

**The transformation of
the higher education
system in Ukraine:
proposals and
perspectives**

MONOGRAPH

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INTRODUCTION

The economic success of developed countries, as practice shows, is achieved due to the development of education and scientific research, which are quickly mastered. Education of people can be considered as an effective factor of economic growth. At the same time, it is the most important component of human capital, which accumulates in society and becomes the main economic resource.

However, its long-term development requires state support. The experience of providing state support and development of education in advanced countries of the world can be useful for Ukraine, which needs to reform the education system and build an innovative economy. But here you need to clearly imagine the problems that will arise and find ways to solve them.

Solutions to the problems of the educational space are currently complicated by a full-scale war and the pandemic state, under which COVID-19 has received a permanent "registration" in the modern world.

The relevance of the study is determined by the growing number of problems in education caused by external and internal factors, the importance of ensuring quality education at all levels and supporting inter-university cooperation.

Russian military aggression, the partial destruction of the educational fund, a large number of migrants and many hours of power outages make the process of qualitative initiation impossible, both live and online. This monograph is designed to focus attention on complex and, at the same time, important challenges of the educational environment, which, in turn, can change the future of our country.

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1 QUALITY OF EDUCATION AND SOCIO-ECONOMIC DEVELOPMENT: ANALYSIS OF PUBLICATION ACTIVITY TRENDS

The quality of educational activity as a determinant of socio-economic development at the local (regional), national and international levels of protecting the interest of scientists. At the same time, the keyword “education” is not only for local scientific areas (for example, the quality of education) but also gives more space for larger-scale studies. Analysis of the first 2 thousand most cited articles for 2016-2021. according to the corresponding query, it shows that the keyword “education” is among the 3% most mentioned in the question "economic growth" (the keyword map is presented in Fig. 1.1, the analysis tool is VOSviewer), 0.7% is mentioned most often in the query "Sustainability". goals" (the map of keywords is presented in Fig. 1.2), 0.7% of the most mentioned in the query "innovation" (the map of keywords is presented in Fig. 1.3), 0.3% of the most mentioned in the query “quality assurance” (the map of keywords is presented in Fig. 1.4), 1.1% of the most mentioned by the query “marketing” (the map of keywords is presented in Fig. 1.5).

Ensuring education quality in connection with socio-economic indicators is stated in several scientific works. The main problems considered in these works are the challenges facing education in times of change (Weston, Ferris & Finkelstein, 2017), the involvement of stakeholders in the formation of a high-quality educational environment (Saxena, 2022; Labanauskis & Ginevičius, 2017; Anis, Abdullah & Islam, 2014; Savga, Krykliy & Kyrychenko, 2018) the opinion of internal and external stakeholders of education (Abidin, 2015), the role of education in the economic development of the state, region, territory (Burchi, 2006; Hanushek & Woessmann, 2007; Ozturk, 2001; Astakhova et al, 2016), the social impact of

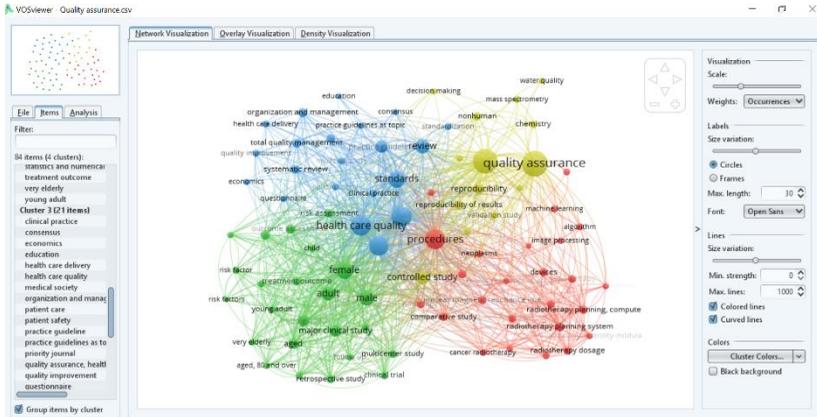


Fig. 1.4 – Map of keywords for the query “quality assurance”

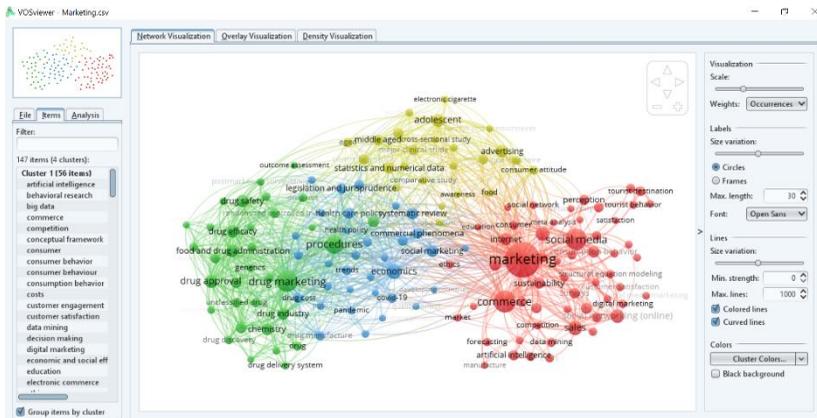


Fig. 1.5 – Map of keywords for the query "marketing"

The above questions require a detailed bibliometric analysis of the “quality of education” query and the determination of publishing activity trends in a specific set of scientometric indicators, in particular, fields of knowledge.

General map by search query Quality of education (Scopus database, all fields of knowledge).

The built-in Scopus toolkit was used for bibliometric analysis.

As a result of the **Quality of education** search, 126,374 documents were found in the Scopus database.

Works on this topic began to appear in Scopus in 1921 (Fig. 1.6). Their number was a meagre 1-3 per year until 1967. But since 1968, it began to grow rapidly and constantly and reached its climax in 2021 - 7329 works.

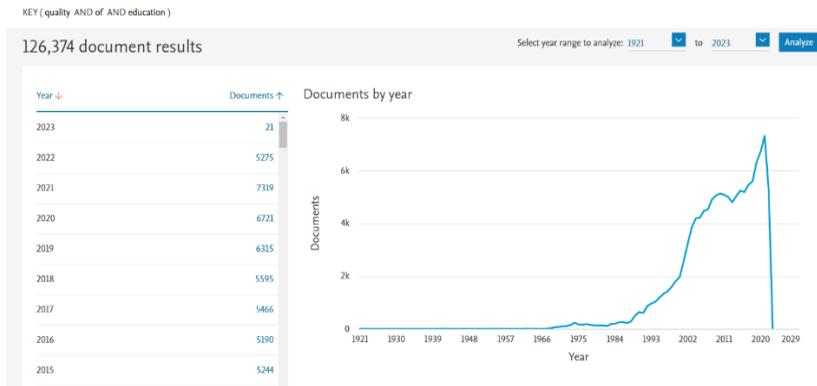


Fig. 1.6 – Number of documents on the query “Quality of education”

If we consider scientific publications by types of publications (Fig. 1.7), then most of them (61%) are articles, followed by reviews (12%) and conference materials (11%).

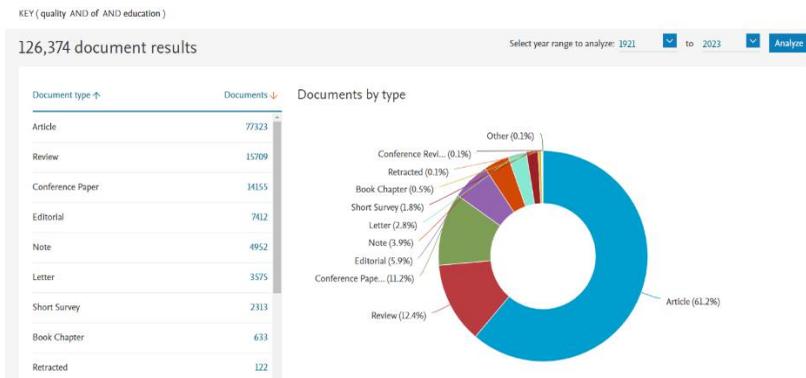


Fig. 1.7 – Types of publication on the query “Quality of education”

The largest number of scientific works on the subject of Quality of education were prepared by scientists in the field of Medicine (46.9%), with a large margin of 30%, in the second and third positions are the fields of Social Sciences (10.6%) and Nursing (10%) (Fig. 1.8).

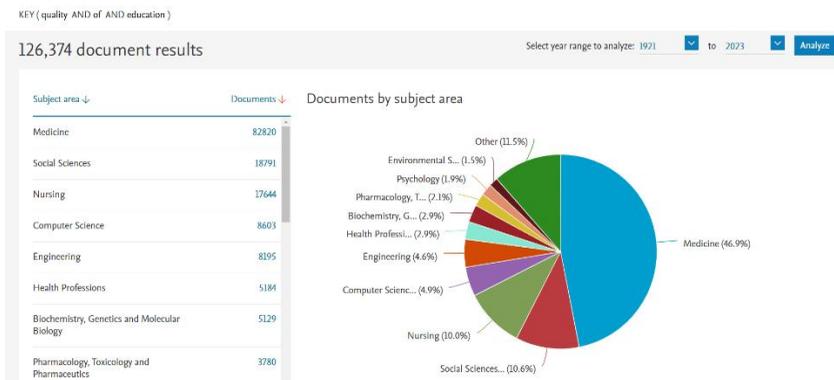


Fig. 1.8 – Documents by area on the query “Quality of education”

The geographical structure of publications in the field of Quality of education is shown in Fig. 1.9. The leading countries

of scientific research in this field are the United States of America (45,143 works), Great Britain (14,186 works) and Canada (6,669 works). The top ten also includes Australia, China, Germany, the Netherlands, Spain, Italy, and France. According to the received data, the number of scientific works in this scientific direction is 293 in Ukraine.

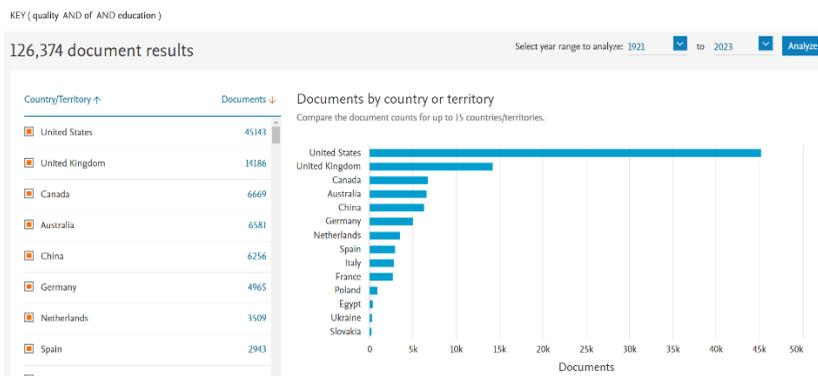


Fig. 1.9 – Documents by country on the query “Quality of education”

Harvard Medical School, University of Toronto, University of California, San Francisco, University of Washington, The University of North Carolina at Chapel Hill are among the main scientific and educational institutions actively conducting research in this direction (Fig. 1.10).

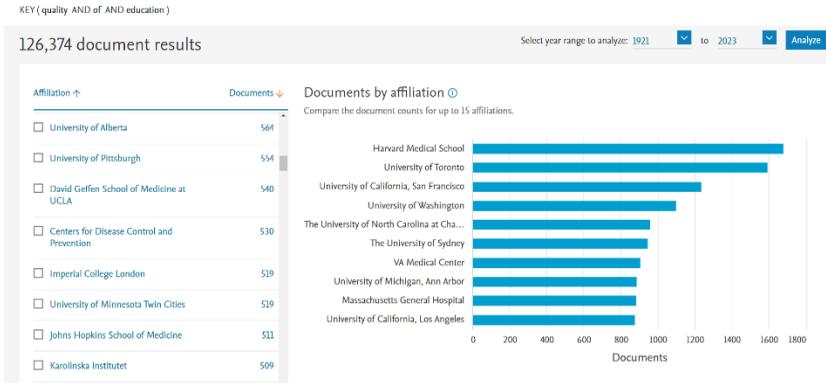


Fig. 1.10 – Documents by affiliation on the query “Quality of education”

According to the Scopus database, the National Institutes of Health (1972) sponsors the most works, with almost 1,000 less than the National Cancer Institute (Fig. 1.11).



Fig. 1.11 – Documents by funding sponsor on the query “Quality of education”

The publications status in Ukraine according to the search query Quality of education is characterized by Fig. 1.12 – 1.14. It can be seen from them that the first publication in Scopus on

this topic appeared in 1990, and the following ones as early as 2000. And only since 2011, there has been a constant increase in publishing activity in this direction. And in 2021, the number of works increased sharply by 3 times compared to 2020 (Fig. 1.12).

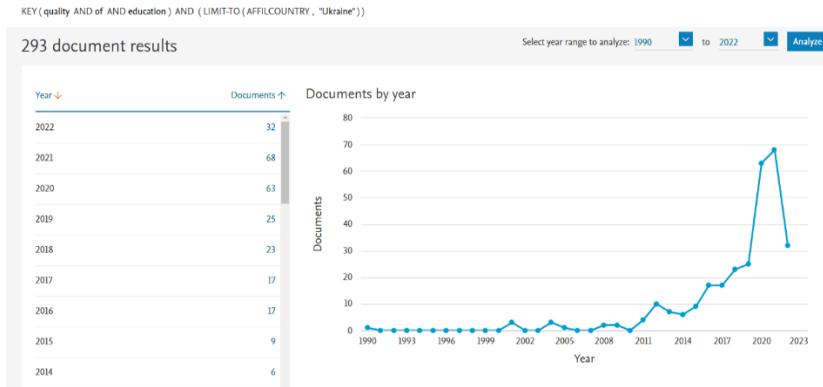


Fig. 1.12 – Number of documents on the query “Quality of education” (Ukraine).

By types of publications, articles and conference materials were almost equally divided - 47% and 45%, respectively (Fig. 1.13).

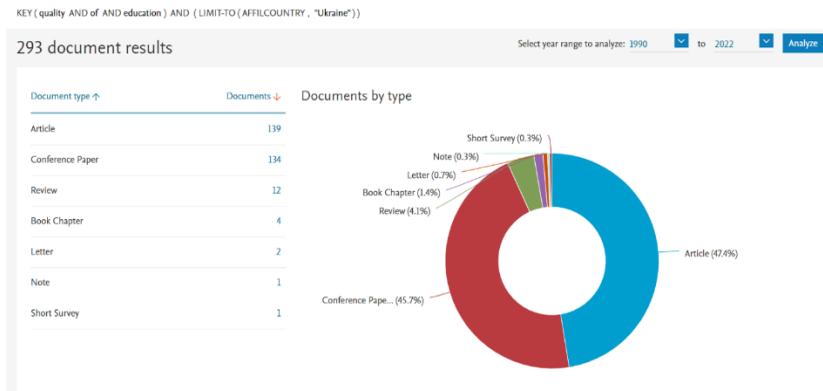


Fig. 1.13 – Types of publication on the query “Quality of education” (Ukraine)

A dozen leading universities, whose scientists pay attention to the study of the topic Quality of education in Ukraine, are shown in Fig. 1.14.

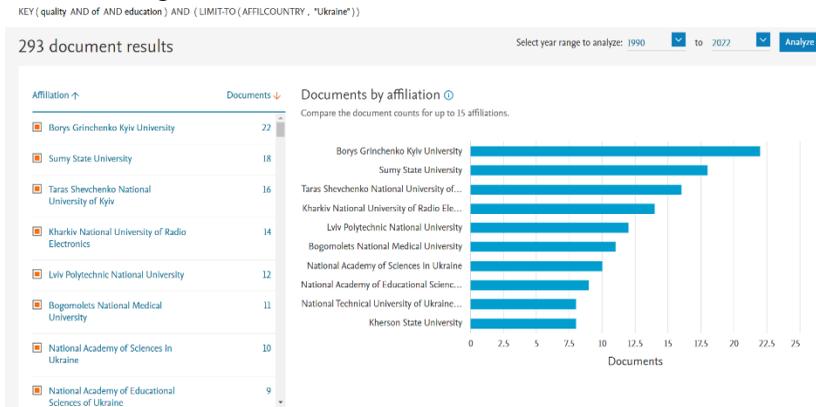


Fig. 1.14 – Documents by affiliation on the query “Quality of education” (Ukraine)

Quality of education search query map (Scopus database, detailed analysis by area).

As a result of an advanced search using the keyword **“Quality of education”** and the fields of study **“Business, Management and Accounting”**, **“Economics, Econometrics and Finance”**, **“Decision Sciences”**, **“Social Sciences”**, 21,472 documents were found.

Chronologically, they cover the period 1921-2023. In fig. 1.15, it can be seen that the last ten years have seen a significant increase in publication activity on this topic. In 2020-2021, the most considerable number of works was 1357 and 1389, respectively.

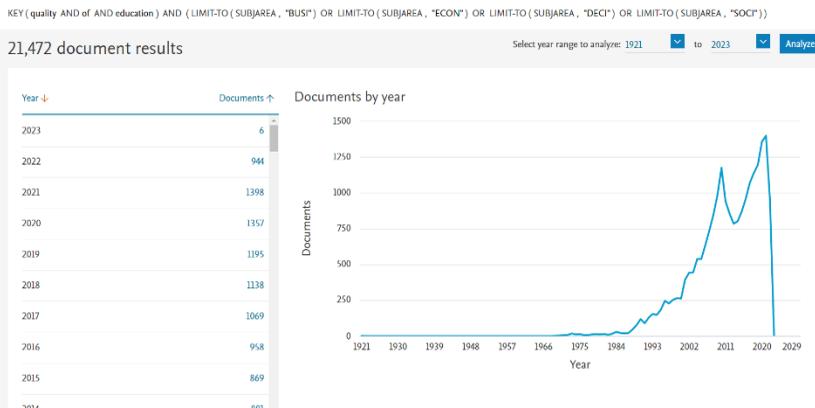


Fig. 1.15 – Number of documents on the query “Quality of education” (selected areas)

A significant volume of the species composition of publications (68.5%) consists of articles (Fig. 1.16).

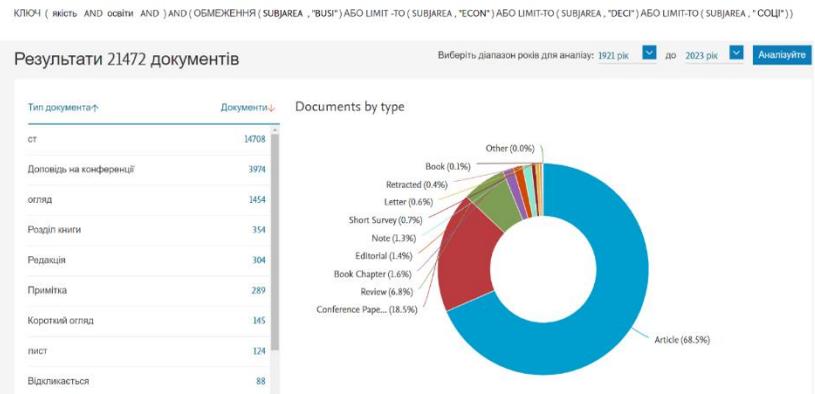


Fig. 1.16 – Types of publication on the query “Quality of education” (selected areas)

The United States of America (7,081 works) is the leader among research countries on this topic by a significant margin

(Fig. 1.17). They are 5,000 jobs ahead of the UK, which is in 2nd place. The third place is occupied by China - 1364 works.

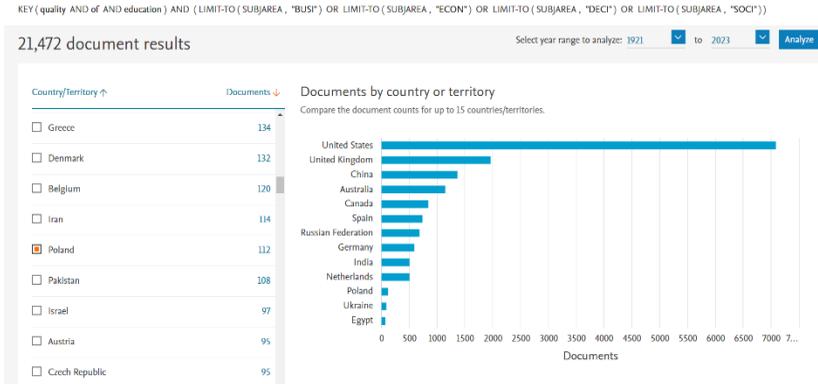


Fig. 1.17 – Documents by country on the query “Quality of education” (selected areas)

According to the geographical structure of publications, 3 US universities are among the top three organizations that research this topic the most: University of Toronto, University of California, Los Angeles, University of California, San Francisco (Fig. 1.18).

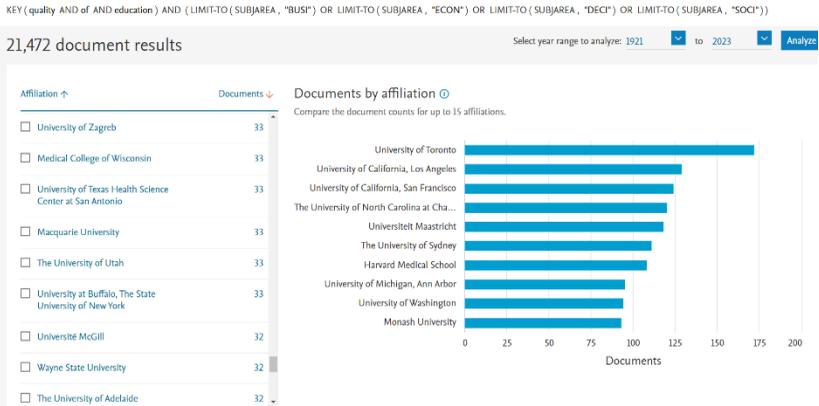


Fig. 1.18 – Documents by affiliation on the query “Quality of education” (selected areas)

Most often, the National Institutes of Health, European Commission, and National Science Foundation provided sponsorship support in scientific research (Fig. 1.19).

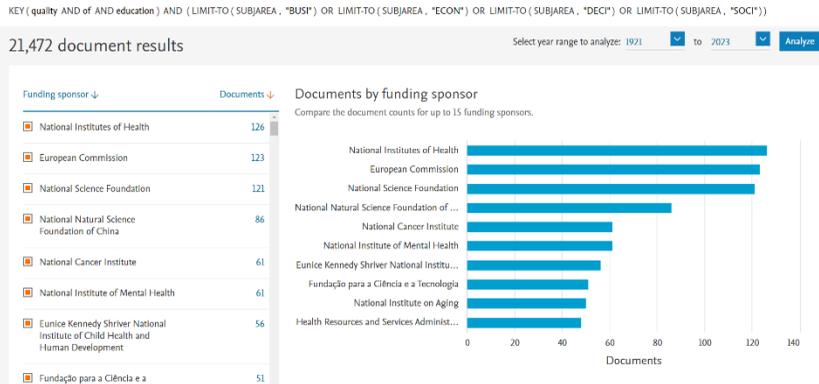


Fig. 1.19 – Documents by funding sponsor on the query “Quality of education” (selected areas)

Ukraine has in its arsenal 84 works on the studied subject covering the period 2009-2022 (Fig. 1.20).

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (AFFLCOUNTRY , "Ukraine"))

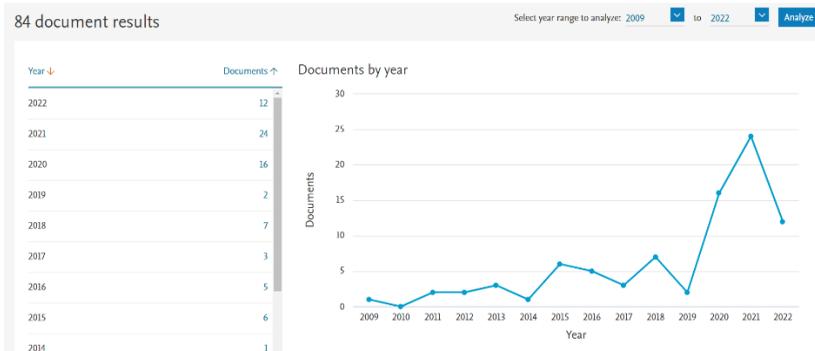


Fig. 1.20 –Number of documents on the query “Quality of education” (selected areas, Ukraine)

By type of publication, 71% are articles. (Fig. 1.21).

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (AFFLCOUNTRY , "Ukraine"))

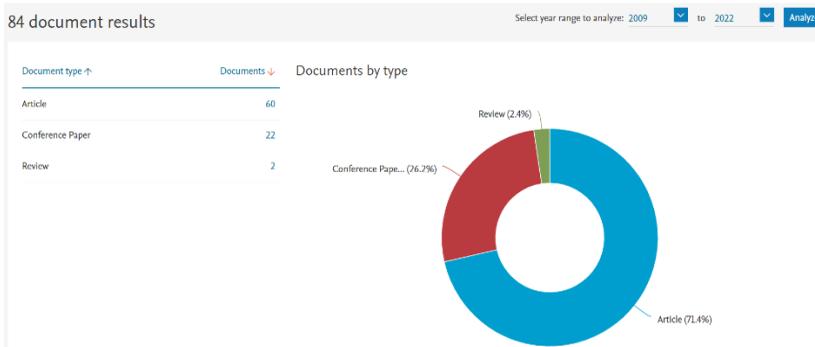


Fig. 1.21 – Types of publication on the query “Quality of education” (selected areas, Ukraine)

Fig. 1.22 shows 10 universities that pay the most attention in Ukraine to the study of this topic in the context of the indicated fields.

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA, "DECP") OR LIMIT-TO (SUBJAREA, "SOCP")) AND (LIMIT-TO (AFFILCOUNTRY, "Ukraine"))

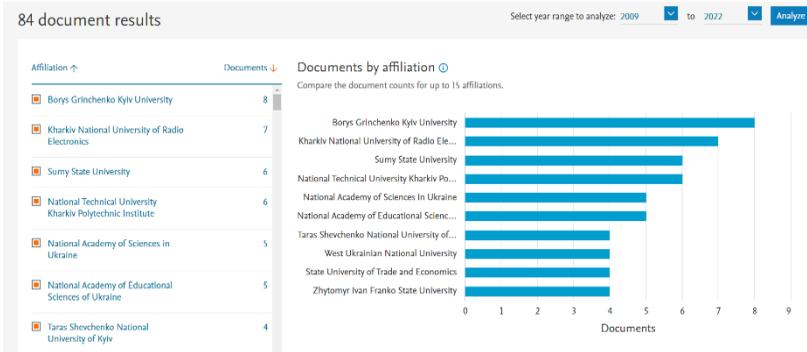


Fig. 1.22 – Documents by affiliation on the query “Quality of education” (selected areas, Ukraine)

Fig. 1.23 – 1.25 demonstrate the number, chronological period, species composition and geographical structure of publications on the topic **Quality of education in the section of the Business, Management and Accounting field.**

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "BUSI"))

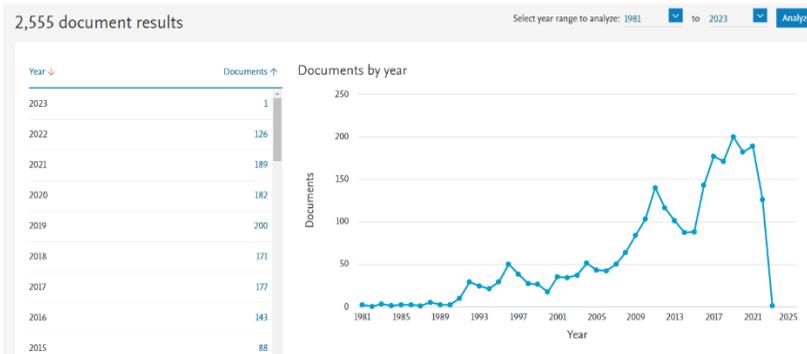


Fig. 1.23 – Number of documents on the query “Quality of education” (selected area “Business, Management and Accounting”)

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "BUSI"))

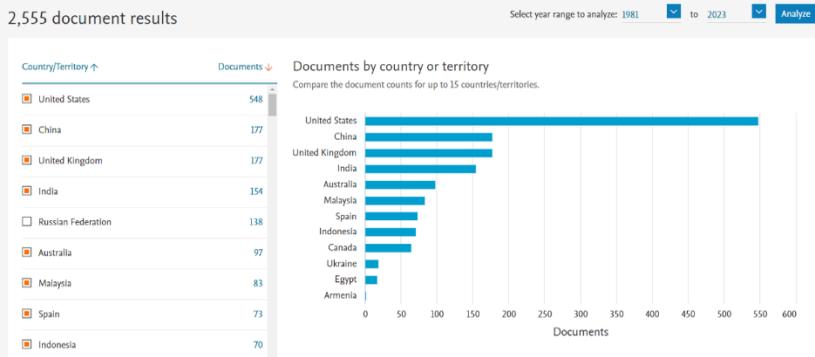


Fig. 1.24 – Documents by country on the query “Quality of education” (selected area “Business, Management and Accounting”)

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "BUSI"))

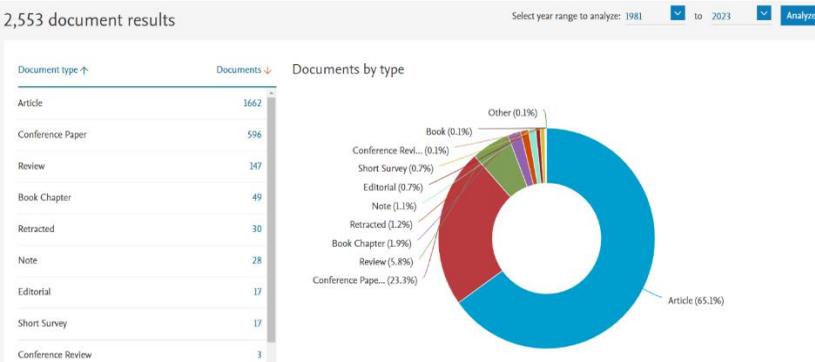


Fig. 1.25 – Types of publication on the query “Quality of education” (selected area “Business, Management and Accounting”)

Fig. 1.26 – 1.28 demonstrate the number, chronological period, species composition and geographical structure of publications on the topic **Quality of education in the section of the field of Economics, Econometrics and Finance.**

819 document results

Select year range to analyze: 1991 to 2023 Analyze

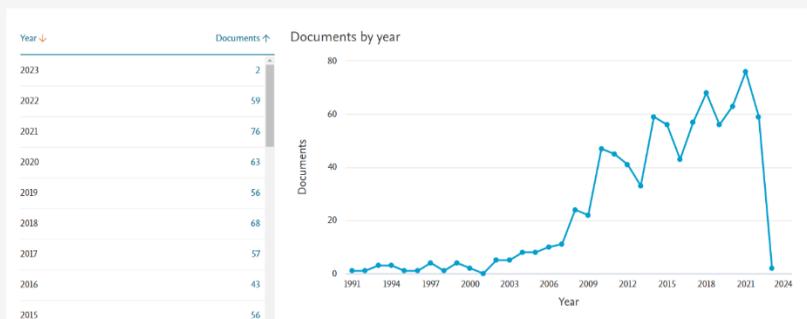


Fig. 1.26 – Number of documents on the query “Quality of education” (selected area “Economics, Econometrics and Finance”)

819 document results

Select year range to analyze: 1991 to 2023 Analyze

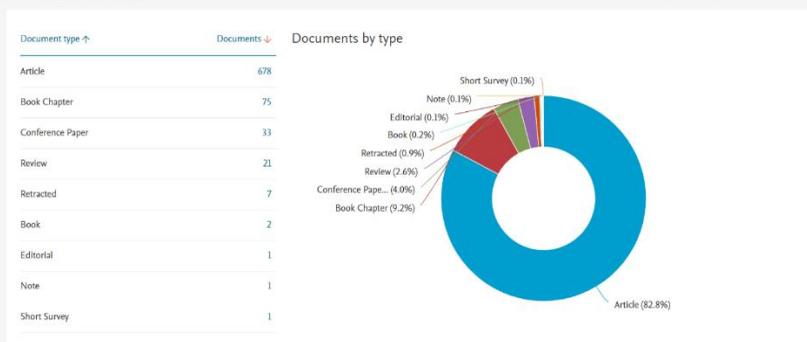


Fig. 1.27 – Types of publication on the query “Quality of education” (selected area “Economics, Econometrics and Finance”)

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "ECON"))

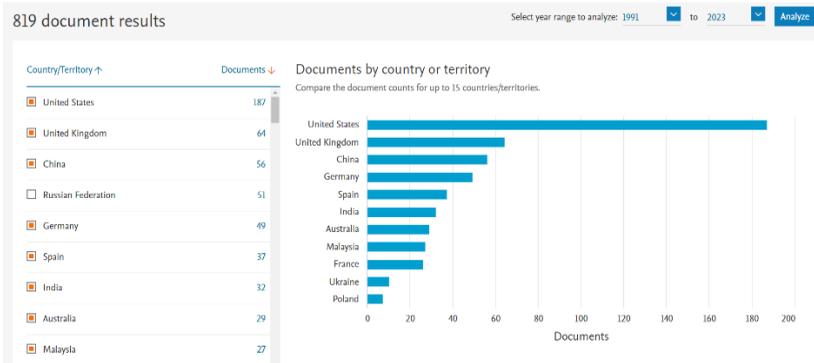


Fig. 1.28 – Documents by country on the query “Quality of education” (selected area “Economics, Econometrics and Finance”)

Fig. 1.29 – 1.31 demonstrate the number, chronological period, species composition and geographical structure of publications on the topic **Quality of education in the section of the Decision Sciences field.**

KEY (quality AND of AND education) AND (LIMIT-TO (SUBJAREA, "DEC"))

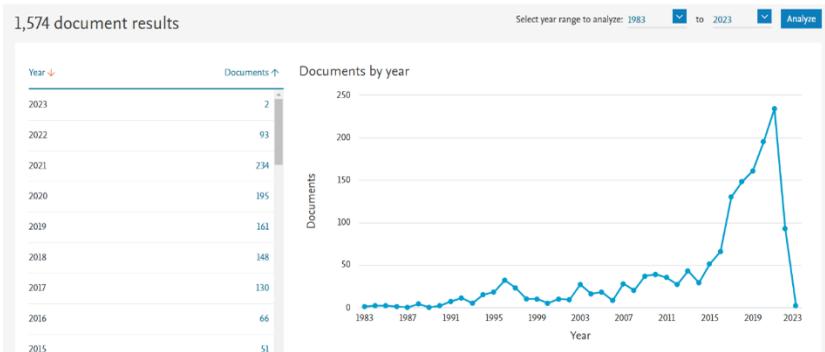


Fig. 1.29 – Number of documents on the query “Quality of education” (selected area “Decision Sciences”)

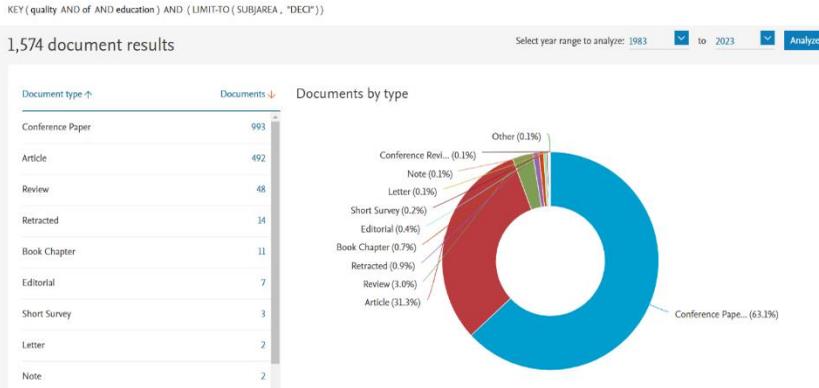


Fig. 1.30 – Types of publication on the query “Quality of education” (selected area “Decision Sciences”)

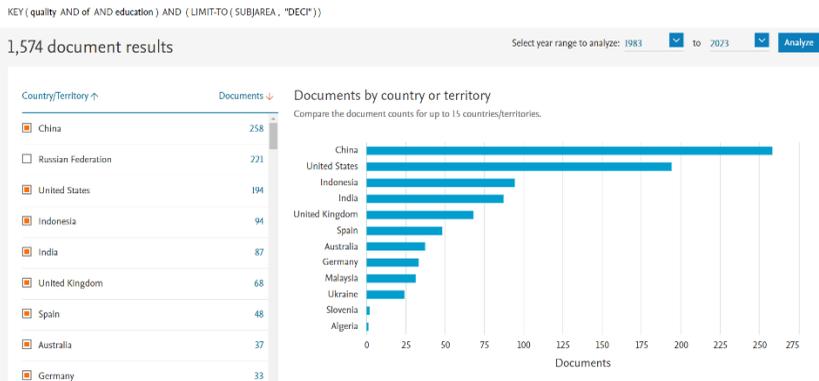


Fig. 1.31 – Documents by country on the query “Quality of education” (selected area “Decision Sciences”)

Fig. 1.32 – 1.34 demonstrate the number, chronological period, species composition and geographical structure of publications on the subject of **Quality of education in the field of Social Sciences**.

KEY (quality AND education) AND (LIMIT-TO (SUBJAREA, "SOC"))

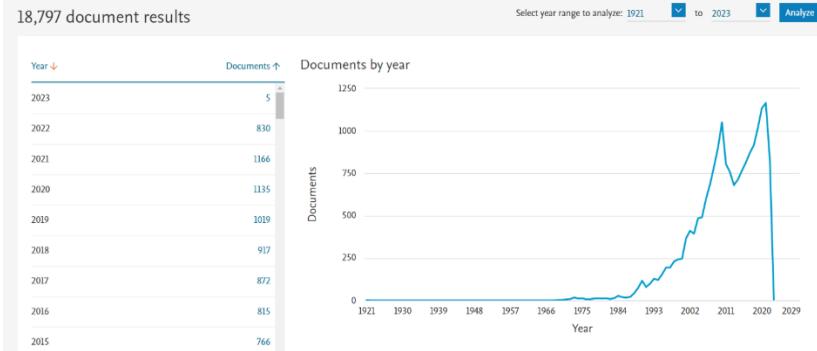


Fig. 1.32 – Number of documents on the query “Quality of education” (selected area “Social Sciences”)

KEY (quality AND education) AND (LIMIT-TO (SUBJAREA, "SOC"))

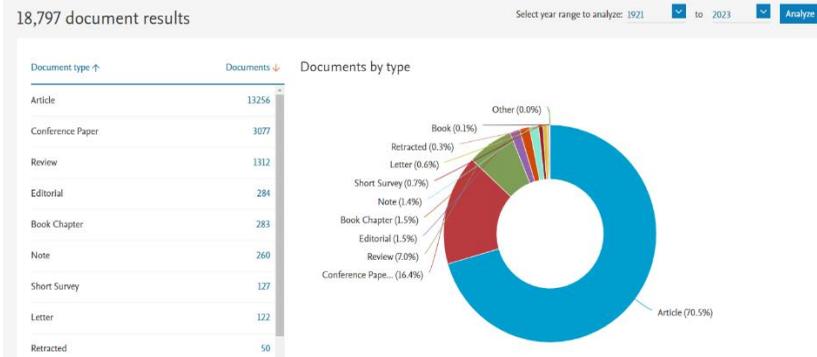


Fig. 1.33 – Types of publication on the query “Quality of education” (selected area “Social Sciences”)



Fig. 1.34 – Documents by country on the query “Quality of education” (selected area “Social Sciences”)

The results of the bibliometric analysis made it possible to determine the directions of further research into the main trends in ensuring the quality of education. Interesting analysis can be:

1. Leaders in publishing activity among the countries and universities from the point of view of studying successful cases of education quality assurance systems implementation.

2. Types of publications and fields of journals knowledge from the point of view of understanding the peculiarities of the quality assurance system organization depending on the subject area.

3. Changes in the number and types of documents over the years as an indicator of the reaction to global events related to ensuring the quality of education (implementation of the regulatory framework, definition of sustainable development goals, implementation of the Bologna process, adoption of ESG 2015, etc.).

