

**Дистанционното обучение в университетите - основата
на практическата информационна база за успешна самореализация на
студенти и прекалфикация на специалисти**

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**Distance learning in universities is the basis practical information base
for successful self-realization of the student
and retraining of specialists**

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Abstract:

The report shows the economic effect and practical methods of using distance learning for students and adults.

The statistical data of the Republic of Bulgaria, as well as the regulations of the Republic of Bulgaria and the Republic of Belarus, which provide opportunities for wider use of distance learning in education, have been studied.

Particular attention was paid to the problems that arise in the absence of distance learning in the country, which led to the fact that, for example, in the Republic of Belarus during the Covid-2019 period, the young generation of school graduates turned into young people without the right to receive an education.

The goal was to study the cost items of calculation for daytime and distance learning - to clearly demonstrate the reduction in the amount of expenses of an educational organization.

Ways to expand the use of automated electronic data to calculate the effectiveness of an educational organization are described and the existing experience of distance learning in Belarus is shown, in particular, in the IPKiPK branch of the leading Belarusian National Technical University.

As a result, directions for improvement in distance learning were proposed:

1. development of methodological educational aids,
2. planned calculation of the effectiveness of activities,
3. justification of the feasibility of specialists' participation in international seminars - which will expand the possibilities of using distance learning for applicants, students and specialists from different countries.

Keywords: Distance learning, statistical data, legislative sources of information, bachelor's, master's, educational technologies, problems, advantages and disadvantages of distance learning, costing, innovative experience, international offers.

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ВЪВЕДЕНИЕ

It is well known that a high-quality education system gives future specialists additional opportunities to choose an educational path in the process of professional activity.

At the moment, it is not enough for a modern person to have only a certain set of life knowledge, and in the context of growing employer requirements for personnel, it is not enough to meet the minimum requirements of the professional standard.

A bachelor's degree should provide the graduate with a broad education in various fields and, most importantly, teach him to obtain and then, if necessary, update existing knowledge and acquire new knowledge in his profession and beyond.

A master's degree should not only provide highly specialized training, but also allow you to quickly adapt to the requirements of employers.

In practice, in higher educational institutions, as a rule, the requirements for organizing educational activities in professional programs come down to the application of framework requirements - modular principles for presenting the content of the educational program and constructing the curriculum.

In order to improve the quality of educational services for students, as well as the efficiency and prestige of the educational organization itself, it is recommended to use various forms, including distance learning.

ИЗЛОЖЕНИЕ

In today's rapidly changing world, one of the most promising forms of education can be distance learning, since now graduates of a higher educational institution have the opportunity

- study at a convenient time, including independently,
- constantly search and find the necessary information for yourself and your colleagues,
- practically use various sources of information from specialists to solve emerging work problems,
- constantly expand your professional competencies and gain valuable experience.

According to the National Statistical Institute of the Republic of Bulgaria, in the **2022/2023** academic year- 214 782 people were admitted, including professional bachelors – 6 783 people, bachelors – 135 947 people, masters – 72 052 people. Of these, according to demographic characteristics, 94 449 people are men, 120 333 people are women.

There were 10 688 students enrolled in distance learning, which is only 5% of the total number of admitted students. Among those accepted for distance learning – bachelor's degree 6 417 (60%), master's degree 4 271 people. (40%) (14).

Table 1: Данните от НСИ за 2022г. "Завършили висше образование по образователно-квалификационна степен, пол и тесни области на образованието»

	Общо	Проф. бакалавър	Бакалавър	Магистър
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**ВТОРА НАЦИОНАЛНА НАУЧНО-ПРАКТИЧЕСКА КОНФЕРЕНЦИЯ
ДИГИТАЛНА ТРАНСФОРМАЦИЯ НА ОБРАЗОВАНИЕТО –
ПРОБЛЕМИ И РЕШЕНИЯ**

Общо	47675	1795	23295	22585
Мъже	18029	727	9505	7797
Жени	29646	1068	13790	14788

Based on the table 1, the following conclusion can be drawn: in order to obtain higher education and become the necessary specialists in a particular region, women often make up half of the economic sector in Bulgaria (12).

According to the National Statistical Institute of the Republic of Bulgaria, in the **2023/2024** academic year, 190 513 people were admitted, including professional bachelors – 6 321 people, bachelors – 123 335 people, masters – 60 857 people.

Among those accepted for distance learning, 9 735 people are studying remotely. – Bachelor’s degree – 6 223 people, Master’s degree – 3 512 people (15).

In the Republic of Bulgaria, various forms of training are used in accordance with the provisions of Art. 75, p. 6 of the Law on Higher Education (1) and art. 1 Decree on state requirements for the organization of distance learning in higher educational institutions (3).

I would like to note that the form of distance learning presupposes, first of all, a responsible attitude of the student towards educational activities: 1. listen carefully to the teacher’s information, 2. independently study additional material, 3. prepare questions and get answers from specialists and teachers, 4. prepare well for tests and exams, 5. be able to defend your work.

