International Conference

Professional Education and Economic Needs of the Black Sea Region

Chisinau, Republic of Moldova, 24 April 2015

“Knowledge is power. Education is the premise of progress, in every society, in every family”

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CONTENT

Conference Objectives

Welcoming Addresses

H.E. Ambassador Victor TVIRCUN, Secretary General of the BSEC Permanent International Secretariat, Professor, Dr. Hab. 6

Acad. Grigore BELOSTECINIC, Rector of Academy of Economic Studies of Moldova Professor, Dr. Hab. 7

Ban KI-MOON, Secretary General of the United Nations 8

Acad. Gheorghe DUCA, President of the Academy of Sciences of the Republic of Moldova Professor, Dr. Hab. 9

Umberto de PRETTO, Secretary General of the International Road Transport Union 10

Panel 1: “Quality Issues in Formal Education”

H.E. Ambassador Victor TVIRCUN, Secretary General of the BSEC Permanent International Secretariat, Professor, Dr. Hab., “Professional Education and Economic Needs of the Black See Region” 12

Grigore BELOSTECINIC, Rector of the Academy of Economic Studies of Moldova, Professor, Dr. Hab., Academician, “Promoting the Knowledge Triangle – a Strategic Objective for Moldova” 14

Larisa BUGAIAN, Professor, PhD, Technical University of Moldova, “Transforming Knowledge in Skills Required by Labour Market” 16

Stanislav NIKOLAENKO, Professor, PhD, Rector of National University of Life and Environmental Sciences of Ukraine “The Main Values and Aspects of Higher Education Development in a Context of Labour Market Demand” 19

Ala COTELNIC, Professor, Dr. Hab., ASEM, “Quality of Higher Education and Financial Autonomy” 26

Panel 2: “Education and the Role of Information and Communication Technologies”

Victor SIBIRSCHI, Assoc. Prof., PhD, Moscow Witte University, Russian Federation 28

Elena SIBIRSKAYA, Moscow Witte University, Russian Federation, “Problems of Higher Education in the Field of the ICT in Russia in Comparison with the Other Countries of the Black Sea Region” 30


Angela BELOBROV, Assoc. Prof., PhD, ASEM, “Principles and Norms of an Effective Multiple Choice Test Construction with the Aim of Evaluating the Knowledge in the Economic and Financial Areas” 35

Igor KRAPIVKA, President of Orvento Metal, Republic of Moldova, “Basic Problems of Professional Education and Training of Specialists for an Effective Activity at the Enterprises of the Real Sector of Economy of the Republic of Moldova” 38

Lucia CASAP, PhD candidate, Gopa Consultants, EU VET Reform Project, ASEM, Oxana SAVCIUC, Assoc. Prof., PhD, ASEM, “Education Marketing and the Role of IT Technologies in Its Development” 41

Igor KRAPIVKA, President of Orvento Metal, Republic of Moldova, “Basic Problems of Professional Education and Training of Specialists for an Effective Activity at the Enterprises of the Real Sector of Economy of the Republic of Moldova” 43

Angela BELOBROV, Assoc. Prof., PhD, ASEM, “Principles and Norms of an Effective Multiple Choice Test Construction with the Aim of Evaluating the Knowledge in the Economic and Financial Areas” 45

Igor KRAPIVKA, President of Orvento Metal, Republic of Moldova, “Basic Problems of Professional Education and Training of Specialists for an Effective Activity at the Enterprises of the Real Sector of Economy of the Republic of Moldova” 47

Lucia CASAP, PhD candidate, Gopa Consultants, EU VET Reform Project, ASEM, Oxana SAVCIUC, Assoc. Prof., PhD, ASEM, “Education Marketing and the Role of IT Technologies in Its Development” 50

Igor KRAPIVKA, President of Orvento Metal, Republic of Moldova, “Basic Problems of Professional Education and Training of Specialists for an Effective Activity at the Enterprises of the Real Sector of Economy of the Republic of Moldova” 52

Lucia CASAP, PhD candidate, Gopa Consultants, EU VET Reform Project, ASEM, Oxana SAVCIUC, Assoc. Prof., PhD, ASEM, “Education Marketing and the Role of IT Technologies in Its Development” 54
Panel 3: “Linking science and education with market demands”


Valentina SMORCHKOVA, Academician, Professor, PhD, Moscow State Regional University International Academy of Sciences of Pedagogical Education, “Education Quality as a Factor of Sustainable Development of Society” 77

Lev MARDAKHAEV, Academician, Professor, PhD, International Academy of Sciences of Pedagogical Education (IASP, Head of the Department of Social and Family Pedagogy RSSU, Honorary worker of Higher School of Russian Federation, Member of Presidium of International Academy of Sciences of Pedagogical Education, Moscow State Regional University, Russian Federation, “Fundamentals of Teacher’s Image Shaping” 80

Marilena Aura DIN, Assoc. Prof., PhD, Higher Education Counsellor, Ministry of Education and Scientific Research, Romania, “Recent Romanian Initiatives in Policy and Practice to Promote Employability of Higher Education Graduates” 85

Panel 4: “Key Values and Priorities of Education in the 21st Century”

Ekaterina ARTAMONOVA, Professor, PhD, President of the International Academy of Sciences of Pedagogical Education, Honorary worker of Higher School of the Russian Federation, Moscow, Russia, “Value Foundations of Modern Professional Education” 94

Tatiana BUCOS, PhD., ASEM, “Connecting the Professional Education to the Requirements of the Economy through the Competencies Formed in the General Education” 101

Carolina TCACI, PhD, “Alecu Russo” State University of Balti, RM, “Developing Skills for Implementing Creative Methods in Making Decision” 110

Svetlana GHENOVA, Assoc. Prof., PhD, Comrat State University, Republic of Moldova, Alla LEVTITSKAIA, Assoc. Prof., PhD, Director of Innovation Incubator “InnoCenter”, Comrat State University, Republic of Moldova, Zinovia ARICOVA, Assoc. Prof., PhD, Rector of Comrat State University, Republic of Moldova, “Incubator “InnoCenter KDU” – the Initiator and Leader of the Regional Innovation Development” 113

Livia BACIU, Professor, PhD, Alexandru Ioan Cuza University of Iasi, Romania, Corneliu GUTU, Assoc. Researcher, PhD, ASEM, “Universities as Social Catalyser of Collaborative Innovation and Regional Development” 121

Other Contributions

Ion ABABII, Academician, Professor, Dr. Hab., University of Medicine and Pharmacy “Nicolae Testemitanu”, Efim ARAMA, Professor, University of Medicine and Pharmacy “Nicolae Testemitanu”, “Advantages of Applications UV Detectors Based on Stratified Crystals in Medicine” 127

Efim ARAMA, Professor, University of Medicine and Pharmacy “Nicolae Testemitanu”, Eugeniu GHEORGHITA, Professor, Tiraspol State University, Valentina PINTEA, Senior Lecturer, Technical University of Moldova, Anatol MACIUGA, Assoc. Prof., PhD, Technical University of Moldova, “Photoelectrical Properties and the Stability at Radiation for Monocrystals ZnIn2S4” 134
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Affiliation(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oleg BUGA, Professor, Dr. Hab., “Aleco Russo” State University of Balti</td>
<td>“About Some Trends of Higher Education System in the Republic of Moldova”</td>
<td></td>
</tr>
<tr>
<td>Tatiana CALLO, Assoc. Prof., PhD, National Council for Accreditation and Attestation of the RM</td>
<td>“The Educolgy of Professional Education and Labour Market”</td>
<td></td>
</tr>
<tr>
<td>Natalya GERASIMENKO, Academician, Professor, PhD, Moscow State Regional University, International Academy of Sciences of Pedagogical Education, Member of the Presidium of the International Academy of Sciences of Pedagogical Education, Russian Federation</td>
<td>“Native Language as a Means of Forming a Tolerant Personality in Teaching in Graduate Studies”</td>
<td></td>
</tr>
<tr>
<td>Lilia GRIGOROI, Assoc. Prof., PhD, Dean of Accounting Faculty, ASEM, Neli MUNTEAN, Assoc. Prof., PhD, Vice dean of Accounting Faculty, ASEM</td>
<td>“Profession of Accounting within the Formal Education”</td>
<td></td>
</tr>
<tr>
<td>Gabriela POHOATA, Professor, PhD, Dimitrie Cantemir Christian University, Romania, Mihaela MOCANU, Lecturer, PhD, Dimitrie Cantemir Christian University, Romania</td>
<td>“Euroculture in Education. Landmarks for a New Axiological Education within Globalization”</td>
<td></td>
</tr>
<tr>
<td>Veronica MIDARI, PhD candidate, ASEM, Aurelia TOMSA, Assoc. Prof., PhD, ASEM</td>
<td>“Need for Reorganization of Vocational and Education Training System in the Republic of Moldova”</td>
<td></td>
</tr>
<tr>
<td>Tatiana TROFIMOV, PhD candidate, ASEM</td>
<td>“Competition and Education – Important Factors for Functional Market Economy Development”</td>
<td></td>
</tr>
<tr>
<td>Mikhail VILENSKIY, Academician, Professor, PhD, International Academy of Sciences of Pedagogical Education, Moscow State Pedagogical University, Honorary worker of Higher School of the Russian Federation</td>
<td>“Competence-based Approach to the Educational Process on Physical Culture in Higher Education”</td>
<td></td>
</tr>
<tr>
<td>Ludmila RURAC, PhD candidate, ASEM</td>
<td>“Common Social Stereotypes in Advertising”</td>
<td></td>
</tr>
<tr>
<td>Diana BRAGOI, PhD candidate, ASEM</td>
<td>“Development of the Republic of Moldova – the Path to Integration”</td>
<td></td>
</tr>
</tbody>
</table>

