РОЗВИТОК ЕКОНОМІЧНОЇ ОСВІТИ

HIGHER EDUCATION FOR SUSTAINABLE DEVELOPMENT

This section has been prepared in the framework of the international project «Creating the consortium of universities to support the sustainable development in the field of education, science and technology», which is intended to bring together the leading technical universities of Ukraine to implement the concept of «Higher Education for Sustainable Development». The coordinators of the project are the SHEI «National Mining University» (represented by its rector Prof. Dr. Gennadiy Pivnyak, academician of the National Academy of Sciences of Ukraine), SHEI «Prydneprovs`ka State Academy of Civil Engineering and Architecture» (represented by its rector Prof. Dr. Vo-lodymir Bolshakov), and Dnipropetrovsk State Agrarian-Economic University (represented by its rector Prof. Dr. Anatoly Kobets).

The purpose of this section is to raise the awareness of sustainable development issues, forming the knowledge about tools for sustainable development of economic activities, to promote the role of universities in the transformation of the higher education in the context of sustainable development.

ВИЩА ОСВІТА ДЛЯ ЦІЛЕЙ СТАЛОГО РОЗВИТКУ

Розділ представлений в межах реалізації проекту «Створення консорціуму університетів з метою підтримки ідей сталого розвитку у галузі освіти, науки і технологій», який покликаний об'єднати провідні технічні університети України для імплементації концепції «Вища освіта для сталого розвитку». Координаторами проекту є ДВНЗ «Національний гірничий університет» (в особі ректора академіка НАН України, професора Г. Г. Півняка), ДВНЗ «Придніпровська державна академія будівництва та архітектури» (в особі ректора професора В. І . Большакова) і Дніпропетровський державний аграрно-економічний університет (в особі ректора професора А. С. Кобця).

Метою проведення досліджень є посилення уваги науки до проблем сталого розвитку, формування знань про інструменти сталого розвитку для управління економічною діяльністю, підвищення ролі університетів у трансформації вищої освіти в контексті сталого розвитку.

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SUSTAINABLE DEVELOPMENT STRATEGY AS THE KEY FACTOR FOR COMPETITIVENESS OF TECHNICAL UNIVERSITIES

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The integration of the ideas of sustainable development in technical universities of Ukraine is studied. The discussion provides insight into the sustainable development strategy for technical universities, prospects, means and instruments of its creation and advancing, significance of partnership in raising the technical universities' competitiveness through their strengths' application.

Keywords: education for sustainable development, sustainable development strategy for higher education, the affiliate network of universities, international co-operation.

Statement of problem. First of all, we would like to emphasize here that elaborating principles and strategy of sustainable development for technical universities is evoked re-

sponse to ambitious goals of Agenda 21, which called for innovative approaches and reorientation of existing policies in all industrial sectors, especially for solving the problems of providing environmental safety and energy efficiency. In the context of sustainable development, knowledge and education are considered as the main drivers for transition to a sustainable economy and social justice by adopting and implementing principles of 'green' growth [1].

In this respect, Agenda 21 (article 36) clearly introduces a triple mission of universities – to provide understanding, awareness, and vocational training, which are necessary for implementing sustainability concept. This implies that universities have to correspond to certain criteria and characteristics, which presuppose social responsibility and initiatives, interdisciplinary approach, high level of scientific and pedagogical staffs, and in general, they should seek to build human capacity for sustainable development.

The leading universities in the EU and the world are intensively implementing the concept of «Higher Education for Sustainable Development» (hereinafter – HESD) with all its facets, thereby promoting the development of a model of 'green' university.

Recently, Ukrainian education reforms focused on the heavy process of approximation of the national higher education system to the standards of the EU as well as enhance the image of domestic universities in global market of educational services.

A new Law of Ukraine «On Higher Education» (Version of 09.08.2016) establishes a general outline of the State policy in the field of higher education, based on the principles of sustainability, among which the first and the most important task is: «the promotion of sustainable development through producing a competitive human capital, and creation of conditions for lifelong learning».

