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**Principal trends of modernization of higher education structure in
Ukraine**

Higher education is the foundation of human development and social progress; it guarantees individual development, promotes formation of intellectual, spiritual and industrial potential of a society. The development of a country, structural transformations at the micro- and macroeconomic levels should proceed in harmonious agreement with modernization of education so as to meet the needs and aspirations of people, especially young people, to set up a new system of social values in the sphere of activities both in civil and private sectors.

Responsiveness of education system and that of professional training to dynamic changes in the market conjuncture for the demand and supply at the world labour market, access of the labour force to training ensuring the professional and qualification parameters that meet the needs of the social and economic development of a society are the decisive factors for growing competitiveness of human resources. In the course of innovative society formation the functional features of education involve not only the learners provision with the overall bulk of knowledge and skills accumulated before, but also with the ability to perceive and implement in practice new scientific ideas, technological tools and methods of manufacture, to form innovative abilities, initiative and enterprise.

The transition from the extensive use of human resources with low level of basic professional qualifications to the intensive use of highly-qualified labour force which is more flexible in the sphere of decision-making and in adaptation to new technologies is characteristic of most countries with highly competitive national economies. As a result, the prevailing tendency in the high-tech sectors of economy is the growing demand for highly-qualified universal specialists who are not only professionally well-trained, but are also able to successfully master business and management skills.

Overcoming social and economic problems that higher education is confronted with, will depend on whether the potentialities and abilities of every individual as a subject of activity can be raised and realized to a maximum degree. In this context the human resource becomes crucial in the struggle for the quality of the product of higher education as a sector of a country economy. The human capital is defined as a set of an individual's characteristics based on such factors as health, natural abilities, education, professionalism and mobility. Every society member must be optimally suitable for professional activity at the expense of the maximal use of individual abilities. To achieve this aim it is necessary to provide investment in higher education and upgrade training and to accelerate progress in the fundamental task of modernization of the national education system so that an individual could gain new knowledge, skills and competence needed in life-long education [8].

To improve the quality of education service the system of life-long education has been set up. This system promotes optimization of the professional and qualification structure of the labour force and makes for the rise of its competitiveness level.

The objective of higher school as a social institution is to contribute to the professional self-realization of an individual by teaching them a professionally aimed interaction with natural and social environment.

An urgent need in elimination of the drawbacks of higher school requires conceptual improvement of education and professional training of specialists in the following directions:

- formation of the attitude towards a person as an ultimate goal, not as a means of social progress;
- activation of the human resource within higher education and professional training based on the conception of a person's harmonious development;
- reformation of the higher education system and professional training is strategic for the provision of specialists' high quality;

- attaining an in-depth proficiency and social responsibility in the process of training when pursuing the objectives of scientific and technological progress, social and cultural development [10].

Solving the problem of investment in the development of higher education and the “human capital” will permit to achieve not only a short-lived economic success, but also to lay the foundations for stable long-lived tendencies in the development of national economy to be formed with further integration into the European Higher Education Area (EHEA).

Evaluation of rating indices of Ukraine for the quality of educational establishments specialized in management training (based on the data of *World Economic Forum* for 2006) has shown that Ukraine is still considerably behind the countries-leaders of innovative development.

Table 1. Indices of Competitiveness of Countries in the Context of Human Capital Development (2005)

Indices	Finland	USA	Sweden	Singapore	Germany	India	Czechia	Hungary	Latvia	Poland	Kazakhstan	Russian Federation	Ukraine
Quality of Educational System	6,0	4,9	4,5	6,1	4,4	4,5	4,7	4,2	4,1	4,1	3,9	3,9	3,9
Scientific Collaboration of Universities and Enterprises	5,4	5,7	5,0	5,0	5,1	3,3	3,9	3,3	2,9	3,2	3,0	3,2	3,1

The source: *The Global Competitiveness Report. – G., – PP. 505, 506, 508, 522*

The country’s population census of 2001 recorded absolutely unacceptable dynamics: for the first time since World War II the proportion of people with higher education in the population group aged 25 – 35 has decreased. The situation turns out to be like this in spite of the fact that the amount of specialists with higher education has grown up by 60 %, which can be accounted for by the fact that people in question have emigrated. This means that our reluctance to turn to another model promotes an increase in the efficiency of the economies of other countries at the expense of the Ukrainian national budget investments in education system.

