don ou appeler un numéro sans frais pour acheter le produit annoncé. produit, il est efficace.

Et la mémoire. Dans l'étude de la perception de la publicité, deux types de mémoire à long terme sont considérés: explicite et implicite. Trop souvent, les marketeurs essaient d'engager la mémoire autobiographique (une sorte d'explicite) pour transférer des émotions positives vers des produits ou des messages annoncés en général. Pour atteindre cet objectif, de nombreux déclencheurs sont utilisés - effets visuels, odeurs, musique (notamment pour évoquer la nostalgie).

La publicité joue vraiment un rôle clé dans la perception que les consommateurs ont des nouveaux produits. Et le résultat de la campagne publicitaire est soit l'acceptation du produit (c'est-à-dire l'achat de nouveaux produits), l'entreprise occupe sa niche de manière efficace et cohérente la mise en œuvre de tous les composants du modèle AIDA, ou d'un nouveau produit, pour ainsi dire, «échoue», ainsi que 80% des nouveaux produits entrant sur le marché. Il est impossible de créer une publicité efficace sans connaître les principes de base de la conscience humaine et les trois leviers (attention, croyances, mémoire) sur lesquels repose la création publicitaire d'un nouveau produit.

UNDERSTANDING WITHOUT SOUNDS

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Knowledge about body language is a valuable skill. Over history, people have had to solve many distinct social problems to adapt and achieve reproductive success. Very often, to perceive a human being as a person, attention is paid to each element of behavior and appearance. For example, body motions such as shrugs, drumming fingers, winking, touch, eye contact, use of time, smell, grunting, tone, or volume [2]. All these non-verbal features have different perceptions in different cultures. The study of them allows people from all over the world to understand each other. Yet the main element of communication is the speech.

But what if a person loses a certain element of communication, such as hearing? Then there is the problem of communicating needs and opinions in other ways.

There are more than 7,000 languages in the world; each of them is unique, interesting, and melodious in its way. But there is a language whose melodiousness we will never be able to feel. And this is exactly what sets it apart and makes it interesting. Now sign languages are recognized as true languages with expressive capabilities and grammatical complexities equal to those of spoken language [3]. The profession of a translator is exciting and responsible. Translating texts is not an easy task, and translating into sign language is even more difficult. Many deaf people communicate their thoughts with their hands and facial expressions, so sign language interpreters translate a text into a video.

Translators work in groups. During the translation, each member of the group performs his role – someone is a translator, someone is a proofreader. Then, if possible, the translated material is viewed by deaf people from different countries and different backgrounds. Their comments help to improve the translation. In this way, they can make sure that gestures and facial expressions are natural, and the thoughts in the ready-made video are easy to understand.

A structural unit of sign language is a gesture, which consists of several components. They are as follows: configuration – the shape of the hand; localization – the place where the gesture is; the direction of movement – up, down, right, and left; the nature of the movement – with what expression. The last component is connected with the body and facial expressions. The dactyl alphabet is also used, but usually to denote proper names.

Most countries of the world have their national sign language, in some countries; there may even be several languages. Still, there are designations of words that a person from any culture will understand. For example, “a house” or how “to drive” a car.

Therefore, it is often much easier for such representatives of different cultures to understand each other.

However, sign language is understood by a small number of people in the world, and difficulties arise quickly when a deaf and a hearing person trying to have a simple conversation. That is why education or self-education is very important so that there are no borders in your world, no matter what difficulties you encounter. It is important to learn to understand each other without words. Besides, learning sign language boosts communication skills, gives the brain a good workout, and improves vision of the world in general.

To conclude, everyone knows that human gestures can carry no less information than words. Gestures complement what we say. Gestures make an entire sign language, without them it is impossible to communicate. There are some gestures all people can learn and understand without exception.

