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ADAPTATION OF EDUCATION SYSTEM OF UKRAINE IN GLOBAL INFORMATIZATION CONDITIONS

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The problem of adaptation of higher education in Ukraine to the modern needs of the information society (knowledge society) is actual at this stage of the information society development. An alternative approach to choosing the strategies of Ukrainian higher education to the modern needs of the «knowledge society» has not been considered before. The purpose of our research is to choose the alternative strategies corresponding to this stage of information society development as an integral indicator – the vector of the dominant factors in adaptation of higher education in Ukraine to the modern needs of the «knowledge society». According to this problem, the integral indicator of human potential development is considered, one of the main characteristics of which are education levels and literacy. We find out the priorities of leading influences on it the indicators of education cost, education quality, the number of Internet users and users of mobile communication using the method of analysis of hierarchies. The hierarchical model with the purpose of obtaining priority criteria and finding alternative solutions that could be the basis for developing scenarios of Ukrainian higher education adaptation to the modern needs of the information society (knowledge society) has been constructed in the research. The alternative assessments, corresponding to this stage of the information society development, confirm the important influence of the quality of education and the use of Internet technologies in the educational process on the results of the adaptation of Ukrainian higher education to the modern needs of the «knowledge society».

Keywords: *higher education; information society; knowledge society; information and communication technologies; ICT development index; informatization of education; method of analysis of hierarchies.*

Introduction

Formation of conceptual approaches to professional training of future specialists is an actual task of the philosophy of education of the XXI century. The educational process of the 21st century is a dynamic system that develops under the influence of evolutionary changes of world guideline of globalization, integration, and information society. Scientists define the modern society as a kind of post-industrial one, which obtains the characteristics of the information society in all spheres of vital activity and gradually transformed into the higher stage of its development – «knowledge society». At formation and development stages of the information society (knowledge society), which is characterized by global informatization, the knowledge increasing, adhocratic features and diversity, the social product is designed based on knowledge. Information is a resource and result of labor, processes of acceleration of changes, de-massification are occurred. Outstanding native scientist R. Gurevich emphasizes – «informatization is caused by social reasons and in the process of its development is one of the dominant factors of social development» [1, p. 6].

In the process of Ukraine's entry into the world economic space, knowledge of information and communication technologies becomes a more significant factor in all sectors of the national



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economy. The requirements for computer competence of the employees of all economic sectors are increasing. The reasons for such a rapid increase of the requirements for information technology knowledge is a qualitative and quantitative extension of computer technology in enterprises and organizations, the development of easy-to-use software, Internet development, increasing number of users etc. Today, specialists are trying to learn not only the native technologies, but also the experience gained by other countries; there is an exchange of advanced technologies, their integration. Therefore, one of the most important tasks of education is the formation of a modern scientific approach to the information culture formation of future specialists in the use of information and communication technologies (ICT) in the professional training of specialists, and in particular, further self-perfection.

American sociologist and futurist, A. Toffler, in his papers on the transition of humanity to an information or post-industrial society as a result of technological revolution, pointed to the development of a sub-industrial civilization and predicted the future, he developed the several models. In the work «The Third Wave. From the industrial society to humane civilization» (1980) he points to the successive change of waves and the change in the industrial wave of civilization on the wave of computers, communications and the approval of superindustrialism [2]. F. Marton noted: «In order to become capable of dealing with a varying future we must have met a varying past» [3, p. 196].

A. Toffler foresees the information society as a demassification society, characterized by diversity, acceleration of changes, production of products based on knowledge, the replacement of the most material resources by information, which is the main material, means of production are scientific knowledge, the information, the main conflict can be arised between the knowledge and the incompetence. According to the author, these transformations also lead to changes in the education system [2].

The processes of changes in the education of Ukraine take place in accordance with world trends and are regular. The education development is modernized under the influence of world events and transformations – political, economic, and scientific. Important political factors were democratization, globalization, integration processes, opening borders and developing the unified information space.

The key task of education in Ukraine in accordance with the «National Strategy for the Development of Education in Ukraine until 2021» is the development of education system of the new generation: orientation to modern scientific achievements and innovations, improving of the educational process by means of SMART-technologies, increasing accessibility and efficiency of education on the ICT basis, ensuring the access of educational institutions to world information resources, expanding interaction and cooperation of higher education institutions with other educational institutions, scientific institutions, employers [4].

The native scientist M. Zhaldak emphasizes the economic, technological, demographic, geographic, historical, political, cultural and religious factors have influenced on the higher education development and determined the current trends of its evolution [5, p. 14]. Economic development, increasing the competitiveness of production, the emergence of new technologies in various fields of activity, regional socio-cultural development contributes to the emergence of new areas of study, discipline. In turn, the diversification of educational structures requires the modern learning tools, research support. In addition to the factor of the level of economic development, education has an important impact by the dynamics of requirements of society, production sector, businesses, services. The compliance of professional education to requirements constantly changed, it is needed the adequate funding, which depends on the level of development and internal reserves of the country. Naturally the country's socio-economic development depends on geographic location and resource potential. Today the distance learning opportunities allow overcoming the geographical location factor. Modern information and communication technologies allow carrying

out distance learning, providing opportunities for operative interconnection with students and other educational institutions, it is one of the important components of lifelong learning.