European integration process envisages creation of common European educational and scientific area based on the provision of uniformed criteria and

standards in the field of education and science with a view to recognizing the periods and terms of training specialists in higher education institutions. It will promote collaboration between higher education institutions of Europe and the teaching staff and student mobility.

Within the framework of the Bologna process the European Higher Education Area is being formed. It is defined by the geographical and institutional norms of the European Culture Convention. The Bologna process envisages the structural rearrangement of the national systems of higher education in Europe, a change of syllabuses and the necessary institutional transformations in higher education institutions of Europe. However, it does not imply the unification of the education content. Conversely, many documents of the Bologna process state that every member country should retain the national features, the unique nature and achievements in the content of education and training specialists with higher education and, subsequently, introduce innovative progressive approaches to higher education structure, which are characteristic of EHEA.

At all stages of the Bologna process it has been declared that this process is voluntary, involving many subjects and based on the values of European education and culture. It rules out the elimination of the national features in the educational systems of different countries of Europe; it is highly adaptive, flexible, accessible, gradual.

The ultimate goal of the process is to ensure the quality of higher education in accordance with the public, personal and professional needs for the provision of a competitive specialist easily adaptable to the economic framework of the European countries.

The latest analysis of these problems was made in France (Strasbourg) on 20-21 November, 2007 by the European Council at the conference “New Challenges in European Higher Education – Overcoming Difficulties in Globalized Society”. At the conference the 3rd project of the Council of Europe on subsequent reform of higher education in the member countries of the Bologna process was launched. The main challenge highlighted by the conference participants was concerned with the problem “University between Humanism and Market:

Reconsideration of Values and University Role in the 21st Century”. These problems are pivotal for ensuring the quality of higher education in Ukraine, its integration into the European educational area and an important factor of modernization of the structure of higher education within the period before and after 2010. It is this very term that has been defined by the forty-six countries participating in the Bologna process as a period for creating the European Higher Education Area.

The project of the further reform of the European higher education proposed by the European Council presupposes several stages.

The first stage involves forming the public and individual awareness of the challenges of modern society.

Then the type of higher education structure relevant to modern requirements is to be shaped. Up-to-date education system is to ensure the attaining of a number of objectives, in particular, economic success, political stability, sustainable development of the society, etc. These objectives are gained through such organization of specialists training that completely meets the demand of the labour market and is able to forecast its development; training active citizens for the needs of a democratic society, their personal development, distinguishing such scientific and educational priorities that will ensure efficacious training of specialists.

The strategy of development of higher education in Ukraine in the Bologna process context involves the creation of the infrastructure that will enable higher education institutions (universities, colleges etc.) to exploit their individual potential to the best advantage to meet the requirements of the European system of learning and to adapt the system of higher education of Ukraine to the principles, norms, standards and basic regulations of the European higher education area, which must be acceptable and efficient for our state and society.

Harmonization of higher education of Ukraine with the EHEA requirements, its development will be achieved in accordance with certain principles. The provision of innovative achievements in education and science is among the priorities. It is common knowledge that the innovative way of development of a society can be achieved through training generations of people who think and work

in a new way. As a result, the greatest emphasis will be laid on the general development of a personality, their cultural and communicative competences, the ability to gain and develop knowledge, to form informational and social skills [3].

It is also important to provide the social context for higher education which will enable the graduates of higher education institutions to promote their professional careers on the principles of social justice, responsibility, general human values.

Never has the problem of quality of higher education in Ukraine been of such great ideological, social, economic importance as it is today.

Foregrounding the problem of quality of higher education is accounted for by a number of factors:

first, the quality of human resources determines the level of the country's development and its global economic competitiveness;

second, the quality of education is getting more and more important in the provision of competitiveness of higher school graduates at the labour market.