Summary and conclusions
CONFERENCE OBJECTIVES

In pursuance of the objectives of the “BSEC Economic Agenda” of particular relevance is its Goal 14 on “Higher Standards in Education and Training”, that focuses, *inter alia*, on supporting the exchange of information and experiences with regard to the modernization of the educational systems in the BSEC Member States aimed at increasing sustainable growth and the establishment of knowledge based societies and building stronger regional synergy between the relevant authorities of the BSEC Member States and their business and academic communities.

So, the International Conference ‘Professional Education and Economic Needs of the Black Sea Region’ has been timely event, as nearly all the BSEC Member States face the problem of the non corresponding needs of the labour markets and education. This event, has been organized for the first time in BSEC, envisaging bringing together the representatives of the governments, academia and businesses (including civil society) from the BSEC Member States, combining both high-level and expert participation, in order to discuss the interrelated issues of education, economy and information and communication technologies.

Besides its educational, technical and scientific aspects, the Conference was aimed at enriching the public-private synergy with a solid academic component and also providing a valuable forum for exchange of experiences and success stories, thus leading to a better understanding of the significance of formal education and identifying the most important areas of research related to the connection between education and the labour markets.

The International Conference “Professional Education and Economic Needs of the Black Sea Region” aimed at attracting theoretical and empirical research which will offer scientific insights. In order to cover all relevant issues, four main themes have been discussed within the following panels:

- Panel 1: “Quality Issues in Formal Education”
- Panel 2: “Education and the Role of Information and Communication Technologies”
- Panel 3: “Linking Science and Education with Market Demands”
- Panel 4: “Key Values and Priorities of Education in the 21st Century”

The Conference has been co-chaired by the Secretary General of the BSEC Permanent International Secretariat and the Rector of Academy of Economy Studies of Moldava.

During the Opening Session, a number of distinguished high-level personalities from governments, international organizations, academia and businesses have addressed the Conference, thus contributing to its high standards.
At the outset, allow me to express my satisfaction at the holding of the first International Conference on ‘Professional Education and Economic Needs of the Black Sea Region’ and to welcome you all to Chisinau, on behalf of the Organization of the Black Sea Economic Cooperation (BSEC). The Conference, organized jointly by the Permanent International Secretariat of BSEC and the Academy of Economy Studies of Moldova (ASEM), represents an important event within the framework of the Moldovan Chairmanship-in-Office of BSEC.

The Conference, which is organized for the first time in BSEC history, brings together representatives of the governments, academia, businesses as well as international organizations from the BSEC region and beyond, combining both high-level and expert participation, in order to discuss the interrelated issues of education, economy and information and communication technologies, aimed at enriching the public-private synergy.

We hope that this event will provide a valuable forum for exchange of experiences and success stories, thus leading to a better understanding of the significance of formal education and identifying the most important areas of research related to the connection between education and the labour markets.

I am particularly grateful to the institutions of the host country – Academy of Sciences, Chamber of Industry and Trade and other civil society organizations, international organizations, including UNESCO, International Road Transport Union, International Union of Railways, Danube Commission, International Teachers Training Academy of Sciences (MANPO) of Moscow and BSEC Related Bodies – Black Sea Trade and Development Bank and BSEC Business Council, without whose intellectual, financial and logistical support this event would not have been possible.

Last but not least, I am very grateful to the United Nations Secretary General, H.E. Ban KI-MOON, who was very kind to send his message of support to the Conference. Judging by the issues on its agenda and the participation from the BSEC region and beyond, I am confident that our Conference is bound to achieve successful results.

I thank you for your kind attention!

Ambassador Victor TVIRCUN
Secretary General of the BSEC PERMIS,
Professor, Dr. Hab.
Dear colleagues,
Honourable Guests,

I feel honoured to be among the first speakers at this meeting and, as co-chairman of the Conference, allow me to welcome all participants to this event and, especially those arriving from abroad. I welcome you dear colleagues and wish you a pleasant stay in Moldova.

Honourable guests,

The theme and the content of this Conference are of great importance for all universities, but also for business environment in Moldova and in the entire region of the Black Sea Basin, taking into account the fact that the education system in general and higher education in particular, play a fundamental role in ensuring sustainable economic development, and building a knowledge-based society in the Republic of Moldova.

Universities should be aware that education has no borders, and that in the future they will work in a highly competitive environment created within a single European higher education area, with a considerable increase of academic mobility and greater opportunities for young people to study in a European university. The above mentioned require radical changes and improvements in higher education, and will impose the elaboration of strategies aimed at ensuring development and capacity of being competitive in the new conditions of the educational environment.

I express my firm conviction that only a genuine university autonomy, together with adequate funding, along with increasing responsibility of university, state, business environment will increase the university’s capacity in training highly qualified professionals, competitive on labour market, and will develop a knowledge-based economy in our country, where cooperation between universities, research institutions and business environment representatives have an essential role.

I like to believe that issues discussed above, along with others, equally important, will be discussed during the conference.

I use this opportunity to thank everyone who got involved in organizing this event, of course, His Excellency, Ambassador Victor Tvircun for his initiative in organizing this event and also wishing good luck to all participants.

Grigore BELOSTECINIC
Rector of the Academy of Economic Studies of Moldova
Professor, Dr. Hab., Academician
I am pleased to convey my best wishes to all those taking part in the International Conference “Professional Education and Economic Needs of the Black Sea Region”.

You are gathering at a critical moment for global development. We have three powerful opportunities to put our world on a safer, more sustainable and equitable pathway.

First, we must renew the global partnership for development at the International Conference on Financing for Development in Addis Ababa in July. Second, countries must adopt the post-2015 development agenda and embrace a new set of sustainable development goals at the United Nations in September. Third, governments must make good on their commitment to adopt a universal, meaningful climate change agreement at the COP21 Paris Climate Conference in December.

In short, we have before us the chance to chart a new era of sustainable development. Quality education, including professional and vocational training, will be essential.

The United Nations offers a platform for regional work on education for sustainable development – ESD – in the pan-European region, including the Black Sea Economic Cooperation (BSEC) area. Since 2005 the United Nations Economic Commission for Europe has supported its members in implementing the UNECE Strategy for Education for Sustainable Development. The Strategy’s main aim is to encourage countries to integrate ESD into all of their educational systems, including vocational and adult learning.

One action area is focused on reorienting technical and vocational education and training in support of sustainable development and the transition to a green economy.

As your Conference brings together the representatives of governments, academia, businesses and civil society, I would encourage all participants to consider how the instruments and platforms of the United Nations could be better utilized for achieving concrete results in the BSEC area.

I look forward to working with you to achieve our common objectives, and wish you a successful conference.

Ban Ki-MOON,
Secretary General of the United Nations
Dear Secretary General of the BSEC and Doctor Honoris Causa of the Academy of Sciences of Moldova, Victor Tvircun,

Dear friends and guests,

The Black Sea region is practically native for the Republic of Moldova. There are 12 states in the neighbourhood of the Black Sea, with a total population of 340 million people. It is obvious that in this region there is a scientific potential and a critical intellectual mass that can work towards achieving a sustainable development of the whole region.

The main desideratum for the achievement of this development is investments in knowledge and creating conditions for the consolidation of the knowledge society in the region. The most relevant areas of impact for the desideratum of knowledge are education, research, innovation and entrepreneurship.

Being exponents of decision makers, we are the right people to transform this desideratum into reality. By comparison, other regions such as the Baltic region, Mediterranean, Northern have successfully implemented this goal and created synergies for the prosperity of the region. There is interest in education and research from the business environment in these countries, which compensates the budgets of the areas and creates prerequisites for growth. For example, in Lithuania, the private sector, especially the banking sector, refills 1/3 of the public budget of education and science. In Norway and Sweden, where is attested the most perfect form of education, business intervenes consistently in the educational and scientific processes – creating preconditions for the professionalization of education and applied research.