The analysis of scientific literature suggests the change in the nature of scientific and informational activities, the information and communication technologies development, accelerating the development of science and technology leads to qualitative changes in the information educational environment. V. Bykov argues the implementation of open education with the use of ICT promotes the mobility of access to educational services, the individualization of education, the continuity of education, inclusive education development [6, p. 23].

Y. Ramsky notes it is necessary to separate the concept of information culture of society and the information culture of the individual [7, p. 16 -18]. The information culture of society, he determines as «an integral indicator of the level of development of information communications in society and the characteristics of the information sphere of human activity», a characteristic of the ability of the «society effectively use the available information resources and means of information communications, and to apply for these purposes the advanced achievements in the field of development of information resources and information and communication technologies». He considers the information culture of person as an integral indicator of «the level of his perfection in the information sphere of activity» basis of which is «knowledge about the information environment, the laws of its functioning and development», the ability to navigate in the «world of information resources, rationally use the means of modern information and communication technologies to meet the information needs», have «an idea of their activities in the modern society structure and the prospects that contribute to or prevent the informatization».

In the studying the topic, we discovered the contradiction between: existing arrangements in the educational sphere and the choice of strategies based on alternative means of the corresponding stage of the development of the information society as an integral indicator – the vector of the dominant factors in Ukrainian higher education adaptation to the modern needs of the «knowledge society».

The problem of Ukrainian higher education adaptation to the modern information society needs (knowledge society) has been widely discussed and investigated in recent years: at the legislative level – by the governments of the countries; at the research level – scientists, educators, developers, representatives of business and public organizations. But an alternative approach to choosing strategies for Ukrainian of higher education adaptation to the modern needs of the «knowledge society», corresponding to this stage of the information society development, was not considered before.

Emphasizing the significant contribution of researchers, we note the problem of adaptation of higher education in Ukraine to the modern «knowledge society» is actual. One of the components of this problem is:

- orientation on person's interests, corresponding to modern trends of the development of society;
- compliance ensuring of the knowledge providing, skills and competences provided the professional activity to the latest scientific achievements;
- ensuring of high-quality higher education on the basis of the diversity of its missions and meeting the modern needs of society;
- study of the influence of indicators of the education level and literacy in the era of digital technologies on the level of development of human potential;
- information and communication technologies integration into the education system, focusing on the ICT development;
- orientation to the advanced achievements in the field of information and communication technologies;

- preparation for lifelong learning, providing the opportunity to adapt to the rapid development of information and communication technologies.

Based on the above considerations, the purpose of our study is to choose the alternative strategies corresponding to this stage of the development of the information society as an integral indicator – the vector of the dominant factors in the adaptation of higher education in Ukraine to the modern needs of the «knowledge society».

In the context of the considered components of adaptation of higher education in Ukraine to the modern needs of the «knowledge society», let's consider the integral indicator of human potential development, one of the main characteristics of which is the education level and literacy. We find out the priorities of leading influences on it by indicators of education costs, education quality, the number of Internet users and mobile phone users using the method of analysis of hierarchy. The hierarchical model to obtain priority criteria and to find alternative solutions that could be the basis for developing scenarios of Ukrainian higher education adaptation to the modern needs of the information society (knowledge society) is designed in our research.

Key research findings

The main goal of informatization of education is to provide a full value human life in the information society developing a computer-oriented educational environment, improving the quality, accessibility and effectiveness of education, professional self-improvement throughout life, harmonious development, satisfaction of needs, and disclosure of person's creative potential. The realization of this purpose is carried out through the information competence formation, which is an integral part of the general culture of man and society as a whole.

Professional training of future specialists should meet the needs of the information society, based on the performance of their professional functions related to information processes. R. Gurevich, emphasizing the important influence of ICT in the educational development underlines: «We live in the age of information and communication. However, information and communications have always been, but only a post-industrial society is unique in that it is characterized by the extremely rapid development of information and telecommunication technologies, and their capabilities have become unprecedented for human development, for effective solution of many professional, economic, social and domestic problems. It is a question of changing the education content, mastering the information culture, we understand one of the components of the general human culture, which is the highest manifestation of education, including personality qualities of a person, and his professional competence» [8, p. 326-327]. O. Spirin said that ICT is an important «component of most modern technologies» in many areas of human activity [9, p. 161].