Problems

In the Republic of Belarus, in accordance with paragraph 1 of Art. 16 of the Education Code - education can be obtained both in full-time evening, correspondence, and distance learning (2).

According to paragraph 4 of Article 16 of the Education Code, a distance learning form is training and education, which involves, first of all, the student’s independent mastery of the content of the educational program and the interaction of the student and teaching staff; based on the use of distance learning technologies.

But in the spring of 2020, when the borders were closed due to Covid 2019, the Ministry of Education of the Republic of Belarus did not make an objective decision on the use of distance learning and examinations in schools for all applicants so that they have the opportunity to continue their promising education in the near future.

Information about the modern Belarusian university and institute

Currently, both full-time, part-time and distance learning are dynamically developing in the Republic of Belarus, for example, at the Belarusian National Technical University - the leader of technical education in Belarus, providing modern higher education and training of highly qualified specialists since 1920.

One of the progressive institutes of BNTU is the branch of BNTU “Institute for Advanced Studies and Retraining of Personnel in New Directions of Development of Engineering, Technology and Economics” (branch of BNTU “IPKiPK”), which was created back in 1987.

The goal of the BNTU branch "IPKiPK" is to implement educational programs in accordance with the requirements of the legislation on retraining and advanced training

of managers and specialists at the levels of higher and secondary specialized education (including students of higher educational institutions) (4).

Calculation of the cost of educational services

In any country, pricing for educational services depends on the cost of their provision in monetary terms..To document the cost of educational services in order to plan their volumes and sources of covering costs, a calculation of the cost of services is drawn up.

As a rule, the cost of production in an educational organization consists of salaries of teachers and accruals on their salaries, rent, cost of materials consumed, costs of electricity and water, fuel costs, depreciation deductions from the cost of buildings and structures, interest on loans and borrowed funds, travel allowances expenses, compulsory insurance, as well as general business expenses for the management and maintenance of the organization.

General production and general business expenses are usually added to the total cost of services sold, taking into account national peculiarities of tax calculation.

The selling price is formed on the basis of the full cost, taking into account the profitability of the organization's activities and profit.

Table 2: Comparative cost calculation for full-time education and distance learning

	cost items for full-time education	expenses for distance learning
teachers' salaries and accruals on their salaries	+	+
part of the costs of purchasing buildings and structures	+	-
rent	+	-
cost of materials used	+	-
electricity and water costs	+	-
fuel costs	+	-
interest on loans	+	-
travel expenses	+	-
insurance	+	-
advertising	+	+
general production	+	+
general business expenses	+	+

As we can see from Table 2, the cost and selling price of educational services in distance learning in certain circumstances can be very profitable with maximum profit.

ЗАКЛЮЧЕНИЕ

Distance learning is one of the promising forms of learning.

The use of this form of training for higher educational institutions will allow

- reduce training costs (no costs for renting premises, travel to the place of training for both students and teachers), train more people,
- improve the quality of education through modern electronic means of communication. libraries,

- and create a unified information and educational environment (10).

Representation of systems for organizing and conducting the educational process using network models allows you to create models of the functioning of these systems, models of information flows and optimize them based on certain criteria characterizing material costs and efficiency of systems (7).

Highly qualified practitioners not only present material for study, but also in the process of online communication give students the opportunity to ask questions and summarize information, formulate conclusions and, most importantly, adapt the acquired knowledge to new situations.

Interactivity is defined as the channel between the listener's theoretical knowledge and its practical application.

In educational practice, interactive teaching methods include - game exercises, - trainings, - analysis and solution of situational problems (analytical exercises), - situation modeling, - work in groups (9).

On the other hand, for information and communication systems, interactivity refers to the ability of a computer system to actively and differently respond to user actions. Based on the developed educational and methodological materials for distance learning, it is possible to analyze the student's work and show how the acquired knowledge can actually be applied in practice.

For effective business planning in order to make a profit, control and forecast the process of distance learning using mathematical calculations, it is recommended to make

1. preliminary calculation of material costs
2. calculation of employees' working time to optimize the educational process (13).

As restrictions imposed on the structure of the educational process, a system of inequalities is considered, presented in linear form and taking into account the limitations of the budget of educational time allocated for studying the academic discipline, financial restrictions on the remuneration of teachers, support staff, financial restrictions associated with the content of educational and material bases, software acquisition and other costs (9).

The problem of optimizing the learning process is reduced to a linear programming problem, which in this case is solved in this way using the simplex method using a standard program implemented in various computer environments (8).

The simplex method is an algorithm for solving an optimization problem of linear programming by traversing the vertices of a convex polyhedron in a multidimensional space (16).

Offers

As a result, we offer: Conducting international distance online courses from educational institutions in different countries - with the participation of practitioners and teachers for training students and advanced training, retraining in other specialties. • distance learning for responsible students, as an alternative to traditional full-time education in an educational institution (11).

We plan

- together with colleagues to develop materials for students' independent work that do not repeat the content of lectures, but specify important aspects of the topic (6, 5).
- creation of interactive electronic courses with feedback from students, which will increase the motivation and involvement of students themselves in the educational process (11).

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