It is anticipated that the underlying institutional reforms will create the necessary groundwork for step-by-step improving of education quality to the European one, whereas currently it moves very slowly. The level of training of graduates of Ukrainian universities still leaves much to be desired – the most of graduates do not meet labour market qualification requirements, they are not able to promote the technological innovation in production. In that regard, it is essential that technical universities become the flagships of the higher educational restructuring and the main platforms for the development and testing of educational programmes for sustainable development with their further implementation throughout the Ukraine [2].

Technical universities not only have to answer the requirements of formal reforms, but they should be under an obligation to proactively respond to the challenges of technological obsolescence that were undermining the capacity of Ukraine to achieve sustainable development, often outstripping traditional labour market needs.

In this regard wide discussion of strategies for development of Ukrainian technical universities, subject to analysing experience and methods of integration of sustainable development strategy as essential element of knowledge and value system, attitudes and beliefs of future managers and engineers that predetermine the way of our economic progress is necessary.

Analysis of recent papers. The review of recent publications on the quality of higher education showed that most of authors had agreed with the need for deep reforms across the higher education system [3]. Authors point out that universities should become the «smithy of staff» for moving to wise practices on environment and energy resources management, including the application of energy efficient solutions and environmentally sustainable economic growth approach [4–5].

The role of technical universities in formation human resources and scientific capacity for responsible production practices, especially in building, agricultural and mining sectors is often proclaimed in literature [4–6].

However, it should be noted that too little attention is paid to practical tools for the implementation of idea and principles of «Higher Education for Sustainable Development». Also further discussion is needed for green strategies of universities development and new models of training programs for engineers and managers, including problem of environment and resource management. Also it is essential to ascertain the ways of consolidating efforts of universities on implementing ideas of sustainable development

under conditions of competition.

Aim of the paper. This article focuses on the determining sustainable development strategy for technical universities. In the context of the discussion, the study had the following objectives: 1) to identify the major components, which form an overarching sustainable development strategy of technical universities in competitive markets of educational services; 2) to define the methodological frames of creating and implementing «green» educational programs for the students of technical universities; 3) to analyse requirements and the ways of ensuring ecologization of curricula for students of non-environmental study programmes.

Materials and methods. Following a series of regional conferences, ministerial meetings and extensive consultations, the 37th session of UNESCO's General Conference (2013) adopted the Global Programme of Action on expanding education for sustainable development during the period after 2015 with the specification of a detailed road map for its implementation.

UNESCO World Conference on Education for Sustainable Development (Aichi-Nagoya, Japan, 10–12 November 2014) and World Education Forum (Incheon, Korea, 19-22 May 2015) emphasized that the transformation of higher education should be comprehensive and multifaceted, also cover the content of educational programs, educational methods and techniques, learning environment and learning outcomes. Moreover, the Paris Agreement on Climate Change (United Nations Framework Convention on Climate Change, 30 November-12 December 2015) calls upon all universities to ensure, that issues of climate and energy saving are adequately reflected in education and training as their contribution to capacity building for climate action.

Such approach is fundamentally new and for Ukrainian universities. Followed the market dictates, Ukrainian universities have suffered from a progressive erosion of their features: unity of education and scientific research, devotion to the idea of true knowledge, serving priorities of society. Our investigations [7-8] allow us to state that there is lack of experience high education for sustainable development in Ukrainian. We don't have universities corresponding to today's requirements and able to influence the national economy, resolve fundamental technological and social problems.

Studying of HEAD experience in different countries has allowed to make some generalizations regarding the main components of the HEAD strategy for universities (Fig.1).