R. Sopivnyk emphasizes at the stage of global informatization, the increase of knowledge, a social order for the training of professionals is being formed who «should be able to effectively act in situations of uncertainty, creatively approach the urgent problems, produce new ideas, unite people around socially useful goal and ensure its achievement in the best possible terms with minimal material costs» [10, p. 206]. In the formation of social and personal qualities in the educational process, ICTs play an important role [11; 12]: they contribute to the acquisition of personal life experience in open information society; to establish communication between people; obtaining and disseminating information; provide a fast and high-quality solution of professional tasks; promote self-realization and self-identification of the individual, the formation of his social position. ICT, in accordance with social interests and needs: provide high-quality training, in particular, on information technologies; provide a lifelong learning; contribute to increasing the competitiveness of future specialists in the labor market; promote self-study, self-development and self-improvement throughout life, continuous increase in the level of mastering of information technologies.

At present, the human development problem is relevant to all countries. The development is the extension of human choice in order to enrich the lives of people in a broad sense. World systems

of human life are in a renewal state and transformation in accordance with the volumes of data accumulation, directions of development of information technologies. The experience of European countries with high human development, such as Norway, Switzerland, Denmark, Netherlands, Germany, Poland and others demonstrate steady progress in the development and use of information and communication technologies. Society is undergoing rapid changes under the influence of globalization and technological revolution. The digital revolution does not only opens up new opportunities, but also generates new problems of non-standard employment contracts and work in a shortened amount of time that in an unequal degree divided between highly qualified and unqualified workers. In these conditions is the question of getting the proper education.

An important dimension that provides an increase of the level of human development in the professional activity is the education quality. The information society development, Ukraine's entry to the world educational space is defined as the main priority directions of the educational system transformation, modernization and improvement of education quality. One of the ways of solving the task is to improve the education system functioned on the basis of modern ICT in the direction of meeting the needs of society. The rapid progress of ICT development contributes to the development of an advanced infrastructure of the educational process with the use of means of information and communication technologies, promotes qualitative training of specialists of different fields, creates the basis for information interaction in the learning process – the environment of rapid exchange of information, access to world electronic scientific resources, libraries, databases, distance education, scientific and educational portals.

According to the report «Dimension of the Information Society» of the «International Telecommunication Union» (ITU) value rating of the «ICT Development Index» (IDI) in Ukraine is $IDI_{U_2017} = 5,62$ (79th place) (table 1), over the last year the rating for this indicator has been decreased by one position ($IDI_{U_2016} = 5,31$) [13]. Poland, for example, ranks 49th ($IDI_{P_2017} = 6,89$), compared with last year, this result has been increased ($IDI_{P_2016} = 6,73$) [13].

Table 1

The value of the «ICT Development Index» [13]

IDI 2017 Rank	Economy	IDI 2017 Value	IDI 2016 Rank	IDI 2016 Value	Rank Change
3	Switzerland	8.74	4	8.66	↑
4	Denmark	8.71	3	8.68	↓
7	Netherlands	8.49	10	8.40	↑
8	Norway	8.47	7	8.45	↓
12	Germany	8.39	13	8.20	↑
49	Poland	6.89	50	6.73	↑
79	Ukraine	5.62	78	5.31	↓

Consider a more detailed IDI. It is an integral indicator of three components: access to ICT, the ICT use, the ability (knowledge, skills and abilities) to use ICT [14]. The main objectives of the IDI measurement are the definition of: the level and indicator of the ICT evolution in the countries, the ratio of ICTs to the index with other countries; the progress of ICT development in developed countries and in developing countries; the values of the differences between countries in terms of the level of ICT development; the potential of ICT development and the extent to which countries

can use ICTs to enhance increasing and development in the context of existing of capabilities and abilities.

Let's give a description of IDI [14]: Access of sub-index defines the readiness of the countries to ICT use, and it includes five infrastructure and access indicators (fixed-telephone subscriptions, mobile telephone subscriptions, international Internet bandwidth per Internet user, households with a computer, and households with Internet access); Use sub-index defines ICT intensity, and includes three indicators (the number of individuals using the Internet, fixed broadband subscriptions, and mobile-broadband subscriptions); Skills sub-index has the capabilities and indexes or skills which are important for ICTs. It includes three proxy indicators (middle years of schooling, general quantity of schoolers of the second educational level, and general number of schooler of the third educational level). These indicators are proxy, rather than indicators directly measuring ICT-related skills, the skills sub-index (20%) is given less weight in the IDI computation than the other two sub-indexes (40 %, 40 %).

Since ICTs contribute to the education development and are a key element of the ICTs conceptual framework, let's depict the ICT development and the evolution of the country towards higher education adapting to the current needs of the «knowledge society», using the three-stage model is shown in picture 1 [14]:

Stage 1: ICT readiness – reflecting the level of networked infrastructure and access to ICTs;

Stage 2: ICT intensity – reflecting the level of ICTs use in the society;

Stage 3: ICT impact – reflecting the results/outcomes of more efficient and effective ICT use.