The data of the bibliometric analysis show that the interest in the researched phenomenon of ensuring the quality of education does not decrease and spreads to an increasingly wide range of fields of knowledge. In this case, the creation of a complete picture of publication activity, the selection of key words and

their clusters with further analysis and "overlay" on the chronological framework of the development of the regulatory and recommendation base is an urgent task for further research.

2 DIRECTIONS FOR IMPROVING THE WORK OF EDUCATION MANAGEMENT AUTHORITIES AT THE LOCAL GOVERNMENT LEVEL

An important aspect of the organization of educational management authorities' work is the legal and regulatory framework of this activity. Education management, both at the state and regional government levels, is mainly carried out by public authorities, the activities of which are clearly regulated by national legislation. Given this, when considering the issue of organizing the work of educational management authorities, it is necessary to analyze the regulatory and legal framework on these issues.

Regulatory and legal provision for the organization of public authorities' work is ensured threefold: in international, state and local directions. In particular, according to Article 2 of the Law of Ukraine "On Education," modern Ukrainian legislation on education is based on the "fundamental law" – the Constitution of Ukraine – the laws that are called special, by-laws in the field of education and science, as well as international agreements and treaties of our country, signed in the prescribed manner and ratified by the national parliament. The above-mentioned regulatory legal acts should not reduce the nature and scope of the right to education, declared in the Constitution of Ukraine, as well as the legally defined autonomy of subjects of the educational process and academic freedom of participants in the educational process (Law of Ukraine on education, 2021).

Legal regulation following the acts of international direction is carried out in accordance with international conventions, agreements, treaties, etc., ratified by the Ukrainian Parliament – the Verkhovna Rada of Ukraine. These include the "Convention on the Recognition of Qualifications concerning Higher Education in the European Region" (Convention on recognition of higher education qualifications in the European region),

“Convention on the Recognition of Studies, Diplomas and Degrees concerning Higher Education in the States belonging to the Europe Region” (Convention on the recognition of study courses, higher education diplomas and study degrees in the countries of the European region), etc.

The Constitution holds the leading position among the national normative acts (Constitution of Ukraine, 2020). As defined in Article 8, the Constitution of Ukraine has supreme legal force, and laws and other subordinate legal acts are adopted in accordance with the norms of the Constitution of Ukraine and they must comply with the Constitution of the country (Constitution of Ukraine, 2020).

The key place among the laws of Ukraine, according to which the organization of the work of educational management bodies, is occupied by the following laws: “On Education” (2021), “On Higher Education” (2021), “On Professional (Vocational) Education” (2022).

The law “On Education” states that it defines public relations arising while exercising the constitutional human right to education, the rights, and obligations of individuals and legal entities involved in the exercising this right, and this law defines the rights and obligations of state and local authorities in the field of education (Law of Ukraine on education, 2021). Article 1 of this law defines the following special education legislation: “On Pre-School Education,” “On Complete General Secondary Education,” “On Out-of-School Education,” “On Vocational Education and Training,” “On Higher Education” (Law of Ukraine on education, 2021). The law defines the framework of basic categories and concepts for the education management organization.

The Law of Ukraine “On Higher Education” defines the fundamental legal, organizational and financial framework for the higher education system, provides conditions for the organization of cooperation between state authorities,

businesses and higher education institutions on the principles of their autonomy, integrating education with science and industry to prepare competitive human capital for innovative and high-tech development of the country, personal fulfillment, to meet the needs of society, provide the labor market and the state with qualified staff (Law of Ukraine on higher education, 2021).

The Law of Ukraine “On Professional (Vocational) Education” establishes the legal, organizational and financial basis for the functioning and development of the professional (vocational) education system, creating the grounds for professional self-realization of the individual and meeting the demand of the state and society for skilled workers [6].

The Law of Ukraine “On Pre-School Education” defines the legal, organizational and financial basis for the functioning and development of preschool education, which provides the development, education and training of children, based on integrating family-based and community-based education, the national science achievements, global pedagogical experience and fosters the values of the legal democratic society are being shaped in Ukraine (Law of Ukraine about professional (vocational and technical) education, 2022)

The Law of Ukraine “On Secondary Education” (2010) defines the legal, organizational and economic basis for the functioning and development of the general secondary education system. It sets out the organization of educational and upbringing processes within secondary schools.

The issue of the development of extracurricular education is defined in the Law of Ukraine “On Extracurricular Education” (2021). This Law, in accordance with the Constitution of Ukraine, defines the state policy in the field of extracurricular education, its legal, socio-economic, as well as organizational, educational and upbringing principles.

Considering that the education management organization is carried out by the executive authorities and local self-

government and their officials, it is necessary to mention such laws of Ukraine as “On Local State Administrations” (2021), “On Local Self-Government in Ukraine” (1997), “On Public Service” (2021), “On Service in Local Self-Government Bodies” (2021), “On Voluntary Unification of Territorial Communities” (2020), “On Prevention of Corruption” (2021). These laws define the basic issues of the education management organization at the national and regional levels, the basis for education management authorities’ formation and functioning.

Specified provisions of the Laws usually take place in subordinate legal acts. These include decrees of the President of Ukraine, resolutions and orders of the Cabinet of Ministers of Ukraine, orders of the Ministry of Education and Science of Ukraine, orders of local state administrations, and decisions of local self-government authorities.

As an example, we can mention the Resolution of the Cabinet of Ministers of Ukraine, which approved the “State National Program ‘Education’ (“Ukraine XXI century”)” (1993); the Resolution of the Cabinet of Ministers of Ukraine “Management Issues of State-Owned Institutions of Professional (Vocational) Education, Subordinated to the Ministry of Education and Science” (2019), and “Management Issues of Certain Categories of State-Owned Educational Institutions Related to the Management of the Ministry of Education and Science” (2019).

At the regional level, we can note the following orders “On Approval of the Regulations on the Department of Education and Science of Sumy Regional State Administration” (No.475-OD dated September 21, 2020) by the Head of Sumy Regional State Administration, which defines the major tasks and peculiarities of management activity of the principal regional educational management institution. Thus, we can argue that the legal foundations of educational management are laid down by the legal acts of international, state and regional levels. The essential provisions of education management are laid down by

the Constitution of Ukraine and thoroughly outlined in special education management legislative acts and sub-legal acts of central, local executive and local self-government authorities. At the same time, it can be argued that some normative and legal acts need to be improved and refined in the context of decentralization and administrative-territorial reforms carried out within our country at the current stage. In particular, the system of normative-legal acts concerning the organization of the educational sector management at the local level is required to be improved. Firstly, it is due to the significant number of united territorial communities being created, some of which previously did not have separate education management authorities.

The education management systems in foreign countries have both common features and significant distinctive and specific features, stemming from the historical, cultural and socio-political features of each particular country.

The education management mechanisms, which have been formed over several decades, nowadays are undergoing significant changes within many countries, which are due to both the reform of national education systems and administrative reforms carried out in these countries at the public administration levels – state or federal, regional and municipal. The processes of supranational integration, which have recently intensified significantly on the European continent, have a significant impact on national education management systems.

It is worth focusing separately on the management decentralization trend, which is an important direction of state reforms in some foreign (primarily European) countries, which provides an opportunity to use the advantages of regional power, which is closer to territorial communities and prompting regional development (Semenova, 2021).

The rapidly rising centrifugal trends in public education administration within many foreign countries are caused by:

firstly, the delegating management powers from the central government to local, territorial management authorities; secondly, the strengthening of educational institutions' autonomy, providing more authority to management entities of educational institutions.

The state is required to define a measure and comply with it in supporting regional development in reality. Examples of this can be found in a united Europe. The exacerbated political confrontation between the Francophone and Flemish communities in Belgium, accompanied by separatist appeals, resulted in a protracted government crisis and put into question the very existence of Belgium as a federal state. However, its connection to a decentralized system of government, including education, is very clear. Since 1989 Belgium has had three autonomous education systems, for the Francophone, Flemish and German-speaking communities, which account for 42%, 57.5% and 0.5% of Belgian students respectively. The Belgian federal government has the authority to set the age limits for compulsory education, the minimum requirements for obtaining the final education certificate (diploma), and the pension rates for teachers. These possibilities are pursued by the service for scientific, technical and cultural affairs under the Prime Minister of Belgium; there is no federal ministry of education in Belgium (Semenova, 2021).

Canada as a federal country is an example of a decentralized education system. The constitution of this country gives the provinces, i.e. federal subjects, exclusive rights in the field of education. As a consequence, Canada has ten autonomous educational systems corresponding to the number of provinces. The federal government has jurisdiction mainly over the issues concerning education of the country's indigenous population (Indians and northern nations).

In 1967, the Council of Ministers of Education of Canada was created at the initiative of provincial education ministers to

discuss the most important issues related to education, to organize cooperation and advice on education issues between provinces and territories, to cooperate with the federal government and to represent the country at the international level. The examples of countries such as Belgium and Canada are the most extreme decentralized management models, which are directly related to the country's political situation (Semenova, 2021).

According to the Basic Law for the Federal Republic of Germany, the primary subjects of the federation, namely the Länder, have the primary authority to organize, control and finance educational institutions. The Federal Ministry of Education of Germany was created rather late, namely in 1969. Before it was created, the educational policy at the state (federal) level was coordinated by the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder. This authority has retained many powers even after the Federal Ministry of Education was established. The decisions of the Standing Conference are still binding on all of the states in the Federal Republic of Germany nowadays (Semenova, 2021).

France is still a highly centralized country in the field of education. But even in this country, the processes of decentralization in education management are beginning to be traced.

The system of education management in the United States can be defined as diversified. In this country, there are more than fifty regional education authorities (which are often called boards or departments) that implement the educational policy of the states and simultaneously are the administrators of the federal budget allocated for the needs of regional education systems. The U.S. Department of Education is primarily responsible for administering and monitoring the targeted and appropriate use of federal funds.

Federal and regional legislative bodies that establish basic legal norms regulating general and higher education, respectively, in the country as a whole and in a certain state, stand out as part of the education management mechanism. Many acts of these bodies, namely laws, have supreme legal force. They are the ones establishing the competence framework for state and local executive authorities.

Thus, having considered the education management system's organization in these foreign countries, it can be argued that most of them have chosen the path of decentralization in the education sector management. That is, we may say that having started to reform the administrative and political structure, including education management, in the direction of decentralization, Ukraine is moving along the path chosen by the developed leading countries of the modern world. Accordingly, adopting foreign experience in education management, in particular at the local level, may be useful in reforming this sector in Ukraine.

The analysis of foreign experience, which was conducted in the previous subsection, shows that most countries are improving education management in the following main areas: expanding the range of subjects involved in education management; the use of competitive principles in management; changing the mechanisms of financing, linking its volumes to the productivity and scientific potential of educational institutions.

It is important that in Ukraine, under the centralized education system management, which was "inherited" from the Soviet times, the educational sector, as a rule, is reformed on the "top-down" initiative and are relatively one-off campaign by its nature. Despite some disadvantages of reforms in the centralized education management system, one cannot ignore their undoubted advantages - thorough preparation (theoretical elaboration of problems, conducting experiments, using the best,

already proven experience), engaging the best teachers of the country in innovations developing, and implementing, the most interesting, useful experience, the opportunity to assess the successes and failures of reform attempts by many examples, etc. An example of successful reform is the introduction of external independent evaluation (EIE) for admission to higher education (Semenova, 2021).

And changes are taking place in the “bottom-up” direction in a decentralized education system like American one, i.e. initiated by the educational institutions themselves, and happen as far as required or possible.

Recent reforms have affected both the educational system structure in Ukraine and the content and forms of control and evaluation, they allow us to talk about the restructuring of the national education system. Important principles of modern education management in Ukraine and foreign countries are humanization and humanitarianization. This fully corresponds to the post-industrial development stage, the growing role of education within the humanized society, the spiritual formation and moral enrichment of its members, the training of experts in a wide range of new humanitarian specialties necessary for modern life.

From a management perspective, education is interpreted as a sphere of power distribution between different levels of government and subjects of educational policy. In the context of decentralization, this thesis becomes particularly important. The education management system in Ukraine, which is one of the social management subsystems, is a complex of lower-class subsystems (state, regional), naturally connected into a single whole.

The peculiarity of modern education system management is a new relationship between national, regional and local education authorities among themselves, as well as with educational institutions. The processes of education

management decentralization, differentiation of competence and authority between its different levels are gathering pace; the transition from state to state-public management is taking place. In this regard, the regional level of education management is becoming increasingly important, and the implemented changes at this level provide the greatest impact on the entire municipal educational system, which contributes to creating the necessary conditions under which local governments become real subjects of education development management, which will provide every citizen living in the area with proper and highly comprehensive and quality education (Semenova, 2021).

It should also be noted that when reforming the education management system at the local level, it is necessary to take into account the challenges currently facing the education management reforming process. In particular, it would be advisable to create education management authorities at the regional (first of all) and district councils, given their absence. Regional and district councils represent the common interests of the residents of the united territorial communities of a particular administrative unit. This may be realized by subordinating the departments of education and science of the regional state administrations, the education departments of the district state administrations and regional and district councils, respectively.

As mentioned earlier, as of today there is a legal conflict, namely inconsistency in different laws regarding education administrators at the local government level. Since, according to the new version of the Law “On Education,” structural units of local state administrations have practically lost their powers (this also applies to the Department of Education and Science of Sumy Regional State Administration). But at the same time, local self-government education management authorities in terms of territorial communities have not been established or are still being developed. Primarily, there is a reference to regional and district councils.

There are challenges facing the education management system's organization at the regional level: inconsistent provisions of certain laws determining the organization of the education management authorities functioning at the local level. In particular, the provisions of the Laws of Ukraine "On Education," "On Local State Administrations" and "On Local Self-Government in Ukraine;" the need to redistribute functions and powers between local executive authorities and local self-government education management bodies; the poor institutional education management bodies within newly united territorial communities. Accordingly, this requires a critical analysis of the existing regulatory and legal framework for education management and bringing it into operating condition, taking into account primarily the processes of decentralization and power redistribution between the executive authorities and local self-government (Semenova, 2021).

To sum up, we can say that it is necessary to initiate an educational reforming process and apply, in particular, the "bottom-up" management rather than vice versa.

The primary tasks in the work of education management authorities organization at the local level are the following: elimination of legal conflicts in the legislation relating to the education management organization at the local level and, above all, harmonization of the provisions of the Laws of Ukraine "On Education," "On Local State Administrations" and "On Local Self-Government in Ukraine;" changes should provide for the power redistribution between executive authorities and local self-government at the local level, in particular, it would be advisable to create an organization of local self-government bodies.

Having carried out a comparative analysis of the public service in education management in Ukraine and abroad, we can offer the following possible ways to improve the organization of

public service in the system of education management at the local level.

Most democratic, developed foreign countries have chosen the path of decentralization in the education sector management. That is, we can say that by starting to reform the administrative and political structure, including education management, in the direction of decentralization, Ukraine is moving along the path chosen by the developed leading countries of the modern world. Accordingly, adopting the foreign experience of education management, in particular at the local level, may be useful in reforming this sector in Ukraine. Nowadays, there is a need to initiate the educational reforming process and apply, in particular the “bottom-up” management, and not vice versa.

The primary tasks in organizing the work of education management authorities at the local level are the following: elimination of legal conflicts in the legislation relating to the education management organization at the local level and, first of all, harmonization of the provisions of the Laws of Ukraine “On Education,” “On Local State Administrations” and “On Local Self-Government in Ukraine;” changes should provide for the redistribution of powers between executive authorities and local self-government at the local level, in particular, it would be advisable to establish education management bodies at regional (first of all) and district councils, given their absence.

3 REFORM OF MODERN HIGHER EDUCATIONAL PROCESSES IN TRAINING SPECIALISTS IN UKRAINE

Experience of the world highly developed states demonstrates that in the last decade, among the many factors determining economic growth and increase in international competitiveness of the states, innovation and creative activity are becoming increasingly important. The reason thereof is that the states having dynamic development of education and technology along with an effective mechanism for commercializing their results are nominated as competitive leaders. Currently, pharmaceutical industry is actively developing: technological changes allow to improve approaches to treatment and improve life, regulatory changes - to accelerate the introduction of new effective drugs, it has become especially relevant in the last two years of the COVID-19 pandemic. In Ukraine, pharmaceutical industry is becoming increasingly technological, modern and innovative. The introduction of the European standards in production along with high investment intensity makes pharmaceutical industry one of the most dynamic ones in the economy with high added value. The market size continues to grow, the share of expensive and prescription drugs is increasing. Pharmaceutical industry is increasing the availability of advanced drugs and making a significant contribution to economic development. Thus, all the above changes shall be reflected in the mechanisms for educating specialists of pharmaceutical industry and reforming educational processes in higher education institutions in Ukraine.

We owe to the scientists and pharmacists who have fruitfully worked on the achievements in forming and developing educational processes for pharmaceutical professionals. V. Slipchuk (Slipchuk, 2015) analyzed the study of professional education of pharmaceutical specialists in the scientific

literature; considered the main approaches to reforming the curricula of professional education of pharmaceutical industry specialists and identified areas for updating not only the content and forms of educational programs, but also methods of educational activities. T. Reva researched the theoretical and methodological discourse of the competence approach in pharmaceutical education and substantiated that "competence" is a key, central concept of the competence approach in pharmaceutical education (Reva, 2016). B. Gromovyk identified the fields of social roles of pharmacy professionals, the consequences of uneven distribution of information between pharmacy professionals and patients (Hromovyk & Unhurian, 2013). A. Kotvitskaya identified the main problems of implementation and functioning of the Code of Ethics for employees of the pharmaceutical sector, as well as identified priority steps in its implementation in practice (Kotvitskaya et al, 2015). During 2015-2016, a group of researchers-pharmacists (V. Chernykh, B. Gromovyk, D. Korobko, A. Kotvitska, S. Ogar, A. Nemchenko, T. Yarnykh, V. Georgiyants, I. Zupanets, N. Vetyutneva and others) worked on the development of methodological principles of the State Standard of Higher Pharmaceutical Education of Ukraine.

Requirements for professional education of a specialist in pharmaceutical industry are related today to the introduction of new State Standards in the system of higher pharmaceutical education of Ukraine, new content and structure of education, ensuring the relationship between the market of educational services and the labor market, educating the specialists for the needs of employers.

Purpose of the study is the development of components of the mechanism of introducing the competence approach into the higher education institutions (HEIs) of Ukraine for improving educational processes and preparing modern experts of pharmaceutical industry.

The research basis of the present article is a comprehensive and systematic approach to introducing competency approach in the HEIs for preparation of the specialists of pharmaceutical industry. The UN Global Initiatives, the Recommendations of the European Association for Quality Assurance in Higher Education, the State Standard of Higher Pharmaceutical Education of Ukraine for the second level of higher education training for masters in the field of knowledge 22 “Health” of major 226 “Pharmacy, Industrial Pharmacy”, as well as analytical and statistical data of the development of pharmaceutical market constitute the information basis forming the results of the research.

The pharmaceutical market in the world continues to grow steadily, by 5-6% annually, 24% of such growth is accounted for by developing countries. This means the emergence of new markets with a lower competitive environment compared to developed countries. Pharmacy is a science-intensive industry, the technological base is constantly evolving, so the amount of investment is constantly growing. According to the State Statistics Service of Ukraine, in 2019 24,000 people of all employees were employed in the pharmaceutical industry (0.15%) (SSS, 2022). Pandemic phenomena in the world only accelerate the growth of pharmaceutical products, and the development of new types of these products depends on professional competent developers and performers. Therefore, the directions of reforming the education system in the pharmaceutical sector should be aimed at educating modern specialists for the pharmaceutical industry of Ukraine in terms of implementing a competency-based approach and improving (acquiring) the skills of the teaching staff. In 2020, 3,000 bachelor's degree graduates and 15,000 pharmaceutical graduates were educated by universities, institutes and academies of Ukraine (Pharmaceuticals of Ukraine, 2020).

The document of the strategic level is the Concept of developing pharmaceutical sector of the healthcare sector of Ukraine for 2011-2020, approved by the Order of the Ministry of Health of Ukraine dated 13.09.2010 No. 769 (as amended by the Order of the Ministry of Health of Ukraine dated 27.03.2013 No. 2242). The concept is developed in accordance with the recommendations of the World Health Organization and provides for the definition of the basic principles of establishing through regulatory documents technical regulations, rules, norms of conduct and requirements governing the circulation of medicines in Ukraine. The concept provides for the development of a strategy for the pharmaceutical sector, which should ensure the appropriate level of quality and effectiveness of pharmacotherapy, promote health, increase the duration and quality of life of the entire population of Ukraine (On approval of the Concept of development of the pharmaceutical sector, 2009). Also, it is important to note that the pharmaceutical industry is an industry with high investment potential, but appropriate investment requires the implementation of the principles of responsible investment, which are ensured by the goals of sustainable development of Ukraine (Orlova & Kharlamova, 2014).

The main directions and priorities of developing pharmaceutical sector of the domestic healthcare sector include formation of management in the pharmaceutical sector, reforming science and education adequate to the needs of the industry and modern transformation of society, improving information support and creating a transparent system of pharmaceutical sector. A separate section of the Concept is devoted to scientific and educational activities. It is envisaged that the policy of the Ministry of Health of Ukraine in the field of scientific activity should be primarily aimed at development of the treatment process according to European standards and ensuring import substitution.

Global and European integration processes have given impetus to the formation of new mechanisms of responsible educational process based on the competency approach, interaction of the HEIs with the business environment, training of teachers to achieve the goals of sustainable development of Ukraine.

International experts have summarized the global trends in higher education for the next three decades - until 2030, namely:

1. Increasing the mobility of applicants, faculty, educational institutions in general, which leads to the formation of a highly dynamic global market for educational services.

2. Development and intensification of international research, in the context of growing cooperation between universities and intensifying competition between them.

3. Increasing the global influence of national higher education systems in Asia and Europe, while maintaining a leading position in North America in this area, especially in the field of research.

4. Global distribution of private higher education (private funding of higher education), especially outside the OECD countries.

5. Development of market mechanisms in the management of higher education, through a system of indicators of efficiency of educational institutions and competitive distribution of funds.

6. Strengthening the attention of higher education institutions to ensure their quality, in response to the growing role and importance of transnational higher education, institutional rankings of free educational institutions and their strive to responsibility (Higher education development strategy, 2020).

World experience has already provided the general principles on which the processes of external quality assurance of education are based, namely:

the need to respect the autonomy of the institution (external quality assurance processes should, in the first place, serve the

interests of applicants and other stakeholders, such as labor market representatives);

the need to implement the results of their own activities of internal quality assurance institutions.

Launched in 2007 by the leaders of the United Nations Global Compact at the Geneva Summit, the Principles of Responsible Education Management (PRME) have become a model for organizing the relationship between the United Nations and business schools. The Principles of Responsible Education Management (PRME) are the UN Global Compact, which is the locomotive of responsible education management, research and cutting-edge ideas on a global scale. Higher education institutions operate on the basis of six principles of responsible education management (United Nations Global Compact, 2021).

Table. 3.1 – Principles of responsible education management

Principle 1 Purpose	Developing students' ability to be future generators of knowledge for business and society as a whole
Principle 2 Significance	Incorporating the importance of global social responsibility into our academic activities and curricula, as reflected in international initiatives
Principle 3 Methods	Creating an educational framework, materials, processes and environments that provide an effective learning experience for responsible leadership
Principle 4 Research	Participating in conceptual and empirical research that promotes our understanding of the role, dynamics and impact of corporations in creating sustainable social, environmental and economic value
Principle 5 Partnership	Interaction with business leaders to expand knowledge about their problems in solving social and environmental responsibilities and to jointly explore effective approaches to solving them
Principle 6 Dialogue	Facilitating and supporting dialogue and discussion among faculty, students, business, government, consumers, the media, civil society, organizations and other stakeholders on critical issues related to global social responsibility and sustainability

The implementation of these principles will provide academic institutions with a mechanism of corporate sustainability through the inclusion of universal values in curricula and research, will form a new generation of business leaders with new competencies in various fields, able to manage complex challenges facing business and society in the 21st century.

The goals of reforming the higher educational system require reevaluation on the basis of new educational approaches:

- providing a substantive link between the requirements of the business environment and the curriculum of all educational institutions;
- providing mechanisms for deregulation of the educational system (equal existence of different formats of education and the possibility of free choice of institutions, educational programs) and academic disciplines;
- priority for development are skills and knowledge (competencies): development of creative abilities; critical thinking; innovative technologies; culture of eco-life; cross-cultural communication; civil rights and freedoms; personal development in the context of leadership and effective communication; business skills.

Creation and functioning of the European Higher Education Area depends in principle on the ability of educational institutions at all levels of their organization to ensure that their curricula have clearly defined learning outcomes to be achieved; from the willingness, desire and ability of staff to provide teaching and create conditions that would help students achieve those results; as well as the presence of full, timely and tangible recognition of the contribution to the work of the part of the staff that demonstrates outstanding skill, excellent professional knowledge, dedication. Therefore, European standards and recommendations for internal quality assurance in higher

educational institutions contain the following areas: institution policy and quality assurance procedures; approval, monitoring and periodic review of curricula and diplomas; student assessment; ensuring the quality of the teaching staff; educational resources and student support; information systems; publicity of information (Standards and recommendations, 2006).

In 2018, the Standard of Higher Education of Ukraine of the second (master's) level of knowledge 22 "Health" major 226 "Pharmacy" was adopted, according to which 75% of the volume of educational and professional program (only 300 ECTS credits based on the full general average) education and on the basis of educational degree junior bachelor of "Pharmacy" by correspondence form of study is aimed at the formation of general and special (professional) competencies in the major, as well as general methodological principles underlying educational diagnostics of professional education were formulated (Standard of higher education in Ukraine, 2018).

All professional competencies are grouped into five clusters according to the Global Pharmaceutical Competences of the International Pharmaceutical Federation (FIP Education Initiatives. Pharmacy Education Taskforce. A Global Competency Framework, v.1) and according to the national specifics of higher education.

These are cluster 1 "Pharmaceutical competencies in the field of health care", cluster 2 "Competences in the field of pharmaceutical care", cluster 3 "Organizational and managerial competencies", cluster 4 "Professional and personal competencies", cluster 5 "Competences in the field of health care" quality assurance and management".

The development of the Standard of Higher Education of Ukraine of the second (master's) level of the field of knowledge 22 "Health" of major 226 "Pharmacy" became a significant contribution to the development of the competence approach in

higher pharmaceutical education. Considering the introduction of a competent approach to the development of standards of higher education, most scholars emphasize that special attention should be paid to the content of such sections as "List of competencies of graduates" and "Regulatory content of training, formulated in terms of learning outcomes." Despite the fact that methodologically the concept of "competence" and "learning outcomes" are distinguished (Gonzalez & Wagenaar, 2008), it should be borne in mind that competencies, as well as learning outcomes, are formed during the implementation of the educational program. Although competencies are mostly assessed during the further practical professional activity of the graduate, the formation of the applicant's relevant competencies, as well as learning outcomes, should equally be the goal of the teacher, the subject of his professional attention. In the standard of competence are divided into integral, general and special (subject or professional), while learning outcomes have become a "mixed phenomenon", although the need for their classification also exists.

For the development of pharmaceutical industry and education of specialists in this sector, it is possible to envisage the achievement of the following priorities: strengthening the role of specialized scientific institutions in conducting priority fundamental and applied research; introduction of multi-channel financing of pharmaceutical science at the expense of budgetary and extra-budgetary funds, ensuring their rational use for priority financing of competitive scientific developments of fundamental and applied nature; modernization of technological processes, development of new equipment, introduction of new technologies; creation of new models of functioning of the pharmaceutical industry, providing strengthening and improvement of the investment model of development of the pharmaceutical industry, preparation of base for transition to the innovative model of developing pharmaceutical industry

(ensuring active work of science parks, research centers, etc.); formation of a modern system of economic and analytical support of scientific developments, intensification of creation of integrated scientific and educational structures within the Ministry of Health of Ukraine, assistance in development of research infrastructure, attraction and formation of venture capital. Particular attention should be paid to the organization of in-house venture units in research institutes (centers) and institutions of higher education, which should take care of a number of issues, namely: the commercialization of scientific developments; creation of regional pharmaceutical clusters involving the existing scientific, educational, production and personnel potential of individual regions, including on the basis of public-private partnership; development and implementation of the system of evaluation of medical (pharmaceutical) technologies HTA (Health Technology Assessment), which includes regulatory support for the evaluation of new and existing technologies, as well as a set of educational activities involving the State Enterprise "State Expert Center of the Ministry of Health of Ukraine" the main organization in the field of development of medical and technological documents on standardization of medical care; inclusion in the curricula of undergraduate and postgraduate education of issues related to the processes of rational use of medicines, namely: evidence-based medicine, formulary system, pharmacovigilance, evaluation of medical technologies, etc.

For the purpose of coordinating issues related to the improvement of pharmaceutical education at the National Pharmaceutical University of Ukraine, a Scientific and Methodological Commission on Pharmacy of the Ministry of Education and Science of Ukraine was established and operates. One of the most significant achievements of the Scientific and Methodological Commission on Pharmacy was the creation of a new generation of standards of higher education, which allowed

to bring the content of education and the needs of the pharmaceutical industry. Standards of higher education have been developed in the following majors:

- 5.12020101 (training of junior specialists),
- 6.120201 (training of bachelors), 7.12020101 (training of specialists) - "Pharmacy";
- 7.12020104 (training of specialists) - "Technology of perfumes and cosmetics";
- 7.12020103 (training of specialists) - "Technology of pharmaceuticals";
- 7.12020102 (training of specialists) - "Clinical Pharmacy";
- 5.12020102 (training of junior specialists) - "Analytical quality control of chemical medicinal compounds";
- 5.12020103 (training of junior specialists) - "Manufacture of pharmaceutical preparations".

Problematic issues of competencies are largely relevant in the context of the distinction between academic and professional competencies. Professional competencies in the standard of higher education should be formed on the basis of professional standards, if any. However, the formulation of such competencies is still entirely at the discretion of the developers of educational standards due to the practical lack of professional standards for most professions that require specialists with higher education.

According to official data vstup.info, as of 2020 more than 100 educational programs were offered in major 226 "Pharmacy, Industrial Pharmacy" with different terms of study. It should be noted that in major 226 "Pharmacy, Industrial Pharmacy" the most common program is "Pharmacy". However, institutions also implement other programs - "Pharmaceutical Technology", "Cosmetology", "Clinical Research", "Clinical Pharmacy", "Health Technology Assessment", "Phytotherapy and Nutrition", etc., among which the National Pharmaceutical

University is a leader in the development of unique educational and professional programs in major 226 "Pharmacy, Industrial Pharmacy".

Reforming educational processes needs constant updating in accordance with the requirements of global world trends and European integration processes in education. Comprehensive implementation of the principles and mechanisms of the competence approach in the training of specialists of the pharmaceutical industry in higher education institutions will contribute to the sustainable development of Ukraine and increase the economic level of the pharmaceutical industry in general.

The main objectives of educational activities in pharmacy for the goals of sustainable development are: creating conditions for the development of individuals and their creative self-realization, who chose the profession of pharmacist, educating a generation of people able to work and learn effectively, preserving and enhancing national pharmaceutical science, culture and civil society, developing and strengthening a sovereign, independent, democratic, social and legal state as an integral part of the European and world community; reproduction of the intellectual potential of the state, formation of moral principles and norms of behavior of individuals; providing pharmaceutical industry of Ukraine with highly qualified specialists who can successfully work in a modern economy, a real professional and international environment that is constantly changing; increasing the quality of professional education of specialists focusing on international educational standards through the priority improvement of the content and forms of pharmaceutical education, which will lead to improved quality of services in the pharmaceutical industry.

4 PROBLEMS AND PROSPECTS OF DUAL EDUCATION IN UKRAINE

The country's competitiveness in the world market is determined by the positive dynamics of integration processes, development of social sphere and market economy. The development of the economy and industry of Ukraine is conditioned by the modernization of the labor market and the level of youth employment.

The labor market of young professionals is an important component of the state economy. After all, young people have the potential to accelerate the dynamics of development and integration processes in the country.

According to the State Employment Agency of Ukraine, the unemployment rate among young people is increasing every year. The reasons for the low level of employment of graduates of higher education institutions include imperfection of theoretical training, lack of practical experience and low level of work skills. The labour market needs not only specialists with certain knowledge or skills, but also highly qualified specialists capable of innovative activities.

In this regard, there is a problem of restructuring the system of training future specialists, introducing new educational models into curricula, improving the mechanism of interaction between education and the labor market. One of the factors of such a solution is the introduction of a dual form of higher education. It offers students a combination of theoretical and practical training and provides an opportunity to review the learning objectives and curriculum in accordance with the requirements of employers.

The participants of dual education are countries, educational institutions and enterprises, and at the same time it is conceptually important that the system of educational experts meets the common needs of all stakeholders.

Dual education is a format of education when a student is trained both in the institution and in the organization where he/she works in the specialty, consolidating the acquired knowledge and mastering practical skills.

Germany is considered the birthplace of dual education, which introduced training in the proportion of "30% theory, 70% practice", in the last century. Later this approach was borrowed by Europe, Canada, South Korea and China.

Dual education is not an innovation. It was launched in Germany in the seventies of the twentieth century. Now this form of education is effectively functioning in many European countries (Belgium, Austria, Finland, Sweden, etc.).

The modern dual education system in Germany provides training in vocational schools and individual higher education institutions. Dual education provides for the existence of educational (dual higher education institution) and industrial (private enterprise) educational environment. The enterprise is a partner of the educational institution and organizes practical training of students. Legal relations of dual education carriers are fixed at the legislative level. The effectiveness of such education meets the needs of the state, the individual, the service sector and the production sector.

Polish higher education institutions also offer a dual form of education, which combines the educational process with practical experience in the chosen specialty. In the framework of such an integrated dual education system, students attend academic classes three times a week, and the rest of the days are reserved for internships and work experience in institutions. The internship is funded by institutions or organizations, which allows the student to pay for their own education.

Among the advantages of the introduction of the dual model of education in Hungary, scientists note that when training a student, for example, in the field of entrepreneurship, the student has the opportunity to understand the relationship between the

various subsystems of the enterprise, and not seeing them as separate subjects in the course. It is possible to present them the system as a whole, the link points between control, accounting, marketing, personnel, procurement, logistics, etc. [6].

Dual education in Austria, Switzerland and Finland is implemented through a combination of academic and professional training of future professionals in various organizations and institutions. The theoretical part of the educational process of students is about 30% of the time, while the practical part is more than 60%.

Study programs under the dual system in these countries are characterized by:

- during the entire period of study, theoretical training and practice are carried out alternately. Theoretical training is integrated with the practical activities of future specialists of the enterprise.

- compliance of the curriculum content with the requirements of a specific dual enterprise-partner of the educational institution;

- assignment of mentors from among the leading specialists of the enterprise to the applicants;

- financial participation of the enterprise in providing practical training of applicants and payment for their work;

- participation of students in training projects not only at the educational institution, but also at the workplace of the partner enterprise.

Foreign scientists emphasize the important challenge that many countries are facing today - to make the transition from compulsory education to the employment system more effective, as the economic need for skilled workers and young people with appropriate qualifications can not be adequately fulfilled in the existing training structures. At the same time, educational experts from countries that have adopted the German model of education call on other countries to join.

Recently, the practice of introducing duality in the educational process is becoming more and more relevant in Ukraine. Among the main tasks of its implementation is to improve the quality of training, taking into account the needs of potential employers, updating curricula, formats and teaching methods, and to bridge the gaps between the theoretical and practical components of the educational process.

Dual education contributes to the professional formation of the individual, its development and self-determination, the formation of readiness to perform production activities. In this form of training, the acquisition of professional competencies is carried out in the performance of production activities, personal development occurs in the conditions of differentiated training. The prospects of the dual form of education are explained by the mutual interest of the state, educational institution and dual enterprise in the training of high-quality specialists.

Thus, researchers P. Sobečovska and M. Maich note that "the reliability of dual education is associated with meeting the needs of both students and the goals of the enterprise or organization..." (Abashkina, 1998). Scientist S. Amelina emphasizes the "significant demand for specialists trained in the dual education system..." (Amelina, 2010).

The interaction of participants in the dual form of higher education is based on the principles of social partnership and strict compliance with the requirements of duality (Sobiechowska & Maisch, 2006). In particular, public services and bodies develop regulatory support, coordinate the cooperation of all participants in the dual process and promote the development of their motivation. The management and leading specialists of the dual enterprise form the demand for training of specialists of a certain profile, determine the requirements for qualifications and professional competence of future specialists, monitor the practical activities of applicants at the enterprise, participate in assessing the quality of knowledge

of applicants, provide employment of graduates (Dudkin & Dudkina, 2013).

The higher education institution modernizes and integrates the educational process in accordance with the requirements of the dual enterprise, develops and improves curricula and educational programs, ensures interaction with potential stakeholders.

The interaction of participants in the dual form of education is presented in Fig. 4.1.

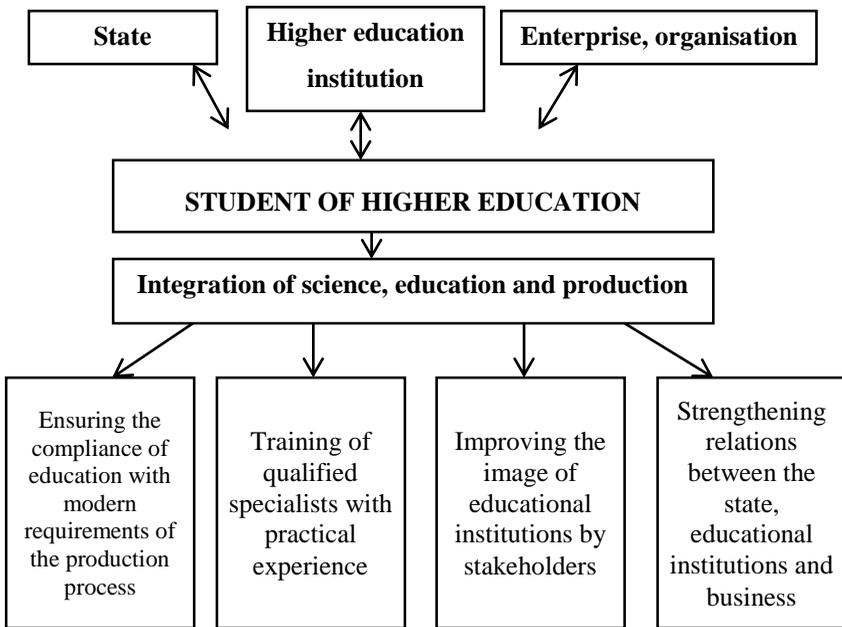


Fig. 4.1 – Model of interaction between participants of the dual form of education

The Ministry of Education and Science of Ukraine, as part of the implementation of the Action Plan for the implementation of the Concept of training specialists in the dual form of education,

proposed for public discussion the project "Regulations on the dual form of higher and professional higher education and the Model Agreement on the dual form of higher and professional higher education".

According to the results of the public discussion, comments and suggestions were sent, namely from the Federation of Employers of Ukraine, the National University of Food Technologies, the "Chernihiv Polytechnic" National University, the Mykolaiv National Agrarian University and the «Zaporizhzhya Polytechnic" National University.

The dual form of education in institutions of higher and professional higher education, according to the Regulations, provides for the acquisition of education by combining the training of individuals in educational institutions with on-the-job training at enterprises, institutions and organizations to acquire certain qualifications on the basis of a contract. Responsibility for the implementation of the educational program rests with the educational institution in full. The Regulation outlines the purpose of implementation and main tasks of the dual form of education, defines the subjects of dual education, their rights and obligations (Yakovchyk, 2019).

In autumn 2020, at the initiative of the Ministry of Education and Science of Ukraine, the first year of the pilot project on the introduction of dual education in Ukrainian educational institutions in partnership with small, medium and large businesses was completed. The level of interest of employers in involvement into the training of applicants at the stage of their training indicates the potential for the development of dual education, especially for technical specialties.

The study showed that there are two models of dual education in Ukraine - the model with integrated practical training and with integrated professional activity.

The first model provides for a combination of periods of study of applicants for the first higher or professional pre-higher education in an educational institution and at an enterprise.