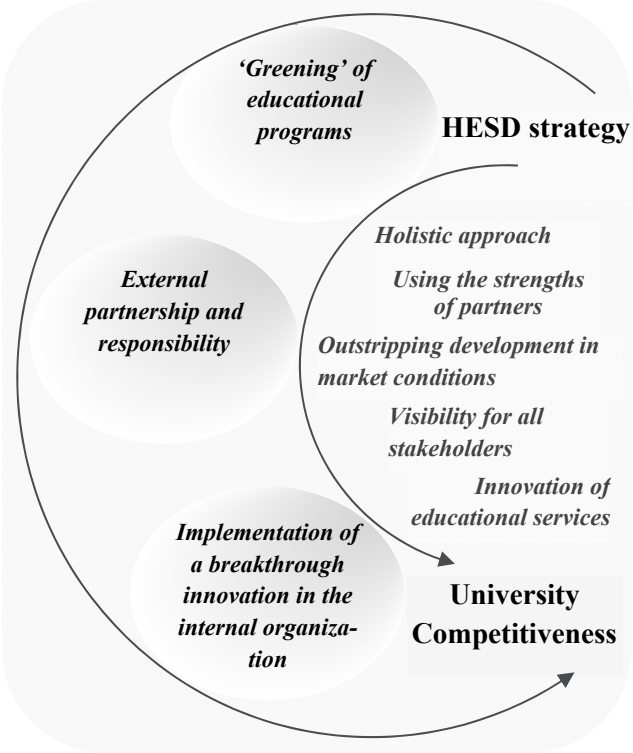

Fig.1. The main factors of the University competition by using the sustainable development strategy

At first, the main concern of a modern technical university should contain a formula of balanced training for the adaptation of management solutions and achieving sustainable development of the main industrial branches. Ukrainian universities often use unjustified targets and indicators of their usefulness, which are quite far from the real expectations and needs of society. At the same time, technical universities were intended to form students' realization of correlation between sectorial economy, energy, environment and social well-being, teach them 'green' standards and instruments for solution of industrial tasks, and of these actions are called sustainability [9].

The task of 'greening' curricula is usually equated to the broadening of ecological education at Ukrainian universities [2–5].

However, 'green' curriculum presupposes not only improving the awareness of sectorial

ecological problems, but also scaled integration of ideas, concepts, principles and methods of managing sustainable development into curricula. The distinctive feature of HESD strategy is multidisciplinary approach, which provide for integrating modules (themes or groups of themes) on sustainable development into professional disciplines according to basic curricula. Such approach ensures correlation between speciality and problem of sustainable development relating to professional tasks.

Second distinguishing feature, the HESD strategy involves a special joint effort to promote the idea of sustainable development in society. Prof. A. E. J Wals underlines, that universities have shared responsibility for creating space for «new thinking about global economic development, focusing on sustainable development», for generating of new ideas and critical reassessment the old methods [10].

Investigation of Ukrainian experience showed that external partnership is developing in a variety of lines today. Technical universities are the members of different international scientific and educational institutions. For example, the SHEI «National Mining University» (hereinafter – the NMU) is a member of European University Association (EUA), Magna Charta Universitatum, European Society for Engineering Education (SEFI), International Association for energy efficiency (IAEE) and numerous other international associations.

Nearly every university has numerous bilateral contacts with foreign universities. Thus, the NMU cooperates with 56 universities and institutions from Germany, Poland, Central and Western Europe, Middle East, Asia, USA and Canada and other countries. Nevertheless, However, Ukraine has not yet received any 'green' university. In this regard, especially significant is the recent movement towards consolidation of national universities in the form of various associations and networks. Such cooperation is particularly important between universities on activities which together increase negative impact on the environment and provide the basic employment.

A significant milestone in this endeavour was the creation of «Consortium of universities to support the sustainable development in the field of education, science and technology», which included the State Higher Educational Institution «National Mining University», the State Higher Educational Institution «Prydneprovs`ka State Academy of Civil Engineering and Architecture» and the Dnipropetrovsk State Agrarian-Economic University. Universities based on partnership, equality and mutual interest will develop through the use of the different resources of its partners and the various forms of cooperation function as true catalysts for development.

