

**Scientific Life**

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**NATIONAL SCIENCE AND EDUCATION  
DEVELOPMENT MODEL WITHIN  
THE CONTEXT OF EUROPEAN INTEGRATION**

In September 2003, the Eight International Scientific Conference «The Problems of Economic Integration of Ukraine into the European Union: Science, Study, Education (Economic and Organizational Aspects)» was held under the patronage of the Ministry of Education and Science of Ukraine (Livadiya – Yalta – Foros, 22–24 September, 2003). The conference was organized by Ternopil Academy of National Economy, the Centre of European and International Studies, J.W. Goethe University (Frankfurt, Germany), Erasmus University (Rotterdam, the Netherlands), and the Universite Lumiere Lyon 2 (Lyon, France).

The discussion focused on the economic and organizational aspects of creating a model of national science and education development within the context of the Ukraine's integration into the European Union.

The participants were unanimous that the future of Ukraine should be associated with the establishment of the «new economy» and the ability of our society to comply with its requirements. Under conditions of the new economy the new knowledge grows into an independent fourth (along with the three traditional) factor of production, which becomes increasingly influential, dynamic, and scarce. In view of this, the way to our society's successful development and overcoming the qualities of «the world economy's periphery» consists in the adjustment to the requirements of the new economy.

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That is why the problem of substantiating a highly effective national science and education development model gains unique urgency. In view of strengthening globalization tendencies and clearly defined European vector of the Ukraine's development, this model can perform successfully only under the conditions of full utilization of the world's positive experience and de-facto integration into the European educational and scientific area adjusted for limitations arising from the Ukraine's current status as the EU neighbouring country.

The discussions followed five basic directions.

The **first** of them encompassed an analysis of the economic and organizational aspects of developing science in the system of new economy and the determination of perspectives and consequences of this process for the EU member-countries and Ukraine.

The subject of the discussion included the following:

- substantiation of the concept of changing the role of science and education in the Ukrainian society and turning them into the basis of the economy's reformation;
- creation of the Ukrainian model of new economy, the competitiveness of which would be ensured by generation, diffusion, sharing, and use of recent knowledge;
- determination of the Ukraine's science and technology priorities for optimizing the use of financial and other resources in order to obtain global leadership in certain spheres;
- clear definition of the directions of the Ukraine's innovative development strategy;
- improvement of the macroeconomic structure for realization of scientific, technical, and personnel potential of Ukraine;
- development of the world market for science and technology information, as well as new technologies;
- determination of the specificity of the EU modern science and technology policy and consolidation of regional co-operation in R&D;
- substantiation of the necessity in and determination of the ways of integrating Ukraine into the European scientific space as a whole, and its Bologna structure, which was created on the decision of the European parliament (21 February, 2001; Brussels), in particular.

In the discussion of the problems participated the following scientists: Alexander Amosha – academician, Doctor of Economic Sciences, Professor, Director of Donetsk Institute for Industrial Economics (Donetsk); Mar'yan Dolishniy – academician, Doctor of Economic Sciences, Professor, Director of Lviv Institute for Regional Research (Lviv); Anatoliy Chuhno – academician, Doctor of Economic Sciences, Professor at Kyiv National T.Shevchenko University (Kyiv);

Roland Eisen – Dr., Prof., J.W. Goethe University (Frankfurt on Main, Germany); Yevgen Savelyev – Doctor of Economic Sciences, Professor at TANE (Ternopil); Alla Melnyk – Doctor of Economic Sciences, Professor at TANE (Ternopil); Volodymyr Zagorskiy – Doctor of Economic Sciences, Professor at Lviv Commercial Academy (Lviv); Olexander Vlasyuk – Doctor of Economic Sciences, Professor, Kyiv National Institute for Strategic Research (Kyiv); Iryna Hladiy – Candidate of Economic Sciences, Assistant Professor at TANE (Ternopil); Victoria Melnyk – Candidate of Economic Sciences, Assistant Professor at TANE (Ternopil).

