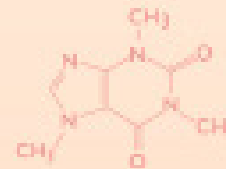


$$\frac{1}{\zeta(s)} = \sum_{n=1}^{\infty} \frac{\mu(n)}{n^s}$$



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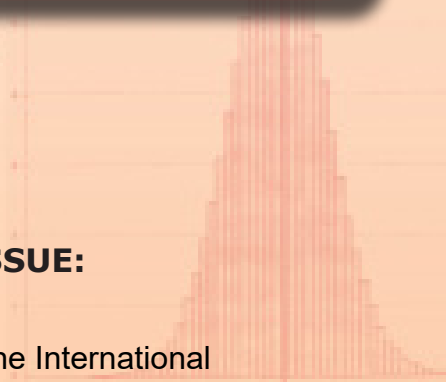
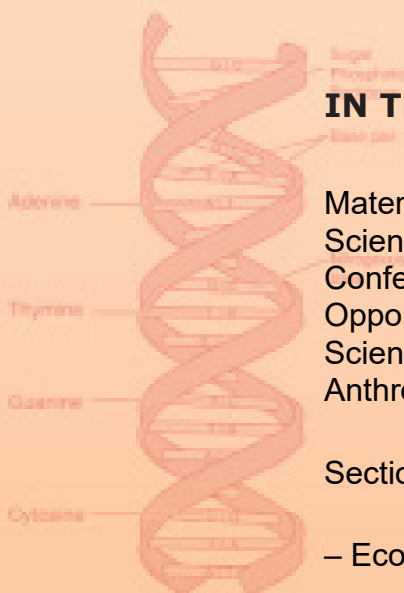
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IN THIS ISSUE:

Materials of the International Scientific and Practical Conference "Problems and Opportunities of Modern Science (Digital Technologies, Anthropocentric Sciences)"

Sections:

- Economic Sciences
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$$\zeta(n) = 1 + \frac{1}{2^n} + \frac{1}{3^n} + \frac{1}{4^n} + \dots$$

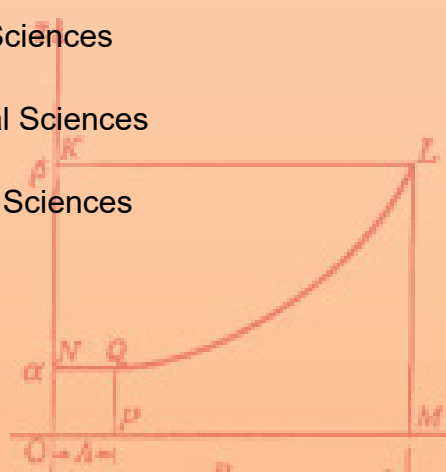
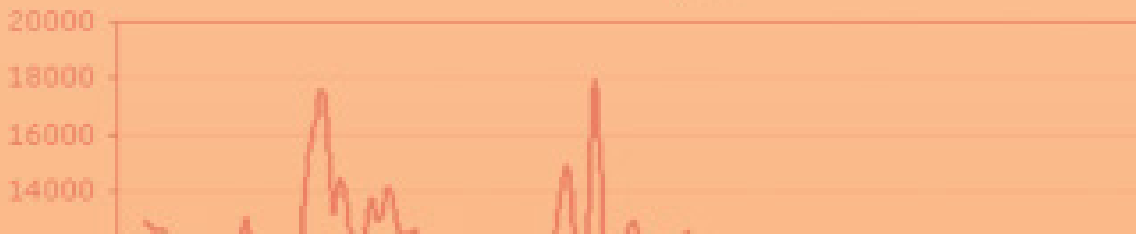


Fig. 1

$$\sum_{n=1}^{\infty} \frac{1}{n^x}$$

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$$\frac{d(x)}{1 - \frac{d(x)}{10^x}}$$

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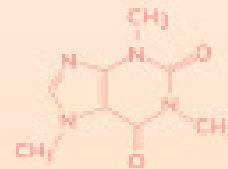
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$$\frac{1}{\zeta(s)} = \sum_{n=1}^{\infty} \frac{\mu(n)}{n^s}$$



**Proceedings of the XV International Scientific Practical Conference
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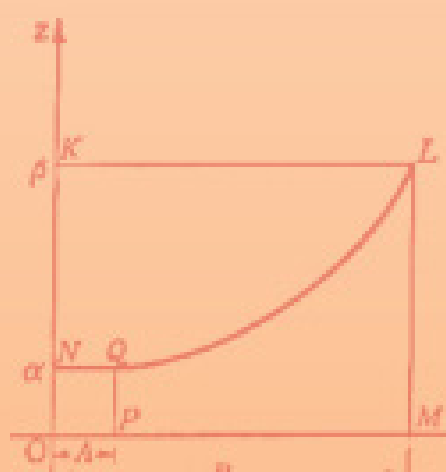
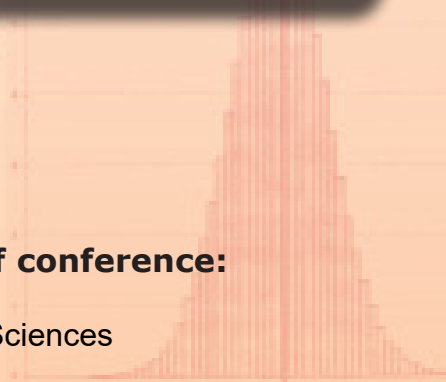
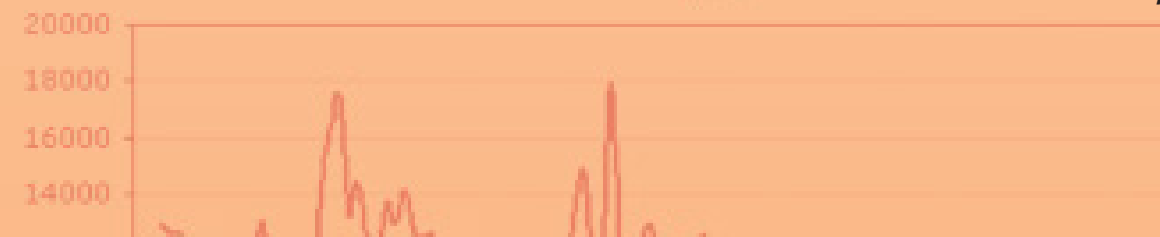


Fig. 1

Thailand, 2021

$$\zeta(n) = 1 + \frac{1}{2^n} + \frac{1}{3^n} + \dots + \frac{1}{n^n}$$

$$\sum_{n=1}^{\infty} \frac{1}{n^x}$$



$$\frac{\sigma(x)}{1 - \frac{1}{n^x}}$$

UDK 338



Theoretical Approaches to the Basic Elements and Characteristics of Information Systems

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...

Key words and phrases: development; information systems; management; processing; system; system concept.



Abstract: In order to study information management systems, an overview of the theory of the information system is conducted. The article notes the relevance of the influence that information systems have on all aspects of modern life. Tasks: study of the concept of information systems, characteristics and related terms, highlighting the role of information management systems. Research methods: analysis, synthesis. Hypothesis: the importance of the influence of information management systems on all aspects of modern life is increasing. As a result of the conducted research, a significant relationship between information management systems and all aspects of modern life is highlighted.



...

Management information systems were the first attempt to create a computer information system that can provide managers with complete information that helps in solving enterprise problems. Some believe that information management systems make it possible to transform office work into work based on information technology to solve the current problems of the enterprise. The current technological development has had a great impact on all aspects of economic life, development and civilizational progress.

The Internet revolution is the foundation of the information revolution. Now we live in a time when information has become almost free. Thus, management information systems have become a vital necessity for all organizations. The share of modern scientific and technical developments based on the development of information technologies has significantly increased. The massive use of information technology has led to a reduction in the time for processing and analyzing data in electronic form. This led to a breakthrough in the speed of managerial decision-making, an increase in administrative interest in information management and the development of training methods.

The following definition of an information system can be distinguished.

A system is defined as: a group of interacting information elements or components to achieve a goal.

The system has the following properties.

1. Goal: any system aimed at achieving a specific goal.
2. Completeness: the inputs of the system must include the largest number of outputs.
3. Openness: the system interacts with systems that exceed it in volume.
4. Transformation: parts of the system should be aimed at achieving something valuable.
5. Interdependence and harmony: various parts of the system are interdependent and harmonious in terms of performance.
6. Control mechanism: it is a set of combined forces connecting parts of the system.
7. Perfection: the system should be considered as a whole, in its development. Development is achieved by making changes to parts of the system.

The system is characterized by the following components.

Inputs. The system is based on the interaction between its elements or components, there must be material or human resources that interact. These resources are called inputs and are converted into outputs (information) during the action.

Processes. Operation includes a set of procedures and methods by which data is converted into information and is considered an "important" component of the system, since it converts the source material (input data) entering the system into outputs that achieve the goals of the system.

Outputs. Processing of system input data within the process allows to obtain results called outputs (interaction of system components), they can be presented in the form of periodic reports, subsequent reports, statistical tables, or graphs, they can also be represented by goods or services.

Feedback. The continuous development of the system requires the adjustment of the development path for the management and monitoring of processes and the implementation of results.

The systems are divided into two main types. The following types of systems are distinguished – open systems and closed systems. An open system is a system whose output cannot be predicted with certainty. For example, the airline system is an open system. A closed system is a system whose outputs can be accurately checked. For example, a television laboratory that knows exactly monitors, electrical circuits, switches and switches.

Today, the following concepts of data, information, technology, and management are distinguished.

1. Data is numbers, letters, or symbols that represent abstract facts that have no relative meaning to the user. They can be used by people or devices to turn them into results from which users can benefit.

2. Information is data after processing or data obtained as a result of data processing, provided that they are related and can be used in the decision-making process.

3. Technologies are all means, tools or technologies that can be used for data processing.

4. Management is a purposeful human activity related to group work, and its importance stems from the fact that the productivity of the group should be higher than simple arithmetic.

The following types of information are distinguished in the scientific literature.

- Incoming information is the information needed by the administrator to make a decision or complete a job or project, for example, to make a decision on the appointment of an employee or the purchase of a device.

- Current information is information needed by the administrator to develop and develop abilities and expand ideas in the field of work and life, for example, information that students receive during training courses.

- Educational information is information required by an administrator in educational

institutions such as universities, institutes and schools.

- Production information is information that is useful for conducting applied research, developing means of production and investing in natural resources and available opportunities, for example, production information for a certain product.

As a result of the research, the author of the article describes the general terms of the information system, considers its definition and constituent elements.

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Теоретические подходы к основным элементам и характеристикам информационных систем

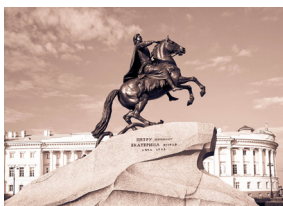
Жеуел Самир Албахри (Россия, Сирия)

Ключевые слова и фразы: информационные системы; концепция системы; обработка; развитие; система; управление.

Аннотация: С целью изучения информационных систем управления проводится обзор теории информационной системы. В статье отмечается актуальность влияния, которое оказывают информационные системы на все аспекты современной жизни. Задачи: изучение концепции информационных систем, характеристик и связанных с ними терминов, выделение роли информационных систем управления. Методы исследования: анализ, синтез. Гипотеза: возрастает значение влияния информационных систем управления на все аспекты современной жизни. В результате проведенного исследования выделена значимая взаимосвязь между информационными системами управления и всеми аспектами современной жизни.

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UDK 338



Improving the Efficiency of an Oil Production Enterprise Using a New Methodology for Assessing the Current State of Energy Management



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...



Key words and phrases: arithmetic mean; energy costs; energy management; energy management matrix; modernization; system concept.



Abstract: In order to study various mechanisms for assessing energy costs of nature management enterprise a review of the use of energy management matrix methodology is conducted. The objectives are to study of the presented model for calculating energy costs of an enterprise. The research method is analysis. It is assumed that minimization of energy costs in the production of petroleum products. As a result of the study, a significant relationship between all stages of production is highlighted.

...

The analysis of various mechanisms for assessing the energy economy of industrial enterprises of nature management has led to the conclusion that the simplest, but at the same time effective method of assessing the current state of energy management, are energy management matrices. Their use makes it possible to promptly identify current problems in the energy economy structure, and to identify strengths and weaknesses. Taking into account the point specificity of matrices, the obtained results in the form of integral assessments can be compared between different subdivisions (so-called – internal energy audit) or other industry representatives (so-called – external energy audit).

It is worth explaining that the energy consumption for enterprise production – means total consumption during mechanized oil extraction, provision of measures to maintain reservoir pressure; energy consumption during oil and water treatment, transportation; energy consumption during gas collection and treatment; energy consumption for other production needs.

In today's world, the oil production industry is one of the most energy-dependent and energy-intensive industries, so it is necessary to consider all factors affecting the energy consumption of the enterprise, as one and the same factor in different industries may have different effects, whereas in oil production all factors carry significant risks of unnecessary costs from the enterprise.

Taking this into account, a new methodology for assessing the current state of energy

management at oil industry enterprises, which takes into account production and organizational indicators in such areas as:

- 1) development of new oil fields;
- 2) equipment and technology of oil production;
- 3) resource extraction costs;
- 4) organizational control markers (indicators).

The main tool used in this methodology is a comparative assessment of the energy costs of production, field development, production techniques and technology, and organizational indicators.

The distinctive feature of the proposed methodology from the existing ones is a comprehensive analysis, designed to account for oil production, which shows the objective production and organizational indicators as a result of the company, which reflect the level of management process that affects the final result.