The second model is designed to combine training at the university and at the enterprise for those who have already received a professional pre-university or first higher education, work at the enterprise and want to continue their studies in their profile or profile determined by the enterprise.

The model with integrated practical training is mainly applied in the educational institution. The transition to the dual form of education takes place from the 3-4th year or from the 1st year of Master's degree. As for the options for organizing the educational process and the schedule of alternating phases of training at the educational institution and at the enterprise, they differ depending on the specifics of training applicants in certain fields, the needs of the enterprise, etc.

Employers note that the criteria for choosing institutions for the organization of dual education are the availability of specialized departments in the institution, its territorial location, experience of previous cooperation, etc. Employers also note that very often the initiative to introduce the dual form and involvement of employers in this process is taken by the educational institutions themselves (Pogatsnik, 2018).

Among the motivational tools that can be implemented in the framework of cooperation with higher education institutions and students, employers name:

- payment of wages to trainees for the actual time worked at the enterprise (periods of on-the-job training)
- appointment by employers of motivating scholarships to the best students for successful theoretical training and active participation in internships at enterprises;
- payment by the employer of the cost of training of the student who studies on a contractual basis to the educational institution.

All these mechanisms can be practically implemented through the conclusion of a tripartite agreement between the employer, the educational institution and the student.

As stated by employers, they are primarily guided by the recommendations of educational institutions when selecting students who may be offered the dual form at the initiative of the enterprise. They participate in the work of qualification commissions, defense of coursework and diploma projects. During the first and second years, students have the opportunity to visit enterprises as a practice base, experimental base or as part of career guidance activities.

Among the problems that may affect the implementation of the dual form of education, employers note:

- military invasion of Russia and suspension of industrial production;

- quarantine restrictions imposed in Ukraine due to the spread of COVID-19;

- concerns of the administrations of institutions and teaching staff about reducing the workload for teachers and reducing staff at departments;

- low level of awareness of the benefits of dual education among both students and teaching staff.

Curricula of dual higher education institutions are vocationally oriented. When developing programs, they can be differentiated into blocks: theoretical training (in an educational institution), independent work of applicants and practical and industrial training (at a dual enterprise). The practical part of dual training takes place in real conditions of the production process, and the knowledge gained by applicants with the participation of mentors from the dual enterprise. During the training, students have the opportunity to learn a practical production profession (Bondarchuk, 2019).

Comparative characteristics of the traditional and dual education system are presented in Table 4.1.

Table 4.1 – Comparative characteristics of traditional and dual forms of education

Traditional educational system	Dual form of education
Formation of the request for training of specialists in various curricula is carried out by the state	Priority is given to the formation of an order for the training of specialists by enterprises
Theoretical and practical components of the educational process are separated	Coordinated combination of theoretical and practical training of specialists
Acquisition of practical skills and abilities by students only during internships	Gradual development of practical skills is carried out during the entire period of training
Practical training programs do not meet the requirements of employers	Training practice is as close as possible to the requirements of the dual enterprise
Financial support for training at the expense of the state or students	Financial support for training is partially provided by the employer or the dual enterprise
Long adaptation period of employment of students after graduation	Much shorter adaptation period during employment
Employment of graduates is not guaranteed	Employment of graduates is guaranteed

There are a number of advantages of the dual system of education over the "traditional" system of education for both graduates and employers, namely:

- compliance of the content of education with the modern level of production;
- familiarization of students with the corporate culture of the enterprise, its features;
- minimizing the costs of social and labor adaptation of the graduate in the new work team;
- use of modern equipment in the educational process in the conditions of real production sites;

- selection of the best personnel for the employer;
- state support of the enterprise;
- improving the image of the enterprise, organization and higher education institution, etc.

At the same time, it is worth noting the problems of introducing the dual form of higher education:

- the need to improve the legislative support of the dual process,

- difficulties in modernizing the curricula of educational institutions to meet the requirements of production;

- mandatory retraining of employees of enterprises without pedagogical experience into mentors of students (Raievniewa, Aksonova & Ostapenko, 2018).

Successful implementation of dual education requires synergy of efforts of educational institutions, employers and students. The primary task for educational institutions is to find employers-partners. At the same time, it is equally important not only to establish partnerships with employers, but also to determine the criteria that employers must meet to organize dual education and develop mechanisms for their economic interest in these processes. Interaction between business and government should be based on the principles of public-private partnership. The current legislation regulating the relations of cooperation between the state (public partner) and legal entities (private partners) does not pay enough attention to such cooperation in the field of education (Regulation "On the procedure for organizing and conducting dual education at the National University "Chernihiv Polytechnic", 2022).

However, the Ministry of Education and Science of Ukraine joins efforts with enterprises and organizations in the direction of systematic, constructive and mutually beneficial cooperation to ensure high quality of vocational training, attracting additional resources for the development of vocational education and its orientation to modern technical and

technological conditions. The main directions of such cooperation are:

- preparation of proposals for reforming the system of vocational education and creating professional and educational standards;

- providing advisory assistance on issues of common interest;

- participation in joint events: competitions, exhibitions, conferences, round tables, etc;

- development of mechanisms for providing graduates of vocational and higher education institutions with jobs at enterprises;

- development of proposals for joint provision of professional qualifications to graduates by employers and educational institutions;

- assigning large organizations to vocational and higher education institutions to provide patronage assistance;

- providing practical training of vocational and higher education students and internships for teachers of vocational and theoretical training, masters of industrial training at basic enterprises;

- introduction of sectoral, personal scholarships for the best scholars, students of vocational and higher education institutions by enterprises and organizations;

- provision of assistance by enterprises and organizations in the maintenance and development of the material and technical base of vocational and higher educational institutions;

- introduction by enterprises and organizations of material and moral stimulation of teachers of vocational and theoretical training and masters of industrial training of vocational and higher educational institutions;

- mutual dissemination of information on issues related to the development of vocational education and training for construction, advertising and promotion in the media, their web

resources (Regarding the introduction of a pilot project..., 2019).

"Chernihiv Polytechnic" National University actively implements the practice of organizing and conducting dual training of students.

According to the University Regulation "On the procedure for organizing and conducting dual education": The dual form of higher education is a way of obtaining education by full-time students, which involves on-the-job training at enterprises, institutions and organizations to acquire certain qualifications in the amount of 25 percent to 60 percent of the total volume of the educational program on the basis of a contract. On-the-job training involves the performance of job tasks in accordance with the employment contract.

The purpose of the dual form of education at "Chernihiv Polytechnic" National University is to improve the quality of training of students for professional activities.

The main objectives of the dual form of education are:

- strengthening and improving the practical component of the educational process with ensuring the achievement of learning outcomes defined by the relevant education standard and educational program;

- ensuring the interconnection, interpenetration and mutual influence of different systems (science-education, science-industry or science-public sector) to implement important changes aimed at improving the quality of education;

- improving the quality of training in accordance with the real requirements of the labor market and providing the national economy with qualified specialists;

- strengthening the role of employers and trade unions in the system of training specialists from participation in the formation of the content of curricula to the assessment of learning outcomes;

- modernization of the content of education in order to bring it in line with the requirements of the labor market;
- increasing the competitiveness of graduates of educational institutions in the context of globalization and promoting the growth of youth employment;
- shortening the period of adaptation of graduates to professional activities;
- increasing the motivation of students to study.
- implementation of curricula and curricula of the dual form of education, based on the combination of theoretical and practical training in the educational process in volumes: 40-75% - theoretical classes at the University; 25-60% - vocational training at enterprises/organizations/institutions;
- introduction of elements of the dual form of education under existing curricula and curricula (with the conclusion of an internship agreement for students at enterprises/institutions/organizations).

To organize and conduct dual education, "Chernihiv Polytechnic" National University must:

- ensure the compliance of the educational program with the standards of higher education, theoretical training and is responsible for the quality of training of higher education applicants
- conclude a cooperation agreement on the organization of the dual form of higher education with the enterprise (organization, institution);
- jointly with the enterprise (organization, institution) develop a curriculum in the specialty, a timeline of the educational process, a plan of measures to ensure the educational process and ensures the implementation of the dual education program. The schedule of the educational process provides for the alternation of theoretical training at the University with practical training at work. The frequency of alternation may vary

depending on the material and technical base of the University and the enterprise (organization, institution);

- issue orders regarding the organization and conduct of training of higher education students in the dual form of education; -

- together with the enterprise (organization, institution) to organize and conduct the final certification of students.

The advantages of the dual form for the educational institution are obvious, among them are:

- improving the quality of educational services, and the demand for graduates in the labor market and commercialization of R&D, but also for business as project participants

- improving the quality of human resources ensuring business access to the results of research and development carried out in the public sector of higher education;

- obtaining state support (financial, organizational, informational, etc.) for participation together with higher education institutions in the activities of promising innovative forms of economic organization (technology parks, clusters, special economic zones);

- obtaining and improving the image of the state partner in solving key problems of education system development;

- improving the image of business being positioned as socially responsible (Regarding the introduction of a pilot project..., 2019).

The dual form of higher education is a product of social partnership between the educational institution and the enterprise. This form of education has a number of advantages over traditional education (it allows to overcome the contradictions between empirical knowledge and future professional activities of applicants, competencies and professional characteristics acquired during training, contributes to improving the quality of knowledge of future specialists, ensures the competitiveness of graduates in the labor market,

partially solves the problems of financing education at the expense of the enterprise, expands the innovative activities of educational institutions).

The primary task is to adopt a separate legislative act in the field of education, which would define the directions of public-private partnership in the field of education, forms of such cooperation (including dual education), we consider it necessary to provide preferences for employers who enter into such relations with educational institutions (for example, direct financing or stimulation of in-house training through differentiated tax policy).

At the same time, for the successful implementation of dual training, it is necessary to conduct an information campaign among students about the availability of such training under a particular educational program, about the enterprises and organizations involved, methods and forms of assessment and benefits of such training.

5 MODELS OF HIGHER EDUCATION FUNDING IN OECD COUNTRIES AND UKRAINE

The models of higher education funding according to the ratio of public and private resources are considered in the chapter. The analysis was carried out on the basis of statistical data of the OECD countries and Ukraine in 2017-2019. The countries were allocated according to the level of the specific weight of public spending into three groups: with a high share of budget funds (bureaucratic model), a low share (market model) and a moderate share (collegial model). Within the obtained groups an indicator of the efficiency of higher education state spending was analyzed. It was calculated on the basis of GDP growth generated by labor with better skills (labor with higher education) and the discount rate.

Many approaches of the organization of higher education funding are considered in the literature. For example, the allocation of countries into groups depending on the amount of tuition fees: free education (Germany, Denmark, Finland, Norway, Greece, Great Britain, Sweden, Austria), low fees (France), high fees (Switzerland, Belgium, Spain, Italy, Netherlands, Ireland) (Kovalko, 2018).

Villarreal & Ruby (2018) use the simplest classification of higher education funding approaches: public and private financing on the example of the USA and Great Britain, describe the models of allocation of budget resources: Incremental-based, Per capita-based, Per credit-based and Performance-based funding approaches and emphasize the appropriateness of their implementation in the relevant conditions of the socio-economic development of countries.

Zatonatska et al (2019), based on the research of Pranevičienė & Pūraitė (2010), consider three models of higher education funding: bureaucratic, collegial and market. The author comes to the conclusion that the market model is the most effective in

modern realities and describes the experience of endowment funds for obtaining additional financing for the development of educational institutions.

Ivanova et al (2019) analyzes the opportunities of optimizing the system of higher education funding in Ukraine and notes that Ukraine has already moved away from the bureaucratic financial model of higher education, but has not yet fully implemented the collegial model. The author supports the CEDOS analytical center's proposal to change the public procurement mechanism with a performance-based model of state funding of universities.

The of higher education funding is especially relevant in the context of overcoming the consequences of the pandemic. As a result of quarantine restrictions and border closures, world universities lost part of their income from foreign students and were forced to provide support to the least protected students. For example, for primary education students, France has introduced exceptional aid for those in need, available to both scholarship recipients and non-scholarship recipients, regardless of their nationality. This was aimed at students who lost paid work or internships due to the impact of COVID-19.

Germany has changed and expanded its €650 per month student loan program; this program was opened to all international students (who were identified as the target group) and was disbursed as a monthly interest-free loan until the end of March 2021. In Ireland, international students, who became unemployed due to Covid-19, were eligible to access unemployment benefits due to the COVID-19 pandemic without breaching their immigration conditions, which normally do not allow them to use public funds.

Non-EU OECD countries have also taken similar measures. Japan in particular has offered general support programs for university students to which international students were also eligible. Examples include a cash payment of up to JPY 100,000 (approx. EUR 790) for all residents and a loan of up to JPY

200,000 (approx. EUR 1,587) for university students, including international students (Yovova, 2020).

In 2020 and 2021, Canada doubled the amount of the need-based student grant for full-time students, including international students, to \$6,000 (€4,053) per standard 8-month academic year. In New Zealand, the support available under the COVID-19 International Assistance Program has been extended to 31 August 2021 for international students experiencing temporary hardship due to the effects of COVID-19 (European Migration Network, 2021).

Based on the analysis of the global experience of higher education funding, Ward et al (2020) highlight three main recommendations for optimizing the higher education funding in the USA: determining the minimum funding level for the training of one student; adjustment of funding formulas taking into account the different needs of students and educational institutions; using performance indicators to identify areas of need rather than penalize institutions.

In this chapter, the basis of the analysis of higher education funding models is based on the ratio of public and private resources (Figure 5.1).

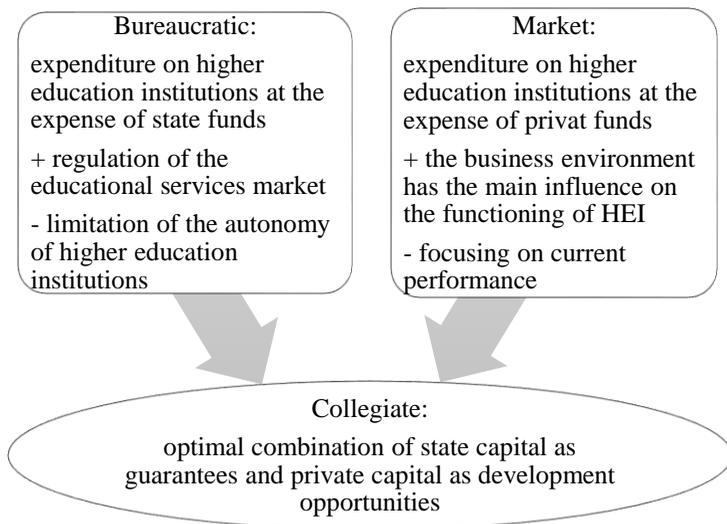


Fig. 5.1 – Higher education funding models

Source: compiled by the authors according to Zatonatska et al (2019), Pranevičienė & Pūraitė (2010), Ivanova et al. (2019).

The analysis of statistical data on the sources of higher education funding in OECD countries (Figure 2) showed that during 1995-2019, public expenditures on higher education funding significantly exceeded private and international resources in terms of volume. At the same time, there is a trend towards an increase in the specific share of private resources: if in 1995 the share of private resources in the structure of financing sources was 21.6%, then in 2010 it increased to 30.4%, and in 2019 - to 34.0%. This is due to a number of reasons, including:

- an increase in the number of higher education recipients;
- limited state financial resources;
- the desire of educational institutions to increase the level of autonomy.

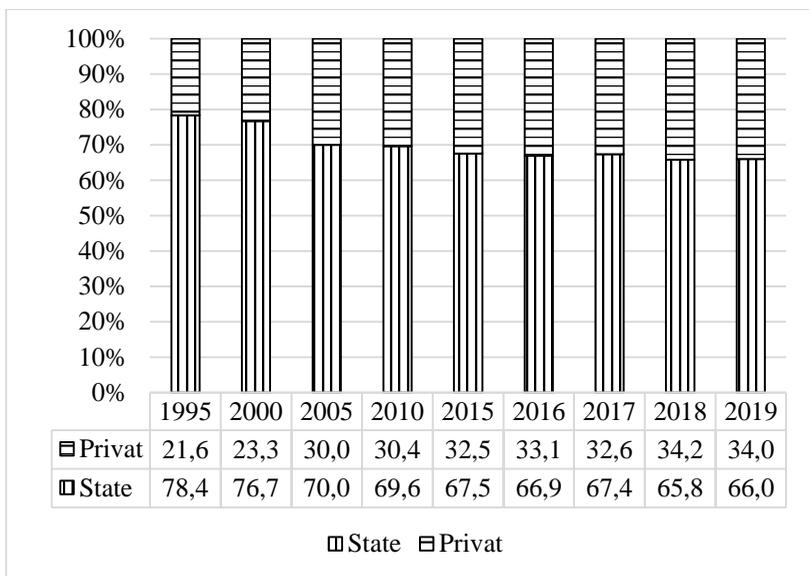


Fig. 5.2 – Allocation of funding sources for higher education on average in the OECD in 1995-2019
 Source: compiled by the authors according to OECD data (1995-2019).

The analysis of the sources of higher education funding in OECD countries during 1995-2019 (table 5.1).

Table 5.1 – Allocation of funding sources for higher education in the OECD in 2000-2019

Country	2000		2010		2019	
	Public	Privat	Public	Privat	Public	Privat
Canada	60,9	39,1	57,2	42,8	53,7	46,3
Chile	19,5	80,5	23,4	76,6	38,9	61,1
Czech Republic	84,0	16,0	75,8	24,2	76,2	23,8
Finland	97,2	2,8	95,9	4,1	90,4	9,6

Continue of table 5.1

Country	2000		2010		2019	
	Public	Privat	Public	Privat	Public	Privat
France			80,8	19,2	75,3	24,7
Germany			84,6	15,4	81,2	18,8
Greece	99,7	0,3			74,7	25,3
Iceland	91,8	8,2	91,2	8,8	88,7	11,3
Israel	60,1	39,9	54,2	45,8	52,5	47,5
Italy	77,2	22,8	66,1	33,9	61,0	39,0
Japan			34,4	65,6	32,6	67,4
Latvia	56,0	44,0	52,0	48,0	57,5	42,5
Netherlands	74,1	25,9	70,1	29,9	68,3	31,7
New Zealand	52,1	47,9	56,2	43,8	53,7	46,3
Norway	96,3	3,7	96,0	4,0	92,2	7,8
Poland	99,5	0,5	68,4	31,6	79,7	20,3
Portugal	92,5	7,5	65,2	34,8	60,0	40,0
Spain	74,4	25,6	78,2	21,8	65,2	34,8
Sweden	88,9	11,1	87,0	13,0	83,4	16,6
United States	43,7	56,3	40,0	60,0	35,7	64,3

Source: compiled by the authors according to OECD data (1995-2019)

Based on the data analysis of table. 1, a number of conclusions can be drawn, in particular:

- in the majority of countries, higher education funding at the expense of the state prevails over funding at the expense of private and international sources, the exceptions are Chile, Japan, Korea, the United Kingdom and the United States (the share of private and international financing is more than 60%);
- all countries are characterized by a tendency to increase the share of public funding during the analyzed period, with the

exception of Latvia, New Zealand and Chile, where the share of public funding changed from 19.5% in 2000 to 38.9% in 2019.

Taking into account the fact that the structure of financial resources of higher education institutions in the OECD countries as a whole remained stable, it can be assumed that the funding models of higher education did not change during 20 years. At the same time, it is necessary to take into account the fact that the described trends may be revised with the appearance of statistical data on the financial support of higher education in 2020 due to the consequences of the impact of funding pandemic.

Since the application of the bureaucratic model of funding (100% state funds) or market (100% private funds) is not carried out in practice, the analysis of distribution of OECD countries according to higher education funding models is presented in the table. 1. Conditional distribution was made with Ward's clustering method using IBM SPSS Statistics with the specified number of groups - 3 (Table 5.2).

According to the results of the grouping the countries are divided into 3 clusters according to the level of the share of state funds in the amount of of higher education expenditures.

Table 5.2 – The groups of countries by the level of the share of public funds in the amount of higher education funding

Cluster	Country
1	Australia, Chile, Japan, Korea, United States, Ukraine
2	Austria, France, Germany, Greece
3	Canada, Ireland, Israel, Italy, Latvia, Netherlands, New Zealand, Portugal, Spain

Source: Processed by authors in IBM SPSS Statistics

Thus, the following characteristics of countries according to the level of state expenditures on higher education were received (Table 5.3).

Table 5.3 – Characteristics of countries according to the level of state expenditures on higher education

Ward Method	Average	Number of countries	Standard deviation	Min	Max	Model
1	38,0	6	4,45	32,0	44,1	Market
2	81,5	4	5,74	77,0	89,0	Bureaucratic
3	59,8	9	6,36	52,0	68,0	Collegiate
Total	X	19	16,91	32,0	89,0	

Source: Processed by authors in IBM SPSS Statistics

Accordingly, the market model (on average for the group the share of public expenditures on higher education is 38.0%) is represented by such countries as Australia, Chile, Japan, Korea, United States, Ukraine; the bureaucratic model, where the share of public spending on higher education is on average 81.5% and ranges from 77.0% to 89.0%, includes such OECD countries as Austria, France, Germany, Greece; the ‘golden middle’ includes Canada, Ireland, Israel, Italy, Latvia, the Netherlands, New Zealand, Portugal, Spain, where the average share of higher education expenditures is 59.8% and ranges from 52% to 68%.

It should be emphasized that the focus of attention remains only on the share of budgetary resources in the amount of expenses for the training of one student, but the mechanism of distribution of state funds between educational institutions is not taken into account.

The next step of analysis is to consider the efficiency of public spending on higher education is in countries that use the described models. One of the ways to analyze the usefulness of higher education funding for the state is to evaluate the increase

in GDP due to the improvement of the qualifications of employees and the calculation of the discounted cash flow over an infinite time interval (Hryhorash et al, 2022). Using a given discount rate, it is possible to determine how effective budget investments are in training specialists with higher education:

$$E_i = \frac{DI_{\Delta}^i}{S^i} \quad (5.1)$$

E_i – efficiency of higher education expenditure in i-country;
 DI_{Δ}^i – discounted cash flow;
 S^i – expenditure of higher education funding.

Based on calculations of GDP growth as a result of higher education of the employed population (increase in the number of employed people with higher education) and discounted cash flow, an indicator of the efficiency of budget expenditures on higher education was obtained. This indicator needs to be considered during the last 3 years (according to the availability of statistical information) within the groups of countries that use the described higher education funding models (Table 5.4).

Table 5.4 – Indicators of the efficiency of higher education expenditures in OECD countries and in Ukraine

Model		2017			2018			2019		
		ΔGDP	Efficiency	Share	ΔGDP	Efficiency	Share	ΔGDP	Efficiency	Share
Market	CHL	54,2	150,9	37,8	80,2	66,3	35	32,3	57,2	33,7
	JPN	23,4	74,2	31,2	22,3	48,2	41	-44,5	-65,0	38,9
	KOR	71,6	288,2	38,1	39,2	118,2	32	11,8	7,9	32,6
	USA	78,0	129,3	35,1	196,4	276,7	40	-22,7	-24,3	38,3
Bureaucratic	AUT	55,0	10,2	91,1	89,0	22,8	89	100,9	21,0	89,0
	FRA	53,7	13,3	77,0	82,7	29,1	77	264,6	76,4	75,3
	DEU	58,5	12,3	83,0	70,8	20,6	83	170,6	42,2	81,2
	GRC	16,6	21,0	77,0	84,8	147,4	77	51,9	65,4	74,7

Continue of table 5.4

Model	2017			2018			2019			
	ΔGDP	Efficiency	Share	ΔGDP	Efficiency	Share	ΔGDP	Efficiency	Share	
Collegiate	CAN	64,5	45,2	53,9	99,6	80,4	52	9,2	4,5	53,7
	IRL	185,0	53,1	66,9	514,9	207,1	68	7,8	2,6	68,5
	ISR	91,4	78,2	58,5	43,1	51,0	53	163,5	303,5	52,5
	ITA	47,6	56,0	61,8	73,6	121,2	62	119,0	192,2	61,0
	LVA	18,8	12,1	59,8	24,6	19,4	58	-3,1	-1,8	57,5
	NLD	65,8	15,5	66,9	81,1	26,8	68	-10,4	-2,9	68,3
	NZL	77,2	147,5	50,8	37,0	63,4	53	8,9	3,5	53,7
	PRT	26,7	12,2	59,7	23,3	15,6	59	-20,0	-7,7	60,0
	ESP	36,7	13,3	66,3	47,1	24,7	65	-64,9	-27,6	65,2
	UKR	11,5	41,9	49,3	5,4	21,4	47,0	10,0	7,8	44,0 *

*in 2019 Ukraine was included into the group of countries that use the market model

Source: compiled by the authors according to OECD data (2017-2019), World Bank data (2016-2019).

Based on the data in the table 4, it is concluded that in 2017-2018 in countries where the market model is used, the indicators of the efficiency of higher education expenditures are generally higher than in groups of countries that use other models. Of course, this is explained by the fact that with small investments in education, the growth of GDP in countries is approximately the same. In countries where the bureaucratic model is used, the indicators of the efficiency of higher education expenditures in 2017-2018 are significantly lower than in countries with a market model of funding. In 2019, on the background of the general reduction of GDP in a lot of countries, the efficiency indicator decreased significantly and became negative. Also, the fluctuation of the discount rate had a significant impact on the level of indicator.

With regard to Ukraine, it should be noted that during 2017-2019 the share of public expenditures tended to decrease, which contributed to Ukraine moving from the group of countries applying the collegiate model to the group of countries applying the market model in 2019. A decrease in the efficiency of higher education expenditures is noted.

Thus, the analysis of higher education funding models in the OECD countries and in Ukraine showed that the division of countries into groups according to the funding model is conditional, since no country can apply a funding model with 100% public or private sources. On the basis of statistical information on the share of public expenditures in the amount of expenditures for the training of one student, the countries were divided into three groups: with a low share of public expenditures (market model), with a high share of public expenditures (bureaucratic model), and countries that did not meet the criteria listed above, were assigned to the group with a moderate level of budget funding (collegiate model). The results of the analysis showed that most of European countries use a collegiate or bureaucratic model. The market model is typical for use in Australia, Chile, Japan, Korea, and the United States.

Based on the calculated indicators of GDP growth caused by the increase in the level of higher education and the discount rate, an indicator of the efficiency of government spending on higher education funding was determined. In 2017-2018, the value of the indicator was the highest in countries applying the market model and the lowest in countries applying the bureaucratic model. On the background of the general reduction of GDP in 2019 in a majority of countries, the described trend did not persist: Israel and Italy had the highest indicators of the effectiveness of spending on higher education.

The perspective of further research is the assessment of the efficiency of higher education expenditures in countries where different mechanisms for the distribution of financial resources are used.

6 FORMATION OF THE HIGHER EDUCATION SYSTEM WITH REGARD TO THE SUSTAINABLE DEVELOPMENT GOALS

The UN General Assembly in 2015 set seventeen Sustainable Development Goals (SDGs) as the baseline to be achieved by 2030. One of the primary goals is “to ensure a sustainable, peaceful, prosperous and just life on earth for all, now and in the future” (UNESCO, 2020), and the SDGs are also the basis of many national development plans and foreign aid strategies (Bel'aninova et al, 2021). The Sustainable Development Goals are an integrated structure of human, social and environmental development goals, including 17 goals with 169 targets and 232 specific indicators. At the EAT Stockholm Food Forum on June 13, 2016, former center director Johan Rokström and board member Pavan Sukhdev announced a new perspective on the economic, social and environmental dimensions of the Sustainable Development Goals (SDGs) (Fig. 6.1) (Sustainable Development Goals: Ukraine, 2017). According to which all Sustainable Development Goals are directly or indirectly related to sustainable and healthy food.

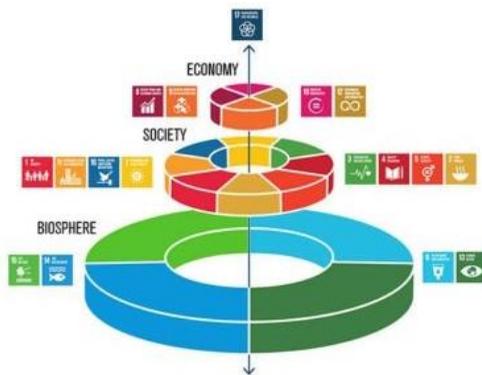


Fig. 6.1 – SDGs classification according to the Stockholm Center for Sustainability

Table 6.1 – The stages of implementation of the Sustainable Development Goals are shown in fig. 6.1 (Summary staff list, 2021)

1972 yr., Stockholm	1987 yr.	1992 yr., Rio de Janeiro	2000 yr., New York	2002 yr., Johannesburg	2012 yr., Rio de Janeiro	2015 yr., New-York
United Nations Conference on the Human Environment	Report of the International Commission on Environment and Development “Our Common Future”	The United Nations Conference on Environment and Development	UN Millennium Summit	World Summit on Sustainable Development	The United Nations Conference on Sustainable Development – or Rio+20	The UN Summit on the Sustainable Development

The goals, targets and list of SDGs are given in Table 6.2.

Table 6.2 – Goals, targets and indicators of SDGs.

Goal	Targets	Indicator	Variable	Target
1: To defeat poverty in all its forms everywhere	1.1: To eradicate extreme poverty for all people worldwide by 2030	1.1.1: Share of the population beyond the international poverty line by gender, age, employment status and geographic location (urban/rural)	% of the population living on less than by 1.90 USD per day at international prices in 2011	Below 3% of the total population
2: To defeat famine, achieve food security, improve nutrition and promote sustainable agriculture	2.1: By 2030, to defeat famine and ensure access to safe, nutritious and sufficient food all year round for all people, in particular the poor and people in vulnerable situations, including infants	2.1.1: Prevalence of malnutrition	% of the population whose food consumption is insufficient to meet food needs on a regular basis	Below 3% of the total population

Continue of table 6.2

Goal	Targets	Indicator	Variable	Target
	2.2: To defeat all forms of malnutrition by 2030, including achieving the internationally agreed targets for development delay and stunting for under 5-year old children, and to meet the nutritional needs of adolescent girls, pregnant and lactating women and elderly people.	Prevalence of stunting (height for age <-2 standard deviation from the median of World Health Organization growth standards) among children under 5 years of age, by type (underweight and overweight)	Percentage of children under the age of 5 years, whose weight for age is more than two standard deviation below the median for the international control population aged 0-59 months	
3: To ensure the health and promote well-being for everyone of all age.	3.2: By 2030, to defeat the mortality of newborns and children under 5 years of age that is preventable; to do this all countries have aim to reduce neonatal mortality to at least 12 per 1,000 live births, and under-five-year old child mortality years of age to at least as low as 25 per 1000 live births	Mortality under the age of five	The probability that a child born in a certain year will die before reaching 5 years of age, expressed per 1,000 live births	Less than or equal to 25 deaths per 1000 live births
4: To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.1: By 2030, to ensure all girls and boys complete free, equitable and quality primary and secondary education, achieving relevant and effective learning outcomes	4.1.1: Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex	Number of students who successfully completed the last year of primary school in a given year divided by the number of graduates	More than 97%

Continue of table 6.2

Goal	Targets	Indicator	Variable	Target
6: To ensure availability and sustainable management of water and sanitation for all	6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1: Proportion of population using safely managed drinking water services	% of the population that has access to “improved” water source	More than 97%
	6.2: By 2030, ensure access to adequate and equitable sanitation and hygiene for all and end open defecation, paying particular attention to the needs of women and girls in vulnerable situations	6.2.1: Proportion of the population using safe sanitation, including hand washing with soap and water	% of the population with access to sanitation services	
7: To ensure access to affordable, reliable and sustainable energy for all	By 2030, to ensure universal access to affordable, reliable and modern energy services	Proportion of the population with access to electricity	% of the population with access to electricity	More than 97%
8. Decent work and economic growth	To ensure stable GDP growth by modernizing manufacturing, developing innovations, increasing export potential and exporting products with high added value	GDP volume index (annual average), % A percentage of gross fixed capital formation to GDP, %		
9. Industry, innovation and infrastructure	Develop quality, reliable, sustainable and affordable infrastructure through the use of innovative technologies, including environmentally friendly vehicles	Percentage of rural population living further than 3 km from paved roads, % Percentage of rural population living further than 3 km from paved roads, %		
10. Reduce inequalities	To ensure accelerated income growth for the poorest 40% of the population	The ratio between the income of the richest 10% and the poorest 40 % in times		

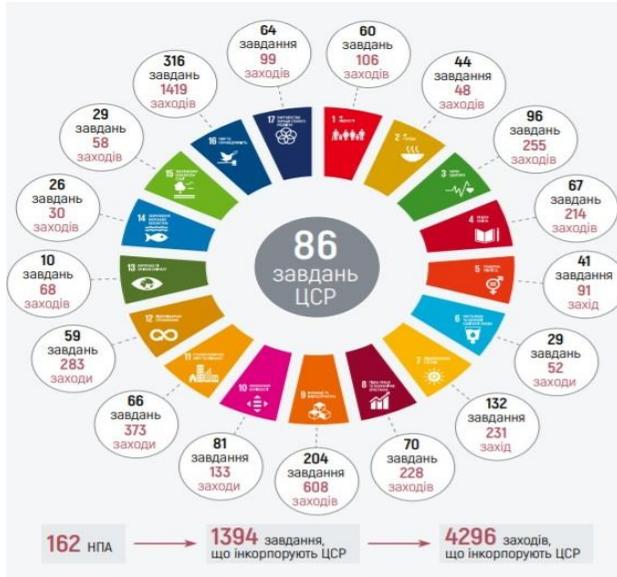


Fig. 6.2 – The degree of SDGs incorporation into strategic planning documents (Sumy University provides equal opportunities for women and men, 2022).

Ukraine, respectively, like the other UN member states, joined the global process of sustainable development. After considering each global goal and considering the context of national circumstances, an appropriate national system was created, formed of 86 national development goals. On September 30, 2019, the Decree of the President of Ukraine, “On the Sustainable Development Goals of Ukraine for the period up to 2030” contributed to the SDGs implementation (Khilchevska, et al, 2020).

The degree of the SDGs incorporation into strategic planning documents is presented in Figure 6.2.

The foundations of sustainable development are the highest and urgent priority for universities around the world, it shows

that educational institutions are solving today's great challenges. Education is key to the process of achieving sustainability, despite controversial results (Leal Filho, et al. (2018).

In December 2002, the period from 2005 to 2014 was designated as the United Nations Decade of Education for Sustainable Development (United Nations The millennium development goals report, 2015). The main goal was to “integrate the principles, values and practices of sustainable development into all aspects of education and learning” and thus shape a more sustainable future in terms of environmental integrity, economic viability and just society for present and future generations.

Within this strategy, the alignment of education and sustainable development programs, the integration of sustainable development into the education system, the involvement of a large number of stakeholders, the strengthening of legal obligations, the inclusion of sustainable development into the entire learning environment, the promotion of critical thinking, collaborative and problem-based learning, and the integration of education for sustainability into formal education were achieved (Figueiró & Raufflet, 2015).

In November 2020, the Rome Ministerial Communiqué (2020) was directly signed, highlighting the general principles and primary objectives for the development of higher education until 2030.

Many higher education institutions promote sustainable development and are actively engaged in training students who are ready to understand global challenges and become active participants and leaders in implementing the principles of sustainable development, despite their differences.

According to the SDGs, higher education should be:

1) Inclusive (every student should have equal access to higher education and full support until graduation).

2) Innovative (new and better methods of learning, teaching and assessment and practices that are very closely linked to research are constantly being introduced).

3) Interconnected (as common tools contribute to international development and improve cooperation and reforms, develops knowledge exchange and mobility of staff and students).

Higher education institutions have the potential to bring about significant changes to improve the knowledge, skills and competencies of students – thereby making a substantial contribution to sustainability, practical environmental protection and other essential goals of the entire society.

Higher education develops students' proactivity, critical thinking and responsibility, providing the opportunity for further lifelong learning, and supporting their social roles and continuous development.

Higher education has become a key element in achieving the UN Sustainable Development Goals. Implementing the principles of sustainable development as a key tool to improve the image of the university, its reputation and the quality of education. Universities with the best ratings are those having a sustainable vision of their students' development and create a culture of sustainable development (Salvioni et al, 2017).

Higher education institutions are diversifying their curriculum offerings and innovating in content and delivery methods to meet the growing need for innovative and critical thinking, emotional intelligence, leadership, teamwork and problem-solving skills, and entrepreneurial attitudes.

Flexible and open learning pathways, which are part of the Bologna Process, are essential aspects of student-centered learning and are increasingly in demand in our society.

High-quality education plays a crucial role in shaping civil society and prepares critical thinkers who feel themselves responsible for preserving resources and ecosystems, protecting

the environment, and overcoming hunger and poverty. The Rome Communiqué states that higher education institutions should contribute to achieve the SDGs, and internal and external quality assurance systems should assess and monitor the achievement of the SDGs set by higher education institutions.

Higher education institutions are a central part of education implementation to ensure sustainability:

- 1) teaching and research centers can enhance sustainability by developing projects and introducing sustainability principles in disciplines;
- 2) practices carried out by teachers can be resulted in educational activity;
- 3) institutional culture of sustainability increases awareness among university staff, local communities and residents;
- 4) higher education institutions are responsible for shaping the next generation of experts, which affects their various professional competencies and social responsibilities;
- 5) by implementing campus sustainability practices (e.g., reduce greenhouse gas emissions, promote biodiversity maintenance, efficient use of energy and reduce the impact on the environment).

Most universities are working on SDG 4 – quality education. Table 6.3. highlights the main targets under Goal 4 related to higher education.

Table 6.3 – Key targets of SDG 4 related to higher education

Target number	Characteristics
4.3	By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and higher education, including university education.

Continue of table 6.3

Target number	Characteristics
4.4	By 2030, increase the number of youth and adults with relevant skills, including technical and vocational skills significantly, for employment, decent work and entrepreneurship.
4.5	By 2030, eliminate gender inequality in education and ensure equal access to all levels of education and training for vulnerable strata of the population, including persons with disabilities, indigenous peoples and children in vulnerable situations.
4.7	By 2030, ensure that all learners acquire the knowledge and skills necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity and the contribution of culture to sustainable development.
4.b	By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.

Moreover, higher education is directly or indirectly interrelated to all SDGs. Higher education is also an important part of other goals related to poverty (SDG 1); health and well-being (SDG 3); gender equity governance (SDG 5); decent work and economic growth (SDG 8); sustainable consumption and production (SDG 12); climate change (SDG 13); and peace, justice, and strong institutions (SDG 16) (Lyashenko, 2020; Meshchaninov, 2012; Oleksenko, & Voronkova, 2020).

Universities significantly influence the SDGs by preparing lifelong learners for the challenges of the 21st century. More than ever, collaborative research and open science are needed to help recover and regain society's sustainability by linking education to other sectors such as health, employment, or the environment. According to a recent International Association of Universities report, most university employees have an average (43%) or very high (36%) knowledge of the SDGs.

Although there is still debate about whether the SDGs should be offered as a separate course or included in all course offerings, the number of university programs that explicitly identify themselves and their graduates as representing the field of sustainability has increased worldwide (Ostapenko, 2020)., as has the number of programs that incorporate sustainability aspects within the existing discipline (Sergienko, 2019). A bibliometric study showed that sustainability education is experiencing a boom in universities worldwide, emphasizing student attitudes, stressing that research in the field is descriptive rather than empirical.

The Times Higher Education Impact Rankings are the only global performance tables that evaluate universities for compliance with the SDGs.

The Impact Rankings include indicators based on all 17 of the U.N. Sustainable Development Goals in four broad areas: research, governance, outreach and teaching. Different universities are evaluated against different sets of SDGs depending on their focus.

Universities must provide their own institutional data for ranking. The bibliometric data are submitted by Elsevier.

In 2021, the Times Higher Education published a full version of its assessment of the universities' impact on global issues worldwide. The developers created 18 assessments overall and 17 assessments for each SDG. The 2021 impact rankings include 1,117 universities from 94 countries and are led by the

University of Manchester, U.K. Three Australian institutions are in the top four: the University of Sydney, RMIT University and the University of Sydney, RMIT University and La Trobe University. The best institution from developing countries is Thailand’s Chulalongkorn University (23rd place) (Table 4). The ranking also includes 17 Ukrainian higher education institutions; in 2021, Lviv Polytechnic University became the leader among higher education institutions in Ukraine (Word University Ranking, 2021) (Table 6.5).