A number of important practical steps for the provision of the Bologna process requirements and further modernization of the system of higher education of Ukraine have been made:

- the government has approved a new List of education majors, according to which higher education institutions train specialists with the bachelor qualifications adapted to the needs of the sectors of national economy and the European requirements;

- a number of governmental decisions concerning, in particular, setting up new academic scholarships and giving a lump-sum grant to higher education graduates with pedagogical qualifications have been made;

- important steps have been taken as to the reduction and ordering of a network of higher education institutions; primarily, the project of a decree concerning a transfer of departmental higher education institutions to the subordination to the Ministry of Education and Science (MES) has been submitted to the Cabinet of Ministers;

- a model of the national Qualifications Framework which is to agree with the Framework for Qualifications of the EHEA has been developed;

- a two-cycle system of specialists training (bachelor, master) has been introduced, which permits to pass over in the nearest future to a three-cycle system of higher education as in the EHEA;

- since the academic year of 2006/2007 the process of teaching in all higher educational establishments of the III-IV accreditation levels is carried out in accordance with the recommendations of the European Credit Transfer System (ECTS);

- recommendations have been worked out and organizational steps are being taken as to the introduction of Diploma Supplement corresponding to the European standard;

- mechanisms have been developed as for inclusion students to university management, monitoring quality assurance of study process and participating in students' social life.

With a view of raising the awareness and general understanding of the principles and objectives of the Bologna process, on the initiative of the Ministry of Education and Science there were held several conferences, workshops and conventions of different levels for departmental and MES-subordinated higher education institutions, and for all other stakeholders. The most challenging problems discussed at these meetings were quality assurance of higher education, the introduction of the three-cycle system of higher education and recognition of the terms and periods of training specialists with higher education in the EHEA.

Later on the Ministry of Education and Science is planning to expand the range of topics for discussion and to raise the level of the public awareness.

Today the priority objectives of restructuring higher education in Ukraine, that are of vital importance for its further development, are to be attained.

The principal of them are quality assurance of higher education; harmonious development of a student's personality, forming not only competent specialists, but also highly spiritual young people, patriots of Ukraine.

Understandably, all our actions as to modernization of higher education can only yield positive results if they are based on law. In the light of the above objectives it has become obvious that our legal basis, i.e. the Law of Ukraine "On Higher Education" is steadily getting behind the needs of higher education, national economy and society, and sooner or later it will slow down the education reforms.

Accordingly, modernization of the structure of higher education in Ukraine requires changes in the system of legislative, normative and legal regulation of higher education with a view to the requirements of the European system of standards and certification, which will promote the development of national cultural values, democracy and humanism as the basic factors for the functioning of civil society.

Working out the national higher education qualifications framework harmonious with the framework for qualifications of the European Higher Education Area will promote its further certification in European and world structures. This, in its turn, will secure mutual recognition of education and learning documents at the European and world level, introduction of a new Diploma Supplement of the European standard, competitiveness of graduates at the national and international labour markets and ensure high quality of training. Also, achieving these objectives will promote satisfaction of students' personal needs in higher education and expansion of their competences, creation and development of appropriate conditions for innovative scientific research and greater mobility of students, research and teaching staff of higher education institutions [6].

At the governmental level the external criteria for the assessment of the quality of activity of a higher education institution should be changed. Yet, while

the principle “the more students, the more money” is in action, quality of education deteriorates. Therefore, integrative criteria for evaluating the quality of study process should be worked out. They include the following: evaluation of learning content and techniques implemented during training; assessment of knowledge gained by a student; requirements for organization and monitoring of the study process; modern requirements for teachers’ and students’ competences; clear and transparent procedure of self-assessment of a higher education institution as a basis for quality assurance system.

As a result of pursuing these objectives the content of specialists professional training will be considerably improved, theoretical and practical learning based on the development of student research skills will become more sound. Among social aspects of higher education a decrease in the risks of various forms of discrimination in the sphere of higher education, including academic, religious, ethnic ones, should be pointed out. Organizational changes involve provision of increasing proficiency of the research and teaching staff, promotion of collaboration with other educational and research institutions both in Ukraine and abroad, raising efficiency and competitiveness of research results, encouragement of international collaboration and student and teacher exchange with foreign education institutions, better social welfare for students, creating learning conditions for students with special needs.