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L'IMAGE DE LA PUBLICITÉ AUPRÈS DES CONSOMMATEURS

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De nos jours, la publicité a une image assez controversée auprès du grand public. On ne peut nier qu'elle est présente à chaque instant de notre vie et qu'il est difficile de lui échapper. D'un côté les gens se plaignent souvent d'être bombardé d'images publicitaires: lorsqu'ils conduisent en ville, lorsqu'ils allument leur télévision ou leur radio, lorsqu'ils surfent sur internet... Certains jugent que la publicité est superficielle, qu'elle nous fait

désirer des choses futiles dont les gens n'ont aucun besoin. Carl Sagan, scientifique américain, a même dit: «La publicité pousse les gens à ne pas se fier à leur jugement; elle leur apprend à être stupides». L'impact de la publicité sur les enfants, cibles vulnérables, est aussi souvent montrée du doigt. D'un autre côté il faut bien reconnaître que chacun y trouve son compte. Qui n'a jamais cliqué sur une publicité pour un vêtement soldé qui lui faisait de l'œil? Qui ne s'est jamais rendu dans un nouveau magasin après avoir aperçu une affiche publicitaire? Enfin, qui n'a jamais pris un flyer distribué dans la rue dans l'espoir d'avoir une réduction intéressante? La publicité remplit donc bien son objectif premier qui est de produire du désir chez le consommateur. Elle fait partie de nos vies et a permis au commerce de fructifier, renforçant ainsi tous les secteurs économiques. C'est l'art de la communication porté à son paroxysme.

La publicité, c'est aussi de l'art. La publicité présente aujourd'hui un tout autre visage que celui du tract passé de main en main à la va-vite. La professionnalisation du métier et la création d'agences de publicité a rendu ce domaine assez recherché. Les bons publicitaires sont des experts en la matière. De même, certaines publicités s'apparentent vraiment à de l'art. Il existe des prix qui récompensent les réclames les plus esthétiques et les plus créatives. Les entreprises rivalisent d'imagination pour attirer l'attention du client et produisent des publicités drôles, piquantes, audacieuses... La publicité a bel et bien trouvé ses lettres de noblesse.

A l'image de notre vie

Loin d'être un simple moyen de communication pour les entreprises, la publicité est aussi un véritable phénomène de société. Les historiens et les sociologues considèrent qu'observer les réclames d'une certaine période en dit long sur les mœurs de l'époque. En effet, les publicitaires savent qu'ils doivent rester au plus près des préoccupations des gens pour réussir à les concerner. En suivant l'actualité, ils collent aux tendances et aux sujets qui intéressent les citoyens. C'est en se montrant proches des clients

qu'ils peuvent leur vendre leurs produits. La publicité est donc un formidable miroir d'une époque, dans un lieu et un temps donné. Les bons publicitaires sont loin d'être uniquement des commerçants. Ils ont des notions de psychologie, d'histoire, d'économie, d'art... Surtout, ils connaissent le comportement des gens et savent par quels biais cognitifs ils peuvent les atteindre. A travers les couleurs, les formes, les polices d'écriture, les illustrations.... Ces professionnels peuvent attirer votre attention et vous faire adhérer à un message. Cela peut passer pour de la manipulation et déplaît donc à certaines personnes. Pourtant, c'est grâce à nos hautes connaissances en terme de psychologie du cerveau que nous savons désormais comment faire ces « tours de magie ». La publicité a simplement su utiliser ces compétences pour évoluer.

THE INFLUENCE OF PARENTS' DIVORCE ON THE CHILD'S MENTAL STATE

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I. Zaitseva, Academic Supervisor

Divorce is the severance of a marital relationship between a man and a woman under certain circumstances. This process is usually accompanied by negative emotions and experiences of both spouses and the people who create their environment.

The reasons for such a decision as the rupture of a formal relationship in a married couple can be many factors. Psychologists have identified the following main ones:

1. Significant difference in education and age between spouses.
2. Predisposition to alcohol dependence.
3. Flippant and casual attitude to marriage.
4. Too early marriage.
5. Probable rapid birth of a child.
6. Insufficiently long period of acquaintance of the man and the woman.
7. Utter lack of parental consent to marriage.