Table 6.4 – The best SDG-oriented universities

№	Goal	University	Country	Contribution into SDGs
1	No poverty	Royal University	Canada	Poverty research and support for students from poor families
2	Famine alleviation	Autonomous Metropolitan University	Mexico	Research on famine, education focused on food sustainability and commitment to fighting food waste and famine on campus and locally
3	Good health and well-being	Oregon Health & Science University	USA	Research on major diseases and conditions, support for medical professionals and health of students and staff
4	Quality education	Aalborg University	Denmark	Contribution to early and lifelong learning and commitment to inclusive education
5	Gender equality	Princess Nourah Bint Abdulrahman University	Saudi Arabia	Research and policy on gender equality and commitment to hiring and promoting women

Continue of table 6.4

No	Goal	University	Country	Contribution into SDGs
6	Clean water and sanitation	The University of Sydney	Australia	Research related to water, water use and commitment to ensuring good water management in the wider community
7	Affordable and clean energy	King Mongkut's University of Technology Thonburi	Thailand	Research on energy, energy use and policy, and commitment to promoting energy efficiency
8	Decent work and economic growth	University of Johannesburg	Republic of South Africa	Economic research, employment practices and the proportion of students who undertake internships
9	Industry, innovation and infrastructure	The University of British Columbia Delft University of Technology The Technical University of Munich The University of Toronto	Canada Netherlands Germany Canada	Research on industry and innovation, number of patents from companies and revenues from industrial research
10	Reduced inequalities	The University of Canberra	Australia	Research on social inequality, discrimination policies and commitment to recruit staff and students from underrepresented groups

Continue of table 6.4

№	Goal	University	Country	Contribution into SDGs
11	Sustainable cities and communities	The University of Manchester	Great Britain	Research in the field of sustainable development, the role of art and heritage conservators and internal approaches to sustainable development
12	Responsible consumption and production	The University of Manchester	Great Britain	Research on responsible consumption and approach to sustainable use of resources
13	Actions regarding climate change	The University at Buffalo	USA	Research on climate change, energy use and preparation for climate change mitigation
14	Underwater life	The University of Plymouth	Great Britain	Exploring underwater life, building and sustaining aquatic ecosystems
15	Terrestrial life	La Trobe University	Australia	Exploring terrestrial life, formation and maintenance of terrestrial ecosystems
16	Peace, justice and strong institutions	Royal University	Canada	Research in the field of peace and justice, participation as government advisors and academic freedom policy
17	Partnership for SDGs achievement	The University of Newcastle	Australia	Much more expansive ways of SDG support used by universities in collaboration with other countries, promotion of advances practices and data publishing

Table 6.5 – The Impact Rankings for Ukrainian HEIs

Classifier	Higher education institution	Partnership for SDGs achievement	Total points
401–600	Lviv Polytechnic National University	44,8-55,6	56,6-66,2
601–800	Ivan Franko National University of Lviv	33.3-44.7	47.6-56.5
	Kharkiv National University of Radio Electronics		29.2-36.4
801–1000	Donetsk National University of Economics and Trade named after Mykhailo Tugan-Baranovsky (DonNUET)	22.7-33.2	-
	Kyiv National Economic University	22.7-33.2	36.5-47.5
	The National Technical University “Kharkiv Polytechnic Institute”	22.7-33.2	47.6-56.5
	National Technical University of Ukraine “Ihor Sikorsky Kyiv Polytechnic Institute”	22.7-33.2	36.5-47.5
	Prydniprovska State Academy of Civil Engineering and Architecture	22.7-33.2	-
	Sumy State University	22.7-33.2	47.6-56.5
	V. N. Karazin Kharkiv National University	22.7-33.2	36.5-47.5

Another ranking that assesses the sustainability of campuses is UI GreenMetric. In general, the rating uses the concept of environmental sustainability, which includes three elements, i.e., environmental, economic and social (Fig. 6.3). The environmental aspect provides for the use of natural resources, environmental management and pollution prevention. In contrast, the economic aspect includes profit and cost savings. The social aspect includes education, community and social inclusion. These three aspects are captured under the UI GreenMetric.

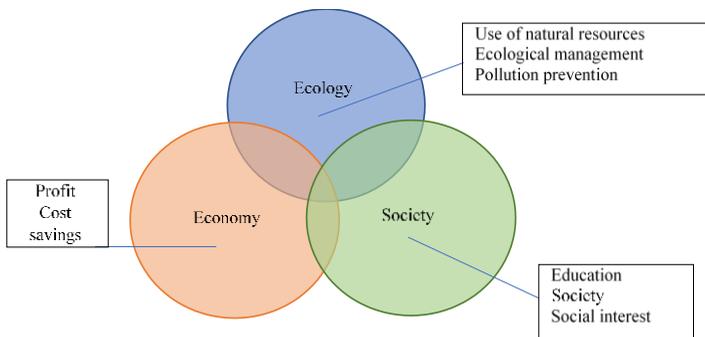


Fig. 6.3 – The UI GreenMetric elements

The main indicators and their characteristics (scores) are shown in Table 6.6.

Table 6.6 - Categories used for ranking and their weights (Guideline of UI GreenMetric Guidelines, 2021)

№	Category	Percentage of the total amount (%)
1	Surrounding and infrastructure (SI)	15
2	Energy and climate change (EC)	21
3	Waste (WS)	18
4	Water (WR)	10
5	Transport (TR)	18
6	Education (ED)	18
	Total:	100

This ranking selects criteria that are considered important for sustainability-oriented universities. These include collecting basic information about the size of the university and its profile, whether urban, suburban or rural. In addition, the degree of

green space is taken into account. The next category of information concerns electricity consumption because of its relationship to our carbon footprint. Transportation, water use, waste management, environment and infrastructure, energy and climate change, and education and research are also evaluated. In addition to these indicators, an assessment is made of how the university responds to or addresses sustainability issues through policies, actions and communication. The ranking of Ukrainian HEIs for 2021 according to this ranking is presented in Table 6.7.

Table 6.7 - Ranking of Ukrainian HEIs by UI GreenMetric for 2021.

Rank	University	Overall assessment	Infrastructure	Energy and climate change	Cost savings	Water	Transport	Education
1	Ukrainian National Forestry University	7075	1100	1050	1275	700	1275	1675
2	Sumy State University	6125	975	1025	1050	650	1225	1200
3	National University of Ostroh Academy	6100	1000	1025	1050	550	1350	1125
4	Uman National University of Horticulture	5575	700	1250	975	650	975	1025
5	Lviv Polytechnic National University	5450	625	1075	825	450	950	1525

Source: Based on (United Nations The millennium development goals report, 2015)

The QS methodology for CSR research assesses the publication activity and citation of scientific papers (according

to SciVal) in two areas: Levels of Opportunity (SDG 5, 11) and Environmental Impact (SDG 7, 11,12, 13, 14, 15).

The corresponding ranking of Ukrainian higher education institutions is presented in Table 6.8.

Table 6.8 – Ranking of Ukrainian higher education institutions by QS methodology

Ranking	University	Share of international students	Ratio of international teachers	Ratio of students of the faculties	References to HEI	Academic image	Employer's image
511-520	Taras Shevchenko National University of Kyiv	7,3	1.1	40,3	2,7	18.1	29,4
601-650	National Technical University of Ukraine "Ihor Sikorsky Kyiv Polytechnic Institute"	3	1	39,7	1,4	12,9	25,6
511-520	V. N. Karazin Kharkiv National University	64,1	1.1	66,7	1,6	11,9	14,5
801-1000	Lviv Polytechnic National University	1,7	1	47,4	1,7	7.1	11.3
1001-1200	National University of Kyiv-Mohyla Academy	1,4	1,2	32,7	1,3	4,8	11.1
651-700	National Technical University "Kharkiv Polytechnic Institute"	17,9	1.1	68,3	1,3	6	10.3
1001-1200	Ivan Franko National University of Lviv	2	1.1	35,4	1,5	1	5.7
701-750	Sumy State University	54,6	1.2	53,1	2	4.7	4.1

Source: Based on (Oleksenko & Voronkova, 2020)

We propose to evaluate the implementation of the HEIs on the basis of the following indicators shown in Table 6.9. For each SDG, the evaluation indicators were analyzed and the following were proposed.

Table 6.9 – Indicators for a comprehensive assessment of the SDGs

Goal	Indicator
Goal 1 – Poverty alleviation	% of employed graduates Participation in support programs for disadvantaged strata of the population Salary levels of staff
Goal 2 – Famine alleviation	The process of food waste disposal Available food facilities on campus The price level within food facilities Availability of vegetarian menu
Goal 3 – Good health and well-being	Number of sports clubs on campus Number of sports facilities Available university clinic Available free mental health services for students and faculty staff Opportunity to visit the gym Insurance of employees
Goal 4 – Quality education	Available courses about the SDGs Available lifelong learning opportunity Available research in the field of sustainable development Distance learning opportunity
Goal 5 – Gender equality	Ensuring gender equality of employees Flexible schedules for mothers Available kindergarten on campus Available ramps and buildings to overcome inclusion

Continue of table 6.9

Goal	Indicator
Goal 6 – Clean water and proper sanitation	Available drinking water access points Development of the water-saving program Available research on water conservation
Goal 7 – Affordable and clean energy	Available research on energy saving Availability of alternative energy sources on campus Available research on alternative energy sources
Goal 8 – Decent work and economic growth	Diversified financial revenues Available research related to the local economy Smooth bonus system for staff
Goal 9 – Industry, innovations and infrastructure	Available business incubator on the campus Available high-tech buildings on campus
Goal 10 – Reduced inequality	Available scholarships for gifted youth funded by business Available decent living conditions on campus Available computerized workstations for the students’ independent work Opportunities for volunteering
Goal 11 – Sustainable development of cities and communities	Existence of cooperation agreements with the community Available research commissioned by the community Jobs created in local areas

Continue of table 6.9

Goal	Indicator
Goal 12 – Responsible consumption and production	Amount of waste Available reports on waste production and its impact on emissions Available research on waste recycling Available electronic document management Available electronic archives of student papers Available green (electronic) libraries
Goal 13 – Climate change mitigation	Available elective courses on climate change for all specialities Available action plan to achieve emission reductions Available research on climate change
Goal 14 – Water system protection	Available research on the issue
Goal 15 – Terrestrial ecosystems protection	Available research on the issue Available green spaces on campus
Goal 16 – Peace justice and strong institutions	Available strategies for HEIs development from the perspective of sustainable development Academic integrity policy Available international students and their supporting institutions Structure of governing bodies, vision and mission statements
Goal 17– Partnership for sustainable development	Available collaboration to ensure SDGs Assessment and reports processes of the HEI on sustainable development

Each indicator has been reviewed and classified solely according to its evaluation as a performance indicator, proxy indicator, or impact indicator. Performance indicators are related

to policies and activities within the organization (e.g., the number of courses with the content of the CSR). The next step is to determine the weight of the single indicators using a pairwise comparison method. The indicator weights for Goal 1 (Poverty Alleviation) are shown in Table 6.10. If the indicator in the row is more important than the indicator in the column, we assign a score of “2” to the indicator in the row; if the indicator in the column is more important than the indicator in the row, we assign a score of “0” to the indicator in the row. If the indicators are equivalent, we assign a score of “1” to the indicator in the row.

The significance of every single indicator for each SDG is determined in a similar way (Tables 6.11-6.22). Note that there is only one indicator for Goal 14. Its weight is 100%, and there are two targets for each of Goal 15 and Goal 17. Their weight is 50%.

Table 6.10 - Defining the weight of the unit indicators for Goal 1 by pairwise comparison method

Indicators	% of employed graduates	Participation in support programs for disadvantaged strata of the population	Salary levels of staff	Sum	Weight, %
% of employed graduates	-	2	2	4	50
Participation in support programs for disadvantaged strata of the population, points	2	-	1	3	37,5
Salary levels of staff	0	1	-	1	12,5
Total				8	100

Table 6.11 - Defining the weight of the unit indicators for Goal 2 (Famine alleviation) by pairwise comparison method

Indicators	The process of food waste disposal	Available food facilities on campus	Price level in food facilities	Available vegetarian menu	Sum	Weight, %
The process of food waste disposal	-	2	1	2	5	41,7
Available food facilities on campus	0	-	1	2	3	25,0
Price level in food facilities	1	1	-	1	3	25,0
Available vegetarian menu	0	0	1	-	1	8,3
Total					12	100

Table 6.12 - Defining the weight of the unit indicators for Goal 3 (Good health and well-being) by pairwise comparison method

Indicators	The number of sports sections on the campus	The number of sports facilities	Available university clinic	Available free mental health services for students and faculty staff	Opportunity to visit the gym	Employee insurance	Sum	Weight %
The number of sports sections on the campus	-	1	0	1	2	0	4	13
The number of sports facilities	1	-	1	1	1	1	5	17
Available university clinic	2	1	-	1	2	0	6	20
Available free mental health services for students and faculty staff	1	1	1	-	2	1	6	20
Opportunity to visit the gym	0	1	0	0	-	0	1	3
Employee insurance	2	1	2	1	2	-	8	27
Total							30	100

Table 6.13 - Defining the weight of the unit indicators for Goal 4 (Quality education) by pairwise comparison method

Indicators	Available courses on the SDGs	Lifelong education opportunities	Available research in the field of sustainable development	Distance learning opportunity	Sum	Weight, %
Available courses on the SDGs	-	1	0	2	3	25,0
Lifelong education opportunities	1	-	0	2	3	25,0
Available research in the field of sustainable development	2	2	-	1	5	41,7
Distance learning opportunity	0	0	1	-	1	8,3
Total					12	100,0

Table 6.14 - Defining the weight of the unit indicators for Goal 5 (Gender equality) by pairwise comparison method

Indicators	Ensuring gender equality of employees	Flexible schedules for mothers	Available kindergarten on the campus	Available ramps and buildings to overcome inclusion	Sum	Weight, %
Ensuring gender equality of employees		2	2	1	5	41,7
Flexible schedules for mothers	0		1	0	1	8,3
Available kindergarten on the campus	0	1		0	1	8,3
Available ramps and buildings to overcome inclusion	1	2	2		5	41,7
Total					12	100,0

Table 6.15 - Defining the weight of the unit indicators for Goal 6 (Clean water and proper sanitation) by pairwise comparison method

Indicators	Available drinking water access points	Water saving program development	Available research on water saving	Sum	Weight, %
Available drinking water access points		1	1	2	33,3
Water saving program development	1		1	2	33,3
Available research on water saving	1	1		2	33,3
Total				6	100,0

Table 6.16 - Defining the weight of the unit indicators for Goal 7 (Affordable and clean energy) by pairwise comparison method

Indicators	Available research on energy saving	Available alternative energy sources on campus	Available research on alternative energy sources	Sum	Weight, %
Available research on energy saving	-	1	1	2	33,3
Available alternative energy sources on campus	1	-	0	1	16,7
Available research on alternative energy sources	1	2	-	3	50,0
Total				6	100,0

Table 6.17 - Defining the weight of the unit indicators for Goal 8 (Decent work and economic growth) by pairwise comparison method

Indicators	Financial income diversification	Available research related to the local economy	Smooth bonus system for staff	Sum	Weight, %
Financial income diversification		2	1	3	50,0
Available research related to the local economy	0		1	1	16,7
Smooth bonus system for staff	1	1		2	33,3
Total				6	100,0

Table 6.18 - Defining the weight of the unit indicators for Goal 10 (Reduced inequalities) by pairwise comparison method

Indicators	Available scholarships for gifted youth funded by business	Available decent living conditions on campus	Available computerized workstations for independent work of students	Volunteering opportunities	Sum	Weight, %
Available scholarships for gifted youth funded by business		0	1	1	2	16,7
Available decent living conditions on campus	2		2	1	5	41,7
Available computerized workstations for independent work of students	1	0		0	1	8,3
Volunteering opportunities	1	1	2		4	33,3
Total					12	100,0

Table 6.19 - Defining the weight of the unit indicators for Goal 11 (Sustainable cities and communities) by pairwise comparison method

Indicators	Available agreements on cooperation with the community	Available research commissioned by the community	Creation of jobs in local areas	Sum	Weight, %
Available agreements on cooperation with the community		1	1	2	33,3
Available research commissioned by the community	1		2	3	50,0
Creation of jobs in local areas	1	0		1	16,7
Total				6	100,0

Table 6.20 - Defining the weight of the unit indicators for Goal 12 (Sustainable consumption and production) by pairwise comparison method

Indicators	Amount of waste	Available reporting on waste production and its impact on emissions	Available research on waste processing	Available electronic document management	Availability of electronic archives of student research papers	Available green (electronic) libraries	Sum	Weight, %
Amount of waste		2	1	1	1	1	6	23
Available reporting on waste production and its impact on emissions	0		0	0	1	1	2	8
Available research on waste processing	1	0		1	2	2	6	23
Available electronic document management	1	0	1		1	1	4	15
Availability of electronic archives of student research papers	1	1	0	1		1	4	15
Available green (electronic) libraries	1	1	0	1	1		4	15
Total							26	100

Table 6.21 - Defining the weight of the unit indicators for Goal 13 (Climate change mitigation) by pairwise comparison method

Indicators	Available elective courses on climate change for all specialties	Available action plan to achieve emission reductions	Available research on climate change	Sum	Weight, %
Available elective courses on climate change for all specialties		0	1	1	20,0
Available action plan to achieve emission reductions	0		2	2	40,0
Available research on climate change	1	1		2	40,0
Total				5	100,0

Table 6.22 - Defining the weight of the unit indicators for Goal 16 (Peace, justice and strong institutions) by pairwise comparison method

Indicators	Availability of HEI development strategies with regard to sustainable development	Academic integrity policy	International students and institutions supporting them	Governing body structure, vision and mission statements	Sum	Weight, %
Available HEI development strategies with regard to sustainable development		1	0	2	3	30,0
Academic integrity policy	1		0	1	2	20,0

Continue of table 6.22

Indicators	Availability of HEI development strategies with regard to sustainable development	Academic integrity policy	International students and institutions supporting them	Governing body structure, vision and mission statements	Sum	Weight, %
International students and institutions supporting them	2	0		2	4	40,0
Governing body structure, vision and mission statements	0	1	0		1	10,0
Total					10	100,0

Ukrainian higher education institutions that are included into the UI GreenMetric ranking in 2021 were evaluated: Ukrainian National Forestry University, Sumy State University, National University of Ostroh Academy, Uman National University of Horticulture, and Lviv Polytechnic National University.

Each SDG will be evaluated separately.

For SDG 1, the calculations are presented in Table 6.23. That is, the assessment includes both quantitative and qualitative indicators. Experts in the scoring assessed qualitative indicators. Since the indicators have different dimensions, each indicator was converted into relative ones by dividing by the maximum value.

Table 6.23 – Evaluation of the HEI for achieving the SDG 1.

Indicator	Weight of the indicator	Ukrainian National Forestry University	Sumy State University	National University of Ostroh Academy	Uman National University of Horticulture	Lviv Polytechnic National University
% of employed graduates	50	90	92	82	76	97
Participation in support programs for disadvantaged strata of the population, points	37,5	1	1	0	1	1
Salary levels of staff	12,5	12500	9980	10250	9500	15630
Generalized indicator	100	0,57	0,56	0,50	0,48	0,64

Let's calculate the SDG 1 Achievement Index for each of the universities:

$$I_{UNFU} = \frac{0.5 \cdot 90}{97} + \frac{0.375 \cdot 1}{1} + \frac{0.125 \cdot 12500}{15630} = 0,57$$

$$I_{SSU} = \frac{0.5 \cdot 92}{97} + \frac{0.375 \cdot 1}{1} + \frac{0.125 \cdot 9980}{15630} = 0,56$$

$$I_{NUOA} = \frac{0.5 \cdot 82}{97} + \frac{0.375 \cdot 0}{1} + \frac{0.125 \cdot 10250}{15630} = 0,50$$

$$I_{UNUH} = \frac{0.5 \cdot 76}{97} + \frac{0.375 \cdot 1}{1} + \frac{0.125 \cdot 9500}{15630} = 0,48$$

$$I_{LPNU} = \frac{0.5 \cdot 97}{97} + \frac{0.375 \cdot 1}{1} + \frac{0.125 \cdot 15630}{15630} = 0,64$$

Similarly, calculations were made for all other SDGs and, taking into account the values obtained, an integral indicator of the achievement of the SDGs by each institution of higher education was determined. The results are included in Table 6.24. We take into account that all the goals of sustainable development are unambiguously important, so the weight of each goal is 5,9%.

Table 6.24 - Calculation of the SDG Integral Index

Indicator of SDG achievement	Ukrainian National Forestry University	Sumy State University	The National University of Ostroh Academy	Uman National University of Horticulture	Lviv Polytechnic National University
Goal 1	0,57	0,56	0,50	0,48	0,64
Goal 2	0,88	0,83	0,41	0,26	0,82
Goal 3	0,34	0,50	0,19	0,18	0,87
Goal 4	1,00	0,75	0,33	0,50	0,58
Goal 5	0,50	0,50	0,50	0,50	0,50
Goal 6	0,67	0,67	0,33	0,33	0,67
Goal 7	1,00	0,50	0,50	0,00	1,00
Goal 8	1,00	0,83	0,33	0,67	0,67
Goal 9	1,00	0,50	0,00	1,00	1,00
Goal 10	1,00	0,83	0,42	0,75	0,33
Goal 11	0,00	0,67	0,00	0,67	0,33
Goal 12	0,47	0,78	0,46	0,44	0,19
Goal 13	0,60	0,80	1,00	0,80	0,60
Goal 14	1,00	1,00	1,00	1,00	1,00
Goal 15	1,00	1,00	0,50	1,00	1,00
Goal 16	1	0,9	0,9	0,5	0,9
Goal 17	1,00	1,00	1,00	0,50	1,00
Integral index	0,76	0,73	0,49	0,56	0,70

According to estimations, the first place in our ranking is occupied by the Ukrainian National Forestry University, the second place – by Sumy State University, and the third one – by Lviv Polytechnic National University.

A list of key actions to improve the ranking position on the corresponding goals is formed in Table 6.25.

Table 6.25 – Actions to ensure sustainability in higher education

SDGs	Main tasks
Goal 1- Poverty alleviation	<ol style="list-style-type: none"> 1. Maximize employment opportunities for graduates by ensuring that the structure of graduates and their skills match the needs of employers. 2. To offer student training on poverty alleviation, such as “Budget planning” and how to earn money. 3. Collaborate on (or create) initiatives in the community that address poverty at the local level.
Goal 2 – Famine alleviation	<ol style="list-style-type: none"> 1. Improve students’ cooking skills to reduce food waste and improve nutrition. 2. Establish a proper food waste disposal process in the HEI and if catering is outsourced, they also follow this. 3. Collaborate with initiatives in the community that aim to overcome famine. 4. Creating initiatives that raise awareness about food and where it comes from, i.e., projects where students help grow food on campus. 5. Reducing the amount of red meat in the catering menu and introducing vegetarian and vegan days.
Goal 3 – Good health and well-being	<ol style="list-style-type: none"> 1. Introducing healthy lifestyles, awareness and campaign activities. 2. Policies to promote health, happiness and well-being of the staff. 3. Investing in mental health services. 4. Optimising the campus with design and furnishings that promote the well-being of those who use them. 5. Creating a local healthy lifestyle network for the community.

Continue of table 6.25

SDGs	Main tasks
<p>Goal 4 – Quality Education</p>	<ol style="list-style-type: none"> 1. Educating future generations through high quality learning that can be measured by survey results such as student employability. 2. Developing a strategy for diversity and inclusion. 3. Integrating education for sustainable development into the curriculum. 4. Introducing lifelong learning opportunities for the community and building partnerships with schools [20]. 5. Encouraging research on sustainable development by collaborating with scientists and insisting that scientists include references to the SDGs. 6. Promote distance learning and digitization of the curriculum to ensure inclusion.
<p>Goal 5 – Gender equality</p>	<ol style="list-style-type: none"> 1. Support gender equality by paying men and women equally and ensuring that senior positions reflect the diversity of the society we live in. 2. Providing flexible working schedule and supporting maternity and paternity policies. 3. Organizing events to raise awareness about gender inequality and ways to improve it. 4. Developing a strict personnel policy on gender discrimination.
<p>Goal 6 – Clean water and proper sanitation</p>	<ol style="list-style-type: none"> 1. Providing free water refill points throughout the campus. 2. Encouraging research on innovations to improve water sanitation internationally. 3. Developing a water conservation program if possible by reviewing your waste. 4. Organizing a fundraising campaign to help families in developing countries [19,21].

Continue of table 6.25

SDGs	Main tasks
<p>Goal 7 – Affordable and clean energy</p>	<ol style="list-style-type: none"> 1. Implementing initiatives to reduce energy consumption. 2. Use of alternative energy sources, such as solar energy. 3. Encouraging research on alternative energy sources. 4. Encouraging student energy competitions in student halls. 5. Encouraging academic staff to give free lectures to the community about clean energy.
<p>Goal 8 – Decent work and economic growth</p>	<ol style="list-style-type: none"> 1. Integrating sustainability into strategic goals to reap financial benefits from more sustainable activities. 2. Educate students about the circular economy by including this topic in relevant courses. 3. Encouraging entrepreneurship, creativity and innovation through competitions with financial prizes. 4. Supporting micro, small and medium-sized enterprises by encouraging the procurement team to seek suppliers from these categories of enterprises first [22]. 5. Ensuring the creation of a safe working environment.
<p>Goal 9 - Industry, innovations and infrastructure</p>	<ol style="list-style-type: none"> 1. Ensuring sustainability as an important factor in all major developments and investments [23].2. 2. Promoting the construction of sustainable and energy efficient buildings and infrastructure. 3. Encouraging innovation that improves the sustainability of assets. 4. Encouraging sustainability in business incubator centres. 5. Work with business students on sustainable development initiatives.
<p>Goal 10 – Reduced inequalities</p>	<ol style="list-style-type: none"> 1. Have equal opportunities for recruiting staff and students. 2. Encouraging initiatives that have a positive social impact and inclusiveness. 3. Providing scholarships and opportunities for students from disadvantaged families. 4. Providing volunteering opportunities for students and the community to promote social justice awareness.

Continue of table 6.25

SDGs	Main tasks
Goal 11 – Sustainable cities and communities	<ol style="list-style-type: none"> 1. Developing outreach programs to educate the community and better connect students with them. 2. Collaborating with local authorities to improve the sustainability of the local area by offering institutions the knowledge and expertise to identify areas of focus. 3. Measuring and reporting on the social and environmental impact of the institution. 4. Creating a safe campus environment for all and regularly updating health and safety policies. 5. Organizing end-of-year waste collection from student dormitories for reuse/recycling.
Goal 12 - Responsible consumption and production	<ol style="list-style-type: none"> 1. Ensuring a procurement policy that includes sustainability checks of the supply chain. 2. Create guidelines for sustainable procurement. 3. Reducing the amount of waste. 4. Public reporting on waste production and its impact on emissions. 5. Developing initiatives that encourage reduction, reuse and recycling policies. 6. Transition to digital course papers/dissertations to reduce paper use, electronic document management.
Goal 13 – Climate change mitigation	<ol style="list-style-type: none"> 1. Introducing courses that emphasize the relevance of climate change measures into the curriculum. 2. Carbon literacy training for staff and students. 3. Developing an action plan to achieve emission reductions. 4. Cooperation with the community to carry out activities to reduce emissions.
Goal 14 –Water system protection	<ol style="list-style-type: none"> 1. Raising awareness of water quality, marine litter, climate change, toxic chemicals, shipping and coastal water protection issues. 2. Encouraging the use of environmentally friendly hygiene and cosmetic products and providing students with free environmentally friendly hygiene products to overcome poverty. 3. Organizing garbage collection initiatives. 4. Encouraging research into plastic alternatives

Continue of table 6.25

SDGs	Main tasks
Goal 15 - Terrestrial ecosystems protection	<ol style="list-style-type: none"> 1. Improving biodiversity on campus. 2. Developing biodiversity standards and strategy. 3. Commitment to protect, restore and promote the conservation and sustainable use of land. 4. Conducting extracurricular activities that promote awareness and education about biodiversity. 5. Організація заходів з посадки дерев.
Goal 16 – Peace, justice and strong institutions	<ol style="list-style-type: none"> 1. Incorporation of sustainability-oriented development strategies. 2. Integrating zero-tolerance policies against bullying, harassment, prejudice and modern slavery. 3. Ensuring transparency and accountability through regular reporting on sustainable development. 4. Ensuring anti-bribery and corruption policies. 5. Ensuring responsive, inclusive, participatory and representative decision-making at all levels by ensuring equitable representation in governance groups. 6. Internationalization of the HEI through the internationalization strategy.
Goal 17 - Partnership for sustainable development	<ol style="list-style-type: none"> 1. Collaboration with other institutions to disseminate best practices on the SDGs. 2. Encouraging and facilitating effective partnerships between governments, public-private and civil society through outreach initiatives. 3. Work with local communities on regional plans for sustainable development.

All higher education institutions have a significant potential to promote drastic changes to improve the knowledge, practical skills and competencies of students and society and contribute to sustainability, environmental protection and other important goals. They should develop students' engagement, critical thinking and responsibility and offer lifelong learning opportunities to contribute to their ongoing social development substantially.

7 ANALYSIS OF TRENDS AND CHALLENGES IN UKRAINIAN EDUCATION INSTITUTIONS IN THE CONTEXT OF THE COVID-19 PANDEMIC

The Covid-19 pandemic significantly changed the educational field and brought up educational issues in Ukraine. Education is one of the fundamental human rights enshrined in Article 26 of the Declaration of Human Rights (Almashi, 2015), the Constitution of Ukraine (Constitution of Ukraine, 2020) and legislative acts. Sustainable Development Goal №4 by 2030 is to “provide comprehensive and equitable quality education and promote lifelong learning opportunities for all.”

The education level has directly influenced the population’s income and employment: more educated people find jobs more easily, have better working conditions and earn more. It is also positively related to life expectancy, health, and social inclusion. More educated people are more involved in public and political life and are more active participants in civil society development. Article 53 of the Constitution of Ukraine (Constitution of Ukraine, 2020) and the Ukrainian Law “On Education” (Law of Ukraine on education, 2021) “guarantee universal access to education regardless of the child’s place of residence, social origin, health status, the language of communication and other factors.” The right to education in Ukraine has been implemented primarily through state (state and municipal) education institutions. The share of private individuals varies depending on the level of education but plays a significant role only in extracurricular and higher education.

The educational process during the quarantine in 2020 was stressful for all participants: teachers, lecturers, pupils, students and parents. Due to the lack of previous experience in distance learning and the government’s response, some educational problems arose. After the quarantine was announced in March, schools did not come back to work in the 2019/2020 academic

year, and it was decided to complete the academic year remotely. The summer could have been used to prepare for the safe opening of schools in September for the 2020/2021 school year. However, no coherent strategy for returning to safe and quality autonomous or blended learning was proposed. During the summer, the issue of whether children would go to school at all remained uncertain. Only after the Government Resolution was approved, adaptive quarantine was introduced, i.e., quarantine restrictions depending on zoning:

- green and yellow zone (it is allowed to visit education institutions in compliance with all security measures);
- orange zone (it was forbidden for students to visit education institutions in groups of more than 20 people, except for preschool and general education institutions);
- red zone (students were fully prohibited from attending education institutions).

According to a survey conducted by the State Educational Quality Service (State service of quality of education), distance learning was a problem for 55,53% of schools because they had no prior experience with this form of education and were not prepared to teach during quarantine. 47,5% of teachers (20,590) stated that they had yet to use distance learning in their teaching activities previously. Meanwhile, teachers had yet to be advised on distance learning or online learning tools. At the same time, teachers would benefit from advice on how to explain new teaching material, give feedback, practice skills, assess progress and determine the duration of lessons in distance learning.

The situation was similar in higher education institutions: some teachers replaced distance learning with written assignments, resulting in excessive student workload. Such methods did not contribute to the quality acquiring of the learning material but loaded the students – students did not understand the learning material, and, consequently, were under stress. However, the situation could be different within various

higher education institutions, as some lecturers assigned writing tasks while others conducted classes remotely. Simultaneously, there was no coordination between the faculty staff and their control over the student workload. This issue is relevant again now, as most higher education institutions have switched to distance learning in the red zone.

Most students liked the shift to distance learning during quarantine. 48% of them want their university course to include many more online lectures.

Only a third of the young people in the survey “stand against” it. Opponents of distance learning outnumber adherents in Mexico, Brazil, Indonesia, and Malaysia. In these countries, students faced a shortage of gadgets, and universities experienced problems with education on an ongoing basis. Great Britain showed similar results: cultural and educational traditions there do not allow innovation to develop, so the situation of closing universities en masse for the first time in the history of the modern country deeply shocked students. Students’ impressions of distance learning differ between U.S. and European students: the positive and negative experiences are relatively the same. In China, all respondents believe that teachers have developed the most effective online classes for them. In Japan, on the contrary: young people have doubts about education and teachers’ ability to work effectively online. If online learning will cost less than full-time education, or if its inclusion in standard programs will reduce the cost of higher education, two-thirds of students from all countries surveyed chose this option. Most U.S., Canadian, Japanese, China and Malaysian students are convinced of this (Wernidub, 2021).

Distance learning was not free for pupils and students in all countries: distance learning was not free in Ukraine as well. Most students surveyed in Saudi Arabia, India, Turkey, China and Canada had to pay for online services. However, in the U.K., almost all online learning was taught for free; reason is the need

of 53% of students in saving money because of these expenditures in 2020: every fifth student saved even on food and every seventh – on medical treatment.

69,6% of higher education institution faculty staff and administrators believed that the educational process organization level in spring 2021 had improved compared to the previous period (fall 2020), while 23,6% of respondents did not notice any qualitative changes. Only 6,8% noted the distance learning process organization had only gotten worse this semester (Analytical report on the trends..., 2021).

The pandemic, unfortunately, also had an impact on students' psychological health. More than half (56%) of students in all countries surveyed report that their mental health suffered during COVID-19. Global data proves the intense pressure on students around the world. Every seventh student had thoughts of suicide and every twelfth had thoughts of self-harm. 81% of respondents say that stress and anxiety have increased recently.

Students living in dormitories have also been affected by the pandemic. Even though in March 2020, the government considered it unacceptable to evict students from dormitories, in October, the Ministry of Education and Science of Ukraine recommended higher and professional education institutions switch to distance learning from October 15 to November 15, 2020, asking all students move out from dormitories.

Thus, not all residents of dormitories got access to education, which caused students' indignation. This decision significantly affected students from vulnerable strata of the population because they did not have all the necessary conditions for studying at home, and some may have nowhere to go (for example, students from the occupied territories). According to the director of the Ukrainian State Center for International Education, there was no significant decrease in the number of international students during the pandemic in the academic year 2020/2021. According to international sources, the pandemic

significantly affected student mobility due to problems with moving between countries. However, 85% of the universities surveyed offered alternative study arrangements, including distance learning – “virtual mobility.” Problems arose for students who were unable to return to their countries and faced campus closures and, therefore, the need to find alternative housing, isolation, problems with documents, etc. For the academic year 2021 – 2022, international student enrollment has declined significantly (by approximately 20%), which may result in reduced faculty staff.

The educational environment of Sumy State University is a set of special conditions in which the professional activities of faculty staff and students are carried out, providing training for qualified employees who have soft and hard skills and can adapt to the changeable conditions of the labor market. The quality of education is confirmed by the level, rating, and winners of All-Ukrainian student olympiads and competitions of scientific works (Wernidub, 2021).

According to the recommendations of the Ministry of Education, during the quarantine in March-May 2020, all higher education institutions should work remotely. This did not cause any significant problems for Sumy State University, because the university has its own development on the Moodle platform – a distance learning system. Most teachers were good at distance learning and most assignments were filled within the distance learning system (Regulations on the organization of the educational process at Sumy State University, 2021).

The Sumy State University distance learning system during the quarantine proved its effectiveness. Teachers and students already had corporate electronic offices, through which, due to mobile and other devices, participants in the learning process communicated online, could send tasks and check them. Interaction between the participants in the educational process was improved through the use of the “Electronic Personal

Cabinet” as a unified window of access to various information services. It made possible for students to choose elective subjects and individual trajectories for the next academic year, evaluate the studied disciplines, receive information on the results of learning in previous semesters, make out an individual schedule for the current academic year. Teachers in the e-room receive necessary documents, can communicate with study groups and individual students, receive electronic information and have access to all services of Sumy State University.

Within two weeks, trainings on the organization of work with video conferencing were held for teachers. Teachers could choose the platform they can work with: Zoom, Google Meet, Teams or Cisco Webex. Most teachers chose the Google Meet platform because each teacher has corporate mail in the domain of Sumy State University on the Google platform. Therefore, each teacher has the opportunity to host a video conference via Google Meet with up to 100 students at once.

Also, even before quarantine, Sumy State University had the following platforms for organizing remote study of students:

1. Lectur.ED helps in the development of e-learning courses.
2. MiX learning is a platform for online learning, knowledge testing, practical / seminar classes. One can create classes, engage students, give assignments, and conduct tests on the platform.

Sumy State University also encourages the use of blended learning, which makes it possible to re-enroll in online courses according to the subject matter of the discipline. Such courses in the Ukrainian language include Prometheus, VUM online, EdEra, European Space, Higher, Google Digital Workshop. Certificates of successful completion may be considered when assigning grades if provided by the regulations. Drawing up an educational declaration makes it possible to re-credit the course in full.

The ITVDN learning platform allowed students to take free online IT courses. ITVDN offered more than 180 video courses in all programming languages and the most popular information technologies, as well as comprehensive training programs in 20 specialties from zero to expert level.

As part of blended learning, students could take courses on the Coursera for Campus platform, which offered access to more than 3,800 courses and 400 specializations. Sumy State University has joined this initiative.

Sumy State University has created platforms to implement e-learning and distance learning tools at all levels and forms of education:

- OpenCourseWare (OCW) of Sumy State University is a constructor of teaching and learning materials that allows you to create, provide access, publish teaching and learning materials, as well as export teaching and learning materials to the distance learning platform;

- an automated distance learning system, which contains a platform for creating and managing educational material and a system for managing the educational process through electronic dean's offices;

- The Examenarium of Sumy State University is an open electronic resource of educational and methodological materials on disciplines that students can use during their studies. The materials are stored in open access;

- Electronic library platforms (Regulations on the quality assurance system of higher education of Sumy State University, 2021).

Since the 2020-2021 academic year, Sumy State University has proposed the following measures during the quarantine period:

- reduced number of seats in classrooms according to sanitary norms;

- minimized transitions between buildings, floors, and classrooms were taken into account while drawing up the schedule;

- the academic process is carried out in three shifts. And the shifts do not overlap with each other in order to avoid contact between students;

- in order to relieve public transport, the beginning of the working day for employees and the beginning of classes for students are differentiated.

The bell schedule has been changed for the first time in 15 years. Students begin their studies at 8.30 a.m., which allows them to get to the university without crowding.

We surveyed students on their satisfaction with the educational process to assess the quality of education during the quarantine period. Sixty-eight students participated in the survey, exclusively those living in the dormitory. The survey was conducted online using GoogleForms; the questionnaire was distributed to students in social networks, Viber groups and Telegram groups.

Students were asked the following questions (Wernidub, 2021):

1. What platforms were predominantly used for distance learning?

2. How do you rate the quality of distance learning?

3. How do you rate the quality of traditional learning at the university?

4. What devices do you use while studying in quarantine?

5. Did teachers always make concessions in case of technical failures?

6. Do you like distance learning? Why?

8. Would you like to continue distance learning?

9. What type of learning do you prefer: online or offline?

It was essential to inquire which educational platforms are used to get a holistic picture of the learning process. Students

responded that the most popular platforms for learning during the quarantine period were GoogleClass, Google Meet, Zoom, Teams. Many students indicated that they worked on the university's e-learning platform.