As a result, the participants elaborated the following conclusions and recommendations:

1. The phenomenon of the new economy was determined to be related to changes in priorities and equivalents of economic, social, and political development. The paradigm of social evolution has completed its regular cycle and now requires that the new approaches and mechanisms for its further improvement be developed. Thus, the need for the developed countries to work out a new developmental model roots in the sharpening self-contradictions of the old model, which ran out of its progress potential and failed. This crisis is reflected in such interrelated phenomena as exhausting possibilities for extensive development; washing out intra-state limits for development due to internationalization of economic activities; principally new reproduction methods being created by scientific and technical revolution; maturing pre-conditions for new development within the framework of the old model.
2. In view of this situation, the existing concept of development – as a systemic factor – calls for revision and demands that principally new approaches to building the «knowledge economy» be created. Knowledge and information accumulated by the mankind has reached so critical a level as to ensure they attain a new high-quality status and become an independent factor of production – in addition to land, labour, and capital – since the very knowledge, in the form of information and technology, quickly changes the face of the modern world. That is why the new economy should be viewed as a conceptually new economic model which does not only influence, but also determines the directions of further development of the society.
3. The implementation of this model with regard to the countries of the EU induced changes in the forms of international cooperation. Thus, the development of scientific and technical co-operation in Europe is presently built upon a «multi-level basis». Three basic levels can be distinguished: the Pan-European level encompasses the EU programs, the «Eureka» programs, the COST (cooperation in the field of scientific and technical research), the CERN (European centre for nuclear research), European Space Agency, European Molecular and

Biological Laboratory, NATO etc.; the sub-regional level includes frontier collaboration among the administrative regions of different countries and exterritorial collaboration of the intra-state regions which do not have mutual borders; the local level presumes collaboration of territories within a single country. Regionalism is supported both «from above» (through the European Commission and national governments), and «from below» (on the regions' initiative).

4. In view of the tendencies just described, the scientific and technical cooperation in Europe might be expected to operate according to the principle of concentric circles in the nearest future. The core of regional co-operation will consist of the most developed – in terms of science and technology – countries of Western Europe: Germany, Great Britain, France, and Scandinavia. The countries of Central and Eastern Europe will participate only in some of the programs, since the processes of economic restructuring have not been yet completed here. This strategy will assign them a role of the «third world» in the united Europe.
5. In order for Ukraine to avoid appearing on the periphery of these concentric circles and to realize its strategy of innovative development, the following problems must be solved:
  - a. the fall in the production sector's demand for innovations caused by recession in high-technology production (which faces a relatively higher taxation pressure) and permanent deficit in operating assets at the enterprises;
  - b. the fragility of innovations-market infrastructure and the decrease in the state science support caused by budget deficit, strict requirements of foreign lenders, political and economic instability, absence of strategic development programs or inability to incarnate them;
  - c. the destruction of the material and technical providing of scientific research caused by the increase in prices for services and scientific equipment;
  - d. the absence of an effective science management system and disregard for the accumulated EU countries' positive experience of creating effective innovation communication systems among creators, providers, imitators, and users of recent developments.
6. For successful implementation of the innovative development strategy, a national model of new economy should be developed. It should base upon the priorities of science and technology, and ensure the concentration of financial resources in the spheres where Ukraine is capable of full scientific and labour potential realization. The model should presume step-by-step implementation. Initially, it should be

oriented at the «Singapore model» of the new economy which implies dominating centralization. At the second stage, the «Californian model» should be applied as the model of decentralized knowledge-based economic development.

To provide the de-facto integration of Ukraine into the European scientific area – even under the limited conditions of its EU-neighbouring-country status – the directions and organizational forms of cooperation with the European Research Area member-countries should be defined.