For Moldova, similar to states in the Black Sea region, is necessary to ensure a sustainable development, are required investments in people through the support for education, science and innovation.

A first step in this direction is necessary to bring back the public’s attention to our country’s top priority – education and science. Institutions in this area must have greater confidence from the society.

A good thing for us is that according to the last survey, the fourth place, at the confidence compartment, is owned by the Academy of Sciences of Moldova. 45% of surveyed respondents positively appreciated the work of the Academy.

Respondents have noticed the most tangible changes in the field of education, culture, science. All these areas have rallied to European standards: in education – was approved a new legal framework (Education Code), in culture – has occurred the association to the Creative Europe program, in science – has occurred the association to the Community program Horizon 2020.

These changes have produced results in recent years. The education reform, supported by the scientific community, has changed the structure of the education system and reformed vocational and professional education. According to the Code, education in Moldova became a dual one. It is very important the participation of society, business, public administration in preparing specialists and especially in professional education. However, there are many actions to be taken following the approval of the Code and for the creation of prerequisites for the proper functioning of vocational education is necessary to attract business environment through small and medium enterprises sector, science, through research institutes, innovation, through accelerators and innovation incubators.

Increasing vocational education and the quality of this process depend on this cluster interaction. This goal, as an example, is implemented by the Academy, within the University of ASM, which created a connection to the existing research institutes and industries in the country. I think it is a good example for the vocational education.
A second important aspect is the integration of these clusters in the Black Sea area and the Community space. These perspectives are opened by Community programs, such as Horizon 2020, where the Republic of Moldova has a good participation experience and is a regional leader at the level of integration into the European Research Area. However, I believe that we must improve cooperation in the region in order to increase funds absorption capacities of development and harmonize our processes at the policy level.

We should not exclude from our actions prerequisites and risks of economic growth. I have recently attended the launch of a forecast for the key macroeconomic indicators of the Republic of Moldova, organized by the Economic Research Institute of ASM, which in the pessimistic version, shows a risk of entry into recession.

This risk, in my opinion, could have been avoided completely if in due time we had realized that investments in people, through education and science, would lead eminently to a sustainable development.

Thank you for your attention and I encourage you to get today’s discussions in the area of knowledge, because through excellence, education and science is produced the added value necessary for the Republic of Moldova and the Black Sea region as a whole.

Gheorghe DUCA
Professor, Dr. Hab., Academician
President of the Academy of Sciences of Moldova
Your Excellency, Mr President,  
Your Excellencies,  
Distinguished Guests,  
Ladies and Gentlemen,  

As IRU Secretary General, I am greatly honoured to be addressing you on behalf of the International Road Transport Union.

I am delighted by the presence of the many special guests who found the time to come and join us here today to contribute their experience and expertise to the discussions and decisions of the conference.

Dear professionals, the movement of people and goods is dependent on road transport. In our economies, over 70-80% of goods are transported by road and thus the efficiency of the entire supply chain is linked to the effectiveness of road transport.

In today’s economy, the road transport industry, of which 95% are SMEs, has become more than just a simple mode of transport. It is now a production and distribution tool which is vital to succeed as it can interconnect door to door all companies to every market over the world.

However, due to fierce competition everyone is forced to provide the best services and the best products under the best conditions to succeed in a globalised economy.

With this new paradigm, the road transport industry and its manpower are set to continuously change to ensure its long-term success and thus contribute to a sustainable development of the economies and societies.

Road safety regulations and ambitious targets to reduce accidents and casualties are a priority and an obligation for all actors in the industry. In consequence, amongst other changes that are taking place, new vehicles are designed following strict security standards, drive and rest time rules have been enforced and innovative technologies are launched in order to ensure compliance.

The outcome is that road transport operators and drivers are required to be both compliant with increasingly complex regulations and to deliver the necessary results to ensure a competitive advantage over other companies active in local and international markets. Appropriate professional training is therefore essential to build up the necessary skills that will ensure long-term success.

The industry needs high quality learning which focuses on developing the skills of road transport professionals by enhancing their knowledge of and ability to deal with key aspects of road transport operations. Well educated professional drivers are an essential contribution to make all roads safer and to keep economies moving. However, transport companies seeking effective training solutions often face a regrettable lack of recognition for the efforts done, due to the lack of harmonisation and transparency in training standards.

The consequences are serious as the industry is striving to attract new entrants in order to respond to increased transport demand which is currently temporarily alleviated by slow recovery in economic growth. The establishment of an employee skills development framework is a key factor to contribute to the development of skilled professionals, competent, confident, and content in their jobs and also properly recognised as true professional and key actors in the logistic chain.

In today’s globalised world, “harmonisation”, “standardisation”, “coordination” and “cooperation” are key words, particularly when we speak about road transport, the most dynamic and flexible transport mode of all, and road transport professionals, the most mobile professional category. The IRU Academy and its Accredited Training Institutes (ATIs) have for a long time understood the value of team work and the importance of working together to implement high standard harmonised programmes to enable a sustainable development of the profession.

12
The IRU Academy was founded in 1999. This initiative was in response to a clear need of the industry which required a consistent qualification framework. Since its inception and with its first programme aimed at Transport Managers, the IRU Academy was able to rapidly expand its geographical scope, now having over 50 ATIs in about 40 countries, spanning 3 continents and working together towards the shared values I expressed before.

However, despite these achievements, the transport industry needs more support, notably from policy makers, by recognising and endorsing the efforts undertaken by the industry and by making professional competence a key prerequisite of any qualitative transport system. This will be contributing to improve transport efficiency, which ultimately benefits the economy and society as a whole.

Ladies and Gentlemen, I wish all of you a fruitful seminar and I am very much looking forward to the interesting discussions that will follow.

Thank you!

_Umberto de PRETTO_

_Secretary General of the International Road Transport Union_
PROFESSIONAL EDUCATION AND ECONOMIC NEEDS
OF THE BLACK SEA REGION

Professor, Dr. Hab. Victor TVIRCUN
Ambassador, Secretary General of the BSEC PERMIS

Education has actively been on the agenda of BSEC for more than 10 years, as nearly all the BSEC Member States face the problem of the non-corresponding needs of the labour markets and education. The “Economic Agenda” of the “Professional Education and Economic Needs of the Black Sea Region” laid emphasis in the area of: enhancing cooperation in the field of vocational training, promoting lifelong learning, supporting joint university research projects and postgraduate programmes, developing partnerships, sharing experiences in quality assurance etc.

Key words: education, development, information, experiences, modernization, labour market, cooperation, support

Education has actively been on the agenda of BSEC for more than 10 years. The Ministers in charge of Education of the BSEC Member States at their Meeting in Athens in 2005, decided to establish a Working Group on Education, as an expert body consisting of representatives of the competent authorities of the Member States, in order to advance the cooperation among the BSEC Member States on Education. Many issues of practical importance for cooperation among the Member States have been discussed over the years, but it became obvious that new steps are needed to implement decisions taken at the various meetings.

That inspiration was found in the “BSEC Economic Agenda Towards an Enhanced BSEC Partnership”, adopted by the BSEC Council of Ministers of Foreign Affairs in June 2012 and endorsed by the Heads of State and Government of the BSEC Member States at the 20th Anniversary Summit of BSEC in Istanbul also in June 2012, as a strategic document for guiding the cooperation in the BSEC framework in order to meet the new challenges and opportunities that the Member States face.

In pursuance of the objectives of the “BSEC Economic Agenda” of particular relevance for our Conference is its Goal 14 on “Higher Standards in Education and Training” that focuses, inter alia, on “supporting the exchange of information and experiences with regard to the modernization of the educational systems in the BSEC Member States aimed at increasing sustainable growth and the establishment of knowledge based societies and building stronger regional synergy between the relevant authorities of the BSEC Member States and their business and academic communities”.

In addition, the “Economic Agenda” laid emphasis in the area of Education on:

- Enhancing cooperation in the field of vocational training among the BSEC Member States and exchanging information in the field of higher education through an Educational Portal of BSEC.
- Sharing experiences in quality assurance and developing a qualifications framework in higher education and sharing best practices in the development of policies for recognizing the results of previous formal, informal or self-education.
- Promoting lifelong learning opportunities through joint programmes among the relevant institutions in the BSEC Member States.
− Supporting joint university research projects and post-graduate programmes, development of joint academic programmes among the academies of sciences and universities, and encouraging the mobility of academic staff and students among the BSEC Member States.
− Developing the partnership with initiatives by the United Nations and other international organizations.
− Enhancing cooperation with technologically advanced countries, *inter alia* through organizing exchange programmes among national academies of sciences and universities.

The International Conference ‘Professional Education and Economic Needs of the Black Sea Region’ is a timely event, as nearly all the BSEC Member States face the problem of the non-corresponding needs of the labour markets and education. This event, which is organized for the first time in BSEC, brings together representatives of the governments, academia and businesses from the BSEC Member States, combining both high-level and expert participation, in order to discuss the interrelated issues of education, economy and information and communication technologies.