At the present time, in the era of information and communication technologies, indicators of education quality and ICT development are important indicators of sustainable development of European countries. In the period of the rapid development of information and communication technologies and the increased requirements to education quality, the problem of prioritizing these indicators and identifying priority areas for human development is actual for many countries of the world, including Ukraine.

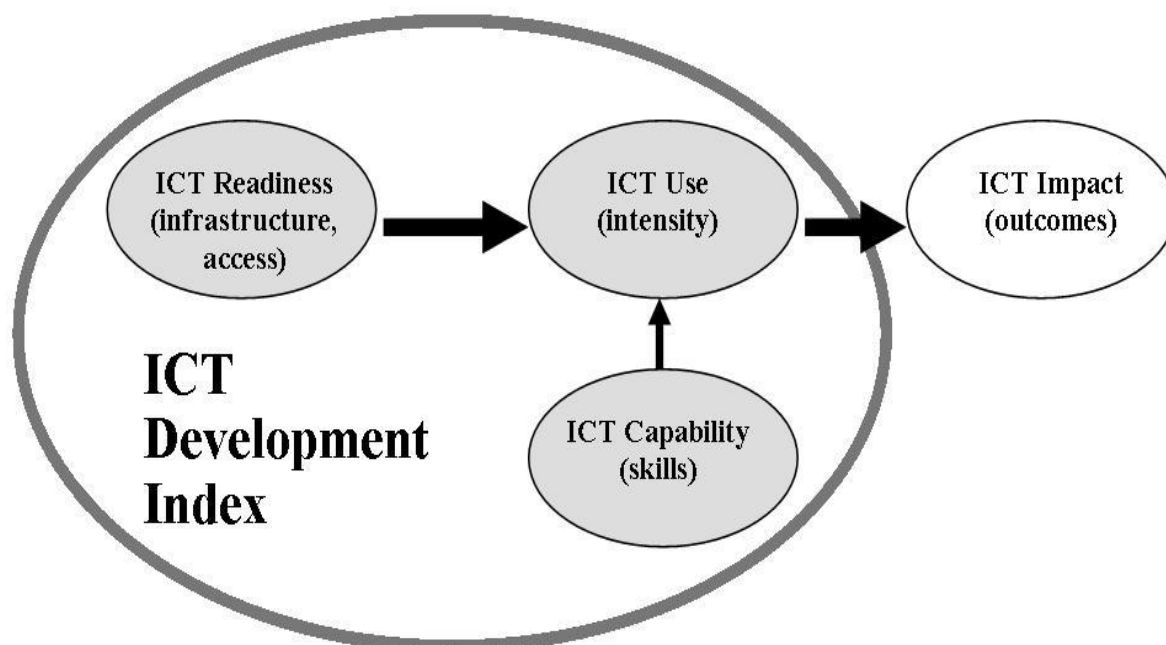


Fig. 1. Three-stage model of the ICT impact on IDI as the conceptual basis of the evolution of the country to higher education adaptation to the current needs of «knowledge society» [14]

Consider the integral indicator of the human potential development; we will determine the priorities of leading influences the indicators of the education costs, education quality, the number

of Internet users and mobile phone users by the method of analysis hierarchies. We'll build a hierarchical model with the aim of obtaining the priority criteria and finding alternative solutions that could be the basis for developing scenarios for the Ukrainian higher education adaptation to the modern needs of the «knowledge society».

We'll analyze the directions of human potential development of European countries, including Ukraine, taking into account indicators of the education quality and ICT development in accordance with the three-stage model of picture 1. We define the alternatives on the basis of hierarchical agglomeration procedures using the method of analysis of hierarchies. We compare the priorities of the human potential development direction found in the base period with the indicators of the reporting period.

In order to conduct the study, we'll build a hierarchical structure of the system of choosing alternative strategies for human development, one of the main characteristics of which is the level of education and literacy. The purpose of the analysis of the presented hierarchy is to determine the priority directions of human potential development in the era of information and communication technologies. Aspects of the goal (criteria) are the values of the Human Development Index (HDI) of the European countries [15]: five European countries are first in ranking with «very high» levels of human development: Norway, Switzerland, Germany, Denmark, the Netherlands, and Poland; with a «high» level of human development – Ukraine (table 2). There are the indicators as alternatives [15]: Government expenditure on education (% of GDP), Education quality (% satisfied), Internet users (% of population), and Mobile phone users (per 100 people) (Table 2).

Table 2.