**The second direction of the conference** looked into the problems of transition from the education of the authoritarian society to a demand-oriented system. The discussion determined the necessity, essence, and directions of creating the educational services market; the problems of democratizing management and strengthening the role of community in the Ukrainian higher educational system; the human capital; the value of the educational establishments' services and the systems of financing education.

The following participants took part in this discussion: Olexandr Ustenko – People's Deputy, Chairman of Subcommittee for Professional Preparation of the Education and Science Committee of Verhovna Rada of Ukraine, academician (Kyiv); Sergiy Yuriy – Doctor of Economic Sciences, Professor, Rector, TANE (Ternopil); Yevgen Savelyev – Doctor of Economic Sciences, Professor, TANE (Ternopil); Yuriy Petrunya – Doctor of Economic Sciences, Professor, Dnipropetrovsk University of Law and Economics (Dnipropetrovsk); Larysa Kryvenko – Doctor of Economic Sciences, Professor, the Ukrainian Academy of Banking (Sumy); Dirk Orlamunder – Professor, Dresden Technical University (Germany); Mykola Matviyiv – Candidate of Economic Sciences, Assistant Professor, TANE (Ternopil); Vadym Konchyn – lecturer, TANE (Ternopil).

The disputants arrived at the following conclusions and recommendations:

1. The reforms in the education's organization and management systems in Ukraine do not satisfy the needs of the economy's market transformation. The planned administrative allocation of resources, which prevails in Ukraine today, is one reason for that. The obsolete algorithm of activities is a drag on the Ukraine's integration into the European education area. The creation of the efficient market for educational services would be a solution to this problem.
2. The formation of the educational services market in Ukraine and its inclusion into the global processes should be developed within the following forms:
  - a. the state-mediated sale of knowledge (on demand of the state):
    - to the citizens of Ukraine;
    - to foreign citizens;

- to transfer national specialists to work at educational establishments of foreign countries;
  - b. the commercial sale of knowledge:
    - to the citizens of Ukraine;
    - to foreign citizens (exports of knowledge);
  - c. imports of knowledge:
    - studying abroad;
    - internship abroad;
    - transferring foreign specialists to work at the educational establishments of Ukraine.
3. The higher educational establishment (HEE) can become effective and competitive on the educational services market only when the legislation about higher education is so changed as to substitute the declared independence with the real autonomy of the HEE. In particular, the system of so called commercial enrolment must become transparent by means of planning and legislative regulation.
  4. Only the educational establishment which succeeds in creating the image of an elite HEE will perform successfully in the educational services market.
  5. The marketing activities of the HEE at the educational services market should be radically reformed so that to meet its requirements by presuming effective product policy, adequate positioning of the HEE and its products, successful price policy, effective PR-based advertising, scientific evaluation of the educational services market capacity, and effective promotion of graduates on the corresponding labour markets.
  6. When carrying out the marketing research of the educational services market, two categories of this sphere – study and education – should be distinguished. The study is the process of receiving knowledge; the education is the level and quality of the knowledge received as a result of the study.
  7. The sources of budget and non-budget HEE financing need optimization. Specifically, in measuring the amount of budget financing, we suggest that the HEE's rating be considered, which must be determined scientifically, for example, by applying the accreditation level indices and competitiveness coefficient. Fundraising and endowment could become additional sources for financing education.

**The third direction of the discussion** encompassed the problems of organizing lifelong education. The matter under consideration was: legal, organiza-

tional, and economic methods of ensuring effective adult education system in Ukraine; possibilities of using the experience of the EU countries for the implementation of lifelong education system and basic forms of its providing.

In the discussion participated: Vitaliy Pogrebnyak – Candidate of Technical Sciences, Professor, Deputy Director of the Scientific and Methodological Center for Higher Education at the Ministry of Education and Science of Ukraine (Kyiv); Wolfgang Uhr – Dr., Professor, Dresden Technical University (Germany); Iryna Kravchenko – Deputy Director of the Institute for Advanced Managerial Personnel Training at the Presidential Ukrainian Academy of Public Administration (Kyiv); Vasyly Shvets – Candidate of Economic Sciences, City Mayor (Dniprodzerzhynsk); Olena Sohatska – Professor, TANE (Ternopil).