Besides its educational, technical and scientific aspects, the Conference is aimed at enriching the public-private synergy with a solid academic component. We hope that this event will provide a valuable forum for exchange of experiences and success stories, thus leading to a better understanding of the significance of formal education and identifying the most important areas of research related to the connection between education and the labour markets.

Despite the differences in the national and professional education systems of the BSEC Member States, we should highlight the presence of common problems and trends:

First of all, these include the incomplete process of professional education system’s reformation in line with international standards, the level of technological process and market needs.

- Among them is the imperfection of the legislative system that would regulate and set out the obligations and responsibility levels of the parties (government, employers and trade unions) for the recruitment and use of the professional staff.
- The lack of commonly accepted profession registry of the BSEC Member States, and a uniform system of certificate recognition confirming the level and quality of the acquired profession.
- There is a need to create a common electronic database of certificates on professional education of the BSEC Member States.
- Implementation and widespread use of the inter-student and inter-faculty exchange system, within the framework of Erasmus Mundus and Vasco da Gama.

We believe that the increase in the efficiency and quality of professional education will promote an active involvement into the educational process of most successful and highly educated representatives of the business community. Their participation would be desirable at the step of planning the entry and enrolment into educational facilities, development and approval of training programs of professional training, but also direct involvement into the educational process: such as reading special courses, practical exercises, projects and dissertations.

A particular role in the preparation of professional personnel belongs to the academic community. The active use within the process of professional education and recruitment of highly qualified specialists of the latest achievements in science enables them to conform to the high demands of the modern business, and become competitive in the regional and international labour market.

Within the framework of the international conference, organized and conducted under the auspices of the Moldovan Chairmanship in BSEC, the above mentioned problems will be discussed by the leading specialists, experts, businessmen and representatives of international and regional organizations.
1. Quality issues in formal education;
2. Education and the role of information and communication technologies;
3. Linking science and education with market demands;
4. Key values and priorities of education in the 21st century.

The relevance and modernity of the raised and brought to discussion issues on the panels, is not on affirmed through numerous participant applications, but also by the attention and the interest shown by the United Nations, UNESCO, The European Union, The International Road Union, the International Union of Railways, the Danube Commission and other international and regional organizations.

Noting the fact that this conference is the first forum of its kind in the history of BSEC, I hope that it will mark a start to a constructive dialogue, close cooperation and partnership between the relevant ministries, academic and business communities of the Member States of the Organization of Black Sea Economic Cooperation.

PROMOTING THE KNOWLEDGE TRIANGLE – A STRATEGIC OBJECTIVE FOR MOLDOVA

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The Moldovan higher education system is currently facing a period of significant changes, promoting the knowledge triangle, so as to adapt it to the demands of the modern society. Our country needs changes that would allow it making a jump towards a knowledge-based competitiveness, with reference to all areas of knowledge: research, innovation, education, information technology and communications, where cooperation between universities, research institutions and business environment has an essential role.

Key words: education, research, innovation, business environment, knowledge triangle, economic growth, labour market, modernization.

Promoting the knowledge triangle is of particular importance for all universities in the Republic of Moldova, as long as the education system in general and higher education in particular, has a fundamental role in sustainable development and building a knowledge-based society in Moldova.

It is obvious that developed economies have high research capacities and competitive strategies are based on innovations that allow specialization in products and services with high added value. The Republic of Moldova needs changes that would allow it making a jump towards a knowledge-based competitiveness, with reference to all areas of knowledge: research, innovation, education, information technology and communications, considered long-term competitiveness factors, which also generate positive externalities in overall economic activity.

Noteworthy is the fact that, despite some positive developments recorded in recent years, Moldova continues to face a number of problems, such as excessive reliance on foreign technologies, low productivity, low capacity to absorb innovations, lack of research and innovation activities in enterprises, poor collaboration between research institutions and universities with business environment, etc., thus losing the investment attractiveness. In order to overcome this situation it is necessary to reconsider the long-term competitiveness factors such as education, research, development of local technological capacities, ensuring consistency between macroeconomic stabilization and transition to an economy based on innovation, knowledge and information. We can overcome this situation and learn from the experience of countries that have made remarkable progress in knowledge sectors.
It is certain that the knowledge society, we have been talking about a lot lately, has become a reality that implies a greater role of universities in our society. First, universities need to review their missions, which should include, besides learning and personnel provision, research activities and possibilities to sell the research results, and involve more actively in knowledge and technology transfer.

Universities should be aware of the fact that education has no borders, and that will work in the future in a strong competitive environment created by the construction of the Single European higher education, with a considerable increase of academic mobility and greater opportunities for youngsters to study in a European university. The above mentioned require radical changes and improvements in higher education system, including economic, and will require the development of strategies aimed at ensuring development and capacity to compete in the new conditions of the educational environment.

At first glance, the Republic of Moldova has got an educational infrastructure, capable of providing competitive human resources necessary for a knowledge-based economy. The inheritance of a highly centralized government control, along with the lack of investment in the field, demotivating salaries of academic staff and limited employment opportunities for graduates undermines the ability of the education system to cope with the need to train professional human resources for a knowledge-based and globally competitive economy. It is necessary to supplement the theoretical skills with abilities and practical skills required in the labour market at all levels of education. The reform must be supported by increased budgetary expenditures for education and proper allocation of funds, based on objective and non-discriminatory criteria.

We need to continue the higher education reforms in the Republic of Moldova, so as to make it of quality and competitive regionally and internationally. Of course, we cannot talk about universal recipes that can be implemented in order to develop the competitiveness of universities. Each university must aim at achieving performance in accordance with its mission and strategic priorities. However, more active involvement of academic staff in research becomes indisputable.

It should be noted that considerable decrease of the research component in universities, along with low involvement of teachers in the process of scientific research and, as a consequence, lack of appreciable progress in raising the quality of education have been specific during the entire independence period of the Republic of Moldova. The use of the research results in teaching and learning should be considered the shortest way of their practical application (we refer to the knowledge transfer to future professionals who will be involved in practical activities).

However, research orientation towards solving concrete problems, faced by the real sector of the economy, business involvement in the research process, effective knowledge transfer (research outcome), including trading it in the market, will inevitably lead to strengthening the knowledge triangle – education, research, innovation, represented by universities, research institutes and companies, and, ultimately, will stimulate economic growth. That is why research results should be analysed through the impact they have on our society.

Under the conditions of a modern economy, the link between university and business environment becomes essential, both for universities and for businesses, as potential employers. The university’s performance and the business success depend on the quality of this link. This has become clear long ago in economically developed states, which already have good practices and traditions in this area. That is why the dialogue and cooperation between universities and businesses must become a priority also for the Republic of Moldova.

Our primary mission is to train professional and competitive human resources on labour market. This requires a continuous adaptation to a changing labour market. In this context we must admit that general higher education in the Republic of Moldova, and economic higher education, in particular, continues to be over-theorized and businesses are less open to
cooperate with academia, including in issues related to content and quality of studies. Universities need and businesses should actively participate in adapting fields of study, specializations to the economy’s needs, making recommendations on the content and skills that students should possess in order to increase their chances in finding a job in the labour market, adapting the curricula, involving academic staff in business activities and vice versa, providing internships for students and lecturers.

It is necessary to promote in universities learning based on problem solving, along with the use of case studies based on situations, so as to encourage partnership and cooperation with business and facilitating employability in the labour market, to the extent that this method develops creativity, teamwork, initiative, and competition. These instruments should also be used in assessing whether the level of knowledge, competences and skills, acquired by graduates, are sufficient in finding a job, or developing their own business, thereby facilitating the process of linking educational offer with labour market needs. It is obvious that knowledge gained in university is no longer sufficient to develop a successful professional career. Lifelong learning should be specific for a university graduate. Along with developing other skills, problem solving teaches you how to learn. And this is very important for all graduates.

Since, the Republic of Moldova has firmly declared its desire to join the large family of European countries, having already signed the Association Agreement in 2014; we should not forget that the Europe 2020 Strategy has placed knowledge at the core of the Union’s efforts to achieve an intelligent, sustainable and inclusive growth. The Communication of 2011, entitled “Supporting growth and jobs – an agenda for the modernization of Europe’s higher education systems” proves that the European Commission supports this strategy, significantly increasing the budget devoted to investment in education, research and innovation. This is because education, and in particular higher education and its links with research and innovation, plays a crucial role in individual and societal advancement and in providing the highly skilled human capital and the articulate citizens that Europe needs to create jobs, economic growth and prosperity. Higher education institutions are thus crucial partners in delivering the European Union’s strategy to drive forward and maintain economic growth.