Third distinguishing feature, the HESD strategy involves the implementation of a breakthrough innovation – a radical transformation of educational products and services that are offered to the market. Such innovations are impossible without internal transformations – combination of will, ambitions and wishes for changes, accumulation of organizational, creative and other efforts of university's staffs. Therefore just internal initiatives are the ground for the extent and depth of the reforms on the 'greening' of the university, i.e. internal initiatives are the beginning of implementation of HESD strategy.

Universities' inner strength is a inexhaustible resource for improving education's quality. HESD can't be realized without joint efforts of all stakeholders of education process, especially instructors and students. Such partnership is necessary for transformation of university's internal capacity into some new value – new kind of educational service in combination with new kind of interpersonal relationships, influencing the changes in quality of university activities.

As a result of implementing HESD strategy, university obtains such competitive advantages (core competencies):

1. Holistic approach – realization of cumulative education and interdisciplinary approach in educational system and in market policy at a whole.

2. Using the strengths of partners – university benefit from partnership, due to partners' expertise and their contribution to joint activities, i.e. each partner get some benefits with the same perspective of HESD goal achievement.

3. Outstripping development in market conditions – reformist nature of the HESD strategy ensures actions for consistency of educational services and core values and funda-

mental requirement of society, often determining market needs.

4. Visibility for all stakeholders – partnership for HESD is based on developing partner networks and intensive consulting for providing to education ability to disclose capacities of stakeholders and to intensify society integration for ensuring sustainable development.

5. Innovation of educational services – the HESD strategy provides not only support for innovations and modernisation in educational process, but of fundamentally new education essence and teaching professionalism, which do maintain the universities' competitive advantages at the education market.

Conclusion. Research reaffirmed the role of universities as key element in realisation of sustainable development goals. In this regard universities have a triunique function: integration of sustainable development concept into education, disseminating ideas and professional training for providing sustainability.

Selection of methodological framework of a HESD strategy for technical university includes three mandatory directions: (1) 'Greening' of educational programs; (2) External partnership and responsibility; (3) Implementation of a breakthrough innovation in the internal organization.

Consistent implementation of a HESD strategy gives university opportunity to maintain such competitive advantages as: holistic approach, using the strengths of partners, outstripping development in market conditions, visibility for all stakeholders, and innovation of educational services.

HESD strategy is not 'a frozen' policy, and requires consistency in the efforts of universities and their stakeholders. Systematised research activities, analytical reviews of universities best practices' results, publishing multiauthor monographs on the problems of sustainable development, publishing books and manuals, designing other educational 'green' packages is getting highly relevant therefore.

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СТРАТЕГІЯ СТАЛОГО РОЗВИТКУ ЯК КЛЮЧОВИЙ ФАКТОР ПІДВИЩЕННЯ КОНКУРЕНТОСПРОМОЖНОСТІ ТЕХНІЧНИХ ВУЗІВ

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У статті обговорюється проблема імплементації ідей сталого розвитку в технічних вузах України. У дискусії розкривається сутність стратегії сталого розвитку для технічних вузів, вивчаються перспективи, засоби і інструменти її створення і просування, цінність партнерських відносин для підвищення конкурентоспроможності через використання сильних сторін своїх партнерів.

Ключові слова: освіта для сталого розвитку, стратегія сталого розвитку для вищих навчальних закладів, партнерська мережа університетів, міжнародне співробітництво.

СТРАТЕГИЯ УСТОЙЧИВОГО РАЗВИТИЯ КАК КЛЮЧЕВОЙ ФАКТОР ПОВЫШЕНИЯ КОНКУРЕНТОСПОСОБНОСТИ ТЕХНИЧЕСКИХ ВУЗОВ

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В статье обсуждается проблема имплементации идей устойчивого развития в технических вузах Украины. В дискуссии раскрывается сущность стратегии устойчивого развития для технических вузов, изучаются перспективы, средства и инструменты ее создания и продвижения, устанавливается ценность партнерских отношений для повышения конкурентоспособности путем использования сильных сторон своих партнеров.

Ключевые слова: образование для устойчивого развития, стратегия устойчивого развития для вузов, партнерская сеть университетов, международное сотрудничество.

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