Human Development Index (HDI) and its impact factors (report, 2017) [15]

HDI rank	Country	Human Development Index (HDI)	Government expenditure on education (GEE)	Education quality (EQ)	Internet users (IU)	Mobile phone subscriptions (MPS)
		Value	(% of GDP)	(% satisfied)	(% of population)	(per 100 people)
1	Norway	0,949	7,4	84	96,8	113,6
2	Switzerland	0,939	5,1	83	88,0	142,0
4	Germany	0,926	4,9	62	87,6	116,7
5	Denmark	0,925	8,5	75	96,3	128,3
7	Netherlands	0,924	5,6	82	93,1	123,5
36	Poland	0,855	4,8	67	68,0	148,7
84	Ukraine	0,743	6,7	50	49,3	144,0

Consider the dominant hierarchies built from the top (the goal is to identify the priority directions of human potential development in the era of information and communication technologies) through the intermediate levels (criteria: the importance of the Human Development

Index (HDI) in Europe) to the lowest level of alternatives (Government expenditure on education (GEE), Education quality (EQ), Internet users (IU), Mobile phone subscriptions (MPS)).

The application of the method is based on the use of hierarchical networks at model constructing that is designed to calculate the probabilities of occurrence of each possible scenario in the future. We'll construct the hierarchical structure of the decision-making system on the priority of alternatives (Picture 2) [16, p. 251-318].

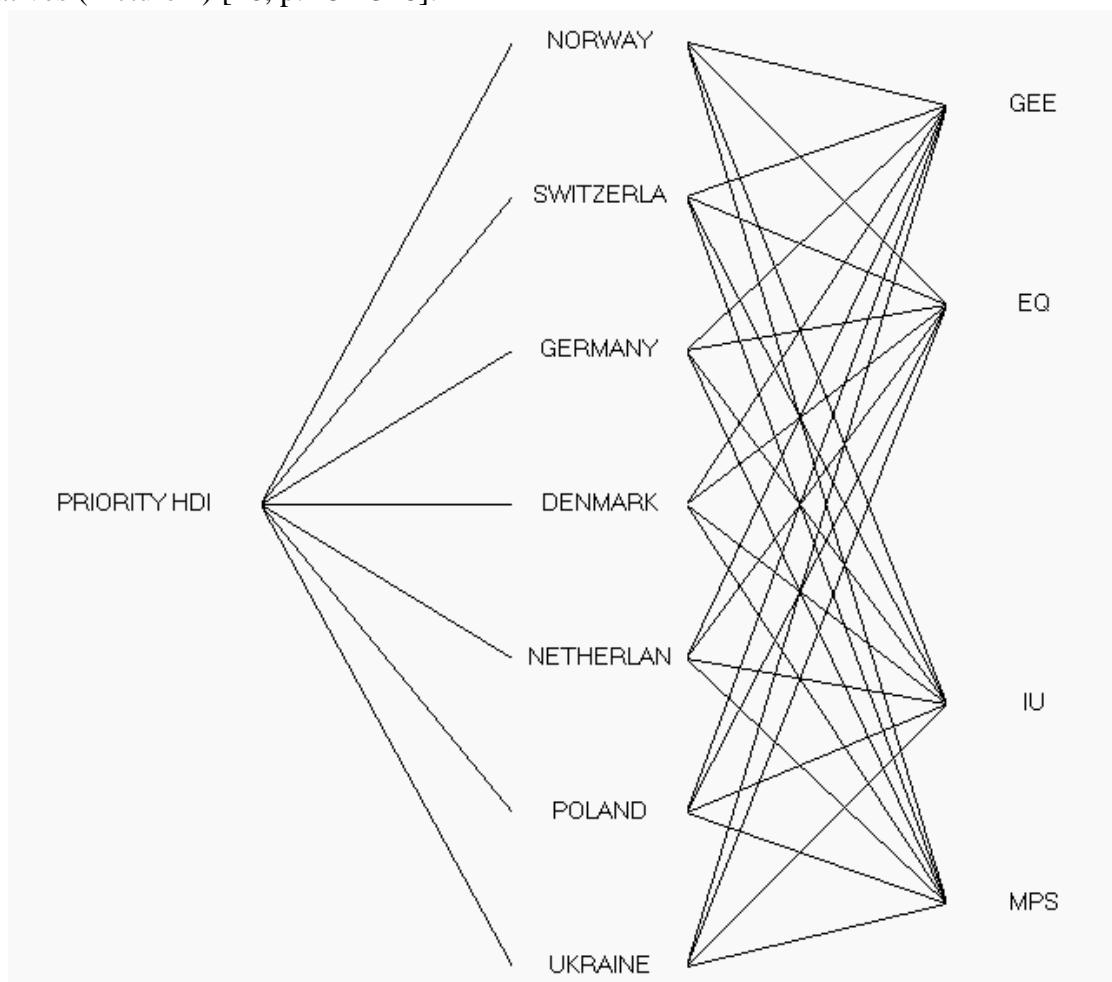


Fig. 2. Hierarchical structure of the system of choice of alternative strategies of of human potential development of European countries taking into account indicators of the education level and the level of ICT development

After hierarchical problem reproduction, the criteria priorities are set and each of the alternatives is evaluated according to the criteria. In the method of analysis of hierarchies, the elements of the hierarchy are compared in pairs relative to their influence on the general characteristics of them. The system of pair comparisons leads to the result, which can be represented as a symmetric matrix.