8. Non-consensual consummation of marriage, through coercion.

For a couple, getting out of relationships is a release from the negative and has a positive effect on their subsequent separation. But for a child born into a family, the parents' divorce is often accompanied by very strong stress, which in the future can have a serious impact on his life.

It is incorrect to assume that children do not understand the situation in the family. Even the youngest children are able to imitate the mood of their parents, to understand that something negative has happened. If a father and a mother do not want their child to suffer the moral injury, they need to remain calm and civilized in the divorce process. When the spouses finally decide to separate, they must inform the child honestly and sincerely about that. If your child is under 6 years old, you can explain that dad or mom may rarely appear at home, or take him away from time to time. Parents can more easily explain to children of mature age what happened between them and what the reasons are. Of course, this will not help the child to change the life completely, but the most important that he can learn this news first from the closest people.

A child, about 2-4 years old, may start crying more often and be constantly depressed. In some cases it can be a delay in mental and physical development of the child, for example in speaking, physical mobility, emotionality, etc.

Children from 5 to 10 years old already better understand the problems in the family. As a result of parental divorce, children may develop isolation, a lack of desire to communicate with their parents, and learning delays. In such cases, it is necessary to help the child to become his condition normal by communicating with friends and other relatives. Also, the appearance of a pet - a new friend - can have a good effect.

High school children, who are about 11-16 years old, often develop aggression, remoteness from relatives, there is a tendency to be involved in bad associations. It is important to maintain the

same warm relationships with adolescents as they were before the divorce, not to give up taking part in upbringing and spending time together. The relationship between a father and a mother may change, but never between a parent and a child.

In conclusion, we can distinguish three types of children's reactions to parental divorce:

1. Children winners who have received benefits, such as increased attention, tenderness from their parents, or reduced negative influence in abusive family relationships.

2. Children who were able to overcome their emotional stress, own background and learn a lesson, gained positive experience and knowledge.

3. Losing children. Their relationship with everyone has become worse, they continue to suffer, which negatively affects their future building family relationships.

JOURNALISTIC STANDARDS IN UKRAINE AND THE USA

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N.V. Tatsenko, Academic Supervisor

Ukrainian journalism was founded about 30 years ago. It is based on European principles which bring forward a higher level of democratization and informative space availability to our country. In Ukraine, there are 6 journalistic standards: balance of ideas, efficiency, reliability, plenitude, separation of facts from comments, and exactness. These norms are considered to be fundamental for all media types of the country. Their inhibition is not well-regulated at the legislative level: for violation of journalistic principles, it is possible to get mental punishment only, namely, condemnation from colleagues and audiences. However, if the violation of these standards results in the creation of fakes, people's offenses, victims, and the threat to the unitarity of the country, administrative or criminal responsibility can be the consequence.

In Ukraine, the Commission on Journalistic Ethics detects violations of journalistic standards. Its decisions do not

significantly affect the media or an individual journalist who violates the standards. Such structures as the Institute of Mass Media and Media Detector monitor the level of compliance with journalistic standards on an annual basis. The research is conducted among online media, TV and radio programs, as well as among print media.

The fourth wave of monitoring of online media in Ukraine has shown that the standards of reliability (95.5%), balance of opinions (93%), and separation of facts from comments (91%) are the most adhered to. Such data are provided by IMI according to the monitoring results in October 2020 [2].

The English for Journalists course at the University of Pennsylvania provides 10 fundamental principles of journalism. These include verification, objectivity, originality, completeness, transparency, fairness, restraint, humanity, accountability, and empowerment. These standards promote the focus of the journalist's activities on the viewer and for the viewer. That is, when collecting, processing, and transmitting information, the journalist should first of all worry about the audience: whether this material will offend someone, whether it will be biased, incomplete, and confusing for the perception of the average reader/viewer. These principles are much more democratic than the Ukrainian ones. A journalist in the United States must consider all possible perceptions of information so that it does not become a source of controversy. The journalist must be responsible for the product he/she has created.