With regard to this direction, the disputants came to the following conclusions and recommendations:

1. It is necessary to elaborate and approve the Law of Ukraine «About education of adult population» that would foresee: the institutionalization of the education of adult population as an independent and leading development sphere of the overall education in the country; economic providing of creation, functioning, and development of the adult education with the funds from the State budget, enterprises, and employment funds; economic and legal provision of the educational establishments in the adult education sphere; consideration for legal, social, and economic aspects of adult education process (tuition, loans, rights and responsibilities of the parties to the study process, standards, economic and social results, etc.); compliance with other legislative acts of Ukraine, as well as the laws of other countries regarding adult education. The validity of this law should be enforced by the adoption of by-laws.
2. The system of lifelong education should be realized within three basic directions:
  - a. at the state level – providing necessary conditions for flexible and adaptable androgyny system;
  - b. at the corporate level – creating optimal qualifying corporate portfolio according to its personnel strategy and peculiarities of the macro-surrounding;
  - c. at the individual level – creating awareness of the necessity for lifelong education and forming the need for continuous education as a lifestyle.
3. The organizational structure of the adult education branch should foresee:
  - a. Educational establishments and structural departments. The sphere of adult education should include state, public, and private forms of study different in both the structure and the

offered study programs. Apart from existing evening schools of secondary education, centres of adult education, people's universities, and various courses, new organizational forms of adult education should be created. The public organizations and associations («Znannya» and «Prosvita» associations, pedagogical unions, etc.) which use educational and enlightening methods of work, as well as businessmen, should be more actively engaged in creating mixed state-public and state-private forms of adult education on the conditions of social partnership.

- b. Management. The adult education sphere under modern socio-economic conditions can and must work according to market demand, since demand predetermines supply. One should focus on satisfying the needs of individuals, social groups, public institutions, the state, and society in general. Another important social question is the creation of deliberate and solvent demand of the population for educational services. Thus, it is necessary to apply various effective management forms of adult education: legislative, administrative, economic, ecological, and educational (directly related to education). For that, it is necessary to create corresponding departments at the Ministry of Education and Science of Ukraine and special departments and councils at local administrations. The responsibility of coordinating these structures can be assigned to the National Public Adult Education Committee of Ukraine. To ensure proper quality of the adult education programs, the accreditation and certification services should be designed.
- c. Marketing and consultative infrastructures. In order to determine educational needs of individuals, groups, enterprises, organizations, and state structures, it is necessary to carry out continuous observation and research, as well as inform and guide potential consumers with regard to changes in the educational services market. Therefore, the information and orientation services should be created for guiding people in the field of education.
- d. Information providing. The sphere of adult education can not function and develop effectively without respective databases, providing information flows with modern technology, and application of computer technologies including the Internet. One of the most important components of the adult education informatization is the promotion of distance learning, which makes education broadly accessible.

**The fourth session** was devoted to the problems of reforming the higher educational process organization in Ukraine. In the discussion, the following was



determined: the state, problems, and perspectives of higher education in Ukraine; the necessity, essence, and directions of reforming the economic education; the issue of implementing modern information and communication technologies into the study process; the principles of forming the venture management system and organizational structures of the HEEs.