Before constructing the matrix of pairwise comparisons we made normalization values. We pass to the matrix of normalized values of Z with elements [17, p. 28]:

$$z_{ij} = \frac{X_{ij} - \bar{X}_j}{S_j},$$

where $j = 1, 2, \dots, n$ – index number, $i = 1, 2, \dots, m$ – number of observation;

$$\bar{x}_j = \frac{1}{m} \sum_{i=1}^m x_{ij};$$

$$s_j = \sqrt{\frac{1}{m} \sum_{i=1}^m (x_{ij} - \bar{x}_j)^2} = \sqrt{(x_{ij}^2) - (\bar{x}_j)^2}$$

Elements of all levels are compared with each other regarding their effect on the guide element, and, according to the rule in the developing of matrix comparing the relative importance of the left matrix elements with the elements above. That is, if the element on the left is more important than the upper element, then in the cell we enter the whole positive number, if the opposite is a positive fractional. The relative importance of any item that is compared with it, is one.

To determine the priorities evaluation of a particular indicator and to evaluate the elements of each level of the hierarchy, we use the scale of pair comparisons of T. Saati, by constructing the corresponding matrices of pairwise comparisons of conditional indices that will allow us to calculate the global weights of the hierarchical pyramid (summing up the priorities of estimation). The results of calculations of summary estimations of priorities using the method of analysis of hierarchies are shown in the table 3 and presented graphically in the diagram 3.

Table 3.

Results of calculations of generalizations of priorities of alternatives (report, 2017)

Alternative	Generalized indicators of priority alternatives
Internet users (IU)	0,3269
Education quality (EQ)	0,2474
Government expenditure on education (GEE)	0,2258
Mobile phone subscriptions (MPS)	0,1997

As can be seen from the table 3 and the picture 3, the most attractive of the four alternatives is Internet users (IU), which received the highest rating is 0,3269. On the second position – Education quality (EQ) is 0,2474. This result is due to the fact that in Europe with a «very high» and «high» level of human potential the priority directions of development are: the ICT use in all spheres of human activity, an important indicator of which is the increase in the number of Internet users; improving the education quality. The lowest estimation is: Government expenditure on education (GEE) – 0,2258, in the mentioned countries, strategically, less attention is paid to Government expenditure on education; Mobile phone subscriptions (MPS) – 0,1997, this factor has the least impact on raising the level of human development in these countries. Summarizing the results of the distribution of the priority of alternatives, we express the opinion on the higher priority of the number of Internet users and the approximate homogeneity of the remaining indicators, that is, the education quality, the government expenditure on education, the number of mobile users have approximately the same priority and importance of contributing to the human potential development.

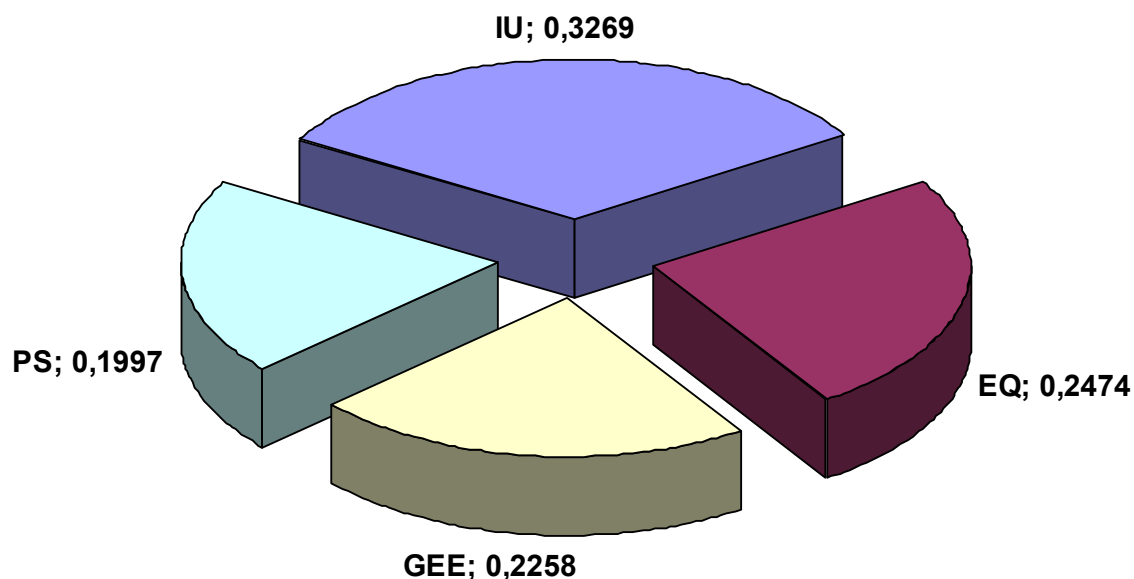


Fig. 3. Generalized estimates of the priority of alternatives to human potential development (report, 2017)

In order to confirm the obtained result and compare it with the data of the previous report on human development, we present the results of generalized assessments of the priority of alternatives in the report of 2016 year [18]. Indicators are selected as alternatives [18]: Public expenditure on education, (% of GDP), Education quality (% satisfied), Internet users (% of population), Mobile phone subscriptions (per 100 people) (Table 4).