If we talk about Ukrainian standards, the domestic media still has something to work on. The number of private media in the country exceeds public information channels. Because of this, we should use the principle of open data (literally we should borrow it from the USA) so that the audience could immediately understand the motives for disseminating information, and not just guess at the hidden purpose. Also, the Ukrainian media must check the data more carefully so that the principle of fairness and originality takes precedence.

The general conclusion is that journalistic standards are an important visa for the development of the media sphere. Their availability and acquisition depend on the specific country and its mentality, but the main purpose of the standards is to adequately meet the information problems of the audience.

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THE ANALYSIS OF PRESENT STATE OF VETERAN BADMINTON IN UKRAINE

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Veteran sport is a promising means of restoring human strength in the process of its training activities, as well as the possibility of self-affirmation and self-expression in free time professional and domestic activities. Veteran sport is not only a means of combating the negative phenomena of the modern information society, but also is able to form worthy values for a healthy lifestyle, ethical, aesthetical and moral and psychological factors in the public consciousness.

Badminton requires adults to show special physical and psychological qualities: general endurance, coordination, operational and analytical thinking, creativity, stability of

attention and a high level of health. Competitive activity becomes a powerful motivation, gives a deeper meaning to physical activity and even changes lifestyle.

The purpose of this study is to consider the problems of veteran badminton development in the world and in Ukraine nowadays on the basis of theoretical analysis.

To achieve this goal we used the following research methods: analysis and generalization of data from scientific and methodological literature sources and the Internet; pedagogical observations; methods of mathematical statistics.

World Masters Games (WMG) are the highest-ranked veterans' competitions, which are held every four years and include many sports in the program. The first World Masters Games were held in Toronto, Canada in 1985 (22 sports, 61 countries, 8,305 participants). Recently, the number of WMG participants exceeds the number of participants in the Olympic Games and World Universiades. This is due to the fact that participants from 35 to 100 years of age and older are allowed to participate in WMG and there is no quota for the number of participants. The popularity of the World Games grew along with the number of athletes who participated in these large-scale competitions. Therefore, in 1995, members of international federations proposed the creation of the International Masters Games Association (IMGA), which aims to promote friendship and mutual understanding between sports veterans around the world regardless of age, gender, race and religion. Analyzing the geography of the World Games of Veteran Sports, we see that only twice these competitions were held on the European continent (Aalborg, Aarhus, Herning, Denmark, 1989; Turin, Italy, 2013). That is why the European Masters Sports Association (EMSA) was established, under the auspices of which, since 2008, the European Masters Games (EMG) have been held every four years. These are sports competitions for Europeans 30-35 years and older, whose program consists only of summer sports, including badminton.

In 2011, the Association of Veteran Sports of Ukraine (AVSU) was established which is all-Ukrainian union of public organizations whose goal is the creation and formation of a single system of veteran sports, development of veteran sports at all levels, social protection of veterans of physical culture and sports, the improvement of organization of all-Ukrainian sport competitions for veterans, participation of veterans in international sport tournaments.

Recently, veteran badminton has received widespread support from Ukrainian Badminton Federation. In 2021 Ukrainian Badminton Federation presented a single calendar of tournaments among veterans and badminton amateurs. It was the first time when amateur-veteran competitions have been agreed and consolidated into a single calendar in a convenient format for the years of Federation existence. The list of competitions includes the official Ukrainian Badminton Championship among veterans in 2021. According to the rules of these competitions, players who took 1-2 places in each age group and each category get the right to represent Ukraine at the European Badminton Championship among veterans, which will be held in Croatia in summer 2021.

Today veteran badminton is popular and it is practiced by a significant number of athletes in the whole world and in Ukraine in particular. Thus the development of veteran badminton movement in Ukraine requires thorough objective researching problems of organization, sport methodology, training practice and right combination of physical culture, sports, health and work of sportsmen of all ages.