The structure of the above methodology for regular assessment of the current state of energy management is as follows:

- 1) development of a matrix combining production and organizational indicators and calculation of average scores by areas;
- 2) determination of estimates in the direction of "Energy consumption for industry";
- 3) building an organizational model of energy management;
- 4) calculation of indicators that take into account both production and organizational indicators to determine the level of the current state of energy management of oil production enterprise;
- 5) analysis of production well performance dynamics;
- 6) statistical study on the watered-out stock of producing wells and the number of wells with potentially unprofitable oil production;
- 7) analysis of the dynamics of the percentage of the composition of extracted;
- 8) management, control, reorganization of unprofitable well stock;
- 9) improving the energy efficiency of unprofitable wells by optimizing the operation of injection and production wells;
- 10) shutting down unprofitable well stock;
- 11) planning and control of energy efficiency and energy performance improvement of the enterprise;
- 12) monitoring of the state of energy consumption at the enterprise;
- 13) adjustment of investment policy in the field of enterprise energy management.

Each of the above-mentioned indicators in the developed matrix is characterized by a certain level of assessment. This matrix is filled in taking into account the monitoring of oil field development by specialists of the technological department and specialists of the energy service of the enterprise.

For each criterion above, the matrix is filled in with the actual indicators, in absolute and relative values.

The use of general indicators to determine an appropriate estimate is not always optimal, since such an approach provides a fuzzy assessment of the results, distorting the real changes in energy costs. However, determining the arithmetic average of the constituent directions of changes in specific energy inputs provides the most accurate assessment.

After construction of the correlation diagram, the calculation of the integral indicator of the state of energy management of the enterprise is carried out. This indicator is characterized as a sum of arithmetic average assessments for each direction.

Improvement of the methodology of the internal energy audit based on the integrated

accounting and analysis of operational and organizational energy management indicators allows you to quickly, efficiently and without significant labor costs to build an organizational energy management profile of the studied company, which provides a sufficiently clear picture of the current problems of the enterprise.

On the scale of the entire oil industry, application of this methodology by oil companies will make it possible to determine the current state of energy management of the entire industrial sector, which will allow making appropriate changes or additions to its development program.

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Повышение эффективности нефтедобывающего предприятия за счет внедрения новой методики оценки текущего состояния энергоменеджмента

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Ключевые слова и фразы: концепция системы; матрица энергоменеджмента; модернизация; среднее арифметическое; энергозатраты; энергоменеджмент.

Аннотация: С целью изучения различных механизмов оценки энергозатрат предприятия природопользования проводится обзор использования методики матрицы энергоменеджмента. Задача – изучение представляемой модели подсчета энергозатрат предприятия. Метод исследования – анализ. Гипотеза: предложенная модель поможет минимизировать энергозатраты при производстве нефтепродуктов. В результате проведенного исследования выделена значимая взаимосвязь между всеми стадиями производства.

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Automation and Robotics as Components of a Digital Breakthrough

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Key words and phrases: automation; digital economy; digital transformation; economic development; robotics.



Abstract: The article deals with the issues of automation, robotics and digitalization of industrial enterprises. The conducted research made it possible to determine the role of automation and robotics in digital processes and their interrelation. The stages of the introduction of digital technologies in industrial production are presented. The obtained results were used as the basis for the development of an organizational and economic mechanism, an important element of which is to determine the characteristic features in solving the problems of digitalization of industrial enterprises.



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Modern theory and practice shows that the introduction of digital technologies is the foundation of the competitiveness of industrial enterprises, and, consequently, of the territories to which they belong.

Currently, digitalization is considered as a necessary basis for the competitiveness of the world economy of industrialized countries. Every year in these countries, the costs of conducting research and development in various fields related to digital industrial production processes are increasing.

In Russia, there are lower rates of development of digital technologies and a low level of costs for the development and creation of new products, the introduction of digital technologies, which has a negative impact on the competitiveness of the domestic industrial complex [1].

Under the conditions of sanctions, against the background of the general state of the economy in the country, enterprises are forced to optimize funds in order to survive. In the current situation, it is quite difficult to implement digital projects on a full scale.

The lack of available funds, inflation and a number of other factors do not allow enterprises to build long-term plans and invest in long-term projects. Therefore, representatives of industrial business are primarily interested in the introduction of quickly recouped projects, which should be justified by customer demand and needs and carry minimal costs for the enterprise both in terms of re-equipping existing production facilities and minimizing the cost of purchasing materials, raw materials, components for the production of a new product [4].

However, in the modern world it is impossible to do without constant attention to the issues of improving the production process. The growing needs, changing views on the quality and

technical characteristics of the products, cannot be met without significant attention to modern technologies in general and digital technologies in particular.

Despite the presence of certain barriers to the introduction of digital technologies, the study of industrial enterprises conducted by the authors showed the interest of representatives of industrial business in the processes of digitalization. As a result of the survey, it was revealed that most enterprises are planning to digitalize production processes. It should be noted that the most attractive, according to experts, for industrial enterprises is automation and robotization of production processes [2].

The study of world experience has shown that the introduction of robotics significantly changes the value chain of the product in the direction of reduction. It should be noted that currently about 10 % of production tasks are automated at the enterprises of the industrial complex. By 2030, it is predicted that investments in robotics will increase and their use in production will increase to 25–45 %.

According to Milton Garry, President of the International Federation of Robotics (**IFR**), despite the ongoing pandemic, the prospects for the robotics industry in the world are optimistic.

The most promising markets for industrial robots are the regions of Asia. The primacy in this market belongs to China, Japan is in second place, followed by India, which has been able to double the number of industrial robots over the past 5 years. In Europe, the recovery of the robotics market is slow. The leader of automation and robotics is Germany. In Russia, the situation on the industrial robotics market is ambiguous. Experts of the National Association of Robotics Market Participants (**NASR**) believe that Russia lags behind developed countries by 7–10 years.

At industrial enterprises in Russia, the density of robotization of production is more than 20 times lower than the global average. According to IFR statistics, there are three industrial robots per 10,000 workers in Russia, while in countries with a high level of digitalization there are more than 100.

Despite the pessimistic statistics of international agencies, it should be noted that in general, the situation in Russia can be assessed positively, because for several years there has been an annual growth in the robotics market. First of all, this is due to the processes of digitalization of the industrial complex of the Russian Federation.

It should be noted that the substitution of the concepts of automation, robotization and digitalization is very often observed at the enterprises of the industrial complex. However, neither automation nor robotization is digitalization in itself. Automation should now be considered as an integral element of robotization and digitalization [1].

To consider automation and robotics in a digital focus, an enterprise needs an effective management system, artificial intelligence and a team of specialists that ensure the effectiveness of digital processes, since digitalization provides a systematic approach to the use of digital resources to increase labor productivity, competitiveness and economic development in general [3].

In her studies, A. Vichugova identifies five differences between automation and digitalization, which include:

- degree of integration of processes and data;
- virtualization of the main production facility;
- the nature of data management;
- production management procedure;
- flexibility of corporate culture.

With a more detailed study of the differences presented above, it becomes obvious that

automation is part of digitalization, but not synonymous. In order for automation within digital processes to be effective, in our opinion, complex and step-by-step work is necessary.

When implementing digital technologies in general, automation and robotics in particular, it is important to control and comply with all requirements, calculated actions and consumption rates. This stage is the most time-consuming and difficult.

Before planning the introduction of digital innovations (automation, robotics), it is necessary to conduct market research in order to identify new requirements for goods and the need for new types of products.

Based on the data obtained, it is necessary first of all to exclude technologies that will not significantly affect the satisfaction of market conditions in the areas identified as a result of market analysis, while the new equipment should be universal, with the possibility of re-equipment with minimal costs.

At the next stage of choosing the direction of automation, it is necessary to conduct a technological audit of the enterprise in order to identify the possibility of introducing digital technologies and the possibility of their integration with the equipment available at the enterprise.

The third stage in the implementation of automation is the analysis of raw materials and materials costs. The ideal option for the company would be the use of existing stocks of raw materials and semi-finished products or the purchase of identical materials.

Next, it is necessary to conduct a more detailed analysis of the automation project and decide on the final version.

The implementation of digital innovations should take place under strict control of all stages. If deviations are detected, timely work is necessary to eliminate the problems that have arisen.

To assess the effectiveness of a digital innovation project, it is necessary to conduct a comparative assessment of the options in terms of their profitability, cost and timing of implementation.

The effectiveness of digitalization should be assessed by analyzing commercial, budgetary and national economic efficiency. It is advisable to consider the impact of digital innovations not only on the economic, but also on the environmental and social component of both the enterprise itself and the territory.

Thus, the management of automation and robotics as elements of digitalization is a complex multi-stage process that includes the management and coordination of information, labor, material and other resources throughout the time of using digital technology through the application of a system of modern methods and approaches in management.

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Автоматизация и роботизация как составные элементы цифрового прорыва

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Ключевые слова и фразы: автоматизация; роботизация; цифровая трансформация; цифровая экономика; экономическое развитие.

Аннотация: В статье рассмотрены вопросы автоматизации, роботизации и цифровизации предприятий промышленного комплекса. Проведенное исследование позволило определить роль автоматизации и роботизации в цифровых процессах и их взаимосвязь. Представлены этапы внедрения цифровых технологий в промышленное производство. Полученные результаты были положены в основу разработки организационно-экономического механизма, важным элементом которого является определение характерных особенностей в решении задач цифровизации предприятий промышленного производства.

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Conservative Approach to Doing Business as a Problem of Research and Production Private Companies

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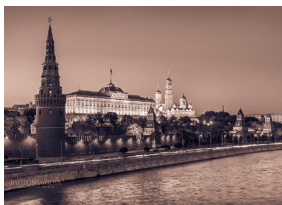


Key words and phrases: business; business development; business tools; competitiveness; crisis management; industrial enterprises; research and production company; sales; technology solutions.



Abstract: The article considers the conservative approach to doing business, as the main problem of existing research and production private companies founded from 1991 to 2009. Signs of such a problem and ways of possible solutions are shown, and possible methods of maintaining the competitiveness of products of such enterprises are identified.

The purpose of the paper is to identify the problem of existing research and production private companies founded between 1991 and 2009, as well as to develop and propose possible ways to solve such a problem.



The objectives of the paper are to offer owners of research and production private companies a transition from their usual business methods to more modern methods, as well as to encourage the use of simple and at the same time effective methods for maintaining competitiveness in the modern market.

The research hypothesis is as follows: most research and production private companies operating in the market for more than 20 years are faced with business stagnation, which, if effective tools and solutions are applied in a timely manner, leads to a new stage of development. In the case of the use of outdated and ineffective tools or idleness, which is more common, there is a regression with all the ensuing effects.



Outdated and inefficient tools or actions can be called “conservative business practices”, which are considered the main problem and obstacle to the development of such companies.



The revision of the applied conservative methods of doing business and their rejection in favor of modern and effective methods of doing business and maintaining competitiveness can become a saving factor for such companies.

The study used methods of sociological survey, observation and collection of information and a method of comparison, as a result of

which the problem of research and production private enterprises was identified and described; the most effective ways to solve such a problem were also described and proposed.

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As of 2021, there are 2.269.235 legal entities working in the production and sale of products on the Russian market, including private engineering, instrumentation manufacturing industry and scientific production enterprises, which originate from the distant 1990s and early 2000s.

In those years, such enterprises put in appearance mainly around bankrupt Soviet enterprises that had previously produced products in demand in a particular industry. The newly created enterprises essentially continued the business of bankrupt Soviet factories and produced the same products, but in smaller volumes and, in some cases, retained the original names and models of the developer. A significant share of such products is still produced and is in demand in the domestic market of the country. For example, these include the simplest metalworking lathes or forging and pressing machines.

Along with such enterprises, completely new private research and production companies were created. Such companies were organized by scientific staff and highly qualified specialists from various industries of the former USSR, which no longer represented value for the state.

The large bundle of knowledge and experience of such specialists allowed them to develop innovative and high-tech products, which today have analogues but are still in demand on the Russian market. Such products include radio-electric measuring equipment, special equipment for ultrasonic decontamination of radioactive waste, micro welding plants for microelectronics, etc.

Being almost the only ones of its kind at that time, such enterprises solved the most difficult production tasks of their customers, which allowed them to gain a reputation and a leading position in the market, as well as maintain them for decades. With their experience and competencies, such enterprises paved the way for the development of the high-tech equipment market and, while being “pioneers”, have left a significant mark in the history of the development of Russian business.

However, the Russian market began to develop rapidly, giving consumers more modern and technological products with the new business startups and foreign suppliers of products making their appearance on the country’s market. Backed by modern business practices, foreign suppliers and young companies simply began to supplant the “pioneers” of Russian business who were failing to follow modern trends.

Needless to say, not all private manufacturing enterprises created in the 90s and the noughties are being replaced by young competitors, but most of them do not keep pace with modern market development trends. As a result, they fail to cope with competition and cede to leading positions of younger and modern enterprises, which in turn leads to a decrease in the level of wealth or even to the bankruptcy of such enterprises.

The low ability to compete in a modern market is primarily due to the conservative approach of doing business, formed from the principles and values of market relations of the 90s and the noughties, which at one time had a positive effect on the development of such companies.

Unfortunately, the application of a conservative approach to business does not have a positive effect in the conditions of the modern market and, in fact, is considered the main problem of the above enterprises. This kind of problem requires an urgent solution and a radical revision of the approach to doing business. In such a way, we will try to understand and highlight two main signs of such a problem, as well as try to consider possible ways to solve it.

The conservative business approach is primarily linked to the human factor and is formed

by people who are of great importance to the company. Often, such people are business owners or managers, who in turn extend their ideology to the company as a whole. In any case, the ideology of the head, in most cases, becomes a policy or a set of principles of the company, which plays an important role in the life of the business.

In most cases, research and production companies from the 1990s and the noughties are managed by their founders. These people are high-class specialists from the former USSR, whose competencies and experience are invaluable. However, despite their invaluable experience and contribution to the development of the Russian market for high-tech equipment and their own business, such people, to a greater extent, have technical thinking that allows them to create products that are vital for a particular industry, and they manage to effectively run the production process. However, they do not always manage to adapt to modern market trends and take the necessary measures, which in the long run may lead to stagnation in the development or even regression of their company.