Table 4.

Human Development Index (HDI) and its impact factors (report, 2016) [18]

HDI rank	Country	Human Development Index (HDI)	Public expenditure on education (PEE)	Education quality (EQ)	Internet users (IU)	Mobile phone subscriptions (MPS)
		Value	(% of GDP)	(% satisfied)	(% of population)	(per 100 people)
1	Norway	0,944	6,6	82	96,3	116,5
3	Switzerland	0,930	5,3	81	87,0	140,5
4	Denmark	0,923	8,7	75	96,0	126,0
5	Netherlands	0,922	5,9	78	93,2	116,4
6	Germany	0,916	5,0	66	86,2	120,4
36	Poland	0,843	4,9	59	66,6	156,5
81	Ukraine	0,747	6,7	49	43,4	144,1

Results of calculations of generalized priorities estimates (report, 2016) by the method of analysis of hierarchies are given in the Table 5.

Table 5.

Results of calculations of generalizations of priorities of alternatives (report, 2016)

Alternative	Generalized indicators of priority alternatives
Internet users (IU)	0,3052
Education quality (EQ)	0,2919
Public expenditure on education (PEE)	0,2083
Mobile phone subscriptions (MPS)	0,1943

Comparing the data of Table 5 with the data of Table 3, we can conclude that the ranking of alternatives is maintained.

Conclusion

The data analysis in tables 3 and 5 indicates the highest weight of the results of the 2016-2017 reports was the number of Internet users and the education quality indicator. The received estimations, corresponding to this stage of the information society development, confirmed the predominantly important influence of Internet technologies and the education quality on the results of the Ukrainian higher education adaptation into the modern needs of the «knowledge society» and are the dominant factors.

The result of the analysis of the indicators of IDI and HDI explains that the digital revolution is mainly due to the rapid development of Internet technologies, it, first of all, facilitates many aspects of human activity. Access to the Internet network expands and mobilizes creative abilities of a person, ingenuity and creativity. In enhancing the development of human potential, ICTs play an important role, namely: overcoming inequalities in access to resources; to overcome inequalities between women and men in the possibility of obtaining employment; increase of mobility; providing the quick access to resources at the right time, etc. In the higher education system, the Internet use provides: the introduction of innovative pedagogical technologies; development of web resources; provide opportunities for learning at any time and anywhere in the world; accessibility of education for people with special needs; communication student with a teacher at a convenient time and in a free place, which contributes to a stronger knowledge, provides a permanent contact with the teacher, allows to implement an individual learning schedule, as well as save time and finances. The functionalities of ICT provide the basic principles of open education: open planning of education, individual educational model, free access to quality education, freedom of choice of subject, tempo, time and place of study, mobility, and equal access of participants of the educational process to educational systems, provision of education quality, and formation of the structure and implementation of educational services.

At the modern labor market, the greatest advantage is given to workers who have knowledge and relevant qualifications in the scientific and technical field, that is, to improve the education quality. The highest demand will be people with a high level of education, knowledge and skills, with special knowledge and skills, appropriate education that can use technologies, in particular, ICT, to create values. Technological revolution can bring not only positive changes, focused on the high qualification of specialists; there are risks of reducing the demand for less skilled personnel. Thanks to the digital revolution, productivity increases, but wage increases are slower: there is inequality between people who have a high level of education and professional qualifications but do not receive an appropriate remuneration in the form of income, stability and public recognition for their work.

In the modern world, individual knowledge and technology are rapidly becoming obsolete, and measures of state policy in various fields of activity and selected strategies may not be appropriate to future challenges.

The role of ICT as a system of scientific knowledge, the object of study and the means of gaining knowledge is proven by the experience gained as a result of their practical application. Based on the data analysis of tables 3 and 5 - priority directions of human potential development, we can conclude that by overcoming many problems of the Ukrainian higher education adaptation in to the modern needs of the «knowledge society» is the focus on improving the quality of education and the development of Internet technologies. At this stage, the important task of adapting higher education in Ukraine to the needs of the information society (knowledge society) is to train students with modern ICT tools, to master their knowledge, skills and abilities of using ICT in future professional activities that will contribute to the process of self-improvement, self-education, designing the development lifelong learning.