When assessing the quality of learning, 23% of the students chose 6 and 7 points each. So, the quality of learning during the quarantine period did not deteriorate much. However, it was not at the highest level either. Thus, 1% of the students chose 10 points. If we compare it with the quality of learning in the classroom, the overwhelming majority of students rated it at 8-9 points. That is, the quality of offline learning is much higher. Only 1% of students rated offline learning in 1-4 points.

Questioning the students revealed several problems in the organization of learning in quarantine (Wernidub, 2021):

- the need to provide students with gadgets to work with (computer, laptop, tablet, phone) and high-speed Internet. This can be done by engaging the university's library and classroom collections.
- reimbursed costs for the Internet, electricity, and worn-out equipment for teachers who work from home. If necessary, providing professors with places to work or gadgets at home;
- searching for effective methods of motivating students and teachers;
- control by the administration, on the one hand, and reduced number of reports, on the other hand. Supervisory departments to change policy from a supervisory function to a service and assistance one;
- not to limit the freedom of teachers to choose the teaching methods and information tools;
- timely retraining of teachers, including training on e-learning tools;
- a transparent system for monitoring student learning outcomes (Nestorenko & Pokusa, 2020).

Based on the survey and studied expert opinions, the following problems in the implementation of the learning process in higher education institutions have been highlighted:

1. Inability to use e-learning technologies by all participants of the process (both students and teachers).

According to the survey conducted by the State Educational Quality Service, 55,53% of schools had problems with distance learning because they had no previous experience with this form of education, so they were not prepared to study during the quarantine. 47,5% of teachers (20590 people) stated that they didn't previously use distance learning in their pedagogical activities. At the same time, teachers did not receive advice on how to conduct distance learning or training with the help of online educational tools. At the same time, teachers would benefit from advice on how to explain new learning material, give feedback, practice skills, assess progress and determine the duration of lessons in distance learning.

The reality revealed that not all higher education institutions are technically equipped – lectures and seminars were conducted using Google Classroom, knowledge was assessed by text tests, the projects were prepared and presented through Skype, new platforms, resources and social networks (Moodle, Zoom, Skype, Viber, Telegram and Messenger). Moreover, teachers started to use external distance learning systems (e.g., the Prometheus platform) (Berezhna & Prokopenko, 2020).

All participants in the educational process were forced to start using modern technologies, whether they wanted to or not. Furthermore, this direct practical experience allowed them to master these skills quite skillfully. In fact, technology has long been an integral part of our lives, so teachers should be able to use this handy tool no matter what mode they are learning in.

2. Poor quality and accessibility of the Internet for participants in the educational process;

3. Lack of complete, structured learning materials posted on a single educational platform.

4. Lack of quality feedback from students.

Teachers also noted the inability to advise students individually, increased time for correspondence with students, as online courses provide more detailed descriptions of homework than usual in the classroom. Adjusting grades at short notice has caused great difficulty, especially in areas with specific accreditation requirements (e.g., accounting, ongoing research), and the organization of online exams has become a test for discipline, academic integrity, and diligence (Analytical report on the trends...,2021).

5. Inability to postpone the defense of qualification papers.

The state finances higher education by paying the university for each student who studies on the budget. If a person studied but did not receive a diploma on time, it is considered that the money might have been spent inefficiently. Due to the lack of financial autonomy, higher education institutions could receive sanctions “for misuse of budget funds.” To prevent this, the Ministry of Education and Science, in its letter, recommended “completing the academic year on time.” This did not give universities enough flexibility to postpone the defense of qualification papers. Students who failed to complete the educational program would have either to pay for extra classes or be expelled.

6. Deterioration of the quality of education at school resulted in a decreased number of graduates who passed the External independent testing. Moreover, this affected the number of applicants. Although on the other hand, many applicants could not go abroad for admission, so they entered Ukrainian higher education institutions.

7. Lack of interest of students in studying. One of the disadvantages of the urgent distance learning deployment is the

lack of interaction between the teacher and the student, which is impossible in the online environment.

Unfortunately, during the learning process, students received tasks they could complete by copying-and-pasting the text. This is confirmed by the experiment of Björk Bretzig and Raymond Kulhavi, who considers the rote duplication of information (one of four types of working with text) to be the least effective method of memorizing information in the long run.

The most effective methods of learning:

1) reading the text + summarizing and taking notes after reading;

2) reading the text + summarizing and taking notes while reading;

3) reading the text + repetitive word-for-word rewriting of the main ideas;

4) reading the text without notes.

Rote copying-and-pasting of the text does not help students to perceive what they read critically. Online learning will not be effective if teachers do not develop tasks that require analysis and generalization of information.

9. The higher workload of teachers. During the quarantine, teachers tried to maintain the quality of the educational process, prepared for online conferences much longer than before. At the same time, there were those who transferred communication with students into a written format: assigned them a lot of writing tasks to do and refused to hold classes. And there were those who almost did not get in touch with students. At the same time, the degree of teachers' involvement in distance learning does not affect their salaries.

8. Lack of additional payments to teachers. During the quarantine, no additional payments were made to teachers, despite the different teaching formats and excessive workload. In the spring, teachers, who were left face-to-face with distance learning, had to spend more resources to master and implement

distance learning methods independently. Also, conducting classes in a distance form required more time to put information into distance platforms. Also, teachers used their technical tools, electricity and the Internet, to a greater extent.

Today, higher education institutions are tied to the tariff scale and cannot set salaries based on teachers' performance. The quarantine just reminded us once again that universities should have more autonomy in financial matters, including staff salaries.

9. Psychological issues. Both students and teachers noted the lack of live communication, the inability to retake missed practical classes, a significantly increased assignments quantity, the lack of time to complete assignments, the obligation to fulfill their family responsibilities to monitor/care for younger siblings while online classes were held at school, limited access to computers because parents also worked remotely.

10. Academic integrity. Students had access to materials even during the tests, so another issue arose – academic integrity. According to a study of the academic culture of Ukrainian students conducted in 2015, more than 90% of students use plagiarism in their studies. They cheat on exams, print ready-made written works from the Internet, buy them, falsify data, etc.

Another issue is that many teachers are not aware of assessment methods that would not allow students to practice dishonesty. Therefore, universities must consistently work on creating an effective system that will help to ensure academic integrity and create the appropriate culture among students.

11. Reduced number of international students. According to the Ukrainian State Center for International Education, there was no significant reduced number of international students in the 2020/2021 academic year. According to international sources, the impact of the pandemic on student mobility has caused problems with movement between countries due to border closures or significant restrictions. However, 85% of the

surveyed universities offered alternative study schemes, including distance learning – “virtual mobility.” Special mention should be made of students who could not return to their countries and faced the closure of campuses and, as a result, the need to find alternative accommodation, isolation, problems with documents, etc. The following results were obtained in European countries: the number of international students decreased by 20% in Germany, 16% in the USA and 80-90% in Australia. Thus, there is reason to believe that the number of international students in Ukraine has also decreased. However, no monitoring was carried out.

Let us conduct a SWOT analysis of the pandemic’s impact on the educational process’s organization (Table 7.1).

Table 7.1 - SWOT analysis of the pandemic’s impact on the educational process’s organization (Wernidub, 2021)

Strengths	Weaknesses
<ul style="list-style-type: none"> – Adaptation to distance education. – Conducting meetings online. Teachers spend less time. – Self-organization of students. – Increased online mobility. – Development of new analytical skills of students. 	<ul style="list-style-type: none"> – Decreased number of international students. – Not all students had access to education. – Overloading of teachers due to constant sitting at the computer and increased time for checking.
Opportunities	Threats
<ul style="list-style-type: none"> – Opportunity to work and study simultaneously. – Expanding the use of mass online courses. 	<ul style="list-style-type: none"> – Unmotivated students. – Teachers are under stress. – Repetition of quarantine measures. – 1-2 year students did not feel what student life is like.

But the pandemic has not only negatively affected the organization of education in higher education institutions. There are the major advantages (Wernidub, 2021):

1. Academic mobility advancement. The progress of globalization processes gets international academic mobility significantly advanced. According to the UNESCO Institute for Statistics, there were about 5,5 million international students worldwide in 2019, 72 thousand of them were studying in Ukraine.

However, the pandemic affected the plans of 50% of students who wanted to study abroad. Therefore, universities were looking for new ways to attract foreign students. Joint international online internships (COIL) have become such a solution to this situation. Approximately 60% of higher education institutions reported that COVID-19 has increased virtual mobility and/or online learning as an alternative to physical student mobility (Wernidub, 2021).

2. The popularity of educational platforms such as Coursera, edX, and FutureLearn has increased significantly. In 2020 alone, almost 32 million new users registered on these platforms, more than twice as many as in 2019 (14,3 million).

4. Students' ability to better manage their time. Students have begun to delve deeper into the subjects they are interested in.

5. The psychological burden during the session has decreased.

6. Students from other regions lived with their relatives and studied without having to leave home.

To improve the quality of education during the pandemic in the future, one should:

1. Develop a contingency plan in the case of a further pandemic. For example, long before the pandemic, Singapore developed a crisis plan for distance learning in case of a natural disaster. Teachers and educators were prepared for such

instances and knew how to organize distance learning and what tools to use.

2. Previous experience with blended learning. Schools in a Norwegian municipality where children, parents and teachers responded positively to online learning. There, students were using laptops and tablets long before the quarantine. In addition, by the pandemic, they already had experience in learning with Microsoft Teams. So the switch to online went off without any substantial losses. For the year 2020 – 2021, positive distance learning changes also have taken place. For example, the platform for secondary schools (Microsoft Teams) has been chosen and a model for lesson management has been developed. And it is already easier to enter the next quarantine. Higher education institutions are more autonomous in choosing platforms for conducting classes, but after a year of practicing online education, a strategy for working with online resources has been developed.

3. To provide education institutions with computers and high-speed Internet available to both teachers and students. It is possible to provide students who do not have access to the Internet with automated seats and libraries or other classrooms. Priority should be given to providing digital resources to secondary schools in small towns and villages, because this may help reduce the digital divide between students from rural and urban areas.

4. Develop quality digital content for teaching in educational institutions and train educators on how to use it.

5. Develop and implement activities aimed at compensating for the deterioration of learning outcomes due to the transition to distance learning. Identify knowledge gaps. Some countries “open the doors” to students for a short time at the end of the school year to check the quality of knowledge personally, understand what students did not understand, and how to restructure education for the next school year.

6. Open primary schools for specialties that cannot be taught online: Medicine, culture, etc. Surely, in compliance with all sanitary requirements.

7. To strengthen the financial autonomy of higher education institutions, as well as the ability to manage it. Increase the number of opportunities to use individual educational trajectories, including in higher education institutions.

8. To ensure proper living conditions in dormitories without violating the rights and freedoms of students, including foreign students.

9. To develop the capacity of education institutions to create inclusive communities around them that can exist both online and offline.

10. To promote the formation of a safe learning environment and strengthen gender equality in education institutions.

10. To promote the formation of a safe learning environment and strengthen gender equality in education institutions.

11. Organized training for teaching staff in order to study the peculiarities of online learning, the functions and capabilities of existing platforms and services (including Google Classroom, Microsoft 365 Groups, WizIQ Moodle, iSpring), organize a particular platform for the experience exchange between teachers in the field of online learning, joint search for solutions to problems arising in the learning process, methodological assistance in adapting programs to online learning forms.

12. Provide psychological support to students and staff.

13. Establish partnerships with foreign universities that are willing to share their resources, experience, especially in the field of online learning and scientific cooperation.

14. Ensure decent living conditions for international students, namely:

14.1. Facilitate the process of obtaining student visas for international students.

14.2. Extend the duration of stay in the country for students after graduation.

14.3. Providing more scholarships for international students.

14.4. Facilitate the process of living in the country.

For Sumy State University, we propose moving to a single online learning platform that would provide students with online and offline materials. The Mix platform could be such a platform. But this platform needs to be improved. For example, to provide students with online lectures. Teachers can record their lectures during the online training and upload them to the platform. It does not mean that the lectures will be delivered in an online format but makes possible to implement flipped classroom model. Also, we propose introducing live video calls on this platform so that teachers can access all services from one platform. Add an electronic diary to the platform and link information to it. To ensure academic integrity, introduce a type of work such as a video response when a student records a video answer to a specific question using a built-in service.

Overall, COVID-19 has brought about a major structural change in higher education institutions. It was due to the changing needs of students, the development and diffusion of new learning technologies, the decreasing number of international students and the increasing competition among higher education institutions.

8 EDUCATIONAL PROCESS SECURITY ENSURING PROBLEMS IN THE TERMS OF WAR

For the past 9 months, Ukraine has been suffering from the brutal, open and large-scale military aggression of Russia. Aggressor troops are attacking Ukrainian cities, shelling the civilian population, infrastructure, houses, kindergartens, schools, colleges, universities.

Today, Ukraine, at the cost of the lives of its best sons and daughters, is protecting not only European values, it is protecting Europe from a terrible invasion! Thousands of Ukrainians were killed, in Europe, in 2022, in the 21st century. It is still impossible to establish even the actual number of dead and wounded due to the lack of access to the inspection of the places where events happened and due to the active hostilities of the occupying troops in Ukrainian cities.

Any war is always a large-scale shock to the country's national security. In Ukraine, these are: significant loss of human capital (losses between the military and civilian population), according to preliminary data, more than 9,000 civilians were killed, including more than 450 children, more than 800 children were injured; shelling of the civilian population, residential buildings, kindergartens, schools, colleges, universities, in particular, more than 2550 educational institutions were damaged, 333 institutions were completely destroyed; massive migration processes are taking place, with a "prospect" of not 100% return (more than 7 million refugees left Ukraine, about 7 million temporarily internally displaced persons); potential risks of new military aggression remain, etc. Unfortunately, due to Russian military aggression in Ukraine, not every child can go to their own school in their hometown or village. At the same time, education and science are functioning in Ukraine despite the war. It is obvious how important it is to ensure the right of every child to a quality education under martial law.

Ukrainians are fighting for their rights not only to education, but also to existence, the independence of the Ukrainian nation, their sovereignty and security. Today, it is obvious that the problem of security is relevant, which influenced not only the emergence of a science - securitology and it is a relatively new branch of knowledge, but has also acquired a new understanding of its content. Security is the most important category and a necessary prerequisite for the balanced functioning of the system of social relations, which ensures the security, vital activity and capacity of the state, society, individual from internal and external threats (Onyshchenko, 2017).

Security is a general, historical and social category that includes the entire history and the entire future of mankind; it is of the utmost importance for the existence of both an individual and society as a whole. The initial categories in determining the preservation are state, property, interests, dangers to interests. That, they characterize the state of the object in relation to threats of various origins, is common to all of them. Consequently, the nature of the danger is an organizational feature in this group of concepts. Features of the prerequisites for the emergence, the degree of manifestation and the degree of influence of threats determine the nature of security. Ukraine in the 21st century faced global threats - military danger, an unprecedented violation of international law by the Russian Federation, encroachments on the territorial integrity and sovereignty of an independent country, the destruction of the system of balanced relations between people / nations regarding their life support and livelihoods, destruction of the principles of safety, freedom and democracy.

The problem of security has always arisen at the highest level of government and was regulated by various state institutions. In accordance with the current regulatory framework of Ukraine, economic security is understood as the state of economic development, which enables to maintain resistance to internal

and external threats and is able to meet the needs of the individual, family, society and the state (Methodological recommendations for calculating the level of economic security of Ukraine; Onyshchenko et. al, 2021). Dialectical approaches and institutional conditions for the formation of state security have recently been based on the improvement of security relations and consisted in a continuous process of strengthening the functional basis of viability and comprehensive protection of the national economy.

Since the war is a large-scale structural shock for Ukraine, one of the manifestations of which was the loss by the state budget of a large number of traditional revenues in the form of taxes, excises and customs duties. Some of these losses have been replaced by concessional financing from international partners and direct budget financing from the central bank, which has an inflationary and devaluation effect, but extraordinary circumstances require an extraordinary response. In other words, in conditions of war... “we do not ask how we will pay for it – we will decide it after it is over” (“When the war is over...”, 2022).

The total losses of the Ukrainian economy due to the war, according to the general estimates of the Ministry of Economy and KSE, considering both direct losses and indirect losses (decrease in GDP, cessation of investment, outflow of labor, additional spending on defense and social support, etc.) range from \$564 billion to \$600 billion. The total amount of direct documented loss of Ukrainian enterprises have already reached \$11.3 billion. Over the past week, this figure has increased by \$591 million. Since the beginning of russia`s war against Ukraine, at least 227 enterprises, plants and factories have been damaged or destroyed (“Total economic losses incurred during the war...”, 2022).

The inflationary threat in the context of the war in Ukraine is significant and has a destabilizing effect on all components of

the socio-economic security of the state. On an annual basis, prices are expected to increase by 15-20% in Ukraine during 2022. Price increases are limited by regulatory measures such as price adjustments for fuel, natural gas, heating and electricity, as well as fixed exchange rates. Supply chain disruptions, increased business costs and the physical destruction of business assets due to russia's full-scale war against Ukraine, as well as uneven demand and supply of goods across regions, remained the main factors behind the acceleration of inflation. Yes, the realization of pent-up demand for goods and services in relatively calm regions against the backdrop of a gradual return of citizens fueled price increases. In the occupied cities and areas with a high intensity of hostilities, the supply of goods was limited by a significant pro-inflationary factor (Official website of the National Bank of Ukraine, 2022).

Rising consumer inflation indicates a further increase in inflationary pressure (Onyshchenko & Masliy, 2017).) due to the consequences of the war. Inflation escalation risks remain significant in the context of russia's prolonged full military aggression and deliberate destruction of food warehouses, retail outlets, blockades of ports and damage to transport infrastructure.

These factors have a negative impact on the target parameters of the safety of the educational process in Ukraine, since they cause key challenges in the educational sphere.

Among the most dangerous challenges, the unprecedented scale of internal and external migration should be highlighted. It has a significant impact on the development of human capital and can be an important factor in the redistribution of internal human resources. The hostilities forced about 27% of the population to leave their permanent place of residence, including 36% of the population aged 18–24 and 34% of those aged 25–34.

A study by The UN Refugee Agency on Ukrainian migrants abroad, conducted in August-September 2022, showed that almost 9.6 million people left Ukraine due to the war (Fig. 8.1), the vast majority of them left their homes or at the start of the war, or left when the war reached their region.

At the same time, not only external, but also internal migration in Ukraine is extremely large in scale. The number of internally displaced persons is growing and amounts at 6.9 million as of August 23, 2022. Many internally displaced people are vulnerable groups: children, pregnant and lactating women, the elderly, people with disabilities and chronic illnesses, and those directly affected by violence. During the 2014-2015 war in Donbas, more than one in 10 pre-displaced persons (13.5%) were re-displaced. About 40% of internally displaced persons are in Western Ukraine, of which 30% are from Kyiv, more than 36% from eastern Ukraine and 20% from the north.



Fig. 8.1 – Refugees from Ukraine across Europe (as of 14 September 2022)

Source: The UN Refugee Agency UNHCR (2022)

The duration of hostilities determines the outcome of internal and external migration. At the place of residence, if the floating population works remotely, there are housing problems and difficulties in finding work. The longer the war goes on, the greater the chance that these problems are successfully resolved and the less reason to return home.

Another reason for the change of residence may be the massive destruction of infrastructure. Even after the end of the war, rebuilding housing and social infrastructure takes time. Most of the destroyed territories (for example, the city of Bucha or the city of Mariupol) are uninhabitable or almost uninhabitable for some time.

According to a study by the International Organization for Migration in 2020, almost 40% of those displaced in 2014-2015 were not going to return to Donetsk and Luhansk regions after six years of war, which is a significant proportion. If such a trend happens again, at least in part, in the current large-scale war, the loss of human capital and the redistribution of local labor are extremely large in scale.

The main challenges for the education sector in the conditions of war are summarized by the Ministry of Education and Science of Ukraine in the Information and Analytical Collection “Education of Ukraine in the Conditions of Martial Law” (2022) and are presented in fig. 8.2.

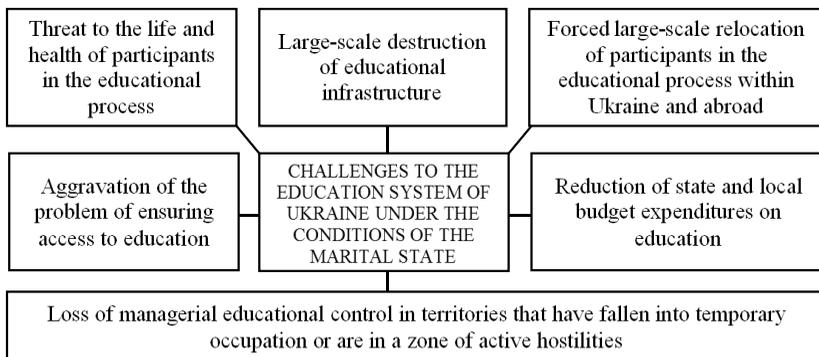


Fig. 8.2 – Challenges to the Ukrainian education system in the conditions of war

Source: compiled according to MES data (2022)

Among the key problems of ensuring the educational process security in a war, the destruction of the educational infrastructure should be highlighted. According to the Ministry of Education and Science of Ukraine (“Education is under threat”, 2022), as of November 11, 2022, as a result of bombing and shelling, 2,739 educational institutions were damaged, which is more than 10% of their total number, of which 2,406 were damaged and 333 were completely destroyed (Table 8.1).

Table 8.1 – The number of victims of bombing and shelling educational institutions in Ukraine

Types of educational institutions	Destroyed	Damaged	Total suffered
Preschool education institutions	95	859	954
Institutions of secondary and specialized education	178	1151	1329
Institutions of extracurricular education	19	111	130

Continue of table 8.1

Types of educational institutions	Destroyed	Damaged	Total suffered
Institutions of professional education	17	118	135
Institutions of vocational pre-higher education	15	106	121
Institutions of higher education	9	61	70
All educational institutions	333	2406	2739

Source: compiled according to the data of MES (2022)

Among all educational institutions, the largest number of destroyed and damaged schools is 178 and 1151, respectively. 954 kindergartens were also affected, of which 95 were destroyed, 859 were damaged. In the regional context, the greatest damage caused to Ukrainian educational institutions as a result of the Russian attack was in Donetsk and Kharkiv regions (Fig. 8.3), where 739 and 545 educational institutions were damaged, respectively. The largest number of destroyed educational institutions in the Zaporozhye region - 127 institutions.

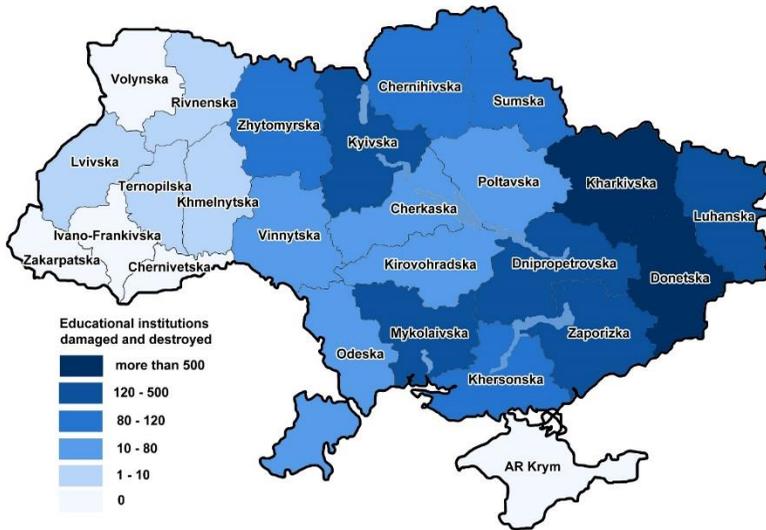


Fig. 8.3 – Cartogram of the destruction inflicted on Ukrainian educational institutions as a result of the russian attack in the regional context as of 11/11/2022
 Source: built according to the MES data (2022)

In the western regions of Ukraine, the least amount of destruction of the educational infrastructure, which enabled educational institution work resumption in this territory with the obligatory observance of safety requirements during the missile threat that persists throughout the country. In general, as of September 1, 2022, about 41% of all educational institutions in Ukraine had the opportunity to start education in the traditional format, while parents were given the right to choose the form of education for their children.

An equally significant problem in the educational sphere during the war is the migration of educators and applicants from Ukrainian educational institutions abroad, as well as their stay in the temporarily occupied territories.

The largest share of teaching staff out of their total number in the regional context went abroad precisely from those regions most affected by shelling and bombing, namely from Kharkiv, Donetsk and Zaporizhzhia regions (Fig. 8.4). So, 22531 teachers left the Kharkiv region, which is 12% of their total number in the region as of the beginning of the 2021-2022 academic year.

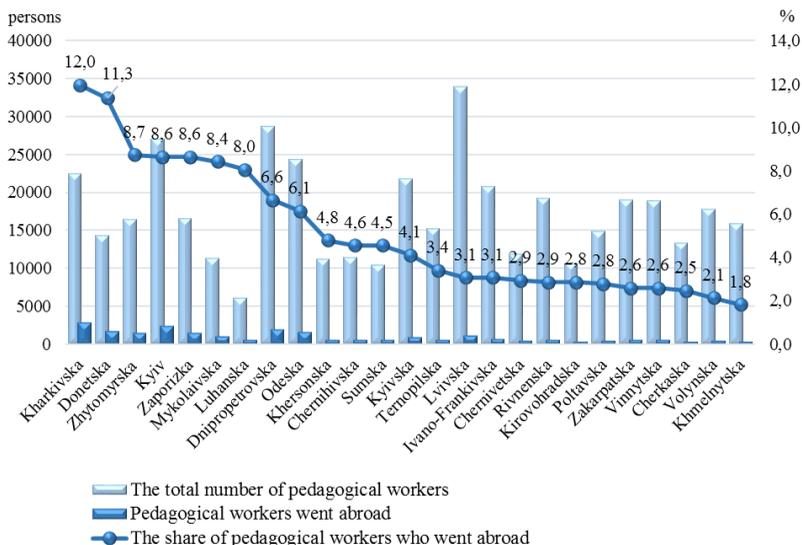


Fig. 8.4 – The percentage of teaching staff of general secondary education institutions who went abroad, starting from February 24, 2022 (as of June 22, 2022)

Source: built according to MES data (2022)

In absolute terms, more teachers left Kharkiv region (2694 people, which is 12% of the total number of teachers in the region), Kyiv (2337 people or 8.6%) and Dnipropetrovsk region (1909 people or 6.6%).

As of the beginning of October 2022, about 13,000 Ukrainian teachers were abroad, out of 27,000 teachers who left starting February 24, 2022. That is, in total, more than half of the

teaching staff returned, including only during September 2022 almost 13% of teachers who went abroad with the start of a large-scale russian invasion. The losses of the contingent of teaching staff due to the war unleashed by the russian federation are significant, which poses a significant threat to the education sector and the national security of Ukraine.

The United Nations estimates that 3 million children and youth have left Ukraine since the start of the full-scale Russian invasion of Ukraine. The largest number of students as a percentage of their total number in the regions of Ukraine left Kyiv, Kharkiv and Mykolaiv regions - about 23% (Fig. 8.5). In absolute terms, the largest number of Ukrainian students left Kyiv, Kharkiv, Mykolaiv, Odesa and Dnipropetrovsk regions.

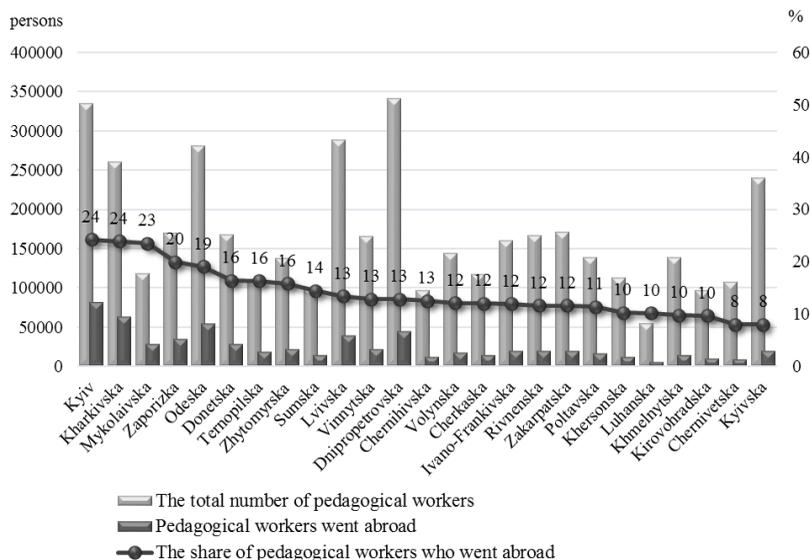


Fig. 8.5 – Percentage of general secondary education students who have gone abroad since February 24, 2022 (as of June 22, 2022)

Source: built according to MES data (2022)

According to the data of the European Commission, as of September 1, 2022, more than 506,000 Ukrainian children went to schools in the EU countries. More schoolchildren from Ukraine are registered in Poland - more than 528 thousand, Germany - about 290 thousand and the Czech Republic - 70.5 thousand. In Italy, Romania, Spain and Slovakia - from 30 to 40 thousand Ukrainian children of school age. There are countries where a few families can be mentioned: in Iceland - 700 children, in Montenegro - about 500, in Belgium and Malta - less than 300 schoolchildren (“How are Ukrainian schoolchildren taught abroad?”, 2022). Less than a third of Ukrainian children living in countries such as Denmark, Greece, Croatia, Malta and Romania go to local schools. More refugee children from Ukraine go to school in Ireland - 92%, Spain - 75%, Italy - 71%, the Netherlands - 66%, Austria - 63%. The rest study remotely in Ukrainian institutions of general secondary education. It indicates a high risk of significant educational losses for Ukrainian children abroad, which is confirmed by the results of a survey of Ukrainian citizens currently abroad conducted by the UN in September 2022 (fig. 8.6).

REFUGEES' INTENTION TO RETURN IN NEXT 3 MONTHS

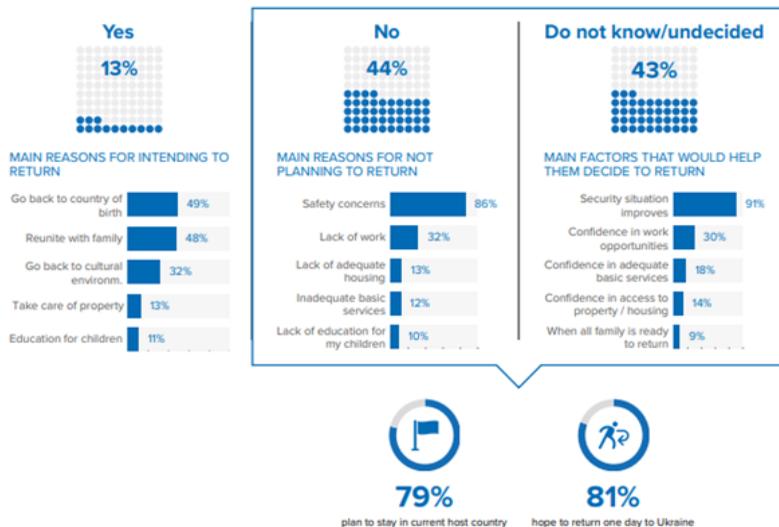


Fig. 8.6 – Results of a survey of Ukrainians living abroad regarding their intentions to return to Ukraine in the next 3 months (September 2022)

Source: United Nations High Commissioner for Refugees (United Nations High Commissioner for Refugees, 2022)

Only 13% of respondents plan to return to Ukraine within the next three months, while 44% do not plan to, and 43% have not decided due to the unsatisfactory security situation, and therefore 79% of them plan to stay in the host country. In general, according to the results of the UN study, people with children tend to stay abroad. Among those who left the country at the beginning of the war, the proportion of persons with children was higher. Mothers are in no hurry to return their children to Ukraine both because of the safety factor and because of the desire to create a favorable social environment for them: conditions for learning, communication with peers, cultural and sports development.

Another category of citizens who are in no hurry to return are students. They want to complete their education in their current host countries, where the educational process has fewer complications than in Ukraine. In addition, countries are actively attracting Ukrainian youth to the labor market, and they are successfully adapting there.

Irreversible migration losses among children and youth threaten the Ukrainian economy not only with a reduction in the supply of labor in the foreseeable future, but also with extremely serious problems with the birth rate.

Air raids, bombing and shelling, hostilities, temporary occupation of part of the territories, interruptions or lack of power supply, absence and lack of gadgets, low quality or lack of Internet connection, the movement of migrants and refugees both within the country and abroad - this is far from complete a list of problems of ensuring the safety of the educational process during the war. As a result, some children have significant interruptions in learning and so-called educational losses occur. The loss of a third year of effective learning for students affected by the pandemic's school closures in early 2020 reduce countries' GDP by an average of 1.5% for the rest of the century, according to a report from the Organization for Economic Cooperation and Development. According to the World Bank experts, educational losses in Ukraine due to war can be more than one year, that is, only this factor can reduce Ukraine's GDP by more than 4.5% (“How educational losses will affect the economy of Ukraine”, 2022). Therefore, there is an urgent need to develop and implement a strategy to compensate for educational losses in Ukraine during the war, both at the state and local levels, as well as within each educational institution, considering the specific features of the organization of the educational process in a particular territory.

Ensuring the security of Ukraine is a necessary condition for the survival of the state, both from a theoretical and practical

point of view, because the war entailed an insane migration of the population, an increase in inflation and a budget deficit, an acute crisis in public finances, the monetary and banking system, an outflow of capital and exacerbation of social tension of the population. A significant number of enterprises have been destroyed, others are forced to change sales markets, supply chains are disrupted due to the occupation of the southern regions, the inability to sell products or provide services in the usual volumes, and therefore the negative effect of the current crisis phenomena associated with the war on economic security is catastrophic. The global scale of threats and dangers to the Ukrainian economy requires urgent structural changes, strengthening the capacity of state institutions, the rule of law, ensuring the rights of investors and reducing corruption risks for economic revival and ensuring the national economy security.

The war changed the plans of the vast majority of Ukrainian students and education workers. Everyone had to escape from physical danger, and after that to recover and try to connect new realities with the old life. Many of the usual things stopped working. Some teachers could not or did not want to resume the distance learning process because they changed their place of residence. Teachers went abroad, some of them were unable to conduct classes with students online and found work in their new country of residence.

Although the bombs of the aggressor country fell on university buildings, they did not destroy the education system itself. Although it is unfortunately to be aware of such destruction, one can also find a positive side of this situation - the Ukrainian education system will have to be rebuilt, reformed and a large number of innovations will be implemented. So, after the war, it should be improved and become better.

It is important to educate students who will develop the country's economy while realizing their talents and potential.

Now every change in the educational program must pass through the filter of relevance in the 21st century.

Therefore, digitization of educational processes can become a chance for millions of Ukrainian students to continue obtaining quality knowledge in Ukrainian higher education, which means to continue being mentally connected to their homeland. This will reduce the brain drain of talented young people abroad.

In general, education should become more interactive, exciting and encouraging to deepen knowledge in order to give Ukrainian applicants competitive advantages in the global educational arena. Talks about granting autonomy to higher education institutions among educators have been going on for a long time, but right now is the most opportune moment to implement such goals.

Military actions became another impetus for changing the principles of the teaching process. Teachers once again realized that now their strength is not in the ability to tell what students can listen to on YouTube or read on the Internet without them. Now their strength lies in their ability to support and ignite a thirst for knowledge, motivate, help find their talent, and become a support. These skills proved indispensable to the students during the war and helped them to pull themselves together and regain what seemed to be lost forever. These skills are extremely important in the future as well. Our children need adults who will believe in them and support them on the path of search and formation.

Discussions about the development of higher education in Ukraine are conducted in two directions: the work of universities in the terms of war and post-war reconstruction. The focus is on the quality of education. But another role of universities remains out of discussion - their contribution to economy development of the country and regions.

The topic of improving the quality of education is always multifaceted. Industry representatives understand that investing

in fundamental academic education development increases the number of educated people in Ukraine. This is such a national bank of knowledge for people who influence changes in the state and, as a rule, are drivers of effective reforms. And they will definitely have many tasks after the victory.

It is clear that today the combination of formal academic and informal applied education is probably the only mechanism that fills the country's industry with qualified specialists.

Ukraine has an extremely favorable environment for the development of education. Our country is implementing the integration of the best world practices into the system of training specialists. This is done in order to provide those who wish with quality education and promote the competitiveness of Ukrainian specialists. In April 2022, the European Commission recommended recognizing Ukrainian diplomas for work in the EU (Quality Education as a Sustainable Development Goal in the Context of 2030, 2020). The European Education Fund has created a resource center on Ukrainian qualifications for the exchange of information, which will speed up the procedures for the recognition of diplomas.

There is no doubt that further reforms in education are needed. We face a difficult task: to modernize the system, using the best practices of the West, but without losing the positive aspects of the past.

Education under martial law requires not only clear, quick and timely solutions, but also accessible explanations of existing challenges.

Higher education in Ukraine corresponds to the education structure of most developed countries. In 2005, our state joined the Bologna system and began to actively develop the plan for implementation European standard in the field of higher education. In this regard, the goal was set to create a true European educational standard, which would provide citizens with quality education, create equal conditions for obtaining it,

encourage mutually beneficial cooperation and, no less importantly, recognize the role of education in the development and preservation of democracy peace.

In the terms of war, inclusive education development plays a key role. The concept of inclusive education reflects one of the main democratic ideas of the world, based on the fact that all students are valuable and active members of society. Therefore, the organization of educational space should be based on such components of inclusive education as inclusive culture, inclusive policy and inclusive practice. Inclusive culture carries the philosophy of inclusive education, is built on inclusive values and is shared by all employees of the university. The method of inclusive education implementation becomes tangible for all members of the community.

Inclusive policies should reflect inclusion in all documents, strategies and institutional development. The documents developed by the institution of higher education should provide clear strategies for the development and inclusive space in which it is located.

Inclusive education poses serious challenges to the educational system and the functioning of the educational institution, mobilizes to the coherence of the work of the team, improvement of programs and teaching methods, stimulating the development of the competence of teachers and other specialists. Ukrainian society has reached such a level of social development that it cannot afford to lose a single growing person, and the recognition of the UN Convention on the Rights of the Child and the World Declaration on Ensuring the Survival, Protection and Development of Children increased the attention of teachers, the state and the public to their problems from birth and to coming of age and responsibility for development, education and upbringing. Of course, students with special educational needs should not be left without proper attention either. After all, historically, they were deprived of the opportunity to receive an

education alongside their peers with normal development, they were denied access to the educational curriculum and taught in special institutions.

Therefore, one of the most important phenomena in modern special education is the movement for inclusive education. Inclusion has a significant impact on policy, research and practice and has many meanings, ranging from the simple enrollment of students with special educational needs in mainstream groups to the transformation of philosophy, values and practical approaches of entire educational systems. Our state needs inclusion as a means of achieving social justice in the interests of students with special educational needs.

Scientists are discussing the problems of integrating students with special educational needs and are actively developing approaches to their education and upbringing in the conditions of the higher education system. Studying the features of creating a comfortable inclusive educational environment is important for the successful upbringing and socialization of such students (Lantero.et. al., 2022).

At the current stage of development of the education of students with special educational needs, the creation of an inclusive educational environment takes priority. In such an environment, all students study together in the mass education system according to general education programs adapted to the needs of such a person. Among the primary steps in the direction of creating an inclusive environment, the following are considered: to abandon stereotypical views of teachers, students, and the educational process; to create an atmosphere at the university based on the ideas of inclusion; to develop an educational institution as a community; focus on cooperation rather than competition; to instill faith in each member of the team.

Necessary conditions for the formation of an inclusive educational environment in educational institutions are:

- recognition by the teacher of the need to use various educational approaches, taking into account different learning styles, temperaments and personalities of individual students;
- adaptation of educational materials for use in a new way, supporting their independent choice in the learning process;
- use of various options for grouping;
- establishment of cooperation and support among students in the group;
- use of a wide range of classes, practical exercises and materials corresponding to the level of personality development.

The purpose of this environment is to focus on personality development and meet the demands of the social environment and human expectations.