However, among the key reforms in the field are considered the following: increasing the number of university graduates at all levels (by 2020, 40% of young people should graduate a higher education institution or equivalent education); improving the quality and relevance of human capital development in higher education; creating effective governance and funding mechanisms in support of excellence; international mobility of students, researchers and staff; internationalization of higher education, and, of course, strengthening the knowledge triangle between education, research and business.

I express my firm conviction that only a genuine university autonomy, together with adequate funding, along with increasing the responsibility of university, state, business environment will increase the university’s capacity in training highly qualified professionals, competitive on labour market, and will develop a knowledge-based economy in our country, where cooperation between universities, research institutions and business environment representatives have an essential role.
Actually, education is one of the most active areas in the social, economic and cultural life. It could be contradictory terms. In fact, these terms are interdependent, because without these features national educational improvements cannot exist. Extensive reforms in the higher education and in the undergraduate level too, reflect the profound changes that take place in contemporary society.

Regarding the higher education extensive reforms have been experienced in the last decade. Without claiming to cover complete all controversial moments of the higher education sector, I would try to analyse some of the main issues that are of the first importance, namely, the relationship between the university and the labour market; the role of the university in the competence formation required by the private and public sectors; the place of internship in consolidation of the abilities developed during the theoretical and practical courses; and the increasing complexity of the learning process. In parallel with the political, social and economic reforms the university’s goals are changed too.

Among the traditional mission of academic process, the university must increase its research activities. University must get out of the lab in the economic environment, to learn the skills of creation and technology transfer. It is necessary to implement researches developed by universities. However, the university continues to be a temple of culture, science, intellectuality and human development in all its fullness, at the same time, in order to develop professionalism and specialists ready to develop competencies for the employment.

Key words: Competencies, labour market, higher education, restructurings, knowledge generator, collaboration, professional skills, innovation capacity, research infrastructure, institutional budget financing, co-innovation

Introduction

The University as a key player in the knowledge-based society aims to contribute to the welfare of the individual and socio-economic environment, generating knowledge and transferring them to students through education, research and innovation. In this context the role of the university in relation to business environment changes and can be defined as follows:

- The role of forming skilled human resources: through its educational processes, both the initial and the continuing one, university aims to train specialists with skills that provide a competitive advantage on the labour market, being perceived by employers as an added value and ultimately contribute to society’s welfare.
- The role of generating new knowledge: through research, development and innovation, university produces transferable results to business environment in products and services with high added value.
- The role of institution that actively contribute to community development through cultural and educational involvement in the spirit of social paradigm of the future, institutional intervention – the university's involvement as an active institutional actor in the development activities of the society, individual intervention – the direct involvement of the academic community members in the society’s life (advice, expertise, representation in decision-making and consultative bodies, etc.).

Based on the common objective of the European Higher Education Area to prepare the transition to a knowledge-based society and economy, the university plays a very important role in preparing the workforce by investing in people through better policies for a society
oriented to research and development, as well as through the intensification of structural reforms’ processes for competitiveness and innovation. It is this new mission of the university that makes it to be one of the most active social sectors. Higher education of the Republic of Moldova has recently faced certain reforms, trying to become a component part of the European Higher Education Area. The University went through several restructurings, which, given to the old mission “to learn”, outlined other goals that were set in parallel with political, economic and social reforms of the environment: the trend to globalization, labour mobility, openness to internationalization. Among the new tasks added to the traditional ones, there is an increasing involvement of universities in research activities through innovation and technology transfer processes. However, the university continues to be a temple of culture, education and science, taking into account the development of the specialist with the necessary occupational skills on the labour market.

A knowledge-based economy cannot exist unless the production of knowledge results in their exploitation within the economic process. But it is not the stock of knowledge that will automatically trigger the knowledge-based economy; it brings availability and efficient use of economic processes. Therefore, the economic system will become more competitive only if the knowledge generator, which is the academic system, is able to convert the new knowledge into economic processes inputs.

Strategic aims of universities are closely related to the labour market, as well as to the socio-political situation at national and international levels. For these reasons many problems of higher education go beyond university walls and overlap or interfere with major society problems. The relationship between the university and the labour market, the role of the university in training specialists to meet future demands of the labour market are on the agenda of the whole educational system.

The collaboration between the university and the business environment is a social dimension. The old formula of “generating” the theory and subsequent implementation in practice, is replaced by a new formula of interaction between theory and practice. Several basic factors that conditioned these changes can be listed.

First, innovation, technology transfer, quality of knowledge, managers and professionals with high level of competence have become key factors for the development of a competitive industrial sector and, finally, of a competitive economy. Studies and research are essential engines of innovation; therefore the university becomes the obvious partner for the business community.

Second, while the concept of formal knowledge based on learning the theoretical tools and methods previously accumulated was essential during many years, research and problem solving-based training, their importance for the development of knowledge is of recent origin. The knowledge gained through analysis and research by definition is incorporated into practice. This type of a new approach makes the business community to become an obvious partner for universities, forming a mutually beneficial relationship for both parties.

The Education Code, recently approved by the Parliament, states that the national education system promotes social dialogue, development and use of partnerships of educational institutions with the community, civil society and business environment. Cooperation is absolutely essential and favourable for both sides, each with its own set of interests, which, being mutually beneficial, ensure the successful development of university education, of the national economy and, consequently, of the society.

At first, the University benefits from cooperative relationships with the business environment, because these relations allow updating the requirements to the structure of the curriculum of studies, to modernize the content of the course, improve the process of young specialists’ training. A very important point is the participation of professionals in the teaching activities, as well as at the performance of practical and laboratory work in company’s environment. This moment is very important because the company is the one that permanently
modernizes its machinery and equipment. Financially, the University cannot keep its pace according to the development rhythm of technologies, so large investments are needed for this kind of upgrading the public institutions cannot cope with. Carrying out practical and laboratory work in real production conditions makes the professional training level permit a more quick involvement of the young specialist within the work activities.

Second, for students, but also for young teachers, internships performed directly in production environments are very important. Following this cooperation, together with gaining practical skills, teachers specify the topics of annual theses, bachelor and masters projects so that they meet business needs, assist in solving practical problems and difficulties that business environment faces.

Third, it is well-known that there’s a need to develop research infrastructure in universities, implementation of the research developed by universities, correspondence of research topics to priority directions for the country's development, research funding, implementation of innovative results in practice.

The main advantages of business environment in achieving good cooperation with the university is to fill jobs with specialists with professional training appropriate to business requirements, upgrading technology and equipment as a result of the implementation of the last-hour research, increasing the efficiency of enterprise’s operations and, consequently, of the real sector of the national economy.

The relations between university and business environment regarding the training of specialists start from determining the skills required on the labour market. The economic environment has the potential to influence educational programs. There are many examples showing that most universities in Moldova cooperate with economic agents at developing the curricula of studies, internships leadership, participation in meetings of undergraduate projects’ presentation as chairpersons of the state Commissions, as well as at improving staff ‘skills through continuous training courses.

But there are still many problems that need to be solved. Professional training of future specialists requires a considerable practical training component. The actual length of internship is insufficient. For professional framing it is necessary for the student to achieve several stages of study, technological exploitation, design, and documentation for the undergraduate and master thesis. Since most companies have conditioned the practice of paid internships, this component was reduced to a few weeks due to lack of funds. A “forgotten” practice of collaboration is the one of leading and reviewing undergraduate projects. Unfortunately, this component occurs less and less often.

Another problem is that the company, by accepting students for internships, leaves them in the lurch, without giving them the available information, hiding behind “company’s secret”. The lack of concrete information doesn’t allows the better understanding of a company's situation, it doesn’t assist at analysing the current situation and it cannot teach the students to analyse the actual situation and try to solve the existent problems.

The newspapers are full of ads on the search of specialists. But all of them require experience. Where can a young graduate take it from? The few weeks of internship are not taken into account. Besides, what skills could he possibly manage to form in such a short time, even having well-established academic skills? The company wants him to be ready to work from day one.

Being the basic recipient of the final product of universities, businesses must be jointly interested in close cooperation with universities, to participate in the applied training of students by offering places for internships, providing financial support at equipping laboratories and classrooms. But this situation in Moldova is more theoretical because, currently, the involvement of enterprises in staff training is unsatisfactory.

The university works for the society. The business environment has levers of influence through participation in the development of educational programs. It has the right to contribute at and analyse the contents of curricula and training courses. The university tries to
maintain the relationship with graduates working in those areas. During internships, there must be leaders from the business environment, so that they express their views on the nature and level of students’ knowledge.

The fact that university autonomy gives the university more freedom and, therefore, the university becomes more open to business environment is undeniable. Such collaboration is proposed to the business environment through continuous studies, which provide initiating and improving training of the economic agents based on modern programs, updated to the requirements of the enterprise, providing expert guidance through concrete information, advice and expertise services, establishing cooperative relations with other centres and similar organizations in the country and abroad.