The disputants were: Olexandr Ustenko – People's Deputy, Chairman of the Professional Preparation Subcommittee of the Education and Science Committee at Verkhovna Rada of Ukraine, academician (Kyiv); Sergey Yuriy – Doctor of Economic Sciences, Professor, Rector, TANE (Ternopil); Harried Mueller – Dr., Professor, J.W. Goethe University (Frankfurt on Main, Germany); Olexandr Kireyev – Candidate of Economic Sciences, Chairman of the Scientific Research Centre of the NBU (Kyiv); Shiobhan Olderson – lecturer, Leads University (Great Britain); Omelyan Kulynych – Doctor of Economic Sciences, Professor, Khmelnytsk Institute for Regional Management (Khmelnytsk); Nataliya Tarnavska – Candidate of Economic Sciences, Assistant Professor, TANE (Ternopil); Alexander Elzas – J.W. Goethe University (Frankfurt on Main, Germany); Volodymyr Hrystianovskyi – lecturer, Donetsk National University (Donetsk).

The participants of the discussion recommended the following:

1. To improve legislation of higher education towards extension of the HEE's rights with regard to high rates of knowledge «senescence» under conditions of the new economy establishment.
2. To stimulate the elaboration and implementation of the state standards of education in order to join the Bologna process so that to enter the European system of higher education.
3. To align the Ukrainian HEE accreditation practice with the modern foreign accreditation systems (TQUIS, AACSB, CEEMAN)
4. To review the curricula at all the levels of specialist preparation so that to remove the duplication of disciplines. To improve alternative professional preparation programs so that to ensure introduction of new study disciplines.
5. To stimulate the improvement of the faculty's preparation level (upgrading qualifications, practicing at the best world universities, receiving the second higher education, retraining) by using flexible motivational systems.
6. For improving the quality of specialist preparation, the methods of active study, electronic tutoring, as well as statistical and econometric methods, should be introduced.
7. To introduce perspective forms of study, the structure of the educational process should be revised so that to increase the share of the student's independent work in it, provided that the access to information sources is simplified, in particular, through computerization and application of modern information and communication technologies.

8. To deepen the cooperation with the Consortium for Education Management Improvement in Ukraine (CEUME) and the Association for Developing Management and Business Education in Ukraine.
9. To disseminate information about the TQM system and possibilities of its use among the Ukrainian HEEs.
10. To ensure competitiveness, the missions, purposes, and strategies of the HEEs' activities should be formulated. The monitoring of educational services market should be carried out systematically by studying the tendencies of its changes and implementing the principles of diversification and variance of education.
11. The current management structures of the HEEs should be studied in order to remove superfluous vertical and horizontal relations; the functions and double subordination should also be analyzed.

**The fifth section** focused on the problems of the overall European education policy coordination mechanism. The similarities and differences in the educational systems of Ukraine, the EU member-countries, and Russia were primarily analyzed. In the course of the discussion, the forms and mechanisms of educational cooperation, as well as perspectives for the Pan-European higher education zone creation, were determined.

The participants were: Hans Wiesmet – Dr., Professor, Dresden Technical University (Germany); Yevhen Savelyev – Doctor of Economic Sciences, Professor, TANE (Ternopil); Ivan Drogobyskiy – Doctor of Economic Sciences, Professor, Financial Academy by the Government of the Russian Federation (Moscow, Russia); Yacek Ruzhkovskiy – Dr., Professor, High School of Market Management and Foreign Languages (Catovice, Poland); Tamara Smovzhanko – Lviv Institute of Banking (Lviv); Vitalina Kurylyak – Candidate of Economic Sciences, Assistant Professor, TANE (Ternopil).

As an outcome of the discussion, the following conclusions and recommendations were formulated:

1. In view of the experience gained, the common features of the educational systems of Ukraine and European countries, and the modern globalization tendencies, there is an opportunity and urgent necessity to include Ukraine into the world knowledge market.
2. When solving the tasks of international cooperation development among higher and secondary educational establishments and expansion of educational services exports, the role of the centralized principle and intermediary structures should be enforced. This role can be partly assigned to the Ukrainian Governmental Centre for International Education, which has been recently created at the Ministry of Education and Science of Ukraine. At the same time, it would be expedient to establish a Centre for International Educational Services for conducting marketing on the external markets (including public relations of the

Ukrainian educational establishments); for facilitating the enrolment of foreign students; for bringing grants and investments into the sphere of education; for realization of projects under the auspices of international organizations; and for establishing branches of the Ukrainian universities abroad. The centre could be organized as a joint stock venture by the interested educational establishments. The shareholders would determine the centre's qualitative and quantitative objectives.