An educational environment will be inclusive only when it has a number of features:

- planned and organized physical space in which students could move safely during group and individual classes;
- availability of a favorable social and emotional climate;
- created conditions for joint work, as well as helping each other to achieve a positive result.

In an inclusive educational environment, all students are capable of success.

Arguments in favor of students staying in an inclusive educational environment are undeniable. Therefore, the contrary statement that the rest of the students receive a lower-quality education in an inclusive environment or find themselves in less favorable social conditions can hardly be called well-argued.

In many ways, other students benefit from being in an inclusive environment just as much as students with special educational needs.

The presence of students with excellent abilities in the group does not interfere with the success of others who do not have limitations.

Students without disabilities can build self-esteem and consolidate content knowledge by mentoring others. They also have the opportunity to learn additional skills, such as learning to read Braille or communicate in sign language. Learning these skills can take place in a situation where all participants in the process are aware of their importance and can apply them in practice. In addition, having them provides an opportunity for personal growth, which is often deprived of students who did not have the opportunity to study with those who have exceptional abilities.

All students, in an inclusive environment, can learn to value and respect gifted students. They learn to see the person, not primarily their flaw or giftedness, and to ignore the social labels associated with them.

Thus, an inclusive educational environment is an environment where all students, regardless of their educational needs, are able to learn more effectively, improve their social competence, improve their communication skills, and feel part of the community.

The formation and development of a democratic society is impossible without observance of basic human rights. One of these rights is the right to receive education, regardless of religious affiliation, physical development and health status. Perhaps the most important factor in the progressive development of society is a humane attitude towards students who cannot lead a fulfilling life due to physical and mental development disorders. Inclusion - the full involvement of such students in all aspects of education that are available to other children. Inclusive education is a process in which an educational institution tries to meet the needs of all by making the necessary changes to the program and resources to ensure equality of opportunities. Our educational institution joined the problem of involving students with special educational needs in the general educational environment. After all, through inclusive

education, students with special needs can walk the path that leads to adulthood as active members of society. And although the family is the main environment for the formation of a person, it should not be the only agent of influence, because a special person needs communication with other members of society and should not be confined to the home environment. Such a system of educational services gives everyone the right to study at their place of residence. Inclusive education teaches everyone how to work as a team and how to communicate and function with others who are differently abled. They learn to appreciate diversity, to see the capacity of others to be useful, and this gives students a sense of unity. At our university, a student with special needs has the opportunity to get an education according to his individual abilities and freely communicate and engage in joint activities with his peers.

After all, our university is an educational institution that is open to all students, regardless of their physical, social or other characteristics. Therefore, it has a barrier-free learning environment, adapted curricula and plans, developed and developed teaching methods and forms. The task of the university is to provide equal opportunities for learning and development to all students. Therefore, the creation of inclusive groups is the most effective means of ensuring solidarity, mutual respect and understanding between students with special educational needs and their peers. The organization of an inclusive educational environment is carried out by specialists who constantly work on improving their qualifications for working with students with special educational needs, undergo course training, attend specialized trainings for employees of the educational sector, engage in self-education and share their experience with colleagues. There can be no doubt that an inclusive educational environment is formed by a teacher, and moreover, not by one teacher, but by a whole team of teachers and specialists - a team that works in interdisciplinary

cooperation. Each teacher working with a student with special educational needs in an inclusive group is responsible for the implementation of the components according to the individual development program. The teacher uses various forms of organization of work (group, pairs), which are designed to ensure the active participation of the student in as many pedagogical activities as possible, thus creating an appropriate atmosphere of relationships in the academic group. The teacher also has the opportunity to provide direct assistance to the student in acquiring knowledge. Socio-pedagogical support of a student with special educational needs is carried out by a tutor, whose presence is a necessary condition for inclusive education. Together with the teacher, tutor performs educational, educational, social adaptation measures, introducing effective forms of their implementation, helps the student in completing educational tasks, involves him in various types of educational activities. Psychological support of inclusive education and initial evaluation of the student is carried out by a practical psychologist of the university, who collects and reports to the group information about the strengths, needs, interests and specific characteristics of the student (development of cognitive processes, emotionality, temperament, learning style, etc.), provides recommendations to group members regarding the features of adaptation to the environment that meet the special educational needs of the student and develops a plan of psychological assistance. The psychologist continuously monitors the student's behavior, observes changes in behavior and development, and provides psychological assistance to the student and teachers working in such groups.

Due to the training classes, positive results appear in communication with peers, self-confidence is developed, the classes help each student feel that the classmates are not strangers, and students studying in inclusive education only

begin to feel themselves in full communication with their peers like everyone else.

The implementation of inclusive education is already yielding certain results. First of all, it opened up the opportunity to transform life outside society into a full life in society for such students; to open the pages of a new quality life for them. And today, inclusive education provides such students with the opportunity to live a quality life. Therefore, the transition to inclusive education, as the most modern form of socio-pedagogical rehabilitation for students with special needs, should become a priority in the development of the national education system.

Today, in the process of modernizing the education system, one of the central issues is ensuring an appropriate level of quality in higher education. Realizing the importance of having a quality education, most countries of the world declare this problem a national priority and a prerequisite for their own national security. Education and science, influencing without exception all forms of organization of the macrosocial system and all its structural elements, is a universal factor in the modernization of the country, its technological, military, environmental and energy security. It is no coincidence that indicators of educational and scientific and innovative policy in international practice have long been introduced into the system of national security parameters. For Ukraine, the quality of domestic higher education is also a matter of national security, because during the years of independence, Ukrainian society not only managed to reverse the trend of education depreciation, but also managed to put into practice the ancient postulate about the power of knowledge. Today, the desire of the Ukrainian people to live in decent conditions can only be realized if the principle of competitiveness and competitiveness is observed. The entry of Ukraine into the structures of the European Union implies the

application of European quality standards, which, of course, also are applied to higher education.

Reforming the Ukrainian educational system defines one of the urgent tasks the problem of creating a national system for assessing and ensuring the quality of higher education, which is impossible without a preliminary comprehensive philosophical understanding of the problem. The quality of higher education arises, on the one hand, as an attributive characteristic of higher education, and on the other hand, as an integral product of the development of science and culture, which meets the actual needs of the development of society. At the same time, the essence of the quality of higher education can be represented as the total energy-informational potential of the individual, which she accumulates in the process of studying at a higher educational institution. The content of this potential is determined by the innovative nature of the productive activity of a specialist. Education is one of the most important factors in the sustainable development of society, competitiveness and national security of the state. The quality of education has become a fundamental category of state policy, the main guideline of international policy in the field of education. Researchers dealing with the problems of higher education argue that the concept of "quality of higher education" is characterized by employers associate quality education with the training of specialists who have the necessary competencies and are able to adapt to dynamically changing production conditions (Muthanna, Almahfali & Haider, 2022). For the Ministry of Education and Science of Ukraine, quality is regarded as impeccable in terms of compliance with the requirements of state educational standards, legislation in the field of education and accreditation criteria. The growth in the number of students, the internationalization of education, the recognition of the fact that higher education and the level of competence of graduates are vital for the economic, political and

social success of the economy, makes higher education institutions pay special attention to quality issues. The problem of guaranteeing the quality of education is one of the most important problems in the higher education development.

Today, the world is watching us, the best are extending a hand of support. We are interesting. But we must continue to join forces at all levels, and as much as possible keep the focus on the availability of education, its quality, and continue to invest. The future of Ukraine lies in its educated citizens.

We have learned to survive in extreme conditions, united in mutual assistance, do not plan life in advance and try to take care of mental health. Education cannot be put on hold. A person's income depends on his education. There are many other social benefits from investing in education. For example, more educated people have a more active civic attitude and trust government institutions more. Strong and influential institutions, in turn, create the basis for an effective business environment and, ultimately, greater economic well-being.

The faith of Ukrainians in victory and the planning of the country's development after it is what causes wonder and respect in our Western allies, and what gives us strength. As long as the war continues, the foundation for the new post-war Ukraine is being laid in the rear. We are building a consensus in every industry and sphere in order to make changes when opportunity for reforms will appear. Until then, it is important to have public discussions to develop a common vision of priorities for future educational reforms.

9 FORMING OF PROFESSIONAL LANGUAGE COMPETENCE OF MEDICAL SPECIALTIES INTERNATIONAL STUDENTS' ACCORDING TO THE PRINCIPLES OF CROSS-CULTURAL COMMUNICATION IN EDUCATION: EUROPEAN AND UKRAINIAN PRACTICES

According to the analysis of normative sources the communicative component of the professional language competence of foreign students of medical specialties is based on Recommendation 2006/962/EU of the European Parliament and the Council "On basic competences for lifelong learning" dated December 18, 2006. The document states that communication in foreign languages in terms of skills generally similar to communication in the native language: based on the ability to understand, express and explain concepts, thoughts, feelings, facts and views both orally and in writing (listening, monologue, reading and writing), in relevant social and cultural contexts (during education and professional training). The content of the notion "foreign-language professional competence of foreign students of medical specialties" we define as a set of interrelated components: language (linguistic), speech, socio-cultural, Ukrainian-language professional competencies.

The concept of "formation of Ukrainian-language professional competence of foreign students of medical specialties" is defined on the basis of the analysis and systematization of scientific sources, conducted research and experimental work as follows: a competency-oriented educational process that takes place taking into account pedagogical conditions. Its result is the positive dynamics of the formation of Ukrainian-language professional competence of foreign students - future specialists in medical specialties, which contributes to the effective implementation of Ukrainian-

language communication in the educational, professional and socio-cultural environment of a higher education institution.

Within the framework of the research problem, we will define the peculiarities of the professional training of foreign students of medical specialties in the context of the formation of Ukrainian-language professional competence, outline curricula, programs of academic disciplines, some aspects of foreign experience of professional, in particular, professional language training.

It should be noted that in the Law of Ukraine "On Higher Education" (2014), the concept of "professional training" is defined as obtaining a qualification in the relevant field of training or specialty (On Higher Education). In the reference literature, as the analysis shows, professional training is characterized as a «system of organizational and pedagogical measures that ensure the formation of a person's professional orientation of knowledge, abilities, skills and professional readiness for such activities in scientific sources - as mastering a system of professional knowledge specific to a certain profession» (Volkova, 2007, p. 477) ; a targeted process of training real and potential employees in professional knowledge and skills with the aim of acquiring the skills necessary to perform certain types of work; the process of professional formation of future specialists, the purpose and result of higher education, the need to involve the student in educational activities

Taking into account research positions, we consider the professional training of foreign students of medical specialties as a systematic pedagogical process of content, form, teaching methods, which takes place taking into account certain principles, factors and is aimed at forming the necessary professional qualities of personality in future foreign doctors.

According to the Order of the Ministry of Education and Culture No. 1541 "Some issues of organization of recruitment

and training (internship) of foreigners and stateless persons" (2013) (Some issues of organization of recruitment and training (internship) of foreigners and stateless persons, 2013) , in institutions of higher education In Ukraine, the training of foreign students of medical specialties is designed according to several options.

According to the first option, the education of foreign students in medical specialties and the study of the state language (and/or the language of instruction) begins with the preparatory faculty/department (this is "pre-professional" or "pre-university" training). Enrollment in studies takes place on the condition that foreign applicants have a full general secondary education received in their country (Some issues of organization of recruitment and training (internship) of foreigners and stateless persons, 2013). Graduates receive an appropriate certificate and have the right to enter the first course with a Ukrainian-language form of education in accordance with the recommendations of embassies and consulates. It is proposed to conduct classes in various academic disciplines for foreign students in the Ukrainian language. In accordance with the "Temporary program of the academic discipline "Ukrainian as a foreign language (Ukrainian-language form of education)", education lasts for 7 semesters. A total of 702 hours are provided. practical classes (the university can regulate the number of hours), and the course ends with a state exam.

The second option of training provides for the right of foreign citizens to enroll in the first course with an English-language form of education after passing the entrance exam in English at a level not lower than B1.

In particular, according to the analysis of study and professional program of Sumy State University, its aim is to form in-depth knowledge about the anatomical and physiological features of the body, features of the course of diseases, their diagnosis, treatment and prevention, knowledge

of a foreign language, communication, and the formation of general cultural and professional skills, which provide solutions to typical professional tasks and practical problems in professional activities in the field of health care, or in the process of education. Among the general competencies, we will single out such as the ability to learn and master modern knowledge, to communicate in the state language both in speech and in writing, to use professional lexis in practical activities; among specialists - the skills of interviewing and clinical examination of the patient, maintaining medical documentation regarding the patient and the contingent of the population in compliance with the relevant ethical and legal norms (Catalog of educational programs of Sumy State University) .

In comparison to the study and professional program of the specialty 222 Medicine of VDNS “Bukovinsk State Medical University” (authors - O. Koloskova, A. Iftodiy, O. Fediv, O. Yuzko, I. Gerush, V. Khodorovsky) (Bukovinsk State Medical University), as the analysis shows, the general results of training by competencies are more clearly presented. In particular, attention is focused on the basic knowledge of the state language and their use in professional communication, on the ability to effectively form a Ukrainian-language communication strategy in professional activities. Organization of the educational process in medical institutions of higher education is carried out in accordance with the curriculum.

We analyze the training plan for specialists in Medicine at Sumy State University. According to the curriculum, natural-scientific and professionally-oriented training includes, in particular, the following disciplines: “Latin language and medical terminology”, “Human anatomy”, “Physiology”, “Deontology in medicine”, “Propaedeutics of internal medicine”, “Patient care (practice)”, “Nursing practice”, “Medical psychology”, “Internal medicine” (in English). Ukrainian-language disciplines are taught to foreign students of

the English-language form of education for seven semesters. At Kharkiv National University named after V.N. Karazin such academic disciplines are taught as “Foreign language” (another name for the discipline “Ukrainian as a foreign language”), “Foreign language of professional direction” (Semenog, Levenok, 2019, Tom 1., p. 287–307).

The study of the Ukrainian language as a foreign language is provided by specialized departments, which use in the educational process the typical program of the normative educational discipline “Ukrainian as a foreign language (English-speaking form of education)” in the field of knowledge 22 The Health care, developed by the main department of linguistics of the Ivano-Frankivsk National University of the Medical University (Lutsak, O. Krynytska, O. Dykan, 2016), as well as the Exemplary curriculum of the study discipline “Ukrainian as a foreign language” training for specialists of the second (master’s) level of higher education in specialties 222 “Medicine”, 221 “Dentistry”, 226 “Pharmacy, industrial pharmacy”, developed by specialists of the same institution in 2017. The program takes into account the main provisions of the “Unified standard curriculum of the Ukrainian language for foreign students of the main faculties of the non-philological profile of higher education institutions of Ukraine of the III-IV levels of accreditation” (2009 p.)

The study, teaching and assessment of the educational discipline “Ukrainian as a foreign language” is regulated by the General Educational Standard for Ukrainian as a Foreign Language, which was approved by the Order of the Ministry of Education and Culture of Ukraine No. 750 dated 24.06.2014, as well as by the All-European Recommendations on Language Education (2003). According to this standard, A1 is defined as the initial level, A2 as the basic level; B1 – as I intermediate level; B2 – as II intermediate level; C1 - as a professional level. According to the Common European competences of foreign

language proficiency (Common European Framework of Reference (CEFR), 2017), the following levels are defined: A Elementary proficiency/ Basic level: A1 – Beginner, A2 – so called “Survival” level/ Elementary; B – Independent user: B1 – Intermediate level, B2 – Upper-Intermediate level; C Proficient: C1 – Advanced, C2 – Proficiency Level (Common European of reference for languages) .

As the analysis of the typical curriculum of the academic discipline "Ukrainian as a foreign language" (Ushakova et al., 2016) shows, the Ukrainian language training of foreign students (English-language form of education) is carried out in the unity of three directions: communicative (the goal is the formation of communicative competence), adaptational (the goal is adaptation to life and study in the Ukrainian-speaking environment) and general scientific (the goal is the formation of general scientific / professionally oriented competence). The discipline is read in the first to fourth courses within seven modules corresponding to the semesters and structured accordingly into content modules. N. Moskovchuk rightly notes that the Ukrainian language for foreign students functions on two levels: as an educational discipline, which is a means of professional development of future specialists, and as the language of the socio-cultural environment.

In particular, modules 1–3 ("Socio-cultural foundations of communicative competence", "Intentional-communicative basis of speech activity", "Creation and representation of a description with elements of reflection and clarification"), as shown by the analysis of the program of the Ivano-Frankivsk National Medical University, are read in the first - in the third semester and are aimed at the formation of initial (A1), basic (A2) and intermediate levels of speech, communication and language competences of foreign students. Modules 4–7 ("Structural-semantic and functional features of medical terminology", "Functional-semantic basis of educational and professional

discourse (strategies and tactics of communication between a doctor and a patient)", "Informative and argumentative component of professionally oriented speech") are offered in 4-7 semesters and are aimed at the formation of I medium (professionally oriented (B1) level of competences and education of cognitive interest in the Ukrainian language as a tool for the practical use of acquired professional knowledge in foreign communicators; consolidation and improvement of previously formed linguistic, sociolinguistic and pragmatic competences.

The program of the discipline "Ukrainian language as a foreign language" in institutions of higher medical education of Ukraine, as the analysis shows, is generally coordinated on the relationship, first of all, with the disciplines of natural and scientific, professional and practical training. In particular, in modules 4-7, consideration of lexical-grammatical material with a clear professional focus is provided. However, the content of the program does not sufficiently take into account the relationship with the academic disciplines "Human anatomy", "Physiology", "Deontology in medicine", "Medical psychology", "Propaedeutics of internal medicine (pediatrics)", "Patient care", nursing and industrial medical practices of foreign students.

As it is shown by the analysis of educational programs and work programs of the educational discipline "Ukrainian as a foreign language", the results of foreign students' studies include, in particular, communicative-speech, linguistic, discursive, socio-cultural and activity competence. Researchers note the importance of adaptation to learning in the Ukrainian-speaking environment, fostering respect for traditions, customs and values, national culture and history of the Ukrainian people on the need to form a positive motivation for learning and the ability to use commonly used and professional vocabulary,

grammatical constructions in professional situations, on the ability to self-evaluate and self-improve.

The formation of Ukrainian-language professional competence is more effective if interactive forms and methods are used. The educational programs provide for the following types of work: practical classes, independent work with the possibility of consultations with the teacher, e-learning for individual educational components, problem-oriented learning, learning through laboratory practice, learning based on research, learning through nursing and medical practice, individual, group work involving solving educational tasks. However, the existing educational and methodological support of the disciplines, as the analysis shows, requires a clearer description of interactive forms and methods that are important to apply in the educational process of medical institutions of higher education: cross-cultural discussions, mini-conferences on ethical problems of medicine, role-playing, business games, work with the text of the textbook, workbook, educational discussion, exercises, independent work, problem cases, etc.

In the research of Xing Zhefu, it is argued that the adaptation of foreign students to study in higher education institutions of Ukraine is a process of active adaptation of students to living conditions in another country, its traditions, norms of social behavior, new social environment; to the educational and educational environment, which includes a new attitude to the profession, educational standards, assessments, methods and techniques of independent work; to the teaching staff (Xing Zhefu, 2015) . A. Gadomska examines the peculiarities of speech and cultural adaptation of foreign students by means of creolized advertising texts as a type of interlinguistic and cross-cultural mediation and proves that the use of such texts contributes to the formation of background and cultural knowledge by a foreign student, the development of speech and language skills and skills necessary for effective interaction with

representatives of the relevant linguistic and cultural community (Gadomska, 2017) . When distinguishing the components of the Ukrainian-language professional competence of foreign students of medical specialties, we use the studies of I. Dyrda, S. Kostyuk, and A. Prykhodko. I. Dyrda thoroughly outlines the content of the components of multicultural competence. to cognitive - knowledge of the Ukrainian language: successful operation of lexical, phonetic, grammatical units, multicultural terminology, stylistic means; understanding of ethno-cultural features of native and other cultures; to effective - mastery of speech culture, communication skills, ability to solve tasks of intercultural interaction, knowledge of intercultural strategies; to reflexive - the ability to reflect on one's own activities, knowledge about the system of moral and national values, discovering one's cultural identity, avoiding stereotypes and prejudiced attitudes towards people (Dyrda, 2019) .

Among the components of intercultural communication competencies of foreign students, S. Kostyuk singles out valuable (awareness of the importance of language training, mastering speech, communicative and intercultural communication strategies), cognitive (possession of a system of knowledge of language, culture, history, rules of etiquette necessary for interaction with representatives of other cultures), effective (a set of abilities and skills to apply knowledge to solve various practical tasks), cultural (knowledge of the universal components of various types of cultures, their manifestations in speech and behavior patterns). When analyzing the sociocultural component of the motivational and personal component of the Ukrainian language professional competence of foreign students of medical specialties, we rely on the research work of O. Palchikova, who substantiated the psychological and linguistic didactic principles of teaching Ukrainian language to foreign students on a cross-cultural basis. The scientist proves that the formed cross-cultural competence is an indicator of

understanding and reproduction of foreign language and cultural information. Ignoring cross-cultural competence causes misunderstanding between representatives of foreign cultures, which manifests itself in an inadequate reaction to what is heard, in the use of an incorrect language form to express the content of the message, in an unsuccessfully chosen model of behavior in certain communicative situations.

In the content of the socio-cultural component of the Ukrainian-language professional competence of foreign students of medical specialties, we have reflected the characteristics of the linguistic and local studies competence of foreign students of technical specialties, which L. Bereza defines as a system of linguistic and local studies knowledge, abilities and skills and full-fledged communication in situations of intercultural communication (Bereza, 2017).

On the basis of the analyzed legislative and normative documents, scientific sources, we come to the conclusion: graduates of the specialty 222 Medicine must possess such important communication skills as dialogic interaction with patients, doctors, interviews with the aim of establishing the correct diagnosis, etc.

The professional competence of the future doctor is based on theoretical knowledge, practical skills, significant personal qualities that determine preparation for the performance of a wide range of professional duties. The essence of the concept of "Ukrainian-language professional competence of foreign students of medical specialties" is defined as a professionally important integrative quality of personality, characterized by the ability to effectively communicate in Ukrainian in the educational, professional and socio-cultural environment of a higher education institution on the basis of acquired linguistic and professional knowledge, linguistic communication skills and value attitudes.

According to the curriculum (entry year 2016/2017), in particular, of the Medical Institute of Sumy State University, several types of practical training are provided: "Patient Care" practice (2nd year), nursing practice (3rd year), "Medical practice production" (8/9 semesters). During the "Patient Care" practice, foreign students study the structure of a medical institution (hospital), the functions of doctors, nurses, and orderlies. The task of medical industrial practice is to consolidate knowledge and skills in professional disciplines (examining the patient, establishing a clinical diagnosis, prescribing treatment, drawing up medical documentation, observing the rules of deontology and medical ethics in the workforce, further improving practical skills). Students work for one week each in the therapeutic, surgical, and pediatric departments of the polyclinic, in the women's consultation, perform the duties of district therapist and pediatrician, polyclinic surgeon, doctor of the women's consultation. In order to fill out the medical history, foreign medical students need to conduct a survey, examine the patient in Ukrainian, and then enter the data into the patient's card and the report. At the same time, as a survey of foreign medical workers shows, patients do not always speak Ukrainian or speak "Surzhyk", which is important to consider in language training.

Actual problems, as the analysis of the websites of higher medical education institutions shows, are the subject of professional discussions at the seminars "Theory and practice of teaching Ukrainian as a foreign language" (Ivan Franko National University of Lviv), "Linguistic and didactic strategies of teaching Ukrainian as a foreign language" (DVNZ "National pharmaceutical university" (Kharkiv), "Ukrainian language as a foreign language based on linguistic and cultural studies" (Zaporizhsky State Medical University), "Actual problems of education of foreign students at the modern stage" (Sumy State University), in collections of scientific works on "Theory and

the practice of teaching Ukrainian as a foreign language" (Ivan Franko National University of Lviv). Specialists have prepared a dictionary ("Ukrainian-English-Arabic explanatory dictionary of medical terms", authors - R. Holod, G. Ivanyshyn, S. Lychuk) (National University of Pharmacy).

Our surveys of specialists during scientific events at Sumy State University give reasons to assume a need for clearer interaction between medical institutions of higher education and medical institutions on issues of higher quality formation of Ukrainian-language professional competence. Researchers, in particular, pay attention to the consideration of didactic features of second language learning (Zabolotna et al., 2019); formation of didactic culture (Melnychuk, Fedchyshyn, Pylypshyn, Vykrushch, 2019), renewal of foreign (Ukrainian) language teaching based on international interdisciplinary integration (Melnychuk, Konchovych, Lypchanko-Kovachyk, Telychko, Bloschynskyi, 2019), implementation of interactive learning (Melnychuk, 2020).

In the context of the problem of our research, we will outline some aspects of the foreign experience of professional training of students, including foreign students of medical specialties. Our study does not aim to conduct a comprehensive comparative analysis, since there are differences both in the system of higher medical education itself and in the features of the educational process. Professional interest is the content, process of language learning, innovative forms and methods that are offered to students for the purpose of forming foreign language competence.

For international students who are going to be future doctors in the United States of America, the entrance exam to the medical college is rather important (Medical College Admission Test (MCAT)). The standardized computer exam is designed to test the ability to solve problems, the formation level of critical

thinking, knowledge of scientific concepts and principles (About the MCAT® Exam).

In the first semester of the college, students master the course "English 101" (English 101) of the elementary level and learn to write essays, stories, in the second semester - "English 201" English 201. Teachers pay special attention to reading and understanding the content of texts, enriching vocabulary future medical specialist (How to pass English 101).

Ukrainian doctor S. Nesterenko, who works in Texas (USA), notes that the concept of American medical education is built on the assimilation of educational material through their practical application. During the first and second years of study, students intensively study basic medical disciplines ("Anatomy", "Microbiology and Pharmacology"), in the third year of study, lectures and practical classes last only one day a week, and all study time is devoted to work in the clinic. Students learn to communicate with patients, perform examinations, and write medical documents. A. Wearn, H. Bhoopatkar confirm the need for students to acquire clinical examination skills. Scientists note: students train to conduct examinations on their classmates, because it is training, reproduction of a real examination that helps to gain practical experience for professional activities (Wearn, Bhoopatkar, 2006).

Special attention in medical education institutions of the USA is given to preparation for the licensing exam United States Medical Licensing Examination USMLE. In particular, to test the doctor's communication skills and his ability to work with the patient's card, the practical part of the exam is conducted with the participation of patients. USMLE evaluates the future doctor's ability to apply knowledge, concepts, principles and demonstrate basic skills in working with a patient (United States Medical Licensing Examination). Effective clinical communication, as noted by J. Silverman, is a leading factor in clinical training, therefore he suggests increasing the number of

hours for mastering the language by specialty, as well as introducing the linguistic and communicative discipline into the basic curriculum (Silverman, 2006) .

In the educational process of institutions of higher medical education in Great Britain and the United States, educational programs based on mutual influence, mutual control, and self-esteem of students of higher education are gaining popularity. In particular, as the analysis shows, the medical school of the Faculty of Medicine of the University of Indiana (USA) implements discipline programs on organizational culture. According to these programs, considerable attention is paid to "teacher-student" relations, constant mutual control and cooperation, maintenance of business etiquette between all participants of the educational process. The Medical News Today website notes that although "rigorous work" and clinical training are mandatory for a medical school, however, in addition to constantly updating the technical training of medical students, the institution pays considerable attention to the formation of the communicative culture of future doctors, especially in communication with patients (Developing «roadmaps» for enhancing the professional culture of medical schools).

In order to help medical students prepare to interact with a real patient and improve communication skills, the University of Texas at Dallas (USA) offers classes using virtual reality (Virtual Patient Project Aims To Develop Smarter Medical Students) and virtual modeling of dialogue with patients. Virtual patient simulation technologies are designed for students to simulate practical advice for virtual patients (Semenog, Levenok, 2020). Such lab of virtual reality is also functioned at Sumy State University.

The importance of language in the professional activity of foreign students of medical specialties is emphasized by B. Hoekje (Barbara Hoekje) and S. Tipton (Sara Tipton). In the

book “English and the medical profession: instruction and assessment of communication skills of international doctors” («English Language and the Medical Profession: Instructing and Assessing the Communication Skills of International Physicians») experts analyze the native (English) language training program for international medical professionals from other countries (for example, the Middle East). It is noted that foreign (international) doctors make up 25 percent of the working doctors of the United States, which increases the need for language communication. On the other hand, according to surveys conducted by American researchers, foreign doctors have problems with foreign language communication even after passing the clinical skills exam, and this often negatively affects their performance of professional duties (Hoekje, Tipton, 2011).

The book «Teaching Medical English: Methods and Models» is important in the context of our research. The authors are Italian scientists. A. Loicano and G. Iamartino, Kim S. Grego prove, that among the reasons to strengthen the professionally oriented factor in the teaching of English for medical purposes are globalization processes and social requirements (Loicano, A., Iamartino, G., Kim S. Grego, 2011).

D. Larsen-Freeman sees the need to study lexical-grammatical constructions primarily as a dynamic process when teaching a second language. This is possible due to the creativity of users when they learn new meanings, give examples to the rules, which contributes to better memorization (Larsen-Freeman, D., 2015). The scientist Dhalival according to reflection of his own experience of working in a public hospital in Japan and a review of educational literature, offers a number of effective methods of training future doctors (training in clinics, English-speaking rooms), which contribute, including overcoming language barriers in professional communication (Dhalival, 2009).

In substantiating the motivational and personal component of the Ukrainian-language competence of foreign students, we are guided by the scientific works of foreign researchers on the professional development of future doctors. A. Howe claims that professional development is largely based on the organization of training, and effectiveness depends on the relationship between participants in the training process (Howe, 2002, p. 353-359). M. Purdy (M., 1997), D. Baud (Boud, D., 1995), J. Cowan (Cowan, J., 1998), J. Fitzpatrick (2006, 23-34) convince of the importance of learning, which is based on self-assessment, integrates personal and professional knowledge and skills, which promotes the development of critical thinking.

In accordance with the German legislation "Ordinance on Licensing of Physicians" of June 27, 2002 (Federal Gazette of Law I p. 2405), as amended by Article 3 of the Law of March 16, 2020 (Federal Gazette of Law I p. 497), the purpose of medical training in institutions of higher education is to provide the basic knowledge, skills and abilities necessary for a future doctor to provide medical services to the population. A doctor must have basic knowledge about body functions, psychological and spiritual properties of a person, have basic knowledge of the ethical foundations of medical behavior, skills and abilities necessary for medical practice in diagnosis, therapy, health promotion, prevention and rehabilitation; have practical experience working with patients, follow an interdisciplinary approach in treatment. (Approbations ordnung für Ärzte (ÄApprO) 2002).

An analysis of the official website of the medical faculty of the Eberhard Karl University of Tübingen confirms that the university, together with the competence center for university didactics in medicine in Baden-Württemberg, is an active developer of medical didactics. The main characteristics of the educational process are student-centered learning; in particular, in professional training, considerable attention is paid to the

formation of practical communication skills of the future doctor and patient. Among the important features of training, experts single out team training, guaranteed quality training with comprehensive assessment, provision of practical skills in the simulation center of DocLab, interdisciplinary qualification in the medical didactic center (Eberhard Karls Universität Tübingen). The experience of the medical faculty is taken into account when designing interactive tasks, modeling professional situations, aimed at forming dialogical interaction "student-patient", "foreign student - practical medical worker".

According to the current Procedure for the admission of doctors to practice (Approbationsordnung für Ärzte (ÄAppO dated 27.06.2002; amended on 17.07.2017), students master medical psychology and medical sociology (Kursus der Medizinischen Psychologie und Medizinischen Soziologie), a practicum with of medical terminology (Praktikum der medizinische Terminologie) in close relationship with language discipline. The training sessions take place in the interdisciplinary training center DocLab and are aimed at the development of psychosocial practical skills of patient care and patient safety, professional behavior of future doctors, their personal qualities (Approbationsordnung für Ärzte).

Students also get the opportunity to get acquainted with the main directions of Tübingen research, which stimulates their awareness of the responsibility of the medical profession, which is based on respect for human dignity, moral and ethical behavior and intelligence, tact, and the ability to listen and hear the patient. The practical training of Tübingen medical students is carried out in the interdisciplinary training center DocLab (DocLab).

In the research and experimental work, we take into account the ideas of the project "Intercultural communication", which was launched at the medical faculty of the University of Tübingen in 2011. We will comment on the main ideas of the

project. A first-year German-speaking student is assigned to each foreign student and acts as a mentor for one semester. Together, they master the initial stage of education, as well as the new transition from school to university. A foreign partner usually has difficulties staying in another culture, language barriers. The German tandem partner helps with linguistic and cultural adaptation to the educational, professional, socio-cultural environment at the university, and also involves participation in cultural events (Studium und Lehre an der Medizinischen Fakultät der Eberhard Karls Universität Tübingen).

Sumy State University also provides practice of LabStudies. “The means (or Learning tools) are a source of knowledge acquisition, skills formation. These include visual aids, textbooks, didactic materials, technical aids, study quest-rooms, labs, and other media (computer visualization. Mental maps). In the process of formation of Ukrainian-language professional competence of foreign medical students we use the following training tools, such as electronic textbooks, virtual laboratories (for example, ULab SSU), blogs, professional-oriented social media pages. While the formation of Ukrainian-language professional competence of foreign medical students we use the authorial Ukr.Lang. Laboratory for foreign students (Ukrainian language and professional oriented laboratory for foreign students of SSU) a professional-oriented account on the social network “Ukr.Lang.Laboratory for foreign students” (<https://www.facebook.com/groups/2580388622284576/>)”.

We consider it expedient to implement such intercultural interaction in the process of training foreign students in Ukrainian institutions of higher medical education. It should be noted that in Germany every medical university sets high requirements for foreign students regarding the level of language proficiency. Knowledge of the German language implies mastery of the language at the B2 level. It is necessary to confirm

knowledge of the German language with language certificates (TestDaf I DSH). The Volkshochschule, for example, offers various courses for adults, including language courses. Studienkolleg Studienkolleg (StudyGroup) (preparatory department in Ukraine) takes care of pre-professional training with the aim of preparing foreign students to study at the university in German. Foreign students can study at a medical university with a B1 level of language proficiency, and at the same time master the language up to B2 or C1 level at language schools (for example, at the F+U Sprachschule language school in Heidelberg) (Welcome to Heidelberg University).

Foreign researchers D. Hymes, (D. Hymes), J. Pride (J. Pride), Holmes (J. Holmes) define communicative competence as the ability to communicate in different situations in the process of interaction with other communication participants, the ability to choose appropriate means language for the communication situation (Hymes, Pride, Holmes, 1972). As noted by I. Renchka (Renchka, 2014), Y. Lukash (Lukash, 2018), the communicative competence of a doctor is manifested in the effective use of the Ukrainian language in various situations of social, educational and professional communication. N. Sura defines this concept as the readiness and ability to master objective, scientific knowledge in professional communication (Sura, 2003).

We enrich the communicative component of the Ukrainian-language professional competence of foreign students of medical specialties with the characteristics proposed by M. Tsurkan. It is about knowledge of medical disciplines, the ability to possess commonly used and professional vocabulary, make an appropriate selection of language means, logical and consistent construction of statements, the ability to listen, as well as tolerance, tact, intelligence, sensitivity, empathy, politeness, friendliness, benevolence, etc. (Tsurkan, 2019).

Taking into account the analysis of scientific research and pedagogical observation, the content of the Ukrainian-language professional competence of foreign students of medical specialties of institutions includes an intercultural component, which is manifested in socio-cultural, sociolinguistic, language-etiquette, language-ethical competences.

The formation of Ukrainian-language professional competence largely depends on the creation of a socio-cultural environment in a higher education institution. We take into account that each foreign student represents a certain country with a specific mentality and a special perception of the world, therefore the intercultural component involves mastering the Ukrainian language through the prism of a sociocultural approach.

The definition of intercultural competence by Z. Bakum and S. Kostiuk is well-argued, which emphasize awareness of value systems, the ability to adapt to the conditions of another culture, joint activities with representatives of other cultures, the need to assess the communicative situation and correlate communicative intentions with the intended choice of strategies. which are used in situations of intercultural contacts (Kostiuk, Bakum, 2017).

The socio-cultural component involves awareness of the national-cultural specificity of language behavior of native speakers, customs, traditions, country knowledge and the ability to use them to achieve the goal of communication. Knowledge of bilingual non-verbal and kinesthetic means of communication, understanding the specifics of one or another religion of students are important (Levenok, 2020). In this context, the use of appropriate didactic material is important in institutions of higher education. Sumy State University, where research and experimental work was carried out, offers a distance course "Ukrainian" for English-speaking foreign students. (authors - Silka A., Kazandzheva M., Konyok O., Bidenko L., Vorona N., Dyadchenko G.), the purpose of which

is to work with the word (for example, generous, towel, embroidered), listening to dialogues, stories about Ukrainian realities, outstanding figures of Ukrainian culture (about Taras Shevchenko, Lesya Ukrainka, Lina Kostenko), the city of Sumy, to help users "polish" orthographic, lexical, intercultural skills.

Sociolinguistic competence, note O. Kostyuk and L. Lushpai, consists in the ability to understand speakers of a foreign language belonging to different social groups, as well as to use the language adequately to the situation and environment (Kostiuk, Lushpai, 2015); it is also defined by researchers as the ability of an individual to choose, in accordance with the context of the situation and communication style, to use and understand language and speech means of foreign language communication with national and cultural specificity (Bigych, Borysko, Boretska, etc., 2013).

Linguistic and etiquette competence is a feature of the tolerant linguistic personality of a medical specialist, "the speech behavior of the linguistically active profession of a doctor" (Degtyarova, 2018), which is manifested, in particular, in the linguistic and etiquette formulas of greeting (Good morning!, Good afternoon!, Good evening!) ; farewells (Goodbye!, Goodbye! requests (Please!); apologies (Forgive (that)!, I apologize!); thanks (Thank you!, Many thanks), wishes ("We wish you success!") in addressing the teacher , dean, rector, doctor, patient, in the use of names and patronymics, personal pronouns you/you/you, in the corresponding gestures. It is especially important for foreign students to master these tools at the initial stage when studying the topics "My city", "My country", "My family", "My family", etc. We agree with I. Radevich-Vynnytskyi that the state of language culture, spiritual values, ethical orientations of society, and the nature of relationships are most clearly and visibly manifested in language etiquette (Radevych-Vynnytskyi, 2001). The assimilation of Ukrainian language and etiquette traditions is facilitated by a

respectful and tolerant atmosphere in the institution of higher education, in the student group, the involvement of foreign students in cross-cultural discussions, reading model texts, watching cultural films about the mental peculiarities of the Ukrainian people.

Let us define the linguistic and ethical component of the Ukrainian-language professional competence of foreign students of medical specialties of higher education institutions. For a future doctor, it is important to be able to observe the rules of professional etiquette in communicating with colleagues, medical workers, and to communicate with patients on the basis of respect and attentiveness. Respect for the profession ("I swear to study the art of medicine..."), professional duty "do no harm to the patient" (non nocere); respect for the personality of the patient - these instructions are formulated in the "Oath" of Hippocrates (460 - 377 BC) (Anthology of pedagogical thought, 1985; Fedorova, 2016). O. Atamanyuk believes that in teaching the key principles of medical ethics and deontology, it is important to focus on modeling "doctor-patient" communication, which is a necessary factor for successful treatment (Atamanyuk, 2013, 89-91). O. Yudina (Yudina, 2004) calls the doctor's attention to a specific patient and the individualization of language influences the basis of effective communication between a doctor and a patient. To educate moral and ethical views of foreign entrants, Ya. Proskurkina, for example, uses texts about the founder of the national school of pathophysiology O. Bogomolets, ophthalmologist V. Filatov, cardiac surgeon M. Amosov, ophthalmic surgeon V. Karavaev, etc. in classes. (Proskurkina, 2014). In the research work, we took into account the author's ideas in conducting master classes.

Program documents on the language and cultural policy of the Council of Europe emphasize the need to stimulate the process of cultural dialogue, to introduce basic knowledge about the culture of different countries into educational programs, etc.