**Competencies for the labour market**

Structural changes in higher education have started when joining the Bologna process, which structured the higher education by degree: Bachelor, Master, and PhD. This process aims to differentiate skill levels regarding the requirements and level of complexity of the developed skills. Moreover, redefining academic specializations requires identification of skills’ levels, providing a direct link between the education level and the labour market.

Universities are often criticized that the educational offer does not meet the needs of the workforce. The changes taking place on the labour market due to new technologies, innovative management implementation and the need to increase competitiveness on national and international markets has led to several concerns regarding the level and competence profile of the graduate, which undoubtedly must be in accordance with the qualification released. Discussions held with business representatives on this issue reflect the need to develop certain skills, but more often the business environment blames higher education system for failing to do so. It is extremely necessary to define an aspect of the utmost importance for the formation of competence at higher education level: the distinction between academic and professional competencies.

One of the problematic aspects universities face is related to the following question: what product does the university provide? Is it traditional academic education or the professional one? Many professions that did not require university education in the past, now, given the challenges the knowledge-based society faces, require a top-level training. From this point of view, it can be said that, if the professional competencies cover the knowledge necessary to perform a professional task required by a particular job, academic skills should include, along with professional skills, competencies of developing new knowledge, as well.

General competences are those that apply to a variety of occupations of the same field. They are often called basic skills, fundamental skills, transferable skills and employability skills. So far, theoretical arguments support the idea that general academic skills, acquired throughout the academic path, are a solid foundation that facilitates the development of specific skills. Thus, general skills are of great importance because they multiply the effectiveness of professional development; assist in maintaining an adequate standard of specific professional skills’ application.

Professional requirements of the business environment are dynamic and change very quickly. Each enterprise is forming its requirements, tailored to concrete processes of production, which means that the cooperation with the education environment must be permanent. Universities, reacting to this phenomenon, include courses of professional profile in the curriculum. An eloquent example is the Information and Communication Technologies sector. Today, to get a good job in this sector businesses require the candidate to hold, together with a bachelor or masters diploma (between which very often the employer, unfortunately, does not see the difference), such specific knowledge in a field as Microsoft, Cisco, Java Development, etc. Those specific requirements should be included in the academic curriculum. The training for gaining specific professional skills can be developed within internships and during the development of theses or projects at the individual request of businesses.
The National Qualifications Framework (NQF) recently developed by the Ministry of Education of the Republic of Moldova in cooperation with national universities includes requirements for the general field of studies and the professional training fields for all levels of higher education: L-M-PhD. Professional training competencies are identified for each area of specialization, taking into account the knowledge, abilities and professional skills that a graduate should possess in order to carry out the function’s work for the required profession. NQF is coordinated with branch associations and economic agents.

Today, for a specialist of certain training, alongside professional qualities, a number of essential skills are important. They include: logical and analytical thinking skills, problem solving, effective communication, teamwork, identification and information management, creativity and intellectual rigor, as well as such intellectual values as: ethical practice, perseverance, integrity and tolerance. This combination of different qualities and skills is different from the technical knowledge traditionally associated with higher education.

**Best international practices**

In 2009, the European Commission presented a set of measures to develop and strengthen cooperation between universities and businesses as part of efforts to modernize higher education. On this occasion, it was accepted that there are many good practices in collaboration, being stimulated by the existence of European programs. However, the conclusion was that the level of cooperation varies according to countries, universities and academic disciplines. Moreover, there are few universities that developed an institutional strategy for cooperation and those that have done so are concentrated in a small number of states. In many other countries, legal and financial frameworks failed to stimulate, they even sometimes inhibited the cooperation efforts.

Researches show that the synergetic potential of these two parts is threatened by communication failures between HEIs and business beneficiaries, by numerous barriers, namely:

- the two types of institutions often have divergent goals and priorities;
- universities are not always interested in the topics proposed by companies, they prefer the pragmatic approach over the academic one;
- there are difficulties in identifying partners;
- there are restrictions related to the publication of the research results.

Another study, performed by the German Academic Exchange Service (DAAD) has shown that there are a number of obstacles that must be overcome. First, there is a lack of mutual trust, expectations are different. Companies seek short-term solutions, which universities usually cannot achieve. The study found out that, in the purpose of good cooperation, there is a need to create structures to promote the dialogue and a better understanding between universities and businesses.

Studies in the UK also confirm the existence of collaboration barriers. The most important of them are related to long-term orientation of universities and the lack of government support programs. Over 55% of respondents believe that the biggest barriers are the rules and regulations concerning data privacy and intellectual property. Another shortcoming is that universities are oriented towards basic research, while companies are interested in applied research.

Given the current situation and needs, two general objectives have been established at European level in order to promote university – business environment cooperation:

1. increasing relevance of higher education to the labour market;
2. improving innovation capacity of studies.

Universities should provide incentives for structured partnerships with business and support in identifying the skills required by the labour market, develop appropriate governance structures, to cooperate with companies for the provision of adequate training programs, to encourage the exchange, dissemination and creation of knowledge through teacher mobility between universities, research centers and business environment. An
important condition for the development of a real partnership between stakeholders within an academic area is the existence of regulations and organizational structures that facilitate the communication between:

- students and the socio-economic environment (ex.: structures of support in developing a professional career, relations with the labour market, etc.);
- university and graduates (ex.: alumni organizations, the presence of graduates in consultative and decisional structures of universities, post-graduation career assistance, etc.);
- university and socio-economic environment, structures and institutionalized forms of consultation and decision from strategic level to the operational, process one, and forms to stimulate the participation of the academic community members in the life of the socio-economic environment organizations. (ex. the representatives of graduates and socio-economic environment in senates, professorial councils and coordination structures of study programs, management structures such as councils, partnership structures in the development and implementation of specific academic approaches such as courses and study programs, research, development and innovation projects, etc.
- state, universities and socio-economic environment, representative institutions of the democracy (ex.: Parliamentary educational commissions);
- national bodies with specific functions related to the academic approach: strategy, quality, funding, research, qualifications (e.g.: National Council of Education in France, Quality Assurance Agencies in European countries, funding, research or academic qualifications managing councils, etc. which are made up of representatives or are institutionally open to the voice of all stakeholders of the academic process).

**Conclusions**

Rapid changes in technology and the increasingly sophisticated social environment lead to unprecedented structural changes where classical methods and approaches of training specialists cannot provide viable solutions. Thus, it requires consideration of innovative intervention mechanisms to support ways of fair and sustainable progress. Approaches should include information, experiences and people trained at the level of higher education structures.

Successful businesses are conditioned both by the quick and easy access to knowledge, the higher possibly qualified workforce, specialized technical and social assistance, as well as by the quick identification of innovative solutions. Universities must become more active players in the knowledge-based economy, able to respond effectively to market demands. In economically advanced countries prestigious universities have a key role in their economic growth. Consequently, university-business relationship is of a strategic importance and public interest, it must be continually developed and streamlined by appropriate government policies. The collaboration between universities and business environment is seen as a process of co-innovation within which knowledge transfer is the core mission of universities.

Moldovan laws do not prohibit or limit universities to establish cooperation relations with business environment and various educational and scientific institutions, centres and organizations in the country and abroad, but it neither facilitates this cooperation. Universities are autonomous in establishing such relationships, targeting various activities, such as business involvement in developing the curricula, organizing teaching and practical training, research, continuous staff training, organizing different common events, technical and material equipment, etc. Therefore, universities are encouraged to engage more actively in such cooperation, the benefit being enormous for both the university and business, and society at large, resulting in increasing the quality of education and, respectively, country’s economic
development. But the government should support this collaboration through adequate funding of researchers’ training by institutional budget financing for adjusting the research infrastructure, through projects that would assist the transfer of technology and efficient public programs that would facilitate SMEs access to technology and innovation developed by universities, other activities in science and technology areas.

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THE MAIN VALUES AND ASPECTS OF HIGHER EDUCATION DEVELOPMENT IN A CONTEXT OF LABOUR MARKET DEMAND

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“We need to strengthen international cooperation in education improvement. The better we develop our education, based on reliable information from all nations, the better education will be. We all must work together in a field of education technology”

Edward KENNEDY

The aim of this article is to distinguish the current trends of basic values and priorities of higher education formation in order to ensure the quality of specialists training in the context of the requirements of the labour market.

Therefore, given the innovative nature of modern civilization and the rapid pace of development of new technologies, the main priorities of higher education are: the constant updating of knowledge, attracting employers to implement the learning process, the mobility of students and teachers, the development and implementation of modern training programs that are relevant to the market work on the all educational levels.