The primary task of such a centre should be to increase the number of foreign students to the level of the pre-reconstruction period in the nearest future. The other major tasks would include building the image of the Ukrainian education abroad and overcoming the paradox of high global demand for Ukrainian specialists and yet unrecognizable Ukrainian diplomas.

3. With regard to specific forms and mechanisms of cooperation, the following is offered:
  - a. To develop trans-national education in the following forms: the on-line and distance learning programs provided via the Internet; campuses – branches (the campuses which are opened by educational establishments abroad to provide education according to their study programs); on a license (an educational establishment A allows to establish abroad an educational establishment B, which would provide one or more programs of the educational establishment A to the students of the educational establishment B); combination (a certain program of the educational establishment B, which is located abroad, is recognized as a partial credit required for passing the program of the educational establishment A); fraternity of educational establishments (concluding the agreements between educational establishments in different countries regarding the realization of joint programs).
  - b. To use actively the concept of «suffrage», i.e. when universities provide on preferential terms their own degree programs to other universities and private providers. At that, the university can be located in the other country and be more well-known and prestigious than the respective HEE in this country. In this respect, worth mentioning are the additional advantages to the students who would receive the qualification and diploma of the HEE recognized by the native country and, at the same time, save on transportation and accommodation costs in the country of the university's origin.
  - c. To jointly develop the curricula of the partner-universities. Such programs take into account the features of local education markets and the needs of the population. The programs are approved by the universities and become, thus, legal from the moment of providing the academic degree.

4. There is a necessity to open at least 2–3 new universities with modern scientific, information, and domestic infrastructure in Ukraine during 10–15 years in the aspect of universities' role strengthening for the distribution and deepening of European cultural values. They must create a new competitive situation in the scientific and educational sphere of the country. Everything should be at the highest world level there: personnel, equipment, methods of teaching, development of the scientific work, wages. It is worth to invite the best national and foreign research workers to them. These establishments have to be accessible to all, who desires to study there. The existing high school network of Ukraine functions on the old scientific, pedagogical, methodical, organizational and economic bases. The system is incapable to be included in full measure and quickly in the global educational environment, because it is burdened by the »old type« personnel, who are mostly old not by the age, but by the way of thinking, work and life style.

It is necessary for the realization of the creation perspectives of All-European higher education area:

To provide with information and to ensure transparency that would allow to evaluate educational possibilities of the HEE and their accordance to the requirements of the interested parties, convergence and compatibility of curriculums, especially from the point of view of vertical mobility ;

To provide a defense of the interests of student, citizens and firms by a confession, high-quality evaluation and co-ordination accreditation as at European, as at the transnational levels;

To provide availability of the educational services, given by the educational establishments. To give the guarantees to the education suppliers for the close or similar two-level programs and qualifications of higher education (bachelor – master's degree), to shorten the study terms; to establish, mainly, decentralized mechanisms and procedures of education quality insurance, in the basis of which there is a self-appraisal of external (international) quality audit; accreditation by the independent organizations.

The Analytical message of the Eighth international scientific conference «Economic integration problems of Ukraine in European Union: science, teaching, education – economic and organizational aspects» was prepared on the basis of the discussion results, the most important conclusions and suggestions of the conference participants (Livadiya– Yalta – Foros, Ukraine, September, 22–24 2003).

The scientific works of the conference participants, sent to the conference organizing committee's address, were published in two issues (5–1, 5–2, 2003) of the scientific magazine «Announcer of Ternopil Academy of National Economy».