There is no doubt that in the conditions of the modern market, such managers try to take all kinds of actions to save the business and develop competitive solutions. However, such solutions come down to the fact that the company reduces the prices of its products to a minimum (dumping) on an ongoing basis, while maintaining the same quality, in the hope of keeping the customers developed over the years of leadership.

Perhaps, with this approach, one can manage to save existing customers. However, in this case, the business growth will be out of the question. Therefore, this approach will be the first resulting sign of a conservative approach to doing business.

Sign 1: *A company does not update the existing product but maintains the previous type of product and quality, while reducing its cost or fixing its price for several years, thereby developing a tool in order to increase competitiveness. The accompanying sign will be the lack of business development for a very long period.*

Of course, in addition to cooperation with the existing customers, such enterprises receive periodic orders from new customers. However, this happens only because the client either does not have enough funds to purchase an imported or modern product, or the client has previously worked with such a product, which eventually forms a niche for such companies.

In turn, the presence of such a niche does not give a large number of orders and at the same time acts as a “comfort zone” for such companies, from which it is difficult to get out without taking development-oriented measures. That is, as we said earlier, the company created a product in demand back in its years, which (according to the owners) suits customers, therefore, there is no need to finalize or modernize it.

It should also be remembered that over time, the niche occupied by such companies begins to gradually narrow due to the change of generations and the improvement of technological processes of industrial enterprises.

To put that into perspective, it is enough to recall the almost unchanged reliable UAZ car of the SGR series (early models 2206/3741/3909/39094/3962/3303), which is produced from 1965 to the present and which has long occupied its niche.

Here, we have the same sort of situation. However, in the case of the UAZ car manufacturer, operate at a loss can be compensated by state orders or state support, and in the case of the company under consideration, this approach is quite risky as it can lead to bankruptcy of the company.

Firstly, practice shows that the majority of state customers is already undergoing the stage of generational change, which, in turn, means improvement of the culture of production by equipping modern high-tech products (equipment) that meet modern standards and requirements

for quality, processability and ergonomics, which automatically deprives these enterprises of orders. Exceptions are cases when there are no analogues that could replace outdated products or when a generation of Soviet conservative engineers is still working at the client's company.

Secondly, it is almost impossible to sell a product to a new customer that was developed in the 90s or the noughties and has a design (technology, functionality) corresponding to that time, even if this product costs much cheaper than modern analogues. The reason for this is again the change of generations and the high consumer ability of state-owned companies, which allows them to acquire modern, high-quality and expensive products, as well as a large number of alternative offers on the market. Exceptions are all the same exclusive developments that have no modern analogues or a financial component that requires budget solutions.

Based on the above, let us note the absence of modern product packaging and business as a whole as a second feature of a conservative approach to doing business.

Sign 2: *A company does not invest in the creation of modern product packaging or business as a whole.*

In such a way, we considered two most important features of a conservative approach to doing business from a commercial point of view – the global problem of companies operating since the 1990s and early 2000s. It is also worth adding that in addition to the indicated features, there are several equally significant features of a conservative approach to doing business, which require separate consideration and are not affected in this article, but rather characterize the approaches of such companies to organizing production, creating documentation for products, and managing personnel.

Now we will try to understand possible ways to solve the global problem of those operating since the 1990s and the 2000s. In order to do this, we turn to Sign 2, when the company does not invest in the creation of modern product packaging and business as a whole.

In our case, the concept of “creating modern packaging” should be understood literally, because we have already said that most of these enterprises produce a product that most often does not outwardly meet modern market requirements (see the example with a UAZ car), which in turn makes such a product less competitive. Even though it may be practical or of high quality and functionality, such a product is unlikely to attract the attention of a new generation of consumers or new customers whom such research and production companies would like to attract to cooperation.

Therefore, the creation of modern packaging is the development of a modern product design. Such a solution is quite labor-intensive and will require big investment as well as analyzing competitive products, conducting customer surveys, and possible changes in the design of the product.

An ideal addition to “redesigning” the product is the improvement of the functionality of previously developed products. However, such an event is considered individually for each product, and the decision to perform such an event is made on the basis of the embedded technological potential or consumer properties in the product.

However, despite the costs of resources, such a solution will unambiguously increase the ergonomic and aesthetic properties of the product, which in turn will have a positive effect on its consumer properties. Whereas the phased implementation of such an event will allow the company to reduce the financial burden by consistently updating the design of the model line-up, as well as reduce costs and labor costs in the case of manufacturing new product shells on outsourcing (if we are talking only about product design). In lay terms, it is worth starting such activities small and then move step by step from the development of product design to drawings and first samples. Such work can be entrusted, for example, to a young design

student, cooperation with which can become quite productive and mutually beneficial.

The practice of modern Russian companies shows that this approach works well, and the use of outsourcing in the production of goods is an economically profitable solution for business, especially when it comes to cooperation with Chinese or Taiwanese companies, where the cost of producing product components will be much lower than in Russia. It means that the production of components according to drawings on the outsource also saves the funds of companies due to the absence of the need to re-equip for production, for example, of a new product shell (housing) after the redesign.

Therefore, the first solution to the global problem is to improve the ergonomic and aesthetic properties of the product.

As updated products are introduced into turnover, attention should also be paid to the company's website, as well as presentations and catalogs, which actually implies the creation of "modern business packaging". At first glance, for many of us, such a solution may seem simple and obvious. However, if you look at the websites, catalogs and presentations of companies created in the 1990s and the 2000s, in most cases we will see irrelevant information drawn up in the style of past years.

For such companies, maintenance of websites, presentations and catalogs at a modern level is no less important than updating product design or introducing modern sales methods. After all, on an aggregate basis, the listed activities can be compared with a single mechanism that generates new orders. Thereby, ignoring the listed activities destroys such a mechanism.

In turn, maintenance of websites, presentations and catalogs at the modern level does not require a lot of time and money from companies, which greatly simplifies the way of solving this problem. Therefore, the second solution to the global problem will be the development of a modern and informative website, presentations and catalogs.

We began to consider possible ways for a purpose to solve the global problem of companies from the second feature, because in order to increase competitiveness in the market, such enterprises, first and foremost, need to solve the problem with the product, website and catalogs, which also partially eliminates the first feature of the global problem. Such events can be held without involving specialists in the company.

Now let us turn to the first sign of the disclosed problem, which implies that a company does not update and retains the same type of product and quality, while reducing its cost or fixing it for several years, thereby developing a tool in order to increase competitiveness.

We assume that the company has already taken actions to solve the previously announced global problem. Now such a company has a product, website, catalogs and presentations that meet modern market requirements. Therefore, such a company is already armed with effective tools that will conditionally keep the product competitive at a high level. In addition, due to the solution of the tasks indicated in Sign 2, some parts of the tasks from Sign 1 are also being solved, when "a company does not update and retains the previous type of product and quality."

However, now such a company should come up with a development strategy, as well as with modern and effective methods for promoting products, because in the hands of a professional manager, a company "packed" with modern standard will become a fairly profitable business.

The obvious solution is to find and involve a competent manager with experience in crisis management and business scaling. It is very important as such valuable people will act as life savers for such companies.

Firstly, such people have commercial thinking, which allows them to objectively identify the value of products offered by such companies, gradually increase the profitability of sales and develop appropriate development strategies.

Secondly, such people already have successful business development experience, which allows them to project their previous experience on a similar business and take effective measures for business development in the shortest possible period of time.

Thirdly, such specialists unambiguously have their own customer base, which will also contribute to an increase in sales. The selection of such specialists can and should be delegated to recruitment professionals.

Without doubt, attracting a hired manager may seem expensive and risky from the point of view of the business owner. However, such a decision is much less risky than the refusal of the services of an experienced manager and the risk of bankruptcy of the company, because any cooperation is regulated by agreements enshrined in a legally significant document – a contract. In addition, it is much more profitable and less risky to give part of the profit from the stable flow of orders obtained as a result of the activities of the hired manager than to receive periodic orders from the remaining part of long-standing customers.

An additional solution for the development of the company may be the development of a dealer chain or targeted cooperation with commercial companies specializing in integrated equipment of industrial enterprises from various industries.

There is no doubt that such an approach to increasing sales does not always suit the owners of production companies, because the principle of such companies is often to work directly with the client, which is also quite reasonable and understandable. One can only assume that a negative attitude towards this format of cooperation occurs due to the comparison of all trading companies with fly-by-night companies from the 90s and the noughties, which quite often were engaged in fraud and deceived their counterparties. Unfortunately, there are similar precedents even today. However, today there are enough services for checking counterparties, which simplifies our activities.

Therefore, in the conditions of the modern market, such company should not neglect cooperation with commercial companies, because cooperation significantly increases the number of new orders, and it also provides production companies with a conditionally free sales department, which does not have to be paid “here and now”.

Without the slightest doubt, in the future one will have to share profits with such companies. However, do not forget that they sell only at a price they are comfortable with, and therefore, and you as well have no need to give them big discounts.

At the end of the article, it should be noted that the methods described above are the simplest and at the same time vital solution to the global problems of private science-based companies, in the life of which there is a clear lack of development over a long period of time.

Relatively young companies are also in need of such methods, where the use of conservative business methods is clearly monitored. However, we have precisely paid more attention to those research and production companies, which were founded in the 1990s and the 2000s. Most of them really produce high-demand products for many industries and, unfortunately, it is such companies that most often ignore modern market trends. As a result, they become uncompetitive and eventually cease to exist, thereby depriving the industry of a time-proved product.

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Консервативный подход к ведению бизнеса как проблема частных научно-производственных предприятий

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Ключевые слова и фразы: антикризисные решения; бизнес; инструменты для бизнеса; конкурентоспособность; научно-производственная компания; продажи; промышленные предприятия; развитие бизнеса; технологические решения.

Аннотация: В статье рассмотрен консервативный подход к ведению бизнеса в качестве главной проблемы действующих частных научно-производственных предприятий, основанных в период с 1991 по 2009 гг. Показаны признаки такой проблемы и возможные пути ее решения, определены возможные методы сохранения конкурентоспособности продуктов таких предприятий.

Цель работы – обозначить проблему действующих частных научно-производственных предприятий, основанных в период с 1991 по 2009 гг., а также выработать и предложить возможные пути решения такой проблемы.

Задачи работы: предложить собственникам частных научно-производственных предприятий переход от привычных для них методов ведения бизнеса к более современным методам, а также побудить к применению простых и в то же время эффективных методов сохранения конкурентоспособности в условиях современного рынка.

Гипотеза исследования: большинство частных научно-производственных предприятий, работающих на рынке более 20 лет, рано или поздно сталкивается со стагнацией бизнеса, что в случае своевременного применения эффективных инструментов и решений приводит к новому этапу развития. В случае же применения устаревших и малоэффективных инструментов или бездействия, что бывает чаще, наступает регресс со всеми вытекающими эффектами.

Устаревшие и малоэффективные инструменты или действия можно назвать «консервативными методами ведения бизнеса», являющимися главной проблемой и препятствием на пути развития таких компаний.

Спасаящим фактором для таких компаний будет пересмотр применяемых консервативных методов ведения бизнеса и отказ от них в пользу современных и эффективных методов ведения бизнеса и сохранения конкурентоспособности.

В работе применялись методы социологического опроса, наблюдения и сбора информации, сравнения, в результате чего была выявлена и описана проблема частных научно-производственных предприятий, описаны и предложены наиболее эффективные пути решения такой проблемы.

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UDK 338



Problems of Legal Regulation of Economic Relations in Conditions of Digitalization of the Economy

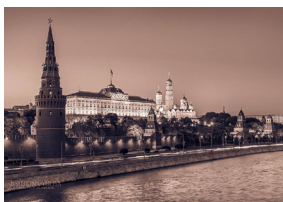
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Key words and phrases: identification; information security; social justice; smart contracts; digital civil turnover; digital financial assets; digital economy.



Abstract: The article reveals the main provisions of the legal regulation of the market economy in the conditions of its rapid digitalization. The main concepts of the development of economic relations and the problems of changing legislation in order to create a comfortable legal environment for economic entities are presented. The current existence of a new “digital” economic reality imposes special tasks on the state in the field of legal regulation, when legal tools are ineffective and even hinder the development of economic relations. In this regard, it is currently relevant to study the problems of legal regulation in the field of digital economic turnover and the impact of digitalization processes on the regulation of property relations of subjects of civil turnover using digital methods of participation in economic relations.

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The widespread introduction of digital technologies has led to drastic changes in the economy in recent decades. Currently, many economic processes are modeled and regulated on the basis of new management principles based on digital technologies. Such technologies are based on huge databases, registries, new methods of digital data analysis, and mathematical modeling.

In this regard, there are a lot of legal conflicts related to the problems of personal data protection, information security, identification of civil turnover persons, registration of property rights and transactions with it, regulation of banking processes. A significant place in the emerging digital economic relations is occupied by the problem of ensuring the implementation of the principle of social justice, identifying social patterns of digital economic relations and their proper legal registration [1, p. 126].

The possibilities of remote communication actively invade the economic turnover and require prompt legal regulation. The new regulatory environment should be aimed at creating a unified digital environment based on equal opportunities for the use of paper and digital document circulation, equal legal status of entities performing legally significant actions in various ways. To do this, it is necessary to provide all business entities with equal opportunities

for digital remote communications [2, p. 27–29].

The issues of legal regulation of certain types of entrepreneurial activity in the context of the development of digital technologies are relevant. The high level of use of information technologies in the field of entrepreneurship, the emergence of new structures in the form of smart contracts, entails the need for state control in the sphere of cryptocurrency turnover and blockchain technology. In practice, the use of smart contracts is quite widespread. The potential directions of using smart contracts range from the registration of trust management and registration of inheritance trusts to the execution of automatic arbitration clauses and insurance [3, p. 80].