Key words: Development, constant updating of knowledge, attracting employers, mobility of students and teachers, new educational services, implementation of trainings

The mankind entered the twenty first century under the sign of globalization. Climate change, economical and food crisis, energy monopoly are the main factors that launched globalization. Globalization processes impacted a wide range of phenomena in economics, politics, agrarian and manufactory production, sociology, so they impacted an educational field as well. Economics knowledge formations, rapid development of technologies, caused by intensifying of globalization processes, require the training of topical and successful specialists. An essential component should be the development of technological manufactory upgrading strategies, aimed at acquirement of the theoretical programs of strategy changes implementation by the future researchers during psychological adaptation to them, that is creation such conditions, which will farther a steady updating of production.

One of the prominent phenomena of a peculiar ‘trans-structural mutation’, which appears in a zone of an active cooperation between business and higher education, is corporate university [8]. Its origin and peculiarity, in comparison with the traditional higher education institutions, and the development prospects of this “joint child” of university and business environment have been studied in the Western academic discussion in the last decade.

In the present conditions of the “aging knowledge” process accelerating it is necessary for a young specialists to acquire education self-improvement throughout their life in order to develop new technologies. Indeed, ‘the half-life’ of special engineering knowledge is now about 2-5 years [5]. Neither continuing education, nor individual self-work, nor retraining will compensate this gap, if educational system doesn’t change towards the specialists’ universalization and fundamentalization of their training in theoretical and humanitarian disciplines. Therefore the main purpose of higher education is “learn how to learn”, that is to teach the future specialist to acquire knowledge independently throughout the whole life.

The future of higher education, according to Michael Barber, Katherine Donnelly and Saad Rizvi, will soon change and traditional universities will lose the right for their existence. It is
associated with the marketing processes, student transformation into consumer, which dictates provisions, the emergence of variety of alternative university opportunities for talented students [2].

On the ideological level, a big business structure occupies the territory, which traditionally belonged to the university education structures [3].

Indeed, adaptation skills and willingness to be ready for today’s challenges are the most essential in the modern conditions. However, the acquirement of technological part of the future specialty is not enough for successful self-realization of a young specialist at the labour market. The current employer requires a young specialist’s proficiency with the modern computer technologies, foreign language, organizational and management skills – that is the knowledge that will make them successful. It is clear that successful specialist provides a company’s success of an employer, therefore – the success of economics, which leads to a stable country development. So the main direction of the university education changes, according to Eddi Blass, will be an attempt to ‘combine education and work together in order to optimize benefits for both’ [13, p.61].

At the same time, some Western scientists, for an instance, Stenley Aronowitz, Henry Zhyro, claim that the proposed changes threaten the fundamental principles of the university education formation, turning it into a complex of a professionally oriented training [12, 14]. They claim that education should be the one of the most conservative social institutes, as its main purpose is transferring the accumulated knowledge, rules and values to younger generations.

Today Ukraine goes through hard times. Russian separatists released the war in Ukraine. It has complicated the university activity and imposed additional challenges for the implementation of the strategic objectives.

But the key idea of education development is that the man development is the aim, rather than the way [11]. So education is a strategic resource for improving human’s welfare, protection of national interests, strengthening the credibility and competitiveness of the country in the international arena. The impact of globalization on contemporary higher education is due to the desire of the international community to form within the current context the new global values of human culture, among which the leading ones should not be the authority of the strong and rich, but humanism, tolerance, respect to the representatives of the other cultures, nations, races, religions, susceptibility to cooperate with them and enrich each other [9].

Due to it, higher education must change and implement a significant quality of education services.

The aim of this article is to distinguish the current trends of basic values and priorities of higher education formation in order to ensure the quality of specialists training in the context of the requirements of the labour market.

The term ‘education quality’ has become a part of a range of issues related to the development and improvement of education in Ukraine and abroad. The phrase ‘education quality’ appeared for the first time at the legislative level in Ukraine in the Law of Ukraine on Higher Education (2002), which has led to many different practices of a such control, initiated the development of the relevant theoretical concepts, changing into a major factor in the steady growth of the interest of scientists to this problem. According to the Law of Ukraine on Higher Education (2014), the quality of higher education is a level of knowledge, skills and other competencies, obtained by a person, that reflect its competence in accordance with the standards of higher education.

For its realization, higher education institutions need, first of all, to provide the quality of an educational activity, which is defined in the Law of Ukraine on Higher Education as a level of education process organization, which meets the standard of higher education, provides the acquirement of a qualitative higher education by persons and promotes new knowledge creation [1].

The dynamic development of modern higher education is characterized by the search of the fundamental approaches of providing the quality of educational activity that could
implement the formation of a range of professionals, able to spread the development and implementation of new technologies. The intensification of information flow as one of the main aspects of entering the globalized world in the era of the informational society, reflects the crisis of a classical scientific paradigm that is expressed in the spread of two opposing tendencies of modern science – universalization and integration of knowledge on the one hand, and their scientific and technical specialization – on the other hand. Public education system must meet this strategic objective, which is necessary to ensure that:

1. The intensive knowledge updating transmitted to students during learning process. The experience of the most successful countries shows that the field of education, which is an important institution of a qualified personnel formation, can provide the international competitiveness by combining three parts of a spiral development – education, research and innovation. Scientific studies give people new skills that transform into products and technologies of a high-tech industry stimulate productivity growth, reduce material and energy intensity, the growth of the social competitiveness production, accelerating the rate of accumulation of public income, changing work motivation, and therefore they are a factor of post-industrial economic growth. Intellectual fund is able to give to each unit of additional investments the highest economic return, providing not only high profitability and secure competitive advantages in world markets, but also setting the foundation of a strategic profitability for the innovative investments.

The institutions, which implement the principles of the business environment existence into the field of education, are research universities. According to Russian researchers G. Konstantinov and S. Filonovich, ‘they are the higher education institutions that systematically do their best to overcome the limits in three areas – knowledge generation, their teaching and implementing – by initiating new activities, transformation and modification of the internal environment interactions with the environment’[7]. Today such institutions include a range of well-known universities in Europe and US that passed a difficult way of formation (Stanford, Harvard, Cambridge, etc.). One of the important components of research universities is the technological parks. An example of the US's most powerful industrial park was the «Silicon Valley»; the founder is Stanford University [4].

So, today, a new concept, based on the need to transform knowledge into economic results, is currently forming. This requires the formation of education that would be able to teach people to turn their knowledge into an electronic content that stimulates an opened circulation of knowledge and competitive environment for the implementation of knowledge into the economy.

2. Active involving employers to implementation of educational process from development of higher education standards and formation of educational curricula of specialists training to their implementation through giving guest lectures, practical training, certification of graduates and correction of such training after employment. There is a model of involving employers to assess the quality of graduates training in educational institution, which presumes the assessment of competencies of graduates in the final stages of study while attestation commission works, and during the state accreditation of educational institution through involving them to work in the expert committees. Indeed, in Ukraine in the new Law on education (2014) all control functions for quality of education, licensing and accreditation transferred to a new body – The National Agency for Education Quality, where employers have a third of third votes in the management institution.

However, the involvement of individual employers cannot be considered as a sufficient measure for assessing the quality of higher education, as they often tend to evaluate the quality of graduate training in terms of specific sphere, field of activity, occupation, profession or even separate, “their” company. Therefore it is necessary to involve employers’ community organizations. An ideal variant of such cooperation should be the formation of employers’ councils at universities and each licensed specialty in particular.
At the same time, it should also improve the external evaluation of quality of professional education on the basis of a wider participation of public and professional organizations, forming criteria of an objective external evaluation on the principles of interaction between the labour market and education, such as participation of employers in the various expert committees, primarily at university accreditation. Finally, the last form of quality assessment should be statistical collection of information. This includes conducting surveys of employers by universities using specially designed questionnaires and observations young professional be employers, because after the graduation during the work one can judge fully about the formation of their readiness to professional activity. Thus, the assessment of the quality of graduates training for employers includes not only the observation and comments, but also their participation in the training.

3. **Staff and student mobility.** The development of knowledge in a particular country would not provide them absoluteness. The solution of this problem is only possible through implementation of educational and intellectual modernization in education, and especially in professional education by erasing borders between countries. Exactly staff and student mobility is one of the main conditions of providing quality of educational services and quality of education in particular.

Significant success of European Economic Area creation has pushed EU leaders to create a single European higher education area (The European Higher Education Area), established through the signing of the Great Charter of European universities (Magna Charta Universitatum) in 1988, the adoption of the Lisbon Convention on the recognition of qualifications for higher education in the European region in 1997, the adoption of Sorbonne Declaration on the harmonization of the higher education structure in Europe and Bologna Declaration on the establishing European Higher Education Area in 1999. The new paradigm of higher education was formulated in the “Worldwide Declaration on the higher education development in XXI century: prediction and actions”, adopted by the World conference on problems of higher education (Paris, 1998). These acts agreed on common requirements, criteria and standards of national higher education systems of the participating countries and ensured the creation of a single European educational and scientific space.