The sociocultural component acts not only as a means of developing the culture of international relations, but also contributes to the formation of personal traits, the development of the moral and spiritual culture of an individual. The inclusion of a socio-cultural component in the content of language learning helps foreign students to adapt to a bilingual and multicultural educational environment, to raise a secondary language personality capable of intercultural communication in everyday and educational and professional spheres, taking into account the customs and traditions of representatives of various ethnic groups.

Textual information is the main source of sociocultural knowledge and effective Ukrainian-language communication of foreign students. As research and experimental work shows, it is appropriate to enrich classes with mini-stories of foreign students on the topic "My university", "Kyiv is the capital of Ukraine", "Interesting about the city in which I study", "I want to be a doctor", "I - foreign student", etc., which relate to adaptation to a foreign-language socio-cultural environment, actual educational and professional communication, future profession.

We fill the socio-cultural environment with workshops, round tables, and cross-cultural discussions. We consider the holding of master classes to be a powerful incentive for more effective involvement of foreign students in the so-called laboratory of an experienced specialist - a teacher of language, professionally oriented disciplines, practical medical workers in order to demonstrate important innovative techniques, learning technologies, professional communication / treatment.

Appropriate master classes with a pediatric surgeon. The participation of foreign students in such master classes allows for a versatile consideration of possible professional situations, stimulates cooperation between a teacher and a student, a student

and a practical medical worker, and forms the features of the master's professional culture (Levenok, 2019).

When attracting foreign students to the socio-cultural educational environment, we take into account their ethno-psychological, national, religious, cultural characteristics, customs, manners of behavior. We consider it expedient to highlight those sociocultural skills that must be formed: the ability to adequately use the means of verbal communication (acquaintances, apologies, expressions of gratitude, etc.); non-verbal communication (gestures, posture, facial expressions, postures), etc.

In practical classes on the Ukrainian language as a foreign language, the intellectual games "Say hello to your native and Ukrainian", "Guess the word" contribute to the establishment of a connection between the native language and Ukrainian. During the game, the foreign student must correlate the concept, image, object described in English with the Ukrainian equivalent (For example, the lexeme "Ukrainian national embroidered shirt or blouse" is associated with the exoticism "Vyshyvanka" (Vyshyvanka)). At the initial stages, in order to form motivation for learning the Ukrainian language during the study of, for example, the topic "Verbs of the Ukrainian language, for example, it is advisable to practice listening to Ukrainian songs with learned verbs.

Extracurricular scientific work contributes to the more active involvement of foreign students in the socio-cultural educational environment in order to ensure effective Ukrainian-language communication. Thus, a round table can be held on the topic of "AIDS Day" in order to activate foreign students to the problems of the disease in the world. At the round table meeting for Mother Language Day, it is advisable to discuss the uniqueness and peculiarities of the languages of the countries that are the homeland of foreign students. Cross-cultural discussions as a creative form of working with students are important for

consolidating already acquired knowledge, fostering the ethics of international communication, understanding cultural differences and respect for other cultures. Cross-cultural discussions with student presentations about the country, customs, and traditions of our people are also organized within conferences with the assistance of the Department of International Education of Sumy State University.

In order to consider the issues of cross-cultural interaction within the profession, to study the psychological characteristics of a doctor's behavior, his stress resistance, it is advisable to conduct such activities jointly with other departments, in particular with the department of pedagogy and psychology. Effective methods of forming the intercultural component of Ukrainian-language competence, attracting foreign students to the socio-cultural educational environment include educational excursions to the local history museum, the university museum, the exposition of which is represented by a significant collection of little-known materials and unique items from the history, life and culture of Sumy Oblast; virtual tours, for example, "Ukraine incognita" (<http://incognita.day.kyiv.ua/muzej-guczulshhini.html>), to the "Museum of the Structure of the Human Body", the National Museum of Folk Art of Hutsul Region and Pokuttia (<https://hutsul.html>). In the classes of the circle for teaching foreign students, we use the educational website "Speak Ukrainian" of the Ministry of Education and Science of Ukraine (<https://speakukraine.net>), which offers numerous dialogue classes, creative exercises for faster mastery of the Ukrainian language. Linguistic studies courses contribute to the activation of the involvement of foreign students in the socio-cultural environment of the university. In particular, the "Ukrainian" course, developed at the Department of Language Training of Sumy State University, where research and experimental work was carried out, covers 8 modules (30 lessons) and is designed for three years of study. An important

role in the adaptation of foreign students to the new socio-cultural environment, the formation of academic culture is played by leaders of foreign students or heads of community councils, who help students of their country adapt to new educational conditions in the new socio-cultural world, as well as teachers and, above all, teacher-mentors, mentors. A teacher-mentor should be an example for foreign students, constantly motivate and maintain interest in the future profession (Levenok, 2017).

An effective means of modeling professional situations is the use of the method of analyzing clinical situations. The essence of the method consists in the development of a model of a certain situation from future professional activity and hospital practice, the solution of which requires professional knowledge and formed skills and practical skills, coordinated collegial cooperation in a professional group. The teacher generates questions, records students' answers, supports the discussion. For example, after watching a certain fragment from the TV series "Doctor on Duty", foreign students reproduce the fragment they saw and model their own solution to the problem: How would you act in this situation? What decision would you make? What would you advise in the hero's place?

Such tasks contribute to overcoming language barriers, understanding language-ethical, language-etiquette norms, the ability to make decisions independently; the completion of tasks is possible if the communicative interaction "foreign student - teacher" is observed. A survey was conducted among foreign students of research and experimental institutions aimed at determining the qualities that a teacher-mentor should possess. 60% of respondents noted that a mentor primarily has thorough knowledge, possesses a high level of communicative culture, the ability to empathize, takes into account the individual characteristics of students, and is a motivator.

In the relationship "foreign student - practical medical worker" an important role is played by industrial practice. Often, as the survey shows, it is difficult for foreign students to communicate verbally during nursing and medical practices. Instead, the intern student should feel in the person of a medical worker that he is his advisor and mentor, who can help, guide, prevent from unprofessional actions, professional negligence, which will generally contribute to the communicative interaction "foreign student - patient".

We come to the conclusion that the Ukrainian-language professional competence of foreign students of medical specialties is a professionally important integrative quality of the personality of future specialists, which combines interrelated components: language-professional, speech-communicative, intercultural. The content is the basis of the structure of the Ukrainian-language professional competence of foreign students

Therefore, we consider the professional training of foreign students of medical specialties as a systematic pedagogical process that takes place taking into account certain principles and factors and is aimed at forming the necessary professional qualities of the personality of future doctors. The analysis of the study of the educational program of the specialty Medicine proves the importance of such competences as the ability to learn and master modern knowledge, to communicate in the state language both orally and in writing, to use professional vocabulary in practical activities; among specialists - the skills of interviewing and clinical examination of the patient. In general, there is a relationship with the disciplines of natural sciences and professional training, which reinforces the need to more clearly distinguish the components of Ukrainian-language professional competence. The state of development of the researched problem was revealed by isolating and analyzing the following interrelated components: international and national

documents regarding the language of instruction for foreign citizens, the study of the Ukrainian language by foreign students; trends in the development of medical education, peculiarities of propaedeutic, professional, Ukrainian-language training of future foreign specialists, including medical specialties, are outlined; socio-cultural, speech-cultural adaptation, intercultural, language-communicative competence of foreign students and the formation of a certain quality within the professional training of future doctors.

On the basis of the analysis of the source base, we ascertain the formation of an interdisciplinary discourse, which allows us to base the research on the provisions regarding the priority of quality training of future foreign specialists in medical specialties in higher education institutions of Ukraine for professional activities that correspond to the principle of humanity, national and world professional standards, and the formation of a harmonious personality capable of intercultural dialogue in the Ukrainian language; clarify the content and structure of the Ukrainian-language professional competence of foreign students of medical specialties, substantiate the theoretical and methodological foundations of the formation of the Ukrainian-language professional competence of foreign students of medical specialties in the process of professional training in institutions of higher education.

10 MANPOWER TRAINING AS AN INSTRUMENT TO BUSINESS EFFECTIVENESS

Employee efficiency and effectiveness are critical to organizational effectiveness. The richness of the workforce's knowledge, skills, and abilities, in turn, depends on the workforce's efficient and effective performance. Workforce training and development is a continuous act/exercise in most organizations. The inexorable march of time, combined with the never-ending glamour of social change, makes adaptability and ongoing workforce preparation as necessary as initial knowledge and skills acquisition. This cannot occur if an enterprise does not provide employee training and development. Every executive, manager, or supervisor in a public or private organization has the responsibility, and indeed the bounding duty, to ensure the development of their employees who have the necessary knowledge and expertise to maximize the organization's productivity and efficiency.

Workforce training and development should be based on a need analysis that compares "actual performance" and behavior to "required performance" and behavior. Human resources training and development is one of the most critical ways organizations invest in their workforce for a higher return today and in the future.

Training is similar to enhancing an existing skill to reflect technological trends and other social-cultural environmental changes in an organization. Productivity is the goal of today's competitive business world, and training can help you get there. The goal is to contribute fully to the organization's welfare, health, and development (Onah, 2015). The primary purpose of training and result in organizations is to increase employee efficiency, leading to increased corporate productivity. This explains why an organization expects a large number of funds and time at one time or to improve the skills of their employees

at various levels. According to Akpan (2019), the primary goal of training is to provide people with the knowledge needed to qualify them for a specific employment position or improve their skills and efficiency in the place they already hold. On the other hand, workforce development entails growth and the acquisition of broad experience for the organization's future strategic advantages.

Workforce training and development, as a result, improve employee effectiveness and efficiency. It is also important to note that any organization with a staff training and development plan is less than dynamic because learning is a continuous process. Acquired skills become obsolete as the environment changes. In addition, a famous saying in the field of human resources is, "If you think training and development are expensive, try ignorance." While training and development benefit organizations, ignorance harms them. As a result, workers, like machines, must be constantly updated or risk becoming obsolete.

The study's findings indicate that training programs must be developed for organizations to see improvements in employee performance. Employees, of course, the most critical assets of an organization, must be consistently trained. Human resources (people) are the most valuable asset in any firm for growth and development, so training and retraining is critical workforce development components. Training and personnel development are actions aimed at improving employee performance in businesses to generate long-term productivity gains. This study concludes that the selection procedure, training design, and training delivery style all impact the outcomes of training programs and, ultimately, employee performance.

Human resources (workforce) are the most critical to any organization's survival, with an adequate supply of materials and financial resources that utilize these available resources to achieve the desired goals.

On the other hand, most organizations plan meticulously for their investment in physical and capital resources, and these plans are received with the utmost attention to detail. In contrast, such organizations rarely pay attention to human investment, which, without it, the capital and equipment will be useless. Many organizations do not recognize the importance of well-defined and ongoing training and development for employees to improve their performance, or they cannot fund training and development programs. The few organizations that consider this critical aspect of the staffing function do so without seriousness, all-around attention, and continuity. The programs are carried out sporadically, but they are also lopsided in content and staff participation. As a result of management's lax attitude toward workforce training and development, there has been a progressive decline in the workforce's ability to deal with the challenges accompanying the organization's ever-changing dispensation.

It was also discovered that the employees lacked the proper attitude toward training because they perceived it to be hectic and stressful. Furthermore, this issue may jeopardize labor turnover.

The main objective of this study will be to determine the impact of workforce training and development on employees' performance in a multinational company. The specific objectives of the study will be to:

- assess the impact of human resource training and development on employee productivity
- explore the effects of human resource training and development on organizational productivity
- investigate the link between human resource training and development and employee skills and knowledge.

The review of related literature on the study's issue is the subject of this chapter. Information from journals, magazines, textbooks, the internet, and other sources is included in the

review. The following sub-headings are covered in detail in the study: Theoretical Framework, Empirical and Academic Review, Types of Training Schemes Available for Employees, Impact of Training on Employee Productivity.

"Training is the systematic development of an individual's knowledge, abilities, and attitudes required to execute a given task or employment properly," says Michael Armstrong. Development is a comprehensive, multi-faceted collection of actions (including training) intended at raising someone or an organization to a higher level of performance, usually in preparation for a new career or function in the future. H.R.D. is a framework for assisting employees in developing their personal and organizational skills, knowledge, and capacities. Employee training, employee career development, performance management and development, coaching, mentoring, succession planning, critical employee identification, tuition aid, and organization development are all examples of human resource development opportunities.

Until recently, there was widespread opposition to multinational corporations investing in training because of the belief that "employees hired under a minute system must be presumed to be qualified, that they were already trained for their jobs, and that if this was not the case, it was evident that initial personnel selection was at fault." As the necessity for training became apparent in both the private and public sectors, this premise was disproved.

Many businesses have realized that training is a practical approach to enhancing skills, improving productivity and work quality, and increasing employee loyalty. They've witnessed firsthand how training develops skills, shifts attitudes evolve ideas, and helps organizations reinvent themselves. Employees create a new corporate culture while learning skills that will help them grow sales, build successful teams, raise quality standards, and achieve various other goals (Babaita, 2020).

Training entails investing in people to help them perform better and empower them to make the best use of their natural abilities for overall productivity and efficiency. If there is an apparent gain in productivity, an organization is considered adequate and efficient (Goldstem and Gillian, 2019). With the impact of rapid technological developments on existing skills and employment, there is a need for ongoing training and retraining. Employees are seen as an indispensable group in the entire office in the labor markets, according to the literature review; thus, the training provided to them is such that it assists an individual in becoming occupationally competent by providing learning experiences that will help him develop skills and ability to make sound decisions.

Several issues (finance, lack of training facilities, staff, etc.) have continued to impede employee training and thus their ideal output (Iwuoha, 2019). Despite the necessity of training being recognized by management experts and the government in white papers on various reforms in Nigeria, the experience of the workforce (staff) training and development in multinational corporations (Okotoni and Erero, 2015) has been more of a farce and waste.

Okotoni and Erero (2015) conducted a study on the topic of "Manpower Training and Development in the Nigerian Public Service" to recognize the experiences of Nigerian public services in terms of workforce training and development to understand better the difficulties they confront. According to the researchers, training and development ensure that organizational members have the information and skills they need to execute their jobs effectively, take on new responsibilities, and adapt to changing conditions. They also discovered that staff training and development in the Nigerian public sector had been a farce and wasted time. They suggested that the government refrain from using quack consultants to train public employees.

Another study, titled "Impact of Training and Development Programmes on Secretaries Productivity in Selected Business Organizations in Owerri," was conducted by Iwuoha (2009) to determine the adequacy of development programs provided to secretaries in Selected Business Organizations in Owerri. The researcher used a survey study design. The study used a basic random selection procedure to select 50 participants, with a questionnaire used for data collection and mean scores used for data analysis. The administration of these organizations provided suitable development programs for the secretaries in seminars, conferences, workshops, etc. The study suggested that secretaries be given paid leave regularly to acquaint them with the most up-to-date abilities thoroughly.

Igwegbe (2019) also conducted a study titled "The Function of Management (Employers) in Human Capital Development," which focused on management's role as labor employers in the development of human capital. If enterprises want to remain relevant in today's world, Igwegbe discovered that human capital development is unavoidable, as is the necessity for the entire workforce to be at home with current information and communication technology (I.C.T.) in line with global trends.

Babaita (2020) aimed to investigate whether productivity is a driving force for investment in training and management development in the banking business in Nigeria in a study titled "Productivity as a Driving Force for Investment in Training and Management Development in the Banking Industry." There were 320 old and new generation banks in the population. We employed simple random sampling techniques. The research included both qualitative and quantitative data analysis. Babita discovered that one of the driving reasons for training and management growth is productivity. He emphasized the importance of managers, senior executives, and all staff receiving training.

The researcher noticed that none of the scholars (researchers) looked at the effects of training and development on employee programs. Instead, they focused on managing and developing human resources in a business. This is the crux of the research.

The responses in an Iwuoha (2019) study were limited in scope in terms of sample size, highlighting the necessity for more comprehensive research on the topic. For example, rather than using a total number of reasonable responders of 100, the researcher used a sample size of 50, which was less than 60% of the whole population.

Furthermore, according to Okotoni and Erero (2015), training and development help to guarantee that organizational members have the information and skills they need to do their jobs well, take on new responsibilities and adapt to business difficulties.

Finally, all of the research examined was tainted in some way. As a result, no scholar known to the researcher has studied the effects of training and development on employee programs. As a result, this is the focus of our study.

The H.R.D. Function, which has been claimed to be a significant part of H.R.M., includes training and development (Weil & Woodall 2005). Training has long been acknowledged as one of the most critical responsibilities within H.R.M., and academic writers have paid close attention to it (see, e.g., Gordon 2019, Beardwell, Holden&Claydon 2018). As a result, there are many different meanings of training. Gordon (2018, 235) describes the training as "the planned and systematic adjustment of behavior through learning events, activities, and programs that results in participants obtaining the levels of knowledge, skills, competencies, and abilities necessary to carry out their work effectively."

It's worth noting that, as experts continue their hunt for answers in the field of training research, they're also arguing about how important it is. According to several of these scholars, the current awareness of the importance of training has been

dramatically affected by the intensification of competition and the tremendous success of firms that prioritize staff development (Beardwell 2020). Beardwell (2019) adds that technology advancements and organizational change have progressively caused some businesses to realize that their success is dependent on their employees' skills and abilities, necessitating a significant and ongoing investment in training and development.

The primary goal of training is to learn and enhance knowledge, skills, and attitudes related to the job. It is one of the most potent potential motivators that can benefit individuals and organizations in both the short and long term. There are a plethora of advantages to training. These advantages are summarized by Cole (2020) as follows:

- Improved morale - personnel who undergo training have more confidence and motivation.
- Lower production costs — activity lowers risks by allowing trained workers to make more efficient and cost-effective materials and equipment, reducing and eliminating waste.
- Reduced turnover - training creates a sense of security in the workplace, minimizing labor turnover and eliminating absenteeism.
- Change management - training aids in the management of change by boosting employee understanding and participation in the process and providing the skills and talents required to adapt to new situations.
- Assist in improving personnel availability and quality by giving appreciation, additional responsibility, and the opportunity of enhanced compensation and promotion.

Training and development needs can occur at three organizational levels, according to Wognum (2011, 408):

- strategic level, where top management determines needs based on the organization's goals, mission, strategy, and problems that must be resolved or corrected.

- tactical level, where conditions are defined with middle management while considering changes in the organization's coordination and cooperation.
- operational level, where demands are defined in collaboration with lower executive management and other employees while considering operational issues such as individual worker and department performance.

It is worth considering providing proper coordination and incorporation of the needs within the three levels to enable an organization to formulate human resource training and development goals that will allow formal and informal human resource training and development methods and programs to create a workforce that will enable effectiveness and competitiveness. The first step is to determine which needs are related to the organization's goals. According to Wognum (2011) and Torrington (2015), there are three types of recognized training and development needs. These include resolving issues, which focuses on worker performance, enhancing specific working practices, focusing on improvement independent of performance issues, and changing or renewing the organization's circumstances; This may occur due to new ideas or a shift in strategy. It is important to remember that while determining training requirements, all processes that contribute to the availability of people with the necessary skills must be created, developed, maintained, and improved. Furthermore, training programs should be tailored to meet a variety of demands. Moreover, the training program, content, and trainees recruited are all determined by the training program's objectives (Milkovic& Bordereau 2013).

There are a variety of training strategies that can be utilized to achieve training. The training method employed is determined by time, cost, effort, the instructor's preference, the number of students, the degree of knowledge required, the trainees' backgrounds, and other factors (Igwegbe, 2019). Although there

are numerous techniques for training, the researcher will focus on the sorts of activities that are most widely employed in today's organizations. On-the-job, skills, retraining, cross-functional, team, creativity, literacy, diversity, crises, and customer service training are some of the topics covered. Orientation/induction courses, in-house training, workshops, seminars, conferences (off-the-job training), and off-the-job pupilage training are among the others, according to Okotoni (2017).

On the other hand, Halim and Ali (2018) divided training into two categories: preservation and in-service training. Pre-service training is more intellectual to them. It is provided by official institutions that follow specific curricula and syllabuses for a set period to award a formal degree or certification. On the other hand, in-service training is provided by the company from time to time to help incumbents improve their skills and knowledge. The researcher will focus on in-service training. Induction/orientation, foundation, maintenance or refresher, and career or development training are examples of in-service training.

1. Off-the-Pupilage Training Programs: officers in the administration, accounts, cooperatives, and engineering departments who have completed their education at accredited higher education institutions. These are long-term education programs.
2. Induction/Orientation Training: this is offered shortly after hiring new extension staff members to introduce them to their new position.
3. Foundation Training: intended for newly hired employees, every staff member needs some professional knowledge of government rules and regulations, financial transactions, administrative competence, communication skills, report writing, leadership ability, and so on.

4. Maintenance/Refresher Training: this keeps specialists, administrators, accountants, supervisors, and frontline workers up to date and allows them to expand on their existing knowledge and skills.
5. Professional or personal growth training is to improve employees' knowledge, skills, and abilities to take on more responsibility in higher positions. This is organized by department.
6. On-the-Job-Training: is ad hoc or regularly scheduled training, such as fortnightly training, for superior officers or subject-matter specialists to subordinate field staff under the training and visit (T&V) extension system.
7. Off-the-Job Training Programs: these are refresher courses for management cadre officers such as administrative officers, accountants, and professionals. The training is usually for a brief period, such as 3-5 days. Regardless of the sort of training provided, the overall goal is to help the company achieve its goals by enhancing the value of its most valuable resource: the people it employs.
8. Formalized training and development programs: a variety of approaches can be employed to build the abilities needed within a company. These courses and programs are typically a series of well-defined and well-understood programs, with the contents, durations, and other pertinent information available to both the business and the employees to be trained. Formal training and programs, unlike informal training and programs, can be prepared ahead of time and evaluated. Employees can enroll in these courses and programs while off work for a set period or while working part-time. These programs can either be on-site (in-house) or off-site (off-site).

Off-the-job training is more effective because employees are not at work and can devote their full attention to exercise.

Trainers may come from within or outside the organization, depending on the knowledge required, structure, and policies.

The success of any training and management development program is determined not by modern facilities, large expenditures on equipment, a large number of administrators on the ground, or a large program budget, but rather by the program's outcome and the development of a team of competent, well-motivated employees capable of dealing with current and future organizational challenges and achieving their desired goal. Basic adult training principles and other prerequisites for achieving learning and transfer success should be familiar to the program's designers and implementers. The following requirements should be met in particular:

- create a conducive environment for managers to apply their new skills and approaches learned in the development program to their jobs. Progress will be ineffective if new ideas and procedures clash with current norms, values, beliefs, and customs (Fleishman, 2017).
- top management support: the program should have full management support and an acceptable budget.
- repetition: employees who require critical abilities and procedures should be trained regularly and again.
- engagement trainees: their active participation in the process may excite them. Long lectures that are likely to dull trainees should be avoided.
- emphasis on objectives and needs: the organization's developmental needs must be specified clearly in the dream. The program should reflect those needs by pointing out the abilities required to perform job responsibilities.
- organization: training should be organized so that the material presented in segments is presented in a logical

order, building on one another. This eliminates the program's gaps, conflicts, and ambiguities.

- prospective motivation: trainees may or may not wish to join in a training program offered to them. They might think it's a waste of time. They should be motivated by informing them of the personal and organizational benefits of the training, such as promotion and enhanced performance.
- collaboration between the three primary stakeholders: for the management development exercise to be successful, a partnership between the organization, the supervisor, and the manager is required. The organization provides the resources and environments, such as paid courses and seminars, and the supervisor raises awareness and encourages managers to participate in the development. On the other hand, the expected targets have enough motivation for the management.
- management development should include all managers: management development should not be limited to supervisory employees but should include all managers in the organization to increase management and executive skills.

Employee performance is usually measured in terms of results. It can, however, be viewed in terms of conduct (Armstrong 2019). Employee performance is judged against the organization's performance standards, according to Kenney (2020). When measuring performance, various factors can be considered, including productivity, efficiency, effectiveness, quality, and profitability (Ahuja 2018); this will be briefly discussed hereafter.

Profitability is defined as the ability to make consistent earnings over a long period. It's calculated as a percentage of gross profit divided by sales or return on invested capital (Wood & Stangster 2019).

Efficiency and effectiveness - efficiency refers to the ability to achieve the required results with the least amount of resources possible, while effectiveness refers to the power of personnel to achieve the intended objectives or target (Stoner 2016). Productivity is defined as output to input (Stoner, 2017). It is a metric for determining how an individual, company, or industry converts input resources into goods and services. Quality is a feature of products or services that demonstrates their capacity to meet expressed or implicit needs (Kotler& Armstrong 2017). It is achieving increasingly better products and services at increasingly lower prices.

According to Draft (2018), it is the job of firm executives to guarantee that their organizations aim for and achieve high-performance levels. As a result, managers must determine the appropriate performance levels for any given period. For example, they can accomplish this by establishing goals and criteria against which individual performance can be judged. Through employee performance management, companies ensure that their employees are contributing to the production of high-quality products and/or services.

This management technique encourages employees to participate in corporate planning by giving them a role in the entire process, motivating them to achieve high-performance levels. It's worth noting that performance management encompasses operations that ensure that organizational objectives are routinely met in a timely and effective manner.

Employees, a department, processes to develop a service, and so on can all be the subject of performance management. According to previous studies on worker productivity, employees who are satisfied with their employees have higher job performance and, hence, superior job retention than those who are dissatisfied with their jobs.

Furthermore, according to Kinicki & Kreitner (2017), happy and pleased employees perform better, and management finds it easy to motivate high performers to meet company goals.

A variety of elements influence organizational growth and development in the actual world. According to current research, employee training plays a critical role in boosting performance and increasing productivity during the development of firms. If there is an apparent gain in productivity, an organization is considered adequate and efficient. Because it shows how efficiently manufacturing inputs are utilized in an economy, productivity might be regarded as the *raison d'être* of management (Bartel, 2019). Successful personnel equipped for positions of higher responsibility must have analytical, human, conceptual, and specific abilities since development is focused more on the employee's personal growth. As a result, business management worldwide is concerned about productivity because it is viewed as a critical measure of efficiency when comparing labor market competitors.

Employee performance is a function of organizational performance, and employee performance influences overall organizational performance. Therefore, the two are linked in some way. Employee competencies evolve as a result of effective training programs, according to Wright & Geroy (2020). As a result, it improves employees' overall performance in their current employment and improves workers' knowledge, abilities, and attitudes in preparation for future jobs, contributing to more excellent organizational performance.

Employee skills are built through training, allowing them to carry out job-related tasks efficiently and competitively meet corporate objectives. Furthermore, discontent complaints, absenteeism, and turnover can be considerably decreased when employees are so taught adequately that they can experience the immediate gratification of a sense of accomplishment and the awareness that they are developing their innate abilities.

The value of productivity in any organization cannot be understated, so the company exposed its staff and event management to achieve optimum output. Total output/total input is a standard definition of productivity. That is the efficiency with which the factors of production are used to create goods and services. When an organization's resources, physical capabilities, and human will are combined, the result is a better product. Organizations should monitor their firm's performance using the following techniques, according to Babaita (2020): employment costs per unit of production and expenses as a ratio of sales value; add value per employee; labor expenses as a proportion of added value, sales value per employee, and so on.

When training is planned, most of the benefits received from it are easily attained. This signifies that the organization, trainers, and trainees have all been thoroughly prepared for the training. According to Kenney and Reid (2016), planned training is an intentional intervention targeted at obtaining the learning required for increased job performance.

According to Kenney and Reid, planned training consists of the following steps:

- determine and establish training requirements
- define the required learning in terms of what skills and knowledge must be acquired and what attitudes must be altered.
- define the training objectives
- create training programs that suit the demands and objectives by combining the appropriate training approaches and places.
- determine who will deliver the training.
- assess the training.
- as needed, modify and extend training.

The other factors affecting employee performance:

1. Management – Subordinate relationship. Planning with the people, rather than for the people, provides a

favorable relationship to performance development as businesses seek flexibility, speed, and ongoing innovation. Employees who are given the freedom to engage in organizational decision-making, for example, are more likely to have mutual trust with management. Mutual trust and cooperation are beneficial in bridging the gap between the two parties. Employees will not resort to strikes or work stoppages unless all other options for settling the disagreement have been exhausted. Employees will be motivated because management views them as partners in the organization's success rather than simply subordinates. Thus, they will refrain from engaging in counterproductive activities, resulting in increased performance through timely fulfillment of organizational goals and objectives (Carrel, Kuzmits & Elbert 2009). Furthermore, (Ichnniowski 2017) claims that innovative human resource management strategies such as the use of technology to boost worker engagement and flexibility in the design of work and the decentralization of managerial tasks and responsibilities improve performance.

2. Working conditions. Although working conditions do not directly impact production or output, they do have an indirect effect. For example, suppose the manual or mental labor involved in specific factory jobs is exhausting. In that case, it will endanger not only company property but also lead to accidents, resulting in incidents such as loss of life. This could hurt the entire workforce's morale. As a result, firms should provide working conditions that do not negatively impact employees, such as giving noise-free workspaces, proper lighting, and appropriate temperatures (Hogber 2019).

Organizations can avoid accidents and maintain high safety records by fostering a positive safety culture that ensures good working conditions and, as a result, improved performance (Newstrom 2018).

3. Reward system. The overall goal of incentive schemes is to attract and retain high-quality employees. When the employee perceives the compensation conditions to be fair and in proportion to their performance development, organizations can employ non-monetary incentives such as transportation fees and incentive systems to improve performance (Armstrong 2016). Furthermore, firms should implement incentive systems that are similar to the industry in which they operate or construct performance-based pay systems to compensate employees based on established performance criteria and profitability targets. Therefore, organizations must build and maintain a sense of justice, equity, and consistency in their pay structures to promote performance (Davar 2016). Employees anticipate that their employers will pay a specific price for their labor.
4. Health unionization. Both management and labor unions should work together to create a healthy work environment and ensure organizational personnel's well-being. When management permits employees to freely join trade unions, unionization improves labor relations. The conditions of workers' employment will be negotiated through collective bargaining processes between management and trade unions. According to Nilsen (2019), industrial peace is a critical factor in a company's performance and growth. Performance is sure to suffer when labor conflicts and strikes beset a company.

To put it another way, to boost overall productivity, unionization should be explored, and industrial disputes should

be avoided by negotiation and conciliation rather than confrontation.

5. Teamwork. This is when two or more people work together to achieve a specific aim or target. Coordination of organizational aims and objectives becomes easier when individuals work together in teams. This will lead to the groups sharing performance goals, which will boost employee morale, eventually leading to increased production. When people operate as a team, they are more likely to communicate openly and have complementary talents, allowing them to accomplish more in a shorter period than when they work alone, resulting in synergy (Daft 2017).

Furthermore, according to Stoner (2016), people in teams often unleash great energy and creativity, which minimizes boredom since groups foster a sense of belonging and connection, increasing employee dignity and self-work. On the other hand, teams have the potential to be productive, but how effective they are is determined by the interaction between management and the working group. As a result of managerial assistance, team performance improves, and overall performance improves.

Manpower development can be thought of as an input, throughput, and output circle system. It involves the man, the job, and the environment all at the same time. These three parts have a connection and are interdependent. Training and development requirements are the inputs, and the outcomes of training and development are the outputs.

Easton was the one who proposed the system theory (1961). A system, according to the systems approach, is made up of interconnected and independent elements that are structured in a way that results in a cohesive whole. Individuals (managers, employees, supervisors, and so on), groups, attitudes, motives, formal structure, relationships, goals, status, and authority are all

considered as interconnected components in a systematic approach. Asaolu and Owojor (2010).

The system approach assumes that a system is made up of pieces that are distinct in some aspects but are linked to form the whole through interactions between the parts and with the outside world. As an open system, the organization cannot live in isolation. It must share energy, knowledge, and skills with its surroundings. Every system has a number of sub-systems or sub-units that are loosely connected. Raw materials, equipment, administrative personnel, working tools, managers, employees, supervisors, and other employees, for example, are loosely tied by the organizational system.

The organization is a set of habitats inside a wider setting. It is critical that the organization's functions be expanded in order to bring it closer to the surrounding environment. Managers, staff, and supervisors, for example, are hired from outside the company, while money is raised either internally or externally. The system theory provides managers with a framework for viewing an organization as a whole and as a component of larger external surroundings. As a result, systems theory holds that the activity of any portion of the organization has an impact on the movement of every other section. A manager's role is to make sure that all components of the company are working together to achieve the organization's goals. As a result, the management must guarantee that human resource and material activities are well-coordinated and represented in terms of staff motivation and training, including employees, so that they can fit into the workplace environment.

Training and development is a collection of activities targeted at increasing the performance of employees in order to achieve continual productivity gains. Because an organization does not exist in a vacuum, it is reliant on its surroundings. People are invested in organizations to help them perform better and to empower them to make the best use of their natural strengths for

the organization's overall effectiveness and efficiency. If there is an apparent gain in productivity, an organization is considered adequate and efficient. Employees are required to perform their tasks to the organization in order to meet the organization's needs and expectations. The job of an organization manager, supervisor, or other leader is to assume that all aspects of the organization are integrated internally so that it is not self-contained. For life-sustaining inputs, they rely on their surroundings.

One explanation for system theory is that it is based on interconnected and interdependent pieces structured in a way that results in a unified whole. Individuals (Managers, supervisors, employees, etc.), groups, attitudes, motives, status, and authority (Ibeaja, 2019) are interconnected to form the whole through the interplay of its component parts and the external environment.

As an open system, the organization cannot exist in isolation; it must share energy, information, and training with its surroundings. According to Okotoni and Erero (2015), who applied system theory to the impact of training and development on employee productivity programs, individuals in any organization remain the most invariable asset for growth and development. Manpower development is incomplete without training and retraining. Manpower development and exercise play a significant, if not decisive, role in supporting equitable economic growth. They help individuals, businesses, the economy, and society as a whole, and they can improve labor market functioning.

The consequences of this theory are that organizations and trainers should keep an eye on labor market changes and needs so that they can rethink, reposition, repackage, and re-engineer their missions, messages, and methodologies to align with changing labor market requirements.

System theory's relevance to this subject is based on ideal manpower training and development, which will undoubtedly result in economic, social, and political growth. Unfortunately, most training programs implemented at all levels of government in Nigeria have failed to generate the desired results, owing to attitudinal issues on the side of the government, organizations, and trainees.

Becker's (1993) model provided the foundation for the belief that training and development is a good investment. The human capital theory focuses on how training and development affect worker efficiency and production by increasing the cognitive inventory of economically productive human capabilities (Olaniyan and Okemakinde, 2008). The human capital theory demonstrates that investing in people benefits both individuals and society as a whole (Sweetland, 2007). Investing in human capital, like investing in physical capital, is critical for increasing individual labor productivity. This improves the labor force's quality and quantity, owing to the fact that a skilled workforce boosts productivity and attracts investment to entrepreneurship. Becker (1993) noted that the essential components of human capital investment are education and training and that the income of a highly educated and trained worker is generally higher than the average wage rate.

The methodology is described as the activities involved in the collection and analysis of all necessary data and information for the research task, whereas research methodology is defined as the systematic and conscious inquiry carried out to offer information for the solution of a problem. The systematic and scientific process of acquiring, recording, and analyzing data about problems and difficulties connected to the distribution of elements or items that occur on the earth's surface, as well as the administration and management of commodities and services, is known as a research methodology. This chapter focuses on the numerous sorts of approaches used to get necessary data. It

covers the steps involved in achieving a research's aims and objectives.

The research design refers to the overall strategy used to carry out the investigation. The surveying method will be used to conduct this investigation. A survey is a method of studying a group of people or goods by collecting and evaluating data from them. Only a small number of people are thought to be representative of the entire group. The critical characteristic of surveying is that it focuses on samples rather than the entire population. There are two types of survey research designs:

- procedure-driven
- purpose-driven

More specifically, the research design is a type of framework that directs the search for research in the process of doing this study with the specific goal of determining the impact of marketing strategy on printing companies.

Basically, there are two methods of data collection used in this research project. These methods are:

- primary data
- secondary data

These are considered firsthand knowledge obtained on a particular object, event, or natural state described as "primary sources data as data provided by witnesses to the study's problem." These are the accounts of those who were present during and witnessed the previous occurrence." The instrument that could be used to collect data for a research work is described below.

A questionnaire is a type of research instrument that has a series of questions that the sample size must answer. It was built to allow people to enter for the reason for which it was created, and it is a combination of structured and unstructured questions. It was made in a way that allows for simplicity, plain language, clarity, and a lack of calculation.

These are frequently obtained through middlemen, who act as a link between the original witness and the current data users. They are statistics provided by people who were not present at the previous event. Questionnaires, Textbooks, periodicals, related kinds of literature, and the internet were employed in this study.

The statistical tools to be implored for this study are both the primary and secondary sources of data collection which involves the administration of questionnaires and secondary data through the use of textbooks, journals and the use of internet.

The use of this tool involves the analysis of the primary data collected. In this same view, the chi-square is used in testing hypotheses as the major statistical tool, and it is the expected frequencies and observed frequencies.

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} \quad (10.1)$$

where:

χ^2 = chi square

f_o = frequency observed

f_e = frequency expected

d_f = degree of freedom $[d_f] = (r - 1)(c - 1)$

r = number of rows

c = number of columns

Σ = summation

Note: tolerance level is 5% or 0.005

Decision rule: Reject null hypothesis (H_0) and accept alternate hypothesis (H_A) if χ^2 calculated is greater than χ^2 tabulated.

The instrument used for data collection for in this study is the questionnaire. A questionnaire is a structured or semi structured instrument, an array of questions to be answered by persons in order to provide information for a specific purpose.

The questionnaire is structured about the research objectives, the research questions and the research hypotheses.

For the purpose of this research, the questionnaire was based on close-ended questions aimed at generating brief and specific answers from the participants. The questionnaire was adopted and modified based on the study. The questionnaire used for this study consists of two sections. Section A, and section B.

Section A: PERSONAL DATA

Table 10.1 – Gender of the respondents

SEX	NO OF RESPONDENTS	PERCENTAGE (%)
Male	24	48
Female	26	52
TOTAL	50	100

Source: Field work 2021

The above table depicts the gender distribution of respondents. Males make up 24 (48%) of the respondents, while females make up 52 percent. This implies that there were more females available than males at the time the research questionnaire was administered.

Table 10.2 – The Age Category

Age Category(Years)	No of Respondents	Percentage (%)
Below 30	21	42
31-40	20	40
41-50	8	16
Above 50	1	2
TOTAL	50	100

Source: Field work 2021

According to the above table, 21 respondents (42 percent) are under the age of 30, 20 respondents (40 percent) are between the

ages of 31 and 40, 8 respondents (16 percent) are between the ages of 41 and 50, and 1 respondent (2 percent) is over 50.

Table 10.3 – Educational Qualification

EDUCATIONAL STATUS	NO OF RESPONDENT	PERCENTAGE (%)
“O” Level	8	16
NCE/OND	20	40
HND/BSc.	22	44
Post Graduate Degree	0	0
Total	50	100

Source: Field work

According to the data above, 8 (16%) of respondents have a secondary school diploma, 20 (40%) have an NCE/HND, 22 (44%) have an HND/BSc, and 0 (0%) have a postgraduate degree.

Table 10.4 – Marital status of respondents

MARITAL STATUS	NO OF RESPONDENTS	PERCENTAGE (%)
Single	24	48
Married	22	44
Divorced	4	8
Total	50	100

Source: Field work 2021

According to the above table, 24 respondents (48 percent) are single, 22 (44 percent) are married, and 4 (8 percent) are divorced.

Table 10.5 – Do the methods used during training have any impact on your skill?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	41	82
No	9	18
TOTAL	50	100

Source: Field work 2021

According to the table above, 41 (82 percent) of respondents agreed that training methods have an impact on their skills, while 9 (18 percent) disagreed.

Table 10.6 – In your opinion, do you think training has helped improve your job performance?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	39	78
No	11	22
TOTAL	50	100

Source: Field work 2021

According to the table above, 39 (78 percent) of respondents believe that training has improved their job performance, while 11 (22 percent) disagree.