Competitiveness of a system of education primarily depends on implementation of unique, innovative, creative elements in the study process. This is possible if the overall system of education and higher education in particular is based on the results of scientific research which gives impetus to higher education. To ensure the changes in the system of professional training in Ukraine it is necessary to draw in industrial enterprises to this system and thus, to satisfy the actual demand for qualified skills and knowledge.

Education institutions must provide professional theoretical knowledge, general education, fulfil the responsibilities of the institutions for upgrade training. The activities of professional training organizations in this direction must be

realized on the basis of learning the experience of developed countries in close cooperation with employers with a view of enhancing the efficiency of professional training of employees and balancing the needs of demand and supply at the labour market.

Successful interaction with social partners will facilitate the provision of employment for graduates, will ensure monitoring of the quality of their training, will forecast the demand for specialists of certain professions, will upgrade the content of professional programmes in accordance with the requirements of up-to-date economic development.

According to a recent poll conducted by the governmental establishment “Institute of Economy and Prognostication, the National Academy of Sciences of Ukraine”, the prerequisite for enhancing the innovative character of Ukrainian society is the creation, on the part of the government, of conditions and opportunities for raising the level of education of the population. It is justified by the fact that more educated respondents are more positive towards innovations as compared to less educated people.

This regularity was even more pronounced when the attitude towards technological development was surveyed. It can be accounted for by the fact that technological achievements more often result from new fundamental knowledge, and, as a rule, it entails new products and goods.

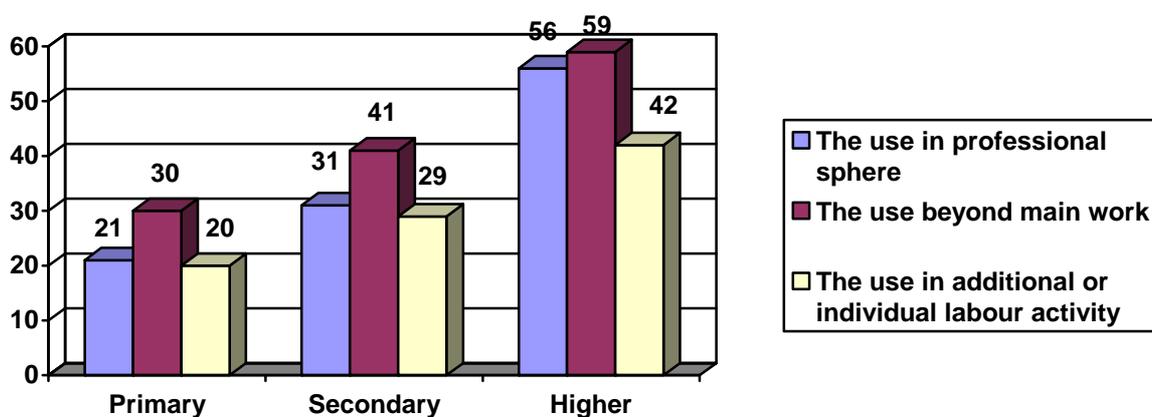


Fig. 2. The Use of innovations (in professional activity at main work, beyond main work in household, in individual labour activity) by workers with different education levels

A definite regularity was traced, namely, the higher the education level of those questioned, the more frequent the use of innovations is (e.g. implementation of new equipment, materials, technologies, including information, new approaches, efficiency “findings” etc.) both in their professional activity at main work and beyond it.

The importance of life-long learning from a perspective of the need in developing the innovative character of the society has been displayed in the following ratios: 27% of those educated in organized structures assess the introduction of new (innovative) technologies, goods, products negatively, while the positive evaluation amounts to 73%.

Scientific research indicates that education is a more important determinant than other factors. Obstacles to innovative development in Ukrainian society can be removed at the expense of a break-through in education.

Modernization of the structure of higher education presupposes carrying out a number of reforms. It is necessary to conduct them carefully in order to preserve national achievements and to avert destruction of the national system of higher education.