The digitalization of entrepreneurial activity in the field of investment, public procurement, credit and insurance activities is a reflection of modern challenges in the Russian economy and law. In this regard, there are many legal conflicts related to the problems of identification of civil turnover persons, regulation of banking processes based on digital technologies that do not provide global information security to economic entities. Draft laws on amendments to the Civil Code of the Russian Federation for the purpose of legal regulation of new digital technologies are actively discussed in the legal environment [4, p. 26]. New digital financial objects (tokens, cryptocurrency, mining, etc.) are not recognized by the Russian legislator. Therefore, it is impossible to legally influence the turnover of these assets and effectively protect the rights of persons who operate them. The courts are faced with the impossibility of fully resolving such cases on the basis of the current legislation, which poses new challenges to Russian law.

In modern society, there has been a rapid transformation of economic relations into a digital form. This makes it necessary to consolidate new objects of the economy and legal regulation of the digital economy in the law. In the digital economy, economic activity is carried out with the help of digital technologies, but hasty regulation of new economic phenomena is fraught with dangers.

Currently, it is impossible to develop a single federal law that would regulate the large-scale development of the digital environment in all spheres of the economy. Therefore, the basic concepts of digital reality affecting the rights of citizens must be regulated at the level of a framework federal law, which will provide for amendments to certain sectoral laws. And the details of regulation should be left at the level of by-laws, taking into account the rapidly changing socio-economic relations.

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Проблемы правового регулирования экономических отношений в условиях цифровизации экономики

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Ключевые слова и фразы: идентификация; информационная безопасность; социальная справедливость; смарт-контракты; цифровой гражданский оборот; цифровые финансовые активы; цифровая экономика.

Аннотация: В статье раскрываются основные положения правового регулирования рыночной экономики в условиях ее быстрой цифровизации. Представлены основные концепции развития экономических отношений и проблемы изменения законодательства в целях создания для хозяйствующих субъектов комфортной правовой среды. Существование в настоящий момент новой «цифровой» экономической реальности накладывает особые задачи на государство в сфере правового регулирования, когда юридический инструментарий оказывается неэффективным и даже тормозит развитие экономических отношений. В этой связи в настоящее время актуально исследование проблем правового регулирования в сфере цифрового экономического оборота и влияния процессов цифровизации на регулирование имущественных отношений субъектов гражданского оборота, использующих цифровые способы участия в экономических отношениях.

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UDK 658



Creating a Value Proposal as a Factor of Improving the Efficiency of Entrepreneurial Activity

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Key words and phrases: entrepreneurial activity; value proposition; startup project management; organization management.



Abstract: Nowadays start-ups and incumbent organizations are forced to operate in conditions of a high degree of uncertainty and variability of the external environment. To stay competitive, companies need to quickly adapt to these changes. The experience of successful companies shows that the development and use of a value proposition is an effective management tool that helps leaders cope with new challenges. The aim of the study is to study existing approaches to the development of a value proposition in the activities of companies. To achieve the goal of the study, the following tasks were formulated: to analyze the need to use the value proposition; to consider the challenges and opportunities associated with the value proposition; to analyze the main elements of the value proposition model; to characterize the elements of the value proposition model.



As a hypothesis, the idea is put forward that the use of a value proposition in entrepreneurial activity allows leaders to increase its efficiency, thereby contributing to maintaining the competitiveness of a startup or an operating organization. The study was conducted using benchmarking methods, systems analysis, management methods and firm theory. The analysis showed that the use of a value proposition is an effective management tool that provides an opportunity to adapt the company's potential to changes in the demands of existing and potential customers.



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One of the most important elements of interaction between the company and the consumer is the creation of a value proposition that matches the problems and needs of customers, as well as the search for opportunities to meet the identified needs.

A common approach to creating a value proposition is to use a template [1; 2]. It can be used not only to create, but also to test the value proposition in the process of finding opportunities for customer satisfaction.

Value proposition development is the process of developing and maintaining the created

product up to date. It is created using certain tools.

An entrepreneur who creates a startup project usually encounters the problems of creating a value proposition for the first time. First of all, it is necessary to understand what problems and what opportunities work on the preparation of a value proposition opens up [3].

Let us point out some problems:

- the need for the founder of a startup project to understand the possibility of its implementation;

- the possibility of attracting investors to finance the project;

- evaluation of the financial model for the monetization of the project.

As for the possibilities, the following should be noted:

- efficiency in making managerial decisions;

- active involvement of investors and project founders in the process of developing a value proposition [4].

The tools that we will consider can be used to prepare new value propositions, as well as to develop existing ones, that is, value propositions created earlier.

Success in entrepreneurship requires developing skills that enable you to continually create and adjust value propositions that target specific customer segments.

While preparing a value proposition, you can use the template proposed by A. Osterwalder and I. Pignet [1]. The template will enable to create:

- a) a customer value map to show how value will be created for that customer;

- b) a customer profile in order to clarify the customer's understanding. This assumes that the value map and the customer profile must be consistent.

We create a value map for the consumer, representing a list of those goods and services that are planned to be offered to the consumer as part of the value proposition.

It should be borne in mind that the value proposition should be focused on a specific consumer segment.

The value proposition can include a variety of products and services, for example: digital and online products and services, tangible, intangible products, financial products and services.

The value proposition should include only those products and services that solve the customer's main problems or provide him with new market opportunities.

The goods and services offered to the consumer that are part of the value proposition may have different values for him.

Therefore, it is necessary to separate those goods and services and their characteristics that may be of key importance to the consumer and those that complement the value proposition. Basic goods and services are aimed at solving those problems of the client, which are the main ones. Additional products are of secondary importance and play an additional role.

In the process of creating a value proposition, it is important to understand what benefits it will bring to the consumer. Product benefits are those benefits that a consumer experiences when they use a particular product. Such benefits can represent benefits in features, savings opportunities, and positive emotions from using the product.

It is important for an entrepreneur to understand the most important consumer benefits that a product represents. If the benefits from the product meet the consumer's expectations, the value proposition is successful.

What actions can lead to alignment of value and benefit?

In order to determine the relevance of value and benefit, it is advisable to start developing a value proposition. Compliance must be ensured, above all in relation to issues of key importance to the consumer.

Matching what is offered with what is needed for the consumer is the main task for the entrepreneur. The solution to this problem can be carried out by implementing the following measures:

- identification of those benefits that are important to the consumer;
- obtaining customer approval for the value provided;
- development of a business model of the product, allowing to obtain the planned financial results.

In the sphere of activity of the creators of start-up projects, the search for the correspondence of problems that are of key importance to the consumer and a profitable value proposition looks like a diagram: problem - solution - product - market.

Once it is clear that the value proposition will be viable, the transition from idea to prototyping of the product takes place.

The starting point for preparing a value proposition can be consumer information, prototype research, or data from other sources.

The next step is prototyping capabilities.

At this stage, several simple models of new product value propositions are created and presented to the consumer in order to understand his reaction. Each model provides the consumer with a specific set of benefits and opportunities that must be tested with the consumer.

Alternatives are explored in the prototyping process. The findings can help you prepare the best value proposition.

In the process of preparing prototypes, it is important to resist stereotypes. Practice shows that the correct value proposition is difficult to obtain at an early stage. The desired result will be received after a certain period of time.

When choosing a starting point for developing a value proposition, it is important to understand that not in all cases it is the customer who is the source that is the generator of the new value proposition. At the same time, a value proposition is created primarily in order to solve significant consumer problems and receive tangible benefits for them.

To develop a value proposition, an understanding of the consumer's perspective is essential.

The analysis shows that there are a variety of methods to understand the needs of clients [5].

1. Research of all available information. Customer reports can be the basis for getting started on creating a value proposition.

2. Conversations and interviews with potential clients can help to understand the views and perspectives of the consumer on the value and benefits of a particular product.

3. Observation of the consumer in his natural environment. This is necessary in order to understand the behavior of customers in real life conditions. This method involves studying the problems that consumers are focused on and the actions they take to solve problems.

4. It is allowed to conditionally take the place of the consumer and use the offered goods and services. Spend some time at the consumer's site and draw conclusions from your own consumer experience.

5. Embed customers in the value chain to jointly develop new ideas or jointly experiment.

In order to more accurately determine the further path of promoting the value proposition, it is necessary to understand in the context of which environment decisions and actions are to be made.

However, it should be correctly understood that analysis and modeling will justify a step-by-step movement towards a given goal, but only the market finally determines whether the value proposition will receive recognition from the consumer, and the entrepreneur will receive profit.

The high degree of uncertainty in the results that the creators of start-up projects expect from the implementation of ideas for creating value propositions compels testing and experimentation.

Practice shows that it is advisable for an entrepreneur to test a business idea by conducting inexpensive experiments, rather than immediately funding the final product development.

Carrying out test activities allows you to accumulate a large amount of knowledge about the consumer for making decisions and taking the necessary actions in a less uncertain and risky situation.

What should an entrepreneur test?

The experiment is to find out if consumers are interested in what constitutes a value proposition? Will the products and services that are marketed help overcome challenges and generate benefits that are meaningful to the consumer?

In order to start testing, it is necessary to formulate a hypothesis about the conditions when the attractiveness of the value proposition will be confirmed by the consumer. A critical attitude to the data obtained will help to avoid failure. The most relevant data are obtained during the experiment.

What is usually understood as an experiment?

During the experiment, the hypothesis about the attractiveness of the product or business model should be confirmed.

The task is to develop and conduct experiments to test the consumer for:

- understanding the relevance and interest in the value proposition;
- availability of effective demand for a product or service.

It is important to obtain confirmation that the users of the product agree not only to respond to the call to act, but also to pay for the goods and services provided.

To study the problems, benefits and interest in the value proposition, or lack thereof, from consumers, advertisements are used by tracking clicks on the advertising link. This technique is used as a method of effective advertising.

You can test your value proposition using services such as social networks, Google Adwords service.

A minimum viable product (**MVP**) can be used to test interest in a value proposition [6].

To test your value proposition, you can create a website or mobile app describing the product and its key features. In this case, it is important to track the number of visitors who signed up for the newsletter or imitated a purchase.

Split testing tools are also widely used to identify facts of consumer interest in a value proposition. Split testing is used to compare multiple value proposition options in order to determine more accurate information about consumer motives and behavior.

If we consider the procedure for creating a value proposition, then it can be thought of as an opportunity to coordinate decisions and actions all the way from a business idea to a product launching to the market.

When an entrepreneur develops a value proposition, he has the opportunity to present to all interested parties information about what consumer problems a new product can solve or what benefits it provides to customers.

It is also important to perform a number of interrelated actions:

1. Conduct events to familiarize partners who will sell a new product with the specifics of the value proposition.

2. Conduct explanatory work among sales representatives (sellers) about which market segments the value proposition is focused on, what are the problems and benefits of consumers. It is necessary to systematically educate and educate about which aspects of the value proposition will ensure commercial success by helping consumers solve consumer problems and reap benefits. To promote ideas for commercializing the value proposition, it is possible to create consistent presentation scenarios for business partners and customers.

3. Base marketing stories, from advertising to packaging, on problem solving and consumer benefits. All marketing measures should be developed in the same style and with a general idea for the benefit of the consumer. Stakeholders' attention should be especially focused on the factors that form the value from and the benefits of the product for the consumer.

4. Help employees understand the specifics of the value proposition, what problems the customer solves, and what benefits it provides.

5. Explain that there is a correspondence between the company's current business model and value proposition.

6. Show other owners how the value proposition is created and how it fits into the business model and keeps the company competitive.

Analysis shows that it makes sense to apply the value proposition template after a new product is launched on the market. It allows you to assess the effectiveness of the functioning of the business model and the results of the company.

The success of companies in the marketplace is related to how well value propositions are incorporated into current business models. At the same time, it is important to work on the efficiency of business models, which are currently rapidly changing and becoming obsolete, as well as on the search for new market opportunities [7].

What an entrepreneur can do to seize new opportunities?

1. Carry out systematic work on the creation of new value propositions, as well as their adjustment.

2. Track successful business models in the market and work on preparing your own business models.

3. Experiment constantly with new value propositions as well as new business models.

4. To renew production without waiting for the moral and physical aging of equipment and technology.

5. Consider new ideas and opportunities as a motive for action, a signal to mobilize employees for new actions.

6. Evaluate new ideas and opportunities based on the results obtained by experimenting with new products.

The analysis shows that it is very important for business founders and entrepreneurs to identify and monitor the success of an existing value proposition on an ongoing basis. This is due to the rapid changes in the external environment in which the company or startup operates.

We need to maintain a high rate of value proposition renewal and business model transformation. There is no need to wait for market conditions to force these decisions and actions. You should go ahead of changes in the external environment.

The results of research show that the use of value propositions by leaders increases the efficiency of entrepreneurship. This tool allows you to timely adjust the company's business model, as well as interaction with consumers in connection with changes in their preferences, as well as other environmental factors.

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Создание ценностного предложения – фактор повышения эффективности предпринимательской деятельности

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Ключевые слова и фразы: предпринимательская деятельность; управление организацией; управление стартап-проектом; ценностное предложение.

Аннотация: В настоящее время стартапы и действующие организации вынуждены работать в условиях высокой степени неопределенности и изменчивости внешней среды. Для поддержания конкурентоспособности компаниям необходимо быстро адаптироваться к таким изменениям. Опыт успешных компаний свидетельствует о том, что эффективным управленческим инструментом, который помогает лидерам справиться с новыми вызовами, является разработка и использование ценностного предложения.

Целью исследования является изучение существующих подходов к разработке ценностного предложения в деятельности компаний. Для реализации цели исследования сформулированы следующие задачи:

- проанализировать необходимость использования ценностного предложения;
- рассмотреть проблемы и возможности, связанные с ценностным предложением;
- проанализировать основные элементы модели ценностного предложения;
- дать характеристику элементам модели ценностного предложения.