Table 10.7 – Would you require further training for motivation towards performance improvement to enable you contribute to increased productivity?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	37	74
No	13	26
TOTAL	50	100

Source: Field work 2021

According to the table above, 37 (74 percent) of respondents believe that additional training for motivation toward performance improvement will enable them to contribute to increased productivity, while 13 (26 percent) disagree.

Table 10.8 – Are the trainings received relevant to your work?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	43	86
No	7	14
TOTAL	50	100

Source: Field work 2021

According to the table above, 43 (86 percent) of respondents believe the training they received is relevant to their work, while 7 (14 percent) believe otherwise.

Table 10.9 – Were you selected for training based on supervisor’s recommendation?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	33	66
No	17	34
TOTAL	50	100

Source: Field work 2021

According to the table above, 33 (66 percent) of respondents believe they were chosen based on the recommendation of their supervisors, while 17 (34) believe otherwise.

Table 10.10 – Does the training received enhance productivity?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	48	96
No	2	4
TOTAL	50	100

Source: Field work 2021

According to the table above, 48 (96 percent) of respondents believe that the training they received increased productivity, while 2 (4 percent) disagree.

Table 10.11 – Does job orientation guarantees improved performance?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	40	80
No	10	20
TOTAL	50	100

Source: Field work 2021

According to the table above, 40 (80 percent) of respondents believe that job orientation guarantees improved performance, while 10 (20 percent) believe otherwise.

The hypotheses stated in the previous chapter of this study will be tested at a 5% (0.05) level of significance, and the degree of freedom is calculated as $(r - 1)(c - 1)$. Where r denotes the number of rows and c denotes the number of columns. This frequency observed (f_o) and frequency expected (f_e) will be used as well.

If χ^2 calculated is greater than χ^2 tabulated, reject the null hypothesis (H_0) and accept the alternate hypothesis (H_1). If χ^2 calculated is less than χ^2 tabulated, accept the null hypothesis (H_0) and reject the alternate hypothesis (H_1).

H_0 : There is no significant relationship between training and performance appraisal

H_1 : There is significant relationship between training and performance appraisal

Table 10.12 – Were you selected for training based on performance appraisal?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	29	58
No	21	42
TOTAL	50	100

Source: Field work 2021

Table 10.13 – Calculations

Response	Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² ÷Fe
Yes	29	25	4	16	0.64
No	21	25	-4	16	0.64
TOTAL	50	50			1.28

χ^2 calculated is 1.28

Degree of freedom = $(r - 1)(c - 1)$

$d_f = (2-1)(2-1)$

$d_f = 1 \times 1$

$d_f = 1$

Hence, at 0.05 level of significance

$\chi^2_t = (1, 0.05)$

$\chi^2_t = 3.841$

From the above analysis, $\chi^2_c < \chi^2_t$ (i.e. $1.28 < 3.841$). Therefore, reject H_1 (i.e. alternate hypothesis). Hence, there is no significant relationship between training and performance appraisal

H_0 : There is no correlation between training and productivity

H_1 : There is correlation between training and productivity

Table 10.14 – Does the training received enhance productivity?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	48	96
No	2	4
TOTAL	50	100

Source: Field work 2021

Table 10.15 – Calculations

Response	Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² ÷Fe
Yes	48	25	23	529	21.16
No	2	25	-23	529	21.6
TOTAL	50	50			42.32

χ^2 calculated is 42.32

Degree of freedom = $(r - 1)(c - 1)$

$d_f = (2-1)(2-1)$

$d_f = 1 \times 1$

$d_f = 1$

Hence, at 0.05 level of significance

$\chi^2_t = (1, 0.05)$

$\chi^2_t = 3.841$

From the above analysis, $\chi^2_c > \chi^2_t$ (i.e. 42.32 > 3.841). Therefore, reject H_0 (i.e. null hypothesis). Hence, there is correlation between training and productivity.

H_0 : There is no significant relationship between job orientation and performance

H_1 : There is significant relationship between job orientation and performance

Table 10.16 – Does job orientation guarantees improved performance?

VARIABLES	NO OF RESPONDENTS	PERCENTAGE (%)
Yes	40	80
No	10	20
TOTAL	50	100

Source: Field work 2021

Table 10.17 – Calculations

Response	Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² ÷Fe
Yes	40	25	15	225	9
No	10	25	-15	225	9
TOTAL	50	50			18

χ^2 calculated is 18

Degree of freedom = (r-1) (c-1)

$d_f = (2-1)(2-1)$

$d_f = 1 \times 1$

$d_f = 1$

Hence, at 0.05 level of significance

$\chi^2_t = (1, 0.05)$

$\chi^2_t = 3.841$

From the above analysis, $\chi^2_c > \chi^2_t$ (i.e. $18 > 3.841$).
Therefore, reject H_0 (i.e. null hypothesis)

Hence, there is significant relationship between job orientation and performance.

Training and retraining are critical components of manpower development since human resources (people) are the most valuable asset in any firm for growth and development. Training and personnel development are a set of actions targeted at increasing employee performance in firms in order to generate continual productivity gains. Employees learn how to use resources appropriately through training and human development, allowing the organization to accomplish its output goals. In order to be marketable in the labor market, employees are expected to perform a number of competencies in their trade. They will be able to contribute most effectively to organizations and national development if they have these labor-market-required skills.

CONCLUSIONS

In the modern world, there is a change in the content of education and approaches to the educational process (in particular, the introduction of innovative approaches to education). Education is no longer interpreted as the achievement of a certain level of knowledge, but is considered from the standpoint of "continuity during life", which aims at the development of the individual, the formation of his spirituality and culture, planetary thinking. Instead of the traditional-classical approach - the routine assimilation of large volumes of standardized information, modern education uses a competence approach - based on mastering the means of continuous independent acquisition of new knowledge, which develops abilities and the ability to adapt to complex, fast-moving and unforeseen situations. In the educational process, more attention is paid to independent work, equal relations between the teacher and the student.

The most important challenge for the educational system of Ukraine at the moment is the fact of martial law and full-scale war with Russia.

According to the international children's fund UNICEF, as of March 24, 2022, more than 1.8 million children under the age of 18 are abroad due to Russia's attack on Ukraine. These children are our children, the future of our country, our potential. Therefore, it is extremely important that every child who was forced to leave Ukraine because of the war continues to get an education in a form convenient for him. The war deprived schools of students, universities - entrants and first-year students who went abroad.

In addition, Ukrainian citizens abroad face various problems that need to be solved, in particular educational ones.

Dual education became a relevant topic for students. Many of them want to study in Ukrainian and foreign universities at the

same time, because students do not give up hope of returning to a peaceful Ukraine.

The Ukrainian education system, despite difficult times, continues to integrate into the European and world education systems, establishing relations with the world's leading universities.

Within the framework of this monograph, many urgent problems and topical topics that require additional research already in peacetime will be covered:

- the importance of socio-economic measurement of the quality of education;
- reforming the higher education system;
- compliance of the educational process with the goals of sustainable development;
- formation of professional language competences for students of medical specialties;
- the importance of training and retraining of human resources.

At any time, education was and is one of the main tools for the reconstruction of the country after the experienced upheavals. Every little problem that is solved now will speed up the reconstruction of the country in the future.

REFERENCES

1. Abashkina, N.V. (1998). Principles of vocational education development in Germany. Kyiv: Higher school, 207 p.
2. Abidin, M. (2015). Higher education quality: perception differences among internal and external stakeholders. *International Education Studies*, 8 (12), 185-192.
3. About some issues of organization of recruitment and training (internship) of foreigners and stateless persons. Order of the Ministry of Education and Science of Ukraine dated November 1, 2013 No. 1541. URL: <https://zakon.rada.gov.ua/laws/show/z2004-13#Text>
4. About the MCAT. Exam. URL: <https://students-residents.aamc.org/applying-medical-school/taking-mcat-exam>
5. About the State National Program "Education" ("Ukraine of the 21st century"): Decree of the Cabinet of Ministers of Ukraine, Program, Activities of November 3, 1993 No. 896. Official web portal of the Verkhovna Rada of Ukraine. URL: <http://zakon5.rada.gov.ua/laws/show/896-93-%D0%BF>
6. Abuja, U., (2019). The economics of human capital development and national growth. *Journal of School of Business and Management Technology*, 1(1): 307-317.
7. Akpomuvire, M. (2017). Human Resource Training and Development for the civil service Nigeria. U.S.A.: Catawba Publishing Company Charlotte.
8. Akpoviro, K. S., Olalekan, A., Alhaji, S. A. (2018). Moderating Influence of Strategic Human Resources Management Practices on Small-Medium Firm Performance. *Business Ethics and Leadership*, 2(4), 99-107. [http://doi.org/10.21272/bel.2\(4\).99-107.2018](http://doi.org/10.21272/bel.2(4).99-107.2018).
9. Almashi I. M. (2015). The UN Universal Declaration of Human Rights as a source of constitutional law of Ukraine. *Scientific Bulletin of the Uzhhorod National University*:

- Series: Law. Uzhhorod: Publishing house "Helvetika".1 (32). 92–97.
10. Amelina, S. M. (2010). Features of the dual system of higher vocational education in educational institutions in Germany. Collection of scientific researcher “Problems of labor and vocational training”. Vol. 15, pp. 107–112
 11. Analytical report on the trends of the organization of distance learning in institutions of vocational pre-higher and higher education in quarantine conditions in the 2020/2021 academic year. URL: [https://sqe.gov.ua/wp-content/uploads/2021/05/ANALITCHNA_DOVIDKA_Opit_uvannya_FPO_ZVO_DSYAO_05.2021 .pdf](https://sqe.gov.ua/wp-content/uploads/2021/05/ANALITCHNA_DOVIDKA_Opit_uvannya_FPO_ZVO_DSYAO_05.2021.pdf)
 12. Anis, A., Abdullah, Z. & Islam R. (2014). Defining quality education in higher learning institutions: divergent views of stakeholders. *International Journal of Arts & Sciences*, 7(1), 375-385.
 13. Annual labor force. OECD data. URL: <https://stats.oecd.org/index.aspx?queryid=27359>
 14. Approbationsordnung für Ärzte. URL: http://www.gesetze-im-internet.de/_appro_2002/BJNR240500002.html
 15. Armstrong, M. (2016). *Personnel Management Practice: Kogan Page H/D Allied Emant Organization Lagos.*
 16. Astakhova, K.V. et al. (2016). The Role of Education in Economic and Social Development of the Country *International Review of Management and Marketing*, 6(S1) 53-58.
 17. Babaita, I.S., (2020). Productivity as a driving force for investment in training and Management development in the banking industry. *European Journal of Social Science*, 13(2): 278-290.
 18. Beardwell, I., Holden, L. & Claydon, T. (2014). *Human Resource Management a Contemporary Approach. 4th Ed. Harlow. Prentice-Hall*

19. Bel'aninova, H. G., Draz, O. M., Tkachev, V. M., & Chala, L. E. (2021). Peculiarities of achieving Sustainable Development Goals in specialized institutions of higher education on the example of the Kharkiv National University of Radio Electronics.
20. Bereza, L. O. (2017). Formation of linguistic and country studies competence of foreign students of technical specialties in the process of learning the Ukrainian language. (Diss. candidate of pedagogic sciences: 13.00.04). Cherkasy
21. Berezhna S., Prokopenko I. (2020). Higher Education Institutions in Ukraine during the Coronavirus, or COVID-19, Outbreak: New Challenges vs New Opportunities Revista Romaneasca pentru Educatie Multidimensionala. 12(1). 130-135.
22. Bondarchuk, N. (2019). The role of public-private partnership in the development of the higher education system. Investments: practice and experience. Vol. 8, pp. 94-98.
23. Briscoe, D.R. (2019). International Human Resource Management. New Jersey: Prentice-Hall.
24. Burchi, F. (2006). Identifying the Role of Education in Socio-Economic Development. International Conference on Human and Economic Resources, Izmir, 193-206.
25. Carrell, R.M., Kuzmits, F.E. & Elbert, N.F. (2019). Personnel: Human Resource Management. Columbus: Merrill Publishing Company.
26. Catalog of educational programs of Sumy State University. URL: <https://op.sumdu.edu.ua/#/>.
27. Common European framework of reference for languages: learning, teaching, assessment. Strasbourg: Language Policy Unit. URL: <https://rm.coe.int/16802fc1bf>
28. Constitution of Ukraine as of January 1, 2020 №27-IX. URL:

- <https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text>
29. Constitution of Ukraine from January 1, 2020 No. 27-IX.
URL:
<https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text>
 30. Convention on recognition of higher education qualifications in the European region. URL:
https://zakon.rada.gov.ua/laws/show/994_308#Text
 31. Convention on the recognition of study courses, higher education diplomas and study degrees in the countries of the European region. URL:
https://zakon.rada.gov.ua/laws/show/995_261#Text
 32. Debrah, Y. A. & Ofori, G (2016). Human Resource Development of Professionals in an Emerging Economy: the Case of the Tanzanian Construction Industry. *International Journal of Human Resource Management* 17,3, 440 – 463.
 33. Dhalival, G. (2009). Teaching Medicine to Non-English Speaking. Background Learners in a Foreign Country, 24(6), 771–773.
 34. DocLab. Wir über uns. URL: <http://www.doc-lab.de/ueber-uns/wir-ueber-uns.html>
 35. Draxler, A. (2014). International Investment in Education for Development: Public Good or Economic Tool? *Education, Learning, Training: Critical Issues for Development*, International Development Policy series, 5, 37–56.
 36. Dudkin, P. & Dudkina, O. (2013). Features of the dual system of higher vocational education in educational institutions in Germany. Socio-economic problems and the state. Vol. 2 (9), pp. 58–66.
 37. Dyrda, I. A. (2019). Development of multicultural competence of foreign students at the main stage of learning the Ukrainian language. (Diss. candidate thesis). Kyiv.

38. Edmond, H. & Noon, M. (2011). A dictionary of human resource management. Oxford University Press.
39. Education is under threat. Ministry of Education and Science of Ukraine. URL: <https://saveschools.in.ua/>
40. Education of Ukraine under martial law. Informational and analytical collection. Ministry of Education and Science of Ukraine. URL: https://iea.gov.ua/wp-content/uploads/2022/08/education-of-ukraine_2022.pdf
41. Employment rates by place of birth and educational attainment. OECD data. URL: https://stats.oecd.org/Index.aspx?DataSetCode=MIG_EMP_EDUCATION
42. Evans, P., Pucik V. & Barsoux J-L (2012). The Global Challenge: Framework for International Human Resource Management. Boston: McGraw-Hill.
43. Figueiró P.S. & E. Raufflet (2015). Sustainability in higher education: A systematic review with focus on management education J. Clean. Prod., 106, 22-23.
44. Gadomska, A. (2017). Methodology of speech and cultural adaptation of foreign students by means of creolized advertising texts. (Diss. candidate of pedagogic sciences: 13.00.02). Odesa.
45. Gideline of UI GreenMetric Guidelines 2021/ URL: <https://greenmetric.ui.ac.id/publications/guidelines>
46. Gonzalez, J., Wagenaar, R. (2008). Universities' contribution to the Bologna Process. Spain: Publicaciones de la Universidad de Deusto, 16-17.
47. Gross fixed capital formation. World Bank data. URL: <https://data.worldbank.org/indicator/NE.GDI.FTOT.CD>
48. Guest, D. E. (2017). Human resource management and industrial relations. Journal of Management Studies 24,5, 503–521.

49. Halim, A. and M.M. Ali, (2018). Administration and management of training programs in Bangladesh. *Journal of Training and Development*, 1(2): 1-9.
50. Hanushek, E.A. & Woessmann, L. (2007). *The Role Of Education Quality For Economic Growth*. Policy Research Working Papers, February 2007.
51. Harvey, M. (2018). Human Resource Management in Africa: Alice's Adventures in Wonderland. *International Journal of Human Resource Management*. 13,7, 1119 – 1145.
52. Harvey, M., Myers, M. & Novicevic, M. M. (2012). The Role of M.N.C.s in Balancing the Human Capital "Books" between African and Developed Countries. *International Journal of Human Resource Management*. 13,7, 1060 – 1076.
53. Hendry, C. (2014). *Human Resource Strategies for International Growth*. London: Routledge.
54. Higher education development strategy in Ukraine for 2021-2031, (2020). Kyiv: Ministry of Education and Science of Ukraine, 71.
55. Hoekje, B., Tipton, S. (2011). *English Language and the Medical Profession: Instructing and Assessing the Communication Skills of International Physicians*. Emerald Group Publishing Limited.
56. How are Ukrainian schoolchildren taught abroad? Observatory URL: <https://osvitoria.media/opinions/yak-navchayut-ukrayinskyh-shkolyariv-za-kordonom/>
57. How educational losses will affect the economy of Ukraine. Educational Ombudsman of Ukraine. URL: <https://eo.gov.ua/yak-osvitni-vraty-vplynut-na-ekonomiku-ukrainy/2022/06/10/>
58. Hromovyk, B.P., Unhurian, L.M. (2013). The role of pharmacy professionals in terms of social pharmacy. *Current issues of pharmaceutical and medical science and practice*, 3(13), 126-128.

59. Hryhorash O., Bocharov, D., Bondar, A., Zhuravka, O., Mordan, Ye & Teslenko T. The efficiency of individual and public spending on higher education in OECD countries and in Ukraine. *Financial and Credit Activity Problems of Theory and Practice*, 5(46), 453–462. URL: <https://doi.org/10.55643/fcaptop.5.46.2022.3909>.
60. Hymes, D., Pride, J. B., Holmes, J. (Eds.). (1972). *On Communicative Competence*. New York : Harmonds worth : Penguin. (pp. 269-293).
61. Issues of management of state institutions of professional (vocational and technical) education subordinated to the Ministry of Education and Science: Order of the Cabinet of Ministers of Ukraine of October 23, 2019. №994-2019. URL: <https://zakon.rada.gov.ua/laws/show/831-2017-%D1%80#Text>
62. Ivanova, N., Kuznetsova, T., Khoma, I. (2019). Modern trends in higher education funding. *Modern science - Moderni veda* 3, 44 – 54. URL: http://ekmair.ukma.edu.ua/bitstream/handle/123456789/17313/Ivanova_Modern_trends_in_higher_education_funding.pdf?sequence=1&isAllowed=y.
63. Iwuoha, C.C., (2019). Impact of Training and Development Programmes on Secretaries' Productivity in Selected Business Organizations in Owerri, Imo State, Nigeria. *Journal of School of Business and Management and Technology*, 1(1): 106-110.
64. Jackson, T. (2012). Reframing human resource management in Africa: a cross-cultural perspective. *International Journal of Human Resource Management* 13,7, 998–1018.
65. Kamoche, K. (2012). Introduction: Human Resource Management in Africa. *International Journal of Human Resource Management*. 13,7, 993–997.

66. Karaoulanis, A. (2018). Strategic Transformation and Innovation towards Blue Ocean Creation in a Changing Corporate Reality. *Business Ethics and Leadership*, 2(2), 49-55. DOI: 10.21272/bel.2(2).49-55.2018.
67. Khilchevska, I., Halmuradova, O., Kholodko, A., & Kholodko, I. (2020). The role of Ukrainian students in ensuring the Sustainable Development Goals of Ukraine. *Collection of scientific papers ΛΟΓΟΣ*, 92-95.
68. Kinicki, A. & Kreitner, R. (2017) *Organizational Behavior*, New York. McGraw-Hill.
69. Kostyuk, S. S., Bakum, Z. P. (2017). Approaches to the formation of intercultural communication competencies of foreign students. *Scientific notes of Berdyan State Pedagogical University. Pedagogical Sciences Series*, Vol. 2, 156–162.
70. Kotvits'ka, A. A., Surikova, I. O., Havrysh, N. B. Research of implementation of the code of ethics of pharmaceutical workers of ukraine in practical activity. *Social pharmacy in healthcare*, 1(1), 45-52.
71. Kovalko N. (2018). Education funding models: which is our? *Obozrevatel*. URL: <https://news.obozrevatel.com/society/modeli-finansuvannya-osviti-yaka-e-dijsno-nashoyu.htm>
72. Kraak, A. (2015). Human Resources Development and the Skills Crisis in South Africa: the Need for Multi-pronged Strategy. *Journal of Education and Work* 18,1, 57–83.
73. Labanauskis, R. & Ginevičius, R. (2017). Role of stakeholders leading to development of higher education services. *Engineering Management in Production and Services*, 9(3), 63-75.
74. Lantero, L. et. al. (2022). Guidelines on fast-track recognition of Ukrainian Academic Qualifications.

75. Law of Ukraine about complete general secondary education from October 2, 2010. №1709-IX. URL: <https://zakon.rada.gov.ua/laws/show/463-20#Text>
76. Law of Ukraine about extracurricular education: from May 22, 2021.
77. Law of Ukraine about local state administrations from August 1, 2021. № 1702-IX. URL: <https://zakon.rada.gov.ua/laws/show/586-14#Text>
78. Law of Ukraine about preschool education from January 1, 2021. №978-IX. URL: <https://zakon.rada.gov.ua/laws/show/2628-14#Text>
79. Law of Ukraine about professional (vocational and technical education) from 01.07.2022 №103/98-BP. URL: <https://zakon.rada.gov.ua/laws/show/103/98-%D0%B2%D1%80#Text>
80. Law of Ukraine about service in local self-government bodies from August 1, 2021. № 1638-IX. URL: <https://zakon.rada.gov.ua/laws/show/2493-14#Text>
81. Law of Ukraine About the civil service from November 10, 2021. № 1810-IX. URL: <https://zakon.rada.gov.ua/laws/show/889-19#Text>
82. Law of Ukraine on education: dated November 11, 2021. № 1838-IX. URL: <https://zakon.rada.gov.ua/laws/show/2145-19#Text>
83. Law of Ukraine on education: dated November 11, 2021. No. 1838-IX. URL: <https://zakon.rada.gov.ua/laws/show/2145-19#Text>
84. Law of Ukraine on higher education dated November 21, 2021. №1556-VII. URL: <https://zakon.rada.gov.ua/laws/show/1556-18#Text>
85. Law of Ukraine on local self-government in Ukraine from 05/21/1997. № 280/97-BP. URL: <https://ips.ligazakon.net/document/Z970280?an=916473>

86. Law of Ukraine on the voluntary association of territorial communities from May 14, 2020. № 1838-IX. URL: <https://zakon.rada.gov.ua/laws/show/157-19#Text>
87. Leal Filho, W. et al. (2018). The role of transformation in learning and education for sustainability. *J. Clean. Prod.*, 199, 286-295
88. Levenok I.S., Sydorenko O.P. (2022). Integrating E-learning in Ukrainian language teaching for international students at higher education institutions. *Innovative pedagogy*. 45. p. 275
89. Levenok, I. S. (2017). The sociocultural aspect of the formation of the secondary language personality of a foreign medical student. The native word in the ethnocultural dimension, 417–423.
90. Levenok, I. S. (2018). Foreign professional language teaching experience of international medical students (on the example of the USA). International scientific and practical conference «Pedagogy in EU countries and Ukraine at the modern stage»: Conference proceedings, December 21–22, Baia Mare: Izdevnieciba «BaltijaPublishing», 72-74.
91. Levenok, I. S. (2019). Pedagogical conditions for the formation of Ukrainian-language professional competence of foreign students of medical specialties. *Innovative pedagogy*, 16. P.1, 98–105.
92. Levenok, I. S. (2020). Ukrainian-language professional competence of foreign students of medical specialties: components, criteria, indicators, diagnostics. *Science and Education a New Dimension*, VIII (92), Issue: 228, 23–26.
93. Levenok, I. S., Semenog, O. M., (2020). The professional language competence of foreign students of medical specialties: content, forms, methods of formation at higher educational establishments. *Vectors of development of modern pedagogical and of psychological science in Ukraine*

- and EU countries (P.2, pp. 389–408). Riga: Izdevniecība «Baltija Publishing».
94. Lives on Hold: Intentions and Perspectives of Refugees from Ukraine. United Nations High Commissioner for Refugees, September 2022. URL: <https://data.unhcr.org/en/documents/download/95767>
 95. Loicano, A., Iamartino, G. Kim S. Grego (2011). Teaching Medical English: Methods and Models. Polimetrica International Scientific Publisher, Monza, Italy. 8. 22.
 96. Lutsak, S. M., Krynytska, O. I., Dykan, O. V. and others (2016). Ukrainian language as a foreign language" for the training of English-speaking students in higher educational institutions of the Ministry of Health of Ukraine; fields of knowledge 22 "Health care": Kyiv.
 97. Lyashenko, O. M. (2020). Sustainable development of higher education institutions: local informational and communicative aspects. Academic notes of the University "KROK", (2 (58)), 97-102.
 98. Md Yusuf Hossein Khan (2018). Strategic Human Resource Practices and its Impact on Performance towards Achieving Organizational Goals. Business Ethics and Leadership, 2(2), 66-73. DOI: 10.21272/bel.2(2).66-73.2018.
 99. Melnychuk, I. (2020). Peculiarities of creating interactive educational environment in vocational training of future medical specialists. Medical Education. № 2. 87–91.
 100. Meshchaninov, O. P. (2012). Sustainable development of university education: balance between global and regional challenges. Scientific works. Ser.: Pedagogy, (188, Issue 176), 5-10.
 101. Methodological recommendations for calculating the level of economic security of Ukraine. Official website of the Ministry of Economic Development and Trade of Ukraine. URL:

- http://me.kmu.gov.ua/control/uk/publish/article?art_id=97980&cat_id=38738
102. Muthanna A., Almahfali M. & Haider A. (2022). The Interaction of War Impacts on Education: Experiences of School Teachers and Leaders. *Educ. Sci.* 12, 719. <https://doi.org/10.3390/educsci12100719>
 103. Nestorenko T. & Pokusa P. (2020). Education during a pandemic crisis: problems and prospects. Monograph. Opole: The Academy of Management and Administration in Opole. 296.
 104. №1414-IX. URL: <https://zakon.rada.gov.ua/laws/show/1841-14#Text>
 105. OECD. (2019). Relative shares of public, private and international expenditure on educational institutions. OECD Publishing. URL: <https://stats.oecd.org/index.aspx?queryid=93063>
 106. Official website of the National Bank of Ukraine. URL: <https://bank.gov.ua/ua/supervision/about>
 107. Okolona, M.O., (2017). Personnel development in the Nigerian federal civil service, with reference to Oyo and Kwara States unpublished Ph.D. thesis, Obafemi 991-19 wallow University, Ile-Ife.
 108. Okotoni, O. and J. Erero, (2015). Manpower Training and Development in the Nigerian Public Service. *AJPAM*, xvi(1): 1-13.
 109. Oleksenko, R. I., & Voronkova, V. G. (2020). Education for the sustainable development of civilization in the conditions of continuous structural changes and challenges.
 110. On approval of the Concept of development of the pharmaceutical sector of the healthcare sector of Ukraine for 2011-2020, 769 (2009). URL: <https://zakon.rada.gov.ua/rada/show/v0769282-10#Text>

111. On higher education: Law of Ukraine dated July 1, 2014 No. 1556-VII. URL: <http://zakon1.rada.gov.ua/laws/show/1556-18/page>.
112. Onyshchenko S. et. al. (2021). Risks and Threats to Economic Security of Enterprises in the Construction Industry Under Pandemic Conditions. *Lecture Notes in Civil Engineering*. Vol. 181. P. 711-724. DOI: https://doi.org/10.1007/978%2D3%2D030%2D85043%2D2_66
113. Onyshchenko, S. & Masliy, A. (2017). Organizational and Economic Mechanism of Prevention the Threats to Budget Security of Ukrainian Economy. *Scientific bulletin of Polissia*. № 1 (9), P. 1. P. 176–184.
114. Onyshchenko, S. (2017). Budget security of Ukraine: essence, threats and ways of ensuring it: monograph. K.: Knowledge of Ukraine, 450 p.
115. Ostapenko, V. M. (2020). Education for sustainable development in the conditions of the COVID-19 pandemic (Doctoral dissertation, SNU named after V. Dal).
116. Owojor, A.A. and T.O. Asaolu, (2020). Critical Evaluation of Personnel Management Problems in the Nigerian School System. *Int. J. Educ*, 2(1): 1-11.
117. Ozturk, I. (2001). The role of education in economic development: a theoretical perspective. MPRA, paper 9023.
118. Pharmaceuticals of Ukraine (2020). Kyiv: Darnytsia, 40 s.
119. Pogatsnik, M. (2018). Dual Education: The Win-Win Model of Collaboration between Universities and Industry. *International Journal of Engineering Pedagogy*, 8(3), 145–152. URL: <https://www.learntechlib.org/p/207436/>
120. Pranevičienė, B., & Pūraitė, A. (2010). The financing methods of higher education system. *Jurisprudence*, 4(122), 335-356.

121. Public spending on education. Tertiary. OECD data. URL: <https://data.oecd.org/eduresource/public-spending-on-education.htm#indicator-chart>.
122. Quality Education as a Sustainable Development Goal in the Context of 2030 Agenda: Bibliometric Approach, July 2020 Sustainability 12(15):5884 DOI:10.3390/su12155884
123. Raievnieva O., Aksonova I. & Ostapenko V. (2018). Comparative analysis and generalization of the experience of partnership between higher education institutions and the business environment. Problems of the economy. Vol. 8, pp. 94-98.
124. Ranft, A. and M. Lord, (2010). Acquiring new knowledge: The role of retaining human capital in acquisitions of high-tech firms. Journal of High Technology Management Research, 11(2): 295-319.
125. Real interest rate. World Bank data. URL: <https://data.worldbank.org/indicator/FR.INR.RINR>
126. Recommendation 2006/962/EU of the European Parliament and the Council (EU) "On basic competences for lifelong learning" dated 18.12.2006. URL: https://zakon.rada.gov.ua/laws/show/994_975#Text
127. Regarding the introduction of a pilot project in institutions of vocational pre-higher and higher education for the training of specialists for a dual form of education: Order of the Ministry of Education and Science of Ukraine from 15.10.2019. No. 1296/
URL: <https://mon.gov.ua/ua/npa/shodo-zaprovadzhennya-pilotnogo-proektu-u-zakladahfahovoyieredvishoyi-tavishoyi-osviti-z-pidgotovki-fahivciv-za-dualnoyu-formoyu-zdobuttya-osviti>
128. Regulation "On the procedure for organizing and conducting dual education at the National University "Chernihiv Polytechnic". URL: <https://stu.cn.ua/wp-content/stu-media/normobaza/normdoc/norm->

- osvitproces/poloz-pro-poryadok-organizacziyi-ta-provedennya-dualnogo-navchannya.pdf
- 129.Regulations on the organization of the educational process at Sumy State University. (2021). Sumy State University. URL:
<http://normative.sumdu.edu.ua/index.php?task=getfile&tmpl=component&id=d8ae04b7-0a39-e611-b47a-001a4be6d04a&kind=1>
- 130.Regulations on the quality assurance system of higher education of Sumy State University. (2021). Sumy State University. URL:
<https://normative.sumdu.edu.ua/index.php?task=getfile&tmpl=component&id=8ace6554-1539-e611-b47a-001a4be6d04a&kind=1>
- 131.Reva, T. (2016). Theoretical concepts of competence approach in pharmaceutical education. Continuous professional education: theory and practice, 1-2(46-47), 127-131.
- 132.Rome Ministerial Communiqué NOVEMBER 19, 2020 URL:
http://www.ehea.info/Upload/Rome_Ministerial_Communiq_ué.pdf.
- 133.Salvioni, et al. (2017). Sustainability in the higher education system: An opportunity to improve quality and image. Sustainability, 9, 914.
- 134.Savga, L., Krykliy, O. & Kyrychenko, K. (2018). The Role of Internal and External Stakeholders in Higher Education System in Ukraine. Business Ethics and Leadership, 2(1), 32-43.
- 135.Saxena, S. How to Involve Various Educational Stakeholders in Education Improvement? URL:
<https://edtechreview.in/trends-insights/insights/894-how-to-involve-various-educational-stakeholders-in-education-improvement>

- 136.Semenog, O. M., Levenok, I. S. (2019) Intercultural approach to forming the linguistic competence of foreign medical students: world and Ukrainian contexts. A. Kordonska, R. Kordonski, (red.). Społeczność międzynarodowa w obliczu przemian: ujęcie wieloaspektowe (Tom 1, 287–307). Lwów–Olsztyn: Lwowski Uniwersytet Narodowy im. Iwana Franki.
- 137.Semenova N.V. (2021). Organization of the work of education management bodies at the local level (on the example of the Department of Education and Science of the Sumy Regional State Administration): work on obtaining a master's degree: special. 281 - public management and administration. Sumy: Sumy State University. 44.
- 138.Sergienko, T. (2019). The influence of modern education on the sustainable development of society. Humanitarian Bulletin of Zaporizhzhya State Engineering Academy, 150-152.
- 139.Silverman, J., Kurtz, S., Draper, J. (2006) Skills for communication with patients (2nd and) Ann R Coll Surg Engl, 88, 84–88.
- 140.Slipchuk, V.L. (2015). Contents of professional training of specialists in the pharmaceutical industry of Ukraine in the conditions of European integration. Scientific notes of Vinnytsia State Pedagogical University named after Mykhailo Kotsyubynsky, 43, 306-312.
- 141.Sobiechowska, P. & Maisch (2006). Work-based learning: in search of an effective model. Educational Action Research. M. Vol. 14/2. p. 267–268.
- 142.Spiel, C. et al (2018). The contribution of education to social progress. International Panel on Social Progress. Rethinking Society for the 21st Century: Report of the International Panel for Social Progress, 753-778.

143. Standard of higher education in Ukraine in the field of knowledge 22 «Health» specialty 226 «Pharmacy» (2018). Kyiv: Ministerstvo osvity i nauky Ukrainy, 32.
144. Standards and recommendations for quality assurance in the European Higher Education Area (2006). Kyiv: Lenvit, 35.
145. State service of quality of education. URL: <https://sqe.gov.ua/>
146. State Statistics Service of Ukraine. Available at: <http://www.ukrstat.gov.ua>
147. Studium und Lehre an der Medizinischen Fakultät der Eberhard Karls Universität Tübingen. URL: <https://www.medizin.uni-tuebingen.de/de/medizinische-fakultaet/studium-und-lehre/studiengaenge/humanmedizin/vorklinik>
148. Summary staff list for 2021 Sumy State University. URL: <https://sumdu.edu.ua/images/content/general/Staff/staff-base-2021.pdf>
149. Sumy University provides equal opportunities for women and men. URL: <https://gendercenter.sumdu.edu.ua/index.php/news/432-sumdu-nadaie-rivni-mozhlyvosti-dlia-zhinok-ta-cholovikiv>
150. Sura, N. A. (2003). Foreign language professional competence: the main principles and components of the process of learning professionally oriented communication. Bulletin of the Luhansk State Pedagogical University named after T. G. Shevchenko, 4 (60), 190–192.
151. Sustainable Development Goals: Ukraine 2017 National Baseline Report ministry of Economic Development and Trade of Ukraine. URL: <https://zakon.rada.gov.ua/laws/show/722/2019?lang=en>
152. The impact of COVID-19 in the migration area in EU and OECD countries (2021). European Website on Integration. URL: <https://www.oecd.org/migration/mig/00-eu-emn-covid19-umbrella-inform-en.pdf>.

153. The issue of management of separate categories of state-owned educational institutions belonging to the sphere of management of the Ministry of Education and Science: Order of the Cabinet of Ministers of Ukraine of December 11, 2019. No. 1412-2019. URL: <https://zakon.rada.gov.ua/laws/show/1412-2019-%D1%80#Text>
154. The Sustainable Development Goals in Higher and Further Education. URL: https://static.onlinesurveys.ac.uk/media/account/114/survey/561422/question/gga_case_studies_resources.pdf
155. Times Higher Education World University Ranking (2021). URL: <https://www.timeshighereducation.com/>
156. Tiutiunyk, I., Zolkover, A., Maslov, V., Vynnychenko, N., Samedova, M., Beshley, Y., & Kovalenko, O. (2020). Indices of innovation activity as components of macroeconomic stability assessment: how does the shadowing of investment flows affect? *Marketing and Management of Innovations*, 4, 26-40. <http://doi.org/10.21272/mmi.2020.4-02>.
157. Total economic losses incurred during the war amount to \$564-600 billion. URL: <https://mind.ua/news/20242128-zagalna-suma-pryamih-zbitkiv-infrastrukturi-cherez-agresiyu-rf-vzhe-perevishchue-1055-mlrd-kseinstitu>
158. Tsurkan, M. (2019) Professional and communicative competence of a foreign medical student, *Scientific notes of the BSPU*, Vol. 3, 51-56. URL: <https://pedagogy.bdpu.org/wp-content/uploads/2019/12/45.pdf>
159. UNESCO, 2020. *Global education monitoring report 2020: Inclusion and education: All means all*. United Nations Educational, Scientific and Cultural Organization, Paris.
160. United Nations Global Compact (2021). *Principles for Responsible Management Education*. URL:

- <https://www.unglobalcompact.org/take-action/action/management-education>
161. United Nations The millennium development goals report. Department of economic and social affairs of the United Nations secretariat, New York (2015)
 162. Usoro, E.B., (2020). Developing Human Resources in Tertiary Business Education for Youth Empowerment and National Development in Nigeria Review of Higher Education in Africa. 2(1): 1-7.
 163. Villarreal, P., & Ruby, A. (2018). Government Models for Financing Higher Education in a Global Context: Lessons from the US and UK. Philadelphia, PA: Alliance for Higher Education and Democracy (Penn AHEAD), University of Pennsylvania Graduate School of Education.
 164. Volkova, N. P. (2007). Pedagogy: study guide. Kyiv: "Akademvydav", 615.
 165. Ward J. D., Pisacreta E. D., Weintraut B. Kurzweil M. (2020). An Overview of State Higher Education Funding Approaches. ITHAKA S+R. URL: <https://sr.ithaka.org/wp-content/uploads/2020/12/SR-Issue-Brief-Overview-of-State-Higher-Education-Funding-Approaches-121020.pdf>
 166. Wearn, A., Bhoopatkar, H. (2006). Evaluation of consent for peer physical examination: students reflect on their clinical skills learning experience. Medical Education, Volume 40, Issue 10, 957–964.
 167. Wernidub O. M. (2021). Management of institutions of higher education in the conditions of a pandemic (on the example of Sumy State University): work on obtaining the master's qualification level: special. 281-public management and administration (civil service). Sumy: Sumy State University. 49.
 168. Weston, C., Ferris, J. & Finkelstein, A. (2017). Leading change: an organizational development role for educational

- developers international. *Journal of Teaching and Learning in Higher Education*, 29(2), 270-280.
169. When the war is over: necessary steps for the economic recovery of Ukraine. URL: https://lb-ua.translate.google.com/blog/ievhen_stepaniuk/509330_when_war_over_neobhidni_kroki_z.html
170. World Bank data. URL: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart>
171. Xing, Zhefu. (2015). Pedagogical support for the adaptation of foreign students to study in higher educational institutions of Ukraine. (Author's thesis of candidate of pedagogic sciences: 5.00.05). Starobilsk
172. Yakovchyk, O. (2019). Prospects for the development of the dual system of obtaining higher education in Ukraine. *Youth and market*. Vol. 2, pp. 111-116.
173. Yovova G. (2020). Inform #2 – Impact of COVID-19 on international students in EU and OECD member states European Website on Integration. URL: https://ec.europa.eu/migrant-integration/library-document/inform-2-impact-covid-19-international-students-eu-and-oecd-member-states_en
174. Zabolotna, O., Gut, N. (2018) Learning the language of instruction in Ukraine: international students' attitudes. *Advanced education*, s.l., p. 48-54
175. Zatonatska, T., Rozhko, O., Lyutyty, I., Tkachenko, N and Anisimova, O. (2019). Global Practices of Higher Education Financing: Approaches and Models. *Khazar Journal of Humanities and Social Sciences*. Vol. 22; № 4. URL: <https://jhss-khazar.org/wp-content/uploads/2020/02/Global-Practices-of-Higher-Education-Financing-Approaches-and-Models.pdf>.

176.Orlova, N., Kharlamova, A. (2014). Responsible investing in conditions of the global economy sustainable development. The Economic Annals-XXI, 3-4(1), pp.4-7.

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