Firstly, a reform of higher education involves optimization of a network of higher education institutions. At present higher education specialists are trained in 920 higher education institutions of all accreditation levels and forms of property subordinated to 28 ministries and departments, 10 of which have only one education institution subordinated to them. There is no practice of this kind in any European country. The analysis of world experience in this field shows that in the countries with identical demographic indicators the average student body in one university is, for instance, in Spain – 22,000, in Italy -23,000, in Greece – 14,000, in Slovenia – 8,000 students, and in Ukraine it is only 6,500 students.

Departmental subordination of educational institutions often hinders their development, the introduction of unified approaches to organization of educational activities, which requires creation of a new paradigm of interaction of education institutions both with the ministries and employers and with the state system of

higher education on the whole. This problem must be solved at the state level by issuing an appropriate governmental decree.

Besides, the formation of the optimal network presupposes defining the types of pre-university and university educational establishments, in particular, pre-university, i.e. professional colleges (the present vocational schools) and colleges and university establishments including universities and academies. **Professional colleges** are aimed at training qualified workers and specialists only with the qualification of Junior Specialist. **Colleges** will deal with teaching specialists with the qualifications of Junior Specialist and Bachelor. **Universities and academies** will teach specialists with the qualifications of Bachelor, Master and Doctor and will also prepare and upgrade scientific researchers and research-pedagogical workers by teaching them at post-graduate and doctoral study programmes.

Today the Ministry of Education and Science, higher education institutions and employers are discussing the problem of determining the role of bachelors in the system of training specialists with higher education. Thus, primarily, bachelors should be in demand at the labor market, as they are in many European countries. The public opinion and staff departments must be informed about sufficient level of bachelor's competence enabling them to fulfil their functions in accordance with modern requirements of production or social sphere of service.

Secondly, modernization of the structure of higher education involves the introduction of the national qualifications framework compatible with fields of education and training in the European Higher Education Area.

Thirdly, a three-cycle system of education should be introduced.

As to Bachelor's and Master's Degrees, experience in organization, formation of the content of their training and professional employment of these specialists has been accumulated, as was mentioned above, though there is still a problem of the lack of correspondence between the qualifications gained by graduates and the labour market demand.

There is also a problem of training at the third cycle – PhD. The reason for this is the traditional system of two scientific degrees (Candidate of Sciences, Doctor of Sciences) acting in Ukraine and the possibility to get these degrees not only in universities, but also in research institutions of various subordination. Besides, getting these degrees is not necessarily accompanied by studies at universities; degrees can be obtained by making individual research independently or under the supervision of a prominent specialist in a certain field.

As a rule, in many European countries the general term of university training permitting to get PhD cannot be less than 8 years (3-4 years of Bachelor's studies, 1-2 years of Master's studies and 3-4 years of post-graduate studies) [11]. The ultimate variant of adaptation of specialists' training at the third cycle has not been determined yet. Discussions of this problem are under way in Ukraine.

In this point we hope to get support from representatives of universities, researchers, public opinion and rely upon the exchange of experience with the countries that have already implemented these reforms.

Modernization of the national qualifications framework results from the necessity to provide the mutual links between the market of education service and the labour market, to coordinate the volume and quality of professional education and learning with the employers' needs, to enhance the role of social partners and employers in realization of the strategy of lifelong learning.

Formation of the national qualifications framework in the context of the European Higher Education Area will ensure, firstly, the transparency, accessibility and recognition of terms and periods of training specialists with higher education in Ukraine, and, secondly, the national qualifications framework will be certified by the appropriate European structural bodies which will permit to introduce a new Diploma Supplement of the European type into higher education of Ukraine. The efficient functioning of the latter will create pre-conditions for the transition from one qualification level to another or gaining adjacent qualifications which, in its turn, will motivate the Ukrainian citizens to upgrade professionally and to work efficiently.

Ukraine introduces national criteria for higher education qualifications. Within the system of these criteria qualification descriptors that correspond to the principle of “readability and comparability” have been worked out. These criteria will be coordinated with the European approaches to short-cycle qualifications – Junior Specialist (60-120 ECTS credits); first-cycle qualifications – Bachelor (180-240 ECTS credits); second-cycle qualifications – Master (60-120 ECTS credits), and third-cycle qualifications (PhD) with the length of studies not less than 3 years [12].