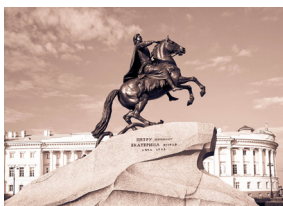
В качестве гипотезы выдвинута идея о том, что использование ценностного предложения в предпринимательской деятельности позволяет лидерам повысить ее эффективность, тем самым способствуя поддержанию конкурентоспособности стартапа или действующей организации.

Исследование было проведено с использованием методов сравнительного анализа, системного анализа, методов менеджмента и теории фирмы.

Проведенный анализ показал, что использование ценностного предложения является эффективным управленческим инструментом, который предоставляет возможность адаптировать потенциал компании к изменениям запросов существующих и потенциальных клиентов.

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UDK 338



Measures for the Development of the Waste Recycling System in St. Petersburg

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Key words and phrases: waste management in the city, economic indicators; urban economy; selective collection, sorting and transportation of waste.



Abstract: In order to improve the waste management system in St. Petersburg, the article discusses measures to streamline the management of waste management in the city, to improve the economic indicators of this sphere of urban economy and to improve its regulatory framework. The study used methods of economic analysis, system analysis of the current situation, and forecast of the development of the waste management system in St. Petersburg.

As a result of the study, measures are presented to streamline the management of waste management in the city, to improve the economic indicators of this sphere of urban economy and to improve its regulatory framework.

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The improvement of the waste management system in St. Petersburg will require the priority implementation of measures to streamline the management of waste management in the city, to improve the economic indicators of this area of urban economy and to improve its regulatory framework.

In any case, at the first stage of optimizing the waste management system, it will be necessary to improve the organization of its structure and strengthen the material base necessary for the selective collection, sorting and transportation of waste. In particular, technical means, including mobile stations, will be needed for the collection and neutralization of hazardous fractions of household waste (waste containing mercury, spent chemical current sources, etc.). It is also necessary to provide for the development of the legal framework and material infrastructure necessary to increase the collection, processing and use of secondary raw materials.

In order to accelerate the implementation of measures to isolate hazardous fractions and secondary raw materials from MSW, it is advisable to organize a system of sorting stations in the city, where waste collected selectively by the population would be received, and where they could be cleaned and become marketable before further use.

The financing and practical implementation of these processes can be transferred to

commercial structures, but the functions of general management and control should remain with the administration of St. Petersburg.

To identify the most acceptable of the above options for the development of the waste management system, it is necessary first of all to assess the degree of environmental impact during the implementation of each of these options, as well as the amount of upcoming capital and operating costs for each option.

When assessing the level of impact of each of the considered options on the environment, it should be borne in mind that this impact is mainly determined by the following factors:

- pollution of atmospheric air, soils and natural waters by the release of harmful substances formed by waste buried in landfills, and the level of these pollutants (i.e. the amount of biogas and filtrate released from landfill masses) depends on the amount of buried waste and on their composition;
- pollution of atmospheric air by flue gases formed during the heat treatment of processed waste [1].

Before assessing the environmental features of the options under consideration, the material balance of the waste stream should be compiled and studied during the implementation of each of them.

During thermal processing, new waste is generated, mainly ash and slag, in the amount of 40 % of the mass of treated waste.

Buried biodegradable waste in conditions of limited oxygen access will emit biogas, consisting of at least half methane, as the main decomposition product.

According to the reference book “Biotechnologie”, Part 1, Gustav Fischer Verlag Jena 1991, 1 ton of dry waste gives from 200 to 600 m³ of biogas when completely decomposed by an anaerobic mechanism. If we take as a basis the allocation of 300 m³ of biogas per 1 ton of dry waste, i.e. the volume is below the average possible, this will correspond to the allocation of 150 m³ of methane [2].

Thus, the complete decomposition by the anaerobic mechanism of 612 thousand tons of biodegradable substance will give 183.6 million m³ of biogas, i.e. with a 50 % methane content – 91.8 million m³. Since methane is almost 80 times more active greenhouse gas than CO₂, this volume will correspond to the release into the atmosphere of about 7.3 billion m³ of carbon dioxide.

If one of the options 2 and 3 is implemented, secondary (non-recyclable) waste in the amount of about 580 thousand tons, as well as ash and slag in the amount of about 530 thousand tons will be delivered to the landfills. The non-recyclable waste will contain no more than 20 %. 58 thousand tons of dry biodegradable substance, from which 8.7 million tons m³ can be released of methane (in carbon dioxide equivalent, this corresponds to about 690 million m³ of CO₂). Ash and slag do not contain organic substances.

As for flue gas emissions into the atmosphere from thermal-oxidizing waste treatment plants at factories (options 2 or 3), these gases must be effectively cleaned of toxic substances before being released, and at the output, the main pollutant in them will be the greenhouse gas CO₂.

When estimating carbon dioxide emissions, we will proceed from the following assumptions:

- the content of organic matter in waste is 70 %;
- the elemental composition of organic substances in waste is conditionally assumed to be similar to the composition of cellulose;
- the humidity of the waste is 50 %.

The mass of carbon dioxide released under these conditions will be about 1 million tons,

which corresponds to the volume of 0.51 billion tons m³ of CO₂.

The implementation of any of the possible options for improving the waste management system, including export, in St. Petersburg will require the priority implementation of measures to streamline the management of waste management in the city, to improve the economic indicators of this area of the urban economy and to improve its regulatory framework.

In addition, in any case, at the first stage of optimizing the waste management system, it will be necessary to improve the organization of its structure and strengthen the material base necessary for the selective collection, sorting and transportation of waste.

In particular, technical means, including mobile stations, will be needed for the collection and neutralization of hazardous fractions of household waste (waste containing mercury, spent chemical current sources, etc.).

It is also necessary to provide for the development of the legal framework and material infrastructure necessary to increase the collection, processing and use of secondary raw materials.

In order to accelerate the implementation of measures to isolate hazardous fractions and secondary raw materials from MSW, it is advisable to organize a system of sorting stations in the city, where waste collected selectively by the population would be received, and where they could be cleaned and become marketable before further use.

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Мероприятия для развития системы переработки отходов в Санкт-Петербурге

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Ключевые слова и фразы: городское хозяйство; обращение с отходами в городе; селективный сбор, сортировка и транспортировка отходов; экономические показатели.

Аннотация: В целях усовершенствования системы обращения с отходами в Санкт-Петербурге в статье рассматриваются мероприятия по упорядочению управления обращением с отходами в городе, по улучшению экономических показателей данной сферы городского хозяйства и по совершенствованию ее нормативно-правовой базы. В исследо-

вании применялись методы экономического анализа, системного анализа текущей ситуации, прогноза развития системы обращения с отходами в Санкт-Петербурге.

В результате исследования представлены мероприятия по упорядочению управления обращением с отходами в городе, по улучшению экономических показателей данной сферы городского хозяйства и по совершенствованию ее нормативно-правовой базы.

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UDK 37.015.3

Perception of the Educational Environment by Students of Military Universities

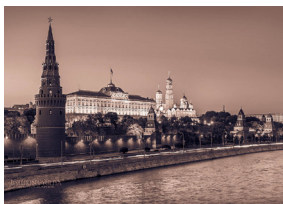
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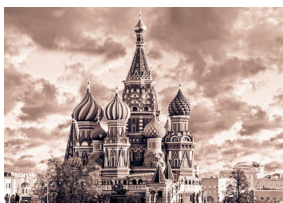


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Key words and phrases: educational environment; value orientations; professional education; personal changes; values of education.



Abstract: The system of modern education has recently been often transformed and constantly improved. The problem that has arisen in this regard to keep pace with the rapidly changing educational reality is relevant not only for teachers, but also for students. The success of vocational training depends on the correct understanding and perception of the educational environment by the cadets. For this, it is important to investigate those criteria that most fully reflect the successful implementation of vocational training.



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When considering the essence of the educational environment in the pedagogical aspect, as a rule, today only the final result is assessed – the competence of graduates and the level of their professional culture [1].

It is important to take into account the objective and subjective aspects of considering this issue for a dialectically correct conclusion. The perception of the educational environment by cadets is sometimes ambiguous. It depends on the subjective (personal, professionally significant) characteristics and objective conditions of the above process.

In an educational organization, conditions for the development and value orientation of a person are created in the process of interaction of group and individual subjects in three closely interrelated and at the same time relatively autonomous aspects: the organization of a person's social experience, education and individual assistance [2].

In recent years, the system of modern education has often been transformed and is constantly being improved. Thus, the problem arises to keep up with the rapidly changing educational reality not only for teachers, but also for students. True professionalism necessarily includes a value-based, meaningful attitude to the profession, and this, in turn, is laid down at the stage of professional education. In this we see the relevance of the study of the perception of the educational environment by subjects.

Personal changes become the main criterion for the success of vocational training: acceptance of professional values, professional culture, and meaningfulness of activities [3]. The process of adapting to the educational environment of a university for a freshman is an adaptation to a new teaching system, to a change in the mode of educational activity, and joining a new team. It is important to take into account that it is in the first year that the foundation is formed for the entire subsequent period of study, the greatest changes occur in

freshmen in a year.

How are the values of education formed and what place in the hierarchy of values do the cadets in the elementary courses take, how are they perceived and what is the educational space of a departmental university for them? A survey was conducted on these issues among the cadets of the first and second courses. As a result, 18 people were interviewed in both courses. The analysis of the definitions of the educational space by cadets showed that for the most part, they define the educational space of the university as a system, place, set of conditions for the implementation of the educational process, and for the formation of personality and its development, for obtaining the skills and experience that will be necessary in the process of implementing professional activities (activities of an employee of the internal affairs bodies). It can be noted that the concept and essence of the educational environment is perceived and determined by cadets correctly, rationally, feelings of anxiety in the learning process should not arise, since the perception of the educational environment corresponds to its essence in the university. However, in a number of similar definitions given by cadets, there are the following.

- The educational environment of a university is an opportunity to look into adulthood, to be responsible.
- The educational environment of a university is an interesting learning.
- The educational environment of a university is a school environment but more complicated.

Such imprecise, not reflecting the specifics of the educational environment of a departmental university, definitions were given in some cases by first-year cadets, due to insufficient understanding or building an erroneous hierarchy of educational values. What is the reason for the ambiguity of the characteristics and perception of the educational environment by cadets? On this issue, it is especially important to analyze this process in the context of the characteristics of personal changes, when the optimal mode of preparation for studies and service at the university, everyday life and leisure is developed, when skills and abilities are formed for the organization of mental activity from the point of view of its expediency, when in the process of education and education, those personality traits that are defined as professionally significant are realized.

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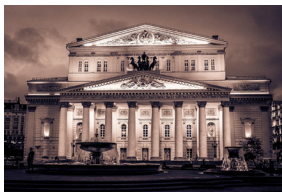
Восприятие образовательной среды обучающимися ведомственных вузов

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Ключевые слова и фразы: личностные изменения; образовательная среда; профессиональное образование; ценности образования; ценностные ориентации.

Аннотация: Система современного образования в последнее время часто трансформируется и постоянно совершенствуется. Возникшая в связи с этим проблема – успеть за быстро меняющейся образовательной реальностью – актуальна не только для педагогов, но и для обучающихся. Успешность профессионального обучения зависит от правильного понимания и восприятия курсантами образовательной среды. Для этого важно исследовать те критерии, которые наиболее полно отражают успешную реализацию профессионального обучения.

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UDK 37

Essential Aspects of Students' Multicultural Education in Modern Educational Environment

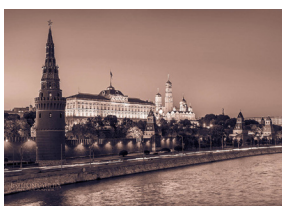
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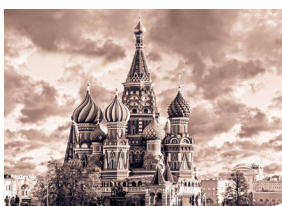


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Key words and phrases: multicultural education; linguistic and multicultural competence; educational environment; structure of multicultural competence; activity system; higher educational institution.



Abstract: The purpose of the study is to determine the optimal educational conditions for multicultural education of students. The article summarizes the theoretical material on the topical problem of multicultural education of students in the system of a higher educational institution. The research results can be used by teachers of higher educational institutions with the aim of integrating the elements of multicultural education in additional disciplines. The obtained data and scientific conclusions can be used in teaching and expanding the content not only of individual courses, but also in the system of postgraduate pedagogical education as a whole.



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In the process of studying the problem, the following types of multicultural competence were identified: interethnic / interracial interaction competence; interfaith interaction competence; interregional integration competence; stratified interaction competence.

The study of the state of multicultural education of students in the system of activity of a higher educational institution, in particular the formation as a result of multicultural competence, was carried out at three levels: at the level of a territorial community; at the level of organization of the activities of a higher educational institution; at the level of subjects of the educational environment.

The indicators of the formation of students' multicultural competence have also been determined: cultural and cognitive criterion; tolerant value criterion; communicative-behavioral criterion.

In the course of the study, at the ascertaining stage of the study, it was found that less than 10 % of students have a high level of multicultural competence. More than half of the respondents (63.74 % of students in the control group and 60.16 % of the experimental group) have an average level of multicultural competence, which reflects the influence of family values, opinions and judgments spread in the media, and non-synthetic ones. About 30 % of students have a low level of multicultural competence.

The authors substantiated the structural and functional model of multicultural education of

students in the system of activities of a higher educational institution, presented the individual psychological characteristics of students at different age stages, determined the role of the educational environment in the formation of the educational environment. multicultural competence of students; the stages, directions and organizational and methodological conditions for the implementation of the model of multicultural education are indicated.