Prospects for the further development of education in Ukraine should be directed towards the development of Internet technologies for the designing of a unified information environment, components of which are Smart-complexes of disciplines, electronic educational resources of metadiscipline, containing data and links to educational and scientific resources, providing access to the information environment for all participants in the educational process and other users. An important step at this stage is the support of the state, implementation of the proposed programs for the development of infrastructure of the media environment of the Federal District, the network of electronic libraries of the Federal District, skilled teaching staff training, learning of future specialists in the sectors of the national economy with ICT, etc. Such an approach will help to raise the level of education in Ukraine, technological development of education, intellectual and scientific and technical potential, to confirm the democratic way of development of the state, to achieve the goals in building the information society and its next stage – the knowledge society.

Areas for further research

The conducted research does not exhaust fully all aspects of the problem of adaptation of higher education in Ukraine to the modern needs of the information society (knowledge society).

There is a wide range of issues undecided, it make possible to outline areas for further research, in particular: the study of trends in the development of the information society (knowledge society) as a scientific and cultural phenomenon that evolves in co-operation with the development of scientific advances, technologies, social and pedagogical sciences; the research of the phenomenon of «information explosion», due to the deepening of this phenomenon in the education system evolution; to carry out a comparative analysis of the selected, as a result of the research, alternatives to the human potential development in the ICT era in recent years; introduction of experience in applying modern ICT in international integration processes in vocational education of Ukraine.

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АДАПТАЦІЯ СИСТЕМИ ОСВІТИ УКРАЇНИ В УМОВАХ ГЛОБАЛЬНОЇ ІНФОРМАТИЗАЦІЇ

Питання адаптації вищої освіти України до сучасних потреб інформаційного суспільства (суспільства знань) є актуальним на даному етапі розвитку інформаційного суспільства. Альтернативний підхід до вибору стратегій адаптації вищої освіти України до сучасних потреб «суспільства знань», раніше не розглядався. Метою нашого дослідження є вибір альтернативних стратегій, відповідних даному етапу розвитку інформаційного суспільства, як інтегрального показника – вектора домінуючих чинників на шляху адаптації

вищої освіти України до сучасних потреб «суспільства знань». У контексті складових даної проблеми розглянуто інтегральний показник розвитку людського потенціалу, одними з основних характеристик якого є рівні освіти і грамотності. З'ясуємо пріоритети керуючих впливів на нього показників витрат на освіту, якості освіти, кількості інтернет-користувачів та абонентів мобільного зв'язку із застосуванням методу аналізу ієрархій. Виходячи із зазначених вище міркувань, у нашому дослідженні побудовано ієрархічну модель з ціллю одержання пріоритетних критеріїв і знаходження альтернативних рішень, що можуть бути покладені в основу розробки сценаріїв адаптації вищої освіти України до сучасних потреб інформаційного суспільства (суспільства знань). Отримані нами альтернативні оцінки, відповідні даному етапові розвитку інформаційного суспільства, підтверджують переважно важливий вплив рівня якості освіти та застосування засобів Інтернет-технологій в освітньому процесі на результати адаптації вищої освіти України до сучасних потреб «суспільства знань».

Ключові слова: вища освіта; інформаційне суспільство; суспільство знань; інформаційно-комунікаційні технології; індекс розвитку ІКТ; інформатизація освіти; метод аналізу ієрархій.

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АДАПТАЦІЯ СИСТЕМИ ОБРАЗОВАНИЯ УКРАИНЫ В УСЛОВИЯХ ГЛОБАЛЬНОГО ИНФОРМАТИЗАЦИИ

Вопрос адаптации высшего образования Украины к современным потребностям информационного общества (общества знаний) является актуальным на данном этапе развития информационного общества. Альтернативный подход к выбору стратегий адаптации высшего образования Украины к современным требованиям «общества знаний», ранее не рассматривался. Целью нашего исследования является выбор альтернативных стратегий, соответствующих данному этапу развития информационного общества, как интегрального показателя – вектора доминирующих факторов на пути адаптации высшего образования Украины к современным требованиям «общества знаний». В контексте составляющих данной проблемы рассмотрены интегральный показатель развития человеческого потенциала, одними из основных характеристик которого, является уровень образования и грамотности. Выясним приоритеты управляющих воздействий на него показателей расходов на образование, качества образования, количества интернет-пользователей и абонентов мобильной связи с применением метода анализа иерархий. Исходя из указанных выше соображений, в нашем исследовании построено иерархическую модель с целью получения приоритетных критериев и нахождения альтернативных решений, которые могут быть положены в основу разработки сценариев адаптации высшего образования Украины к современным потребностям информационного общества (общества знаний). Полученные нами альтернативные оценки, соответствующие данному этапу развития информационного общества, подтверждают преимущественно важное влияние уровня качества образования и применения средств Интернет-технологий в образовательном процессе на результаты адаптации высшего образования Украины к современным нуждам «общества знаний».

Ключевые слова: высшее образование; информационное общество; общество знаний; информационно-коммуникационные технологии; индекс развития ИКТ; информатизация образования; метод анализа иерархий.