In accordance with the European approaches **short-cycle qualifications (Junior Specialist)** are given to the students who have completed a corresponding cycle of training in professional colleges and colleges proper. **Qualifications of the first cycle (Bachelor)** are awarded to students who have demonstrated knowledge and understanding in a field of study and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study; can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study; have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues; can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences; have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.

Continuation of studies to get a Master’s Degree is provided only for successful bachelors. Other bachelors who have gained progressive practical experience in industry or in social sphere will be provided the opportunity to do a Master’s course in a number of years. A similar mechanism can be used for masters willing to do PhD.

Qualifications of the second cycle (Master) are awarded to students who have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context; can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study; have the ability to integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments; can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously; have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

Studies for a Master's Degree require creative approaches and are intended for the best students. Therefore, it is necessary to work out mechanisms (bridge programmes, and probably the programmes for pre-Master's preparation, etc.) for those bachelors who are willing to do the Master's course.

These schemes and methods of specialists' training have been tried at V. Getman's Kyiv National University of Economics, Taras Shevchenko's Kyiv National University, Kharkiv National University of Radio Electronics, National Agricultural University, Khmelnytsky National University and some others.

It is also necessary to develop many-variant programmes using the criteria of academism and professionalism. In particular, an after-Bachelor programme for Master's of the academic and professional profile can be implemented. For instance, for technical specialities there can be a Master of Science and a Master of Engineering, the latter being orientated to practical activities.

Specialists can be trained in different fields of education taking the programme of Integrated Master. Integrated Master is a degree of the second cycle of higher education preceded by comprehensive studies at the previous two cycles

of higher education (the Bachelor's Degree is conferred, but the Bachelor's Diploma is not given). Integrated Master is intended for certain complex specialities, for example, medicine, veterinary science, art, ecology, national security. Since we have substantial priorities in Europe and other parts of the world in the field of training pedagogical workers (teachers), it would be reasonable to preserve the degree of Integrated Master in this sphere of training specialists.

Qualifications of the third-cycle (Doctor - PhD) are awarded to students (researchers) who have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field; have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity; have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication; are capable of critical analysis, evaluation and synthesis of new and complex ideas; can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise; can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society.

Standard duration of full-time doctoral studies amounts to not less than 3 years. ECTS credits are planned to be introduced for evaluation of the student workload during the doctoral studies.

Doctoral study programmes are accessible to individuals with a Master's Degree or its equivalent; they provide a person (student) with detailed, deep knowledge in a certain field, prepare him/her for independent, self-reliant creative research work and ultimately enable him/her to get a PhD degree.

In Ukraine a number of problems concerning the introduction of the third Bologna cycle should be thoroughly discussed with the academic and pedagogical public; mechanisms for its introduction should be worked out; structured PhD programmes that include taught courses and individual research, control and assessment procedures should be elaborated.

Ultimately, we are to develop the national qualifications framework for all the three cycles in accordance with the EHEA Qualifications Framework as well as the European Qualifications Framework for lifelong learning.

Vital immediate reforms aimed at modernization of higher education structure will be implemented in the nearest future.

Therefore, on the initiative of the MES of Ukraine a number of working groups have been set up to improve regulations on higher education, to consider the concept of modernization of the structure of higher education and quality assurance, to elaborate standards for higher education, to improve organization of study process, etc.

Now the perspective of holding an international workshop on the implementation of the national qualifications framework in Kyiv, April-May 2008, is being considered. At present we have obtained support and agreement to participation of the leading experts representing the European Council, the European Union and the Bologna process.

Carrying out reforms connected with the adaptation of higher education to the EHEA encourages the overall development of higher education in Ukraine.

The Ministry of Education and Science highly appreciates the opportunity of collaboration with our European partners within the framework of the Bologna process. Our objective is joint development of the flexible system of higher education with national achievements retained and the best of European experience involved; elaboration of unified criteria and standards in this area, where quality of higher education is the basis for launching this process. This will ensure a variety of opportunities for full-fledged development, elaboration of flexible criteria for qualifications and creation of the systems of quality assurance of higher education, and strengthen collaboration between the parties concerned.

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