VIRTUAL LABORATORIES AS AN ONLINE EDUCATIONAL TOOL

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A virtual Lab is a simulated lab environment typically implemented as a software program, which allows the users to perform their experiments. Comparing with traditional laboratory,

virtual laboratory is particularly useful when some experiment involves equipment that may cause harmful effects to human beings. It also allows students to explore a topic by comparing and contrasting different scenarios, to pause and restart application for reflection and note taking, to get practical experimentation experience over the Internet. These advantages of online laboratories allowed them to become popular and in demand during the pandemic.

The application of computer technology in classroom environment has a significant role in enhancing teaching and learning. For instance, the use of artificial educational environment such as simulations and virtual reality in teaching and learning is increasingly becoming widespread and has proven to be effective in teaching difficult subjects in science. Today online laboratories can offer experiences under socially distanced learning settings.

Online labs are still at a developmental stage in terms of technical maturity and educational research around the globe. The case study was launched to examine teachers' perceptions of the quality and effectiveness of high school virtual labs. The research questions focused on experienced teachers' perceptions of the quality of virtual vs. hands-on labs. Data were collected through survey questions derived from the lab objectives of The Next Generation Science Standards. Eighteen teachers rated the degree of importance of each objective and also rated how they felt virtual labs met these objectives; these ratings were reported using descriptive statistics. Many teachers stated that virtual labs are valuable supplements but could not completely replace hands-on experiences.

The potential of virtual laboratories for distance education science teaching as well as reflections from the development and evaluation of a virtual laboratories were enlisted by Barney Dalgarno (School of Information Studies, Charles Sturt University), Andrea G. Bishop and Danny R. Bedgood Jr. (School of Science and Technology, Charles Sturt University). They are all united in

stating that a virtual laboratory allowed students to explore the environment, read about equipment and procedures and locate, collect and assemble apparatus before they undertook their first laboratory session. It would potentially have the following specific benefits:

- students would feel more relaxed and comfortable in the laboratory;
 - less laboratory time would be wasted looking for items of apparatus;
 - students would be more likely to assemble and use apparatus in the correct way leading to more meaningful experimental results;
 - greater familiarity with laboratory procedures may improve safety; and
 - students could devote more of their attention to the chemistry concepts involved in the experiments because they would already be familiar with the procedural aspects of the task.
- skills in recording, reporting and interpreting observations;
 - higher level cognitive skills of deductive reasoning, hypothesis formation and testing; and skills related to manipulative and instrument use.

The use of a virtual laboratory, allowing virtual experiments to be undertaken, could help students to achieve the skills within two of priority areas. Virtual experiments could potentially allow students to improve their skills in deductive reasoning, hypothesis formation and testing as effectively as through real experiments. Skills in recording, reporting and interpreting data could also be effectively developed through these virtual tasks.

Also one of the advantages is that students have the flexibility to complete interactive virtual labs at their own pace, repeating simulations and quizzes as many times as necessary to support their review of foundational and prerequisite concepts, theories, and techniques.

UKRAINIAN CULTURAL ASPECTS

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Ukrainian culture is of great interest to the whole world, as it is not studied by the inhabitants of many countries. More often than not, other peoples perceive Ukraine as a part of another state, even do not know about the existence of the incredibly beautiful country visually with its culture that is rich in traditions, history, heritage and beautiful nature. The soul of Ukrainians is reflected in holidays and special events that have its own unique customs, rituals, songs and dances. But before you plan your trip to Ukraine and its amazing places, you have to know almost everything about it.