The main goal of the process of multicultural education of students is presented, aimed at the systematic formation of multicultural competence in the system of a higher educational institution. The leading methodological approaches to the process of multicultural education are competence-based, cultural, ecological, and systemic. Principles of students' multicultural education are recommended.

The authors outline the role of the educational environment in the process of multicultural education in the system of activities of a higher educational institution, which forms the basis for predicting the content of the activities of subjects of the educational process. The substantive features and organizational specificity of the main stages of the implementation of the methodology of multicultural education ("My culture among others", "We get to know another culture", "We are integrating into another culture") are revealed.

The organizational and methodological conditions under which the process of implementing the model of multicultural education will be effective are presented, namely: accounting and systematization of the characteristics of multicultural education in personal and social dimensions; learners' understanding of other cultures in the learning process by comparing (rather than evaluating) them with their own; the formation of a positive attitude towards multicultural diversity and representatives of different cultures in schoolchildren; readiness of the parties for intercultural interaction; the formation of the ability to cooperate, taking into account the specifics of the cultural environment; formation of an attitude towards positive interdependence and effective cooperation of representatives of various cultural communities; the formation of an active life position, civic responsibility, initiative, patriotism and other important qualities of democratic citizenship, which are equally manifested in all subjects of intercultural dialogue.

The ways of implementing multicultural education have been identified: the integration of the multicultural component into the content of the teaching hours of the humanitarian cycle, extracurricular educational work, communication with representatives of various communities, cultural associations during extracurricular activities.

Through the empirical analysis, it was found that multicultural education is effectively implemented in the following forms: conversations, cultural expeditions, excursions, European clubs, cultural simulations, interschool exchanges, online dialogues, polls, and social projects, watching films, cartoons and other dynamic visuals, attending festivals, forums and theaters.

The applied methods of multicultural education were divided into four groups: methods of cognition of other cultures; methods of actualizing the socio-cultural personality of the individual; methods of acquiring practical skills and abilities; methods of pedagogical reflection. It has been established that the most productive methods of multicultural education in the system of university activities are dialogue, discussion, work in pairs and groups, role-playing games, content analysis of texts and other sources of cultural information, interviewing and other surveys, educational creation, training, assessment and self-assessment.

It is necessary to take into account the phased nature of the multicultural education of students in the system of activities of a higher educational institution. At the initial stage, the platform for the formation of multicultural values is, first of all, the native culture: language,

traditions, customs, rituals, folklore, art, etc. Gradually, thanks to the knowledge of various cultures, the student is enriched with knowledge, which contributes to a better understanding of his own cultural identity.

As a result, students develop a positive and tolerant attitude towards the environment; a high level of motivation to interact with another person, regardless of his cultural characteristics, respect for human dignity, the ability to empathize, empathize; the ability to critically analyze their actions in the environment of intercultural communication. Formation of multicultural competence in the process of work in the process of using various connections between cultures, searching for information about a particular culture.

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Существенные аспекты поликультурного образования студентов в современной образовательной среде

М.В. Камашева, И.А. Щербакова, М.С. Ильина (Россия)

Ключевые слова и фразы: высшее учебное заведение; образовательная среда; поликультурное образование; система деятельности; структура поликультурной компетенции; языковая и поликультурная компетенция.

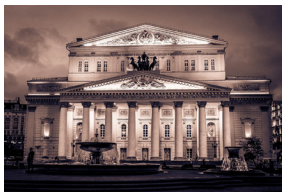
Аннотация: Цель исследования – определить оптимальные образовательные условия для поликультурного образования студентов.

В статье обобщен теоретический материал по актуальной проблеме поликультурного

воспитания студентов в системе деятельности высшего учебного заведения.

Результаты исследования могут быть использованы преподавателями высших учебных заведений с целью интеграции элементов поликультурного образования в смежные дисциплины. Полученные данные и научные выводы могут быть использованы при преподавании и расширении содержания не только отдельных курсов, но и в системе послевузовского педагогического образования в целом.

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UDK 372.8

Changes in the Unified National Exam in English in Russia: Format 2022

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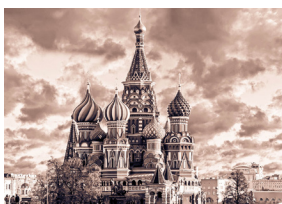


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Key words and phrases: control measurement materials; the English language; Unified National Exam.



Abstract: The paper aims to study the changes introduced in the Unified National Exam in English in the Russian Federation in 2022 in the written part and to make a comparative analysis of the format in 2021 and 2022. The article uses a modern methodology including a set of theoretical research methods such as study, analysis, and synthesis of the ideas and the results of methodologic research on the problem under study. The results of the study showed that the formats of the Unified national exam in 2021 and 2022 have differences in two tasks in Sections 4 (“Writing”). The number of the tasks in Section “Writing” was not changed, but the structure, instructions, and task assessment criteria were changed and these innovations are substantial, as the process of preparing to pass the exam should be significantly reviewed. The study was based on the data of the Federal Service for Supervision of Education and Science.



...

Introduction

Final exams in secondary schools have always been important in the Soviet and later Russian systems of secondary education. Students of the 11th grade always passed double control of the quality of knowledge at the end of school and on admission to higher educational institutions of the country. Their professional and personal readiness for training as future specialists were estimated twice [5]. In 2005 the situation with double exams and the lack of unified requirements for the structure and forms of examinations changed. Some regions of the Russian Federation started approbation of the Unified State Exam to identify the conformity of the results of students’ mastering basic educational programs according to the Federal State Educational Standard [1, p. 41].

The Unified National Exam (**UNE**) has been introduced in the Russian Federation since 2009. Over the years, the exam in foreign languages has been constantly altered and improved under its purpose [7, p. 108]. The purpose of the exam is to assess the level of learners’ competencies acquired when studying educational programs of secondary general education, using tasks of a standardized form (control measuring materials) [10, p. 9]. The role of language is to transfer

Table 1. The comparative analysis of Task 39

Year	2021	2022
Introduction	You have received a <u>letter</u> from your English-speaking pen-friend Nora who writes:	From: Ronny@mail.uk To: Russian_friend@ege.ru Subject: Summer You have received an <u>email</u> message from your English-speaking pen-friend Ronny
Content	<i>... My mom says I have too many dreams. What kind of dreams do you have? What personal qualities do you need to realise your wishes? Do you tell anyone about your dreams, why yes or no? Last weekend my elder brother went hiking...</i>	<i>... I am so happy that summer has come and we are going to have a long holiday. What's the weather like in Russia in summer? What is your favorite season and why this one? What are your plans for the summer? My uncle Keith is coming to visit us next week...</i>
Instruction	Write a letter to Nora. In your letter: – answer her questions; – ask 3 questions about her elder brother. Write 100–140 words . Remember the rules of <u>letter writing</u>	In your message: – answer his questions; – ask 3 questions about his uncle. Write 100–140 words . Remember the rules of <u>e-mail writing</u>

messages, to exchange information about the world in the language focus, which includes the national-cultural experience of a particular language community [6]. This is the reason learners study foreign languages for. The experience of the past years demonstrated the ability of control measurement materials (**CMM**) to assess the level of competencies' mastery of the Federal component of the state educational standard of basic general and secondary (complete) general education in foreign languages by graduates [3]. The UNE is a form of the state final attestation carried out to determine the results of students' acquisition of educational programs of general secondary education meet the relevant requirements of the federal state educational standard. For these purposes, CMM are used, which are sets of tasks of a standardized form [9].

The UNE is conducted under the Federal Law of 29.12.2012. Federal Law No. 273-FZ "On Education in the Russian Federation" and the Procedure of the state final attestation for educational programs of general secondary education, approved by order Ministry of Education of Russia and Rosobrnadzor of 07.11.2018 No. 190/1512 (registered by the Ministry of Justice of Russia on 10.12.2018 No. 52952) [4].

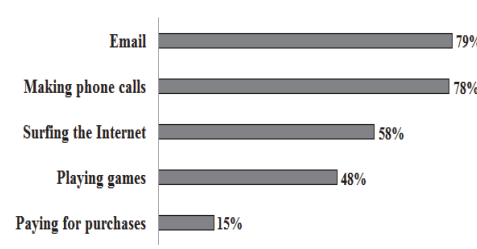
Comparative analysis of the format of the Unified National Exam in 2021 and 2022

This paper analyzes and compares the format of Section 4 "Writing" (Task 39 and Task 40) in the UNE in 2021 and 2022.

In 2021 Section 4 included 2 tasks (a personal letter and an essay). These tasks require demonstration of different writing skills related to two levels of difficulty (basic and advanced) [8, p. 12]. Section 4 in 2022 includes also two tasks but the introduction, instructions, and criteria of task assessment are different [9]. The comparative analysis of Task 39 is shown in Table 1.

Table 1 shows that the main difference is the change of the type of letter. In 2021 task 39

Table 2. The comparative analysis of Task 40

Year	2021	2022													
Introduction	<p>Comment on one of the following statements. What is your opinion? Do you agree with this statement?</p>	<p>40.1 Imagine that you are doing a project on what book genres are popular among teenagers in Zetland. You have found some data on the subject – the results of the opinion polls (see the table below). Comment on the data in the table and give your opinion on the subject of the project</p>	<p>40.2 Imagine that you are doing a project on what people use their smartphones for in Zetland. You have found some data on the subject – the results of the opinion polls (see the diagram below). Comment on the data in the diagram and give your opinion on the subject of the project</p>												
Content	<p>40.1 Summer is the best time for self-education. 40.2 Parents play the most significant role in teenagers' life</p>	<p>Book genre- Number of readers (%) Adventure – 55.4 Detective/war/spy stories – 55.3 Sports stories – 49.2 Animal stories – 27.2 Romance – 17.6</p>	<p>What people use their smartphones for</p>  <table border="1"> <thead> <tr> <th>Activity</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Email</td> <td>79%</td> </tr> <tr> <td>Making phone calls</td> <td>78%</td> </tr> <tr> <td>Surfing the Internet</td> <td>58%</td> </tr> <tr> <td>Playing games</td> <td>48%</td> </tr> <tr> <td>Paying for purchases</td> <td>15%</td> </tr> </tbody> </table>	Activity	Percentage	Email	79%	Making phone calls	78%	Surfing the Internet	58%	Playing games	48%	Paying for purchases	15%
Activity	Percentage														
Email	79%														
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Playing games	48%														
Paying for purchases	15%														
Instruction	<p>Write 200–250 words. Use the following plan: – make an introduction (state the problem paraphrasing the given statement); – express your personal opinion and give 2–3 reasons for your opinion; – express an opposing opinion and give 1–2 reasons for this opposing opinion; – explain why you do not agree with the opposing opinion; – write a conclusion restating your position</p>	<p>Write 200–250 words. Use the following plan: – make an opening statement on the subject of the project; – select and report 2–3 facts; – make 1–2 comparisons where relevant; – outline a problem that can arise with reading and suggest a way of solving it; – conclude by giving your opinion on the importance of reading for teenagers</p>	<p>Write 200–250 words. Use the following plan: – make an opening statement on the subject of the project; – select and report 2–3 facts; – make 1–2 comparisons where relevant; – outline a problem that can arise with using smartphones and suggest a way of solving it; – conclude by giving your opinion on the role of smartphones in our life</p>												

asked you to write a personal letter in response to a stimulus letter from a foreign pen friend. Thus, students wrote a personal letter to a pen-friend including date, address, revealing and writing the subject of the letter. In 2022 task 39 asks to type an e-mail message in response to a stimulus e-mail message from a foreign pen friend. Thus, no information about a date, address, revealing, and writing the subject of the letter is needed. The maximum number of points for task 39 has not changed (6 points).

Task 40 is a productive task of a high level of difficulty and requires well-developed subject

skills and meta-subject skills [7, p. 109]. In 2021 Task 40 was an opinion essay on one of the statements. In 2022 students have to write an essay with elements of reasoning using the data from the table/diagram and express their opinion on the topic of the project [9] (See Table 2).

Task 40 is an alternative task; test-takers can choose one of the proposed task options (40.1 or 40.2). The main difference between lies in what should be commented on: the statement or the data in the table/ in the diagram. In connection with the change in the type of written work assessment criteria for the task have been changed. The maximum number of points for the performance of task 40 has not changed – 14 points.

Conclusion

The paper deals the study and analysis of the changes introduced in the Unified National Exam in English in the Russian Federation in 2022. Section 4 is called “Writing” and includes 2 tasks. On 27 October 2021, a new Demo Version of the exam paper for the Unified State Exam in Foreign languages was presented. The analysis of the structure of both tasks in 2021 and 2022 showed significant changes in the format of the tasks under study. Though the points for tasks performance and the number of tasks remained the same, the content, instructions, and assessment criteria were considerably changed.

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Изменения в Едином государственном экзамене по английскому языку в России: формат 2022

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Ключевые слова и фразы: английский язык; Единый государственный экзамен; контрольные измерительные материалы.

Аннотация: Цели данной статьи – изучить изменения, внесенные в Единый государственный экзамен по английскому языку в Российской Федерации в 2022 г. в письменной части, и провести сравнительный анализ двух форматов: 2021 и 2022 гг. В статье использована современная методология, включающая совокупность теоретических методов исследования, таких как изучение, анализ и синтез идей и результатов методических исследований по изучаемой проблеме. Результаты исследования показали, что форматы Единого государственного экзамена в 2021 и 2022 гг. имеют различия в двух заданиях в Разделе 4 («Письменная речь»). Количество заданий в разделе «Письменная речь» не изменилось, однако изменилась структура, инструкции и критерии оценивания заданий, и эти нововведения значительны, так как процесс подготовки к сдаче экзамена должен быть существенно пересмотрен.