Subsequently Bologna process became a tool not only of Western European integration, but also the world globalization processes, as evidenced the positive perception of its elements by Eastern European countries [1, 6]. Student, teacher and other staff mobility extension for mutual enrichment experiences was one of its key positions. The above mentioned has been made possible through introduction of two-cyclic training (bachelor, master); introduction of the European credit system, which greatly simplifies reenlistment of credits which are received by students during their study at various universities in Europe; close adaptation of educational curricula, programs, reorientation of the educational process for students self-study, their own research activity and individual approach.

An important task of university in this context – to mobilize students, creates an atmosphere, which would form desire of students to learn, not just to provide teaching. This task is realized by introducing almost round-the-clock access to libraries, the Internet, other infrastructure of training for independent work, which is supported actively by Bologna process in Europe. At the same time, during the development of world globalization processes mobility cannot be considering in only one particular continent. It is necessary to ensure mobility both within the sectorial universities in the country, at the level of the European continent (implementation of the Bologna process) as well as globally to achieve significant success in this direction. The implementation of a number of international educational programs, including Tempus, Erasmus, Lifelong Learning Program and others, contribute to this.

Educational policy received an additional impulse to the development after the adoption of the strategy “Europe – 2020” – a comprehensive EU program aimed at growth and job creation. Realizing that lifelong learning – one of the most important factors for job creation,
development, and involvement of all members of society, the EU Member States and the European Commission have strengthened their political cooperation through a strategic program “Education and professional training 2020”. Realizing that lifelong learning is one of the most important factors for job creation, development, and involvement of all members of society, the EU Member States and the European Commission have strengthened their political cooperation through a strategic program “Education and professional training 2020”. New EU program of researches and innovation activities is the scientific part of the strategy project of prudent, sustainable and comprehensive growth “Europe 2020” is the program “Horizon 2020”. It aims to unite all existing European initiatives for researches and innovations which are funded through the Framework program for researches and innovation development, the Framework program of competitiveness and innovations (CIP) and European Institute of Innovation and Technology (EIT). Combining three separate programs, it is union of research field and innovations. At the same time, Horizon 2020 focuses on the social challenges and provides greater access for all companies, universities and institutes in the EU and beyond.

4. Development and implementation of modern training programs for future specialists that is relevant to the labour market for all educational levels.

Filling the content of training programs for future specialists requires: consideration of existing and future needs of regional, national and international labour markets; adaptation to the accepted worldwide training system (Bologna process); innovative nature of educational curricula; educational, research and innovative integration to educational curricula of leading foreign research universities; implementation of the principle of continuity of undergraduate, master's and doctoral (PhD) programs by ensuring their semantic content according to the specific future profession.

It is necessary to keep in mind that science is entering a new phase and becomes global due to opportunities of information and communication technologies, particularly the Internet. In this regard, there is a need to reassess the possibilities of distance education, as the experience of Harvard University and the Massachusetts Institute of Technology in the creation and use of open distance learning courses proves their prospects [10].

It should also be noted that the struggle for professionals with high intellectual level escalates in the world. It is likely that in nearest future developed countries will start to export knowledge instead of exporting capital and creating favourable conditions to attract talented youth from other countries by creating branch leading international scientific and educational centres in the form of so-called “clusters Porter” on the areas of insufficiently developed countries. Therefore, each university should determine an individual way of achieving quality of specialists training that is successful in the modern labour market. However realization of this goal will be impossible without:

- financial independence of universities, implemented through substantial government support, realization of their own innovation, attracting international research projects etc.;
- modern material and technical base of the university, equipment of its educational and research laboratories, practical training bases and using of the latest techniques and technologies for educational purposes, etc.;
- highly professional professors-scientists, knowledgeable modern technologies and requirements of state and international labour markets and are able to create new knowledge.
- modern information technologies, in particular providing of wide access to all consumers of educational services;
- modern educational technologies, because considering intensive development of global information networks, “giving lectures” to students loses its logical sense; more effective forms, such as group training, implementation of joint projects, etc. acquire relevance;
intensive foreign language courses, which ensure the implementation of the mobility of students, researchers and teachers.

All of the above loses any meaning in the absence of a student, which is motivated to acquire knowledge and skills. Unfortunately, the demographic crisis and functioning of a large number of universities make it impossible to conduct a careful selection of high-quality consumers of educational services, which in turn makes it impossible to fully ensure quality training young professionals for the modern labour market. To improve this situation, it is necessary to:

− ensure quality implementation of school education;
− optimize the number of universities, including by holding their ranking at the regional, national and international levels;
− attract the best foreign students to study at the university, through the implementation of foreign training programs;
− implement support of the best students by providing social scholarships (from the funds of universities, employers' associations, etc.).

An important factor of implementation of the all mentioned above is the success of economy. Only due to favourable economic situation, the state can provide a decent funding of general and higher education, creation of new workplaces, implementation of mobility. Economic crises, natural disasters and regional conflicts significantly reduce the intensity of the state economy, and its higher education sector in particular.

Ukraine at the current stage of development cannot stand aside from reform processes of higher education. Educational society of Ukraine and business are interested in all areas of implementation of QA for Higher Education. For example, the launch of training specialists for own business by agricultural holding “Mriya” in the Ukrainian version of the corporate university - Ukrainian agricultural school that unites agro school, mechanic school and school of accounting [8]. Ukrainian and foreign experts from leading universities and internal trainers are involved in teaching there. Agronomists, mechanics and accountants, who later can get work in agricultural holding “Mriya”, receive education at this institution.

An important role in enhancing the competitiveness of universities of Ukraine belongs to the state, which provides educational services market regulation, by developing a legal framework for its functioning, which would facilitate the respect for international educational standards. The “Higher Education Act” entered into force in 2014. This document regulates new requirements to education and professional training in higher educational establishment due to the ideas and principles of providing high quality training for modern job market. The transparency of requirements for the quality of education in Ukraine underlines necessity of using international system of assessments (based on the experience of implementing international programs of initial evaluation of achievements such as PISA, TIMSS, PIAAC, etc.).

National University of Life and Environmental Sciences of Ukraine (NULES of Ukraine) is one of the leading Ukrainian universities in the fields of agribusiness and agro economy. Recently, the University is actively upgrading the educational process; all efforts are focused on achievement of regional and global leadership in the education sector by improving the quality of educational services.

For the purpose of qualitative and quantitative changes, development program “Holosiivska Initiative – 2020” is worked out in National University of life and environmental sciences of Ukraine. The main objective of the proposed changes should be the formation of the University as a major educational centre of Ukraine on problems of Life Sciences and the preparation of educational, scientific, managerial and professional staff of higher qualification for authorities, agriculture, related industries and areas of public life. University of research type will concentrate its efforts on scientific support of effective development of the agricultural sector, adjacent to other sectors of the national economy, life science, competitiveness of education, integration of Ukrainian education into a single European educational space. The final goal of the University
activity is training of highly qualified experts of European and world level and creative combination of educational and research activities.

The realization of university development program from one side and established by the state new directions of high education development – from another side will give a new impulse for further improvement of education and science in the near future. The first involves extension of access to higher education, the second – education quality assurance and efficiency of use of specialists with higher education, the third involves implementation of integration processes at regional, national and international levels.

Conclusion

Given the innovative nature of modern civilization and the rapid pace of development of new technologies, the main priorities of higher education are: the constant updating of knowledge, attracting employers to implement the learning process, the mobility of students and teachers, the development and implementation of modern training programs that are relevant to the market work on the all educational levels.

And most importantly – to change the approach to a traditional university education, enriching it with creative forms of educational process organization, new educational services, development and implementation of trainings, distance education, and other factors that will ensure the viability of higher education in the new conditions of existence.

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QUALITY OF HIGHER EDUCATION AND FINANCIAL AUTONOMY

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Higher education is the one that creates specialists who will lead in the near future our society and country’s economy.

In the context of the above mentioned, it is necessary to reduce the number of universities both state and private. Universities still remain in the search of a successful formula for quality assurance in training graduates. Reform and modernization of higher education in Moldova depend on the competence and motivation of lecturers and researchers. They require better working conditions, including transparent and fair recruitment procedures, initial and continuing professional development, a higher level of recognition and excellence reward in teaching and research, so as universities could produce, attract and retain high quality academic staff that it requires.

Key words: knowledge-based economy, financial autonomy, quality assurance, competence and motivation, reduce the number of universities, better working conditions, higher level of recognition, quality standards, adequate technical and material base

In a changing society, which is undergoing a period of rapid and significant changes, education should not be neglected. Profound transformations taking place in contemporary society impose new requirements to universities in training the young generation. Assuming the responsibility of training the citizens, they are forced to constantly adapt to accelerated economic and social changes, influencing the role of the education system.

It would seem that we want to address two topics, which can hardly be connected, and yet, we will try to highlight some moments that make these two components appear together. We will start with quality. Quality concept is both, old and modern. We shall state some definitions that characterize this notion. Thus, according to ISO 8402 “quality