TVshow makers and journalists still discover unique places in Ukraine, learn new, unknown or forgotten traditions and help foreigners and us to learn about it. The well-known L. Nikityuk from the "Heads and Tails" program traveled almost all over the world and decided to create, together with her team, the travel show "Le Marshrutka". It is the first simultaneously funny and touching show about Ukraine and Ukrainians to show little-known, but incredibly beautiful corners of our homeland, and there are many different people with unusual stories among its passengers. It has already been two seasons and the TV group managed to visit Poltava, Khmelnytsky, Transcarpathia, the Black Sea region, Dneprop, Kharkiv, Cherkassk, Odessa and other regions. The travel show "Check-in Ukraine" is a small team of people who decided to discover and tell more about Ukraine. The hosts of the program, E. Slavkinsky and I. Lutsenko, travel and advise where travel lovers and guests of our country have to go to see the unexplored sights and incredible nature. The information resource "Ukraine-is" is a media space that will help you get to know Ukraine in detail and tell you about little-known, interesting places and cities, both by Ukrainians and foreign guests. Europe is on its way to truly discover Ukraine. And the Ukrainian Mass Media open the amazing opportunities for it.

SOCIAL WORK IS A VOCATION

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Studying social work is a big challenge. To many people this specialty seems difficult and incomprehensible. But I think being a social worker is a calling, because this profession requires a high level of humanity, the ability to empathize with someone else's grief and selflessness. Since childhood, I love helping people, so when choosing a future profession, I undoubtedly chose social work as my first priority. I believe that social workers have a big heart, I often hear from them the phrase “one's grief is everyone's grief” and I hope that after graduation I will help people as this saying mentions.

The social worker strives to do whatever is necessary to keep people happy and content with their lives. Giving the warmth of the soul is a social work. While studying at Sumy State University, students learn the basics of psychology, ethics, jurisprudence and many other disciplines that I will need not only in my future work, but also in life in general. The only thing that can "dissuade" from working in social assistance is a small salary and irregular working hours. But as I pointed out earlier, social work is a vocation, so everyone makes their own choice. There is hardly another field of activity where mercy, compassion and worldly wisdom would play such an important role as in social work. I have never regretted choosing this specialty and I hope that in the future I will be a specialist in this area.

THE ROLE OF THE NEWSPAPER IN UKRAINE

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What is the role of newspaper for today's modern world? Is it possible to see any Ukrainian in the streets with a newspaper? What is the topic of newspapers today, what are the major issues?

Nowadays, people are divided into 2 types: those who use gadgets and read only online publications, those who never give up reading newspapers, magazines and books. Obviously the newspaper plays an important role for humanity, because we do not frequently use online publications. Honestly, it is of great significance to notice young people reading info online in the streets of our city, and only elderly people who are constant supporters of the "live" papers.

There are many newspapers in Ukraine that tell about everything that is happening around, for instance: "Family", "Gazeta in Ukrainian" and others. One of such publications is The Day. "I consume for the benefit of the media, your newspaper is one of the best alive: to be supported by a hand, to change the format, to increase the color wallpaper...", - says a TV presenter and film critic Iryna Hordiychuk. The 16th issue of the newspaper for February 2, 2021 was analyzed. The newspaper has 7 sections: "Day of Ukraine", "Theme of the Day", "Details", "Culture", "Economy", "Society", "Time-out". The newspaper "Day" is easily perceived visually, because red colors are immediately obvious. The main phrases, headings and genres highlighted in red are a big plus, so readers do not need to take much time for finding any heading they want to read. Any text information is quite easy to perceive, because the material is not printed in one continuous text, as well as a section by columns, which allows you to visually perceive the text and separate one material from another. The headlines were written in large font, which was not lost among all publications.