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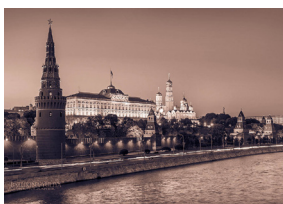
Structure of Methodological Support for the Design of E-Learning Courses for Core Disciplines at University



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Key words and phrases: higher education; methodological support; core discipline; e-learning course.



Abstract: The paper presents the analysis of the structure of methodological support for the design of e-learning university courses for core disciplines. Modern theoretical methods of pedagogical research were used including review of scientific, educational, and methodical literature, analysis, generalization, comparison, synthesis. Special attention is given to the problems in the process of methodological support and their reasons. The author concludes that consistent and timely passing of all stages of methodological support is the key to success in the design of e-learning university courses.

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Since 2019, the Coronavirus crisis has affected most aspects of peoples' lives. Digitalization in all spheres of people's life enabled students with the opportunity to get an education online regardless of external factors such as pandemics and quarantine restrictions [4, p. 279–286].

To provide students with an opportunity to study new material as well as in the classroom, professors have to design a great variety of e-learning courses that have become increasingly in demand and widely accepted educational tools in the distance and blended education [3; 4; 6].

The peculiarity of electronic courses of Core Curriculum academic disciplines is, in addition to the formation of university identity, to give students a set of competencies that are just necessary to become successful people in the uncertain future that awaits them after graduation. At Boston University, the Core Curriculum is an integrated sequence of liberal arts courses in the Humanities, Social Sciences, and Natural Sciences that builds a strong intellectual foundation for any undergraduate major [1]. The Learning Outcomes are as follows: students enrolled in the Core Curriculum should be able to demonstrate a broad understanding of the essential content and intellectual context of the works and ideas studied [1].

In the Humanities, read view, or hear the works studied with comprehension, demonstrating understanding of genre, style, and cultural and historical context.

In the Natural Sciences, demonstrate an understanding of fundamental scientific principles and methodology and a grasp of laboratory techniques and principles.

In the Social Sciences, demonstrate an understanding of fundamental principles and methodology of individual rights and freedom rooted in social theory. Communicate clearly and

persuasively, both orally and in writing, regarding the works and ideas studied [1].

At present Surgut State University is introducing a nuclear program, the so-called Core Curriculum, which provides students with competencies that allow them to navigate quickly in any situation, systematically solve problems, and make informed choices [7]. To prepare for the implementation of Core Curriculum disciplines of the basic professional Bachelor's, Specialist's, Master's, and Ph.D. educational programs in the 2022/2023 academic year in the format of blended learning, it was decided to appoint the lecturers responsible for the design of e-learning courses.

At the same time, it was decided to appoint experts providing methodological support of e-learning courses design. Researchers E.O. Galitskikh and O.V. Davlyatshina write that methodological support should be both scientific and methodological and define it as a scientifically grounded, specially organized process of interaction between the subjects of support, aimed to overcome professional difficulties and personal problems of the teacher. Support includes a system of interconnected actions, activities, pedagogical events and situations focused on understanding the teacher's professional experience, self-design actualization, professional success, personal transformation [2, p. 17].

The experts are the lecturers of Surgut State University, who had completed an advanced training course under the program "Pedagogical Design in the Fields of Science" and became the winners and prizewinners of the contest "The Best E-Learning Course" organized by the Center of the Design of Digital Competencies and Online Education at Surgut State University.

The plan and timeline for the design of electronic courses were approved by the Pro-rector for Educational and Methodological Work at Surgut State University.

The project plan for the design of electronic courses included the following steps.

1. Meeting of working groups. Project plan for the design of electronic courses.
2. Enrollment of working group members in the Advanced Course (**AC**) "Pedagogical Design by Field of Science".
3. Work of designers with the materials of the AC "Pedagogical Design by Field of Science".
4. Identifying learning outcomes, their decomposition.
5. Designing a discipline map and a system of assessment activities (for one learning outcome).
6. Elaboration of the scenario of the educational process of the discipline (part).
7. Importing a template for an electronic courses.
8. Elaboration of the structure of electronic courses, LMS Moodle tools.
9. Submission of training materials (part).
10. Review of the online course (100 % completeness).
11. Design of assessment elements, Moodle tools.
12. Design of the module "Organization of training".
13. Analysis of the designed course.
14. Analysis of the designed course, review.
15. Course design review and presentation.

Meetings of the project participants, including working groups, experts, the head of the Center of the Design of Digital Competencies and Online Education, and the Pro-rector of the Educational and Methodological Work of Surgut State University were held online under the previously approved project plan.

At the end of the project, all designers took part in the questionnaire about the results of their teamwork and difficulties in the project. Most participants admitted that they did not meet their deadlines. The reasons were lack of time (most designers worked full-time and had difficulty in

finding time to design an e-learning course), lack of understanding of what and how everything should be done, team disunity, etc. It was also revealed that only part of the participants studied the materials of the advanced studies course (AC) "Pedagogical Design by Field of Science" and elaborated the learning outcomes, discipline map, and full scenario of the educational process of the discipline. Thus, the theoretical part of the AC "Pedagogical Design by Field of Science" including lectures, seminars, and learning materials has not been studied by some designers and the formation and design of general pedagogical teacher competence to design e-learning courses have not been completed.

Based on the problems outlined above there is a need to determine the conditions that optimize the process of e-learning courses design and elaborate a list of recommendations to follow for both experts and designers.

The design of e-learning courses in high school is an essential part of the educational process as it ensures interaction between teachers and students, compensates lack of live communication with the lecturer, assesses and controls student achievements. Still some lecturers experience difficulties in elaborating e-learning courses and need methodological support aimed to respond quickly to the needs and requests of the participants. Methodological support is carried out by different means – consulting, methodological guidance, methodical support, etc. The analysis of the results of the survey conducted in the group of designers showed that the main conditions for the timely and high-quality design of electronic courses are strict following the sequence of stages of methodological support, obligatory study of the theoretical part of the AC "Pedagogical Design by Field of Science" and completion of the tasks.

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Структура методического сопровождения проектирования электронных учебных курсов дисциплин «ядра» в вузе

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Ключевые слова и фразы: высшее образование; методическое сопровождение; обязательная дисциплина; электронный учебный курс.

Аннотация: В статье представлен анализ структуры методического сопровождения проектирования электронных учебных курсов дисциплин «ядра». В работе использованы современные теоретические методы педагогического исследования, включающие обзор научной, учебной и методической литературы, анализ, обобщение, сравнение, синтез. Особое внимание уделено проблемам, возникающим в процессе методического сопровождения и их причинам. Автор делает вывод о том, что последовательное и своевременное прохождение всех этапов методического сопровождения является залогом успеха при проектировании электронных учебных курсов в вузе.

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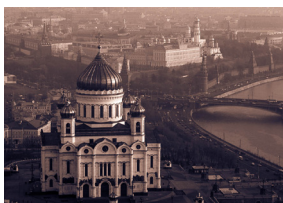


UDK 373.2

The Problem of Speech Ontogenesis and Dysontogenesis in Older Preschool Children

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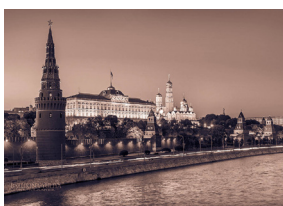
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Key words and phrases: pedagogical process; speech; speech development.



Abstract: The article substantiates the reasons for the low level of speech development in modern children, and this problem becomes more urgent.

The results of an experimental work carried out on the basis of one of the state kindergartens to identify the level of formation in the senior preschool group of the level of speech development are described and options for methods for improving it are presented. The formation of a speech skill determines the development of not only subject, but also personal qualities in a child. The object of the research is classes on the speech development of older pre-schoolers, the subject is speech development. The hypothesis of the study is that speech disorders in older pre-schoolers are associated with their age characteristics. The research methods include theoretical methods: literature analysis; analysis of documentation; generalization, etc. and empirical methods: observation; conversation; study of pedagogical situations; testing; etc. It was found that the system proved its effectiveness in teaching older pre-school children.



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Introduction

Speech is the main indicator of the level of human culture, thinking and intelligence [1]. Speech is formed in our early childhood: first in the form of individual words; then, when getting to know the world around you; when teaching various disciplines it becomes richer and more complex.

Speech development is the most important human skill. How well we are able to communicate with others, express our thoughts, build dialogues, answer questions and ask them, hear and listen to others is important not only during pre-school, and school life, but also in adulthood [2].

In order to achieve the best results in the learning process, it is necessary to involve the entire pedagogical system in active work – there must be a clear and well-coordinated work [3].

Experts note the following problems in the development of children's speech (using the

example of older preschool age):

- the speech of pre-schoolers is built mainly by simple sentences;
- insufficient vocabulary;
- use of parasitic words;
- inability to correctly pose a question and answer it;
- difficulty in explaining your own opinion;
- difficulty in composing descriptive stories;
- lack of intonation in speech;
- problems with diction (of various kinds).

It should be noted that many researchers consider the work on the development of speech among pre-schoolers at the initial stage as a process of assimilation of words.

Methods and materials

A study conducted by us on the basis of one of the kindergartens showed that most pre-schoolers have problems with speech development. This refers to phenomena occurring at various levels of the language system.

At the ascertaining stage of the experimental work, we set the following tasks:

- to draw a general picture of speech development of pre-schoolers of a senior group using diagnostics and several techniques developed by A.I. Lavrentieva, J.M. Glozman, I.F. Markovskaya;
- to identify the presence of semantic units of different language levels in the language consciousness of children;
- to determine the relations that have developed in the lexico-semantic system in the process of their development;
- to identify the features of the functioning of lexical units in the speech of preschoolers.

Results and discussion

The tasks offered to the children were divided into three blocks: A, B, C.

In block A, three types of tasks were identified: the ability to give the names of objects and the ability to use them in speech was revealed; to group words depending on their signs; to use the correct forms of the word. The children were shown pictures, asked questions, and attempts were made to build a dialogue. The analysis of the answers enabled to conclude that the majority of children – 71 %, make use of these words, but some of them may confuse some qualities of terms. The remaining 29 % of children have difficulties both with naming the subject itself and with describing its qualities. In stories, words can be used incorrectly, and when describing an object, it is necessary to list only its individual parts.

When conducting diagnostics, we tried to use the names of simple objects familiar to children: toys, domestic and wild animals, dishes, household items and plants. Questions were asked: “What is this object used for?”, “Where did you see it?”, “Which of the toys do you like the most? Why?” etc.

As a result, we divided the children into three groups, depending on the level of proficiency in words: high, average and low. The first group, in general, includes 15 children out of 48. The average is 23 children. 14 children belong to the group with a low level of speech development. Two groups are designated as a control and an experimental group. In the control group, special work was carried out to improve the level of speech development, in the experimental classes will go on as usual.

Table 1. Final result of the research on improving speech development

Level	Experimental group		Control group	
	Before training	After training	Before training	After training
High	7	7	8	10
Average	11	12	12	13
Low	6	5	4	1

Block B implied the use of an associative experiment (hereinafter AE). We have selected the words of three parts of speech: nouns, adjectives and verbs.

As a result, three types of responses were identified:

- adequate (28 %);
- extralinguistic (49 %);
- negative (23 %).

When performing block B, we identified in pre-schoolers the peculiarities of the functioning of semantic units and relationships when constructing, directly, the utterance itself.

The children gave both the names of objects and their qualities; the name of the object of action was followed by the name of the action; negative answers were given; their own attitude to the subject was expressed; enumeration was observed.

In short, according to the results of the ascertaining stage, all children were divided (conditionally) into three groups.

– With a high level of speech development – when a pre-schooler knows the names of objects and can use them in speech, explain the meaning of a word, build correct sentences (common), answer questions and ask them, express their position (regarding any case). The speech of such children has a built structure and is filled with lexical content.

– With an average level of speech development: children, in general, are proficient in the use of words, but may confuse some qualities. When composing a coherent text, pre-schoolers can use either the name of the subject, or display only its qualities. When trying to answer the question posed, they do not always cope with it. They mainly use simple non-extended sentences.

– With a low level of speech development: children have difficulties both with naming the object itself and with describing its qualities. In stories, words can be used incorrectly, and when describing an object, it is necessary to list only its individual parts. There are practically no common sentences in speech. The answers were short: “yes”, “no”, “good”, “bad”.

The ability to clearly express your thoughts, enter into a dialogue, defending your point of view; to get out of contentious and conflict situations without conflict; to be an interesting interlocutor – all this originates when studying in a preschool institution and, as we said above, much earlier.

We read, sang, discussed what we saw and heard, invented word games, guessed riddles, staged mini-performances, conducted all kinds of quizzes and contests.

As a result of the work, we conducted a control stage of work using the same methods as on the ascertaining (named above).

Table 1 summarises the final result of the research on improving speech development.

As can be seen from the Table, there are practically no changes in the experimental group (with the exception of one person), and in the control group, pupils with a low level of speech development, almost all, moved to others: with an average level and with a high one.

Conclusion

In the pre-school period, the core of the child's vocabulary is formed, that is why it is so important for him to carry out systematic, diverse and timely work on the formation of a child from this age.

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Проблема речевого онтогенеза и дизонтогенеза у детей старшего дошкольного возраста

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Ключевые слова и фразы: педагогический процесс; развитие речи; речь.

Аннотация: Обоснованы причины низкой сформированности у современных детей речевого развития, данная проблема становится все более актуальной. Описаны результаты опытно-экспериментальной работы по выявлению уровня сформированности в старшей дошкольной группе уровня речевого развития, проведенной на базе одного из государственных детских садов; представлены варианты методик для его повышения. Сформированность речевого навыка определяет развитие не только предметных, но и личностных качеств у ребенка. Объект исследования – занятия по речевому развитию старших дошкольников, предмет – речевое развитие. Гипотеза состоит в предположении, что нарушения речи у старших дошкольников связаны с их возрастными особенностями. Методы исследования: теоретические (анализ литературы; анализ документации; обобщение и т.д.) и эмпирические (наблюдение, беседа; изучение педагогических ситуаций; тестирование и т.д.). Достигнутые результаты: предложенная система работы показала свою эффективность при обучении детей старшего дошкольного возраста.