The front page of the newspaper "Day of Ukraine" contains material about events, information about Ukrainian writers and interesting facts that expand the horizons of readers of this publication. A striking example is the material about the book, which tells about Lesya Ukrainka, it was published in Belarus. It is worth for foreigners to learn about outstanding and strong-minded Ukrainian writers who have overcome high obstacles in their lives. "Theme of the Day" is a small but important section

contains information that is relevant for a long time. "Details" includes 2 pages, the sections of each material are divided into subheadings: "Photofact", "Point of view", "Situation" and "View". The rubric is similar to "Society" tells about events that happen in our country. A column about all cultural news of Ukraine "Culture" contains 2 pages including 5 photos that complement each material. The most mobile material in the section is the material "Zo in another museum" from the subheadings "Impressions", where it is reported about the renovation of Lozynsky Palace, which represents the Lviv Art Gallery. The "Society" section: large in size with 2 pages, a few photos and 4 pictures. Most of the text's information addresses all issues, and "Vaccination" is the first publication in it. "Economy" is in general, similar to the rubric "Society" and has 2 pages. This section is filled with a large amount of quantitative data. Loans, currency markets, budget sphere, comments - all this is contained in the pages of the rubric. "Time-out" is a small section that contains information about the divisions that occurred on a particular day, interesting publications on various topics. No wonder the column remains the last, because after a lot of streaming information you need to overthink again and again what you have read, it is called "food for thought" and has its unique answer.

The newspaper "Day" does not only contain the material about Ukraine, its activists and residents, but also expands its scope and publishes material about another country, such as Russia and its activist Olexsiy Navalny. The general information is up-to-date, without access to important topics to read and easy to sprint. If we talk about the target audience, this publication is designed not only for people over 35, but also for young people who want to know various details of Ukrainian life.

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DEMOCRACY INDEX 20202 – IN SICKNESS AND IN HEALTH

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The Economist Intelligence Unit's Democracy Index provided a snapshot of the state of democracy worldwide in 165 independent states and two territories. It covers almost the entire population of the world. The Democracy Index is based on five categories: electoral process and pluralism, the functioning of government, political participation, political culture, and civil liberties. Based on its scores on a range of indicators within these categories, each country is then itself classified as one of four types of regime: "full democracy", "flawed democracy", "hybrid regime" or "authoritarian regime". It is the 13th edition of the Democracy Index, which began in 2006, and it records how global democracy fared in 2020.

The focus of the report is the impact of the coronavirus (Covid-19) pandemic on democracy and freedom around the world. It looks at how the pandemic resulted in the withdrawal of civil liberties on a massive scale and fueled an existing trend of intolerance and censorship of dissenting opinion. The report also examines the state of US democracy after a troubled year dominated by the coronavirus pandemic, the Black Lives Matter movement and a hotly contested presidential election. According to their measure of democracy, only about half (49.4%) of the world's population live in a democracy of some sort, and even fewer (8.4%) reside in a "full democracy". More than one-third of the world's population live under authoritarian rule, with a large share being in China.

Out of 167 countries and territories covered by the model, there are 23 "full democracies", 52 "flawed democracies", 35 "hybrid regimes" and 57 "authoritarian regimes". The top 5 on the list are: Norway, Iceland, Sweden, New Zealand, and Canada.

Surprisingly, Ukraine takes the 79th place in the list as a "hybrid regime" with a Democracy Index of 5.81, falling 4 places short of becoming a democracy. Furthermore, it takes 15th out of

28 places in the Eastern Europe region, falling just 2 places short of becoming a democracy. On the other hand, it beats Russia by 45 places globally and by 7 places regionally. Overall, despite making some improvements in the transparency of elections, Ukrainian Democracy Index is slightly lower than it was in 2019 (5.90) mostly because of infringements of civil liberties as a result of the coronavirus pandemic. Still, it's far from the lowest score of 5.42 which was reached in 2014 and the highest score of 6.94 which was reached in 2006-2008.

As recorded in the Democracy Index in recent years, democracy has not been in robust health for some time. In 2020 its strength was further tested by the outbreak of the coronavirus (Covid-19) pandemic. The average global score in the 2020 Democracy Index fell from 5.44 in 2019 to 5.37. This is by far the worst global score since the index was first produced in 2006. The 2020 result represents a significant deterioration and came about largely—but not solely—because of government-imposed restrictions on individual freedoms and civil liberties that occurred across the globe in response to the coronavirus pandemic.

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