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The Use of Ethno-Video Materials in a Foreign Language School Audience

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Key words and phrases: methodology of Russian as a foreign language; ethno-video materials; linguocultural competence; ethnopedagogy; ethnomethodology; video text.



Abstract: The use of ethno-video materials is an informative means of teaching Russian as a foreign language (**RFL**). The paper discusses the relevance of the use of linguo-socio-cultural information from ethno-materials in the process of learning a foreign language. The purpose of the article is to present the expediency of using regional texts. The objectives are to name the selection criteria and ways of familiarization with the video texts in the class. Research methods are analysis, and synthesis. The hypothesis is as follows: the linguocultural competence involves the acquisition of a target language and cultural linguistic concepts, as well as contrasting them with one's native language. As a result, methodological techniques of teaching Russian speech for foreigners on video materials are presented. The paper calls for the creation of teaching aids with methodologically well-developed scenarios of introducing region-specific video materials to non-native speakers.



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Introduction

Recently, ethnophilology has been in the foreground in the process of forming linguocultural competence of non-native speakers in the methodology of teaching Russian as a foreign language (**RFL**) [1]. The prominent teaching methodology experts O. Mitrofanova, S. Khavronina note that RFL needs region-specific instructional and test materials. In learning a language, non-native speakers need to develop at least a minimum of cultural awareness necessary for successful interpersonal cross-cultural communication in the region of residence [1]. The basis of ethno-pedagogical teaching is in the formation of students' linguocultural competence.

The problem of linguocultural adaptation of foreign students studying in different regions of Russia is often discussed at workshops and conferences. Most researchers believe that the adaptation of students develops in the process of acquiring regional linguacultural competence. Non-native speakers need to know the common vocabulary, landscape and social realia of the

region of study.

Theoretical background

Region-specific video materials as a visual aid of teaching a foreign language are authentic regional materials (news reports, animated films, feature films). The use of authentic region-specific video materials in teaching RFL contributes to the development of students' language proficiency and awareness about the history of the country of the target language. When analyzing the video, it is necessary to give to foreign students a linguistic and cultural commentary.

The linguocultural competence includes some elements of linguistics, cultural studies and expertise. The term is multidimensional. The formation of linguocultural competence is focused on multicultural communication, on students' awareness of a different ethno-cultural conceptual sphere and developing tolerance to another nation and culture. When foreign students come to study in the North, it is important for RFL teachers to help them understand the community of the northern people. The importance of including a region-specific cultural component in the learning process has been noted by O. Mitrofanova, S. Khavronina [1], G. Pirozhkov, I. Pirozhkova [2], O. Shuvalova [3], A. Ipatova, N. Matsevka, T. Yudina [4–6]. The researchers suggest various ways of immersing foreign students in everyday life of the target language country; they describe means of ethnopedagogy (folk pedagogy). Regional cultural linguistics ensures non-native speakers' sense of participation in the culture of the region of their temporary stay and respect for its citizens. Cultural and local lore studies are the beginning of a person's familiarization with cultural heritage [2]. To include videos about national holidays: non-native speakers get a grasp of the ethnocultural identity. In my classes, I show videos of traditional trades, holidays, focused on the values of the community of the Far North [6]. Analyzing animated films in RFL classes is one of the ways of forming the linguocultural competence of non-native speakers. Attention is given to region-specific information, facts about the history, culture and landscape, to an overview of mentality, national culture. Students develop knowledge of the ethnic group with whom they are currently living side by side. Awareness of the subculture turns a foreign student into a person educated in terms of national and regional culture. Gradually, foreigners form a picture of the world of the neighboring ethnos [4].

Currently, region-specific materials for RFL classes are few in number. It is necessary to develop teaching aids. I am planning to describe Northern Russian and Arctic phenomena in my new set of region-specific materials to be used in RFL classes so that foreign students get a notion of the North. Arctic-related topics are popular in Russian animation. Themes-concepts about the Arctic: of human in the Arctic; northern animals. Images: the hero is the winner opposing the northern nature, the image of the mother is central.

The method of working with animated films is described in the articles [3–5]. Animated films are usually regarded as video texts with region-specific cultural materials. The tales reflect the history and culture of the Russian people. Historically, the Russian language is characterized by the axiological function – positive and negative assessments that reflect thinking about morals. Key images from the tales symbolize certain personality types. The precedent names reflect the worldview of the nation. The tales reflect the mentality of the nation. Of great interest are the precedent phenomena connected with the way of life, customs and traditions of the North, and the harsh Arctic environment, which are represented in the following animated films: S. Pisakhov's Tales, "The Adventures of Lolo", "Umka (Adventures of the White Bear)",

The Northern Tale, The Brave Fawn, and the following animated films about the Urals: The Mountain of Gems, The Origin of the Moon and The Ural mountains.

Following the researchers O. Shuvalova [3], T. Yudina [4; 5], to develop assignments for the lesson, we use three stages of work: pre-demonstration, demonstration and post-demonstration. The tasks of the first type – before watching a video – are aimed at understanding vocabulary items and the main idea of the story. The tasks of the second type – while watching a video – are used to ensure that the students understand the information. The video is divided into meaningful fragments that are shown unmuted up to four times. The tasks of the third type – after watching the video – are done on the basis of what the students saw and are meant to ensure thorough comprehension of information. Then the students do tasks to compare how these topics are covered in Russia and in their home country and give examples from films in their native languages. So, in the process of teaching foreigners, the formation of linguocultural competence is relevant.

Conclusion

This paper presents the results of research in the field of language didactics of RFL.

Obviously, foreign students' acquisition of linguistic and cultural information is influenced by the regional specifics of the "local" environment, where foreign students live while studying. The "local" environment is reflected in the historical, cultural, social, and ethnic aspects, which constitute the region-specific component as a whole. For teachers, the materials collected would be useful to organize the process of teaching RFL correctly in terms of methodology by using cutting edge methods and video technologies. Materials would help to assess foreign students' competence in the Russian language and other subjects; structure and adapt information from textbooks. Currently, there is scarce research in these areas. I am convinced that it would be useful to develop a teaching guide with region-specific video materials on for introducing fragments of films in classes of Russian as a foreign language. Ethnomethodology seems a promising way to go.

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Использование этновидеоматериалов в иноязычной школьной аудитории

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Ключевые слова и фразы: видеотекст; лингвокультурологическая компетенция; методика преподавания русского языка как иностранного; этновидеоматериалы; этнометодика; этнопедагогика.

Аннотация: Использование этновидеоматериалов – познавательное средство обучения русскому языку как иностранному. В статье отмечается актуальность использования лингвосоциокультурной информации из этноматериалов в процессе изучения иностранного языка. Цель статьи – представить целесообразность использования региональных текстов. Задача – назвать критерии отбора и способы ознакомления с видеотекстами в классе. Методы исследования: анализ, синтез. Гипотеза: лингвокультурологическая компетенция предполагает усвоение языка и этнических концептов языка, включая сопоставление их с родным языком инофонов. В результате представлены методические приемы обучения русской речи инофонов на видеоматериалах. Отмечена необходимость создания учебно-методических пособий, представляющих методически грамотно разработанные сценарии введения этновидеоматериалов для инофонов.

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Identification and Elimination of Information Threats

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Key words and phrases: causing financial and material damage; sources of threats to information; ways to eliminate threats to information security.



Abstract: The purpose of writing this article is to identify and eliminate threats to information, search for causes and conditions that contribute to causing financial and material damage, as well as search for ways to eliminate them and describe these methods.

The subject of the study is the state and methods of ensuring information security in modern conditions. The object of the study is information security of the state as a whole, and information itself as an integral part of the infrastructure of society. As a result of the research, the importance of studying the problem of information security formation in our country, the development of new methods in solving this problem has been revealed.

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An integral part of modern society is its informatization, i.e. the constant development, modernization and implementation of information systems in all spheres of human activity. Information and information resources are becoming decisive factors in the development of an individual, society and the state.

The extensive capabilities and facilities of computers and information technologies make it possible to automate the monitoring and management processes of both state and economic structures, and also gives society the opportunity to accumulate, process and transmit information about important processes at high speed and in any quantity.

Currently, information is considered a strategic national resource – the main wealth of the country. The loss of confidential information causes moral or material damage. From the theoretical research, it becomes obvious that ensuring information security is a complex task.

A comprehensive information security system should be:

- 1) continuous: this is due to the fact that the information environment is a complex multidimensional mechanism;
- 2) system-based: components such as electronic equipment, software, and personnel operate in the system.

The informatization of society does not bring only positive changes, but it also creates problems of information security, the main of which are the emergence of information wars and

cyberterrorism. These problems are global in nature, but due to the geopolitical and economic situation, they become particularly acute for Russia.

The choice of ways to protect information in an information system is a complex optimization task, when solving which it is necessary to take into account:

- a) the probabilities of various threats to information;
- b) the cost of implementing various methods of protection;
- c) the presence of various stakeholders.

In most cases, finding the optimal solution to such a problem requires using a game theory, in particular the theory of bimatrix games with a non-zero sum, allowing one to choose such a set of security tools that will maximize the degree of information security at a given cost or minimize costs at a given level of information security.

Information security in modern Russia is considered within the framework of the Information Security Doctrine, which serves as the basis for the adoption of regulations.

The main sections of the doctrine include:

- the need for Russia's independent information presence in the international community;
- selection of reliable data and news delivery channels, which will reduce the damage from disinformation attacks.

At the present stage, the problems of information security in Russia are solved by various state institutions:

- 1) Federal Service for Technical and Export Control (**FSTEC**);
- 2) Federal Service for Supervision of Communications, Information Technology and Mass Communications (Roskomnadzor);
- 3) specialized departments of ministries and departments;
- 4) interdepartmental commission under the Security Council.

All participants in the system of fighting for information security and solving the problem of cyber-attacks believe that at the present stage it is necessary to combine functions and transfer them to a separate regulator at the level of the federal service with independent resources and significant powers.

In conclusion, I would like to add that the problems of information security are multidimensional and need further research and development, and is one of the priority areas of development.

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Выявление и устранение угроз для информации

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Ключевые слова и фразы: источники угроз для информации; нанесение финансового, материального ущерба; способы устранения угроз информационной безопасности.

Аннотация: Целью написания статьи является выявление и устранение угроз для информации, поиск причин и условий, способствующих нанесению финансового, материального ущерба, а также поиск способов по их устранению и описание данных способов. Предметом исследования выступает состояние и методы обеспечения информационной безопасности в современных условиях. Объектом исследования является информационная безопасность государства целом и сама информация как неотъемлемая часть инфраструктуры общества. В результате исследования подчеркнута важность изучения проблемы формирования информационной безопасности в нашей стране, приведены результаты разработки новейших методов в решении этой проблемы.

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Systematization of Information Systems and Information Security



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Key words and phrases: causing financial and material damage; information systems; sources of threats to information; ways to eliminate threats to information security.



Abstract: The purpose of the article is to classify information systems and ways to eliminate threats to information, search for conditions to avoid financial and material damage. This study focuses on the problem of classification of information systems and information security in electronic information systems. As a result, the methods of forming information systems are described.

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Introduction

The scientific relevance of the topic under consideration is due to its importance of research and study, since the problem of information security formation in our country, the development of the latest methods of implementing this problem is today the most important task for specialists in the field of world politics, political science and sociology, as well as in the field of business and entrepreneurship.

The subject of the study is the state of information systems and methods of ensuring information security in modern conditions. The object of the study is information and the security of the state as a whole, and information itself as an integral part of the infrastructure of society.

What is information?

One can say that information is primarily information transmitted by people in various ways, for example, written or oral. Since the middle of the 20th century, information has become a general scientific concept. Usually, information is understood as methods of storing, processing, and direct data in information systems.

An information system is a system designed for storing, searching and processing information. It can also be said that the information system is designed to provide the right people with the right information in a timely manner, then the information needs within a certain subject area, while the result of the functioning of information systems is information products – documents, information arrays, databases and information services.

Types of information systems

Currently, information systems on the status of their creators and the intended purpose can be systematized as follows:

- 1) personal computer systems that accumulate data according to the user's interest and needs;
- 2) locally-targeted systems created within the organization to perform certain functions or operations, including registration of polyclinic staff; control systems for the execution of decisions in an authority, etc.;
- 3) intradepartmental or corporate systems that combine databases and data banks in the range of their professional or industrial duties;
- 4) regional and interregional registration, accounting, analytical and other systems, such as open access centers in municipalities, in the subject of the Russian Federation;
- 5) databases and data banks of multifunctional information centers with "one window" systems for providing services to the population;
- 6) state geographically distributed software systems – electronic management (government), or systems in the field of operational investigative activities;
- 7) interstate automatic control systems, such as the Customs Union automated control system, the search system for missing persons, etc.

Conclusion

Information security is one of the characteristics of an information system, i.e. an information system at a certain point in time has a certain state (level) of security, and information protection is a process that must be performed continuously by an information system.

A secure information system can be called a system that, firstly, protects data and information from unauthorized access, secondly, is always ready to provide them to its users, thirdly, reliably stores information and guarantees the immutability of data.

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Систематизация информационных систем и обеспечение безопасности информации

И.В. Пономорев (Россия)

Ключевые слова и фразы: информационные системы; источники угроз для информации; нанесение финансового, материального ущерба; способы устранения угроз информационной безопасности.

Аннотация: Целью статьи является классификация информационных систем и пути устранения угроз для информации, поиск условий избежания финансового, материального ущерба. Данная работа посвящена проблеме классификации информационных систем и информационной безопасности в электронных информационных системах. В результате описаны способы формирования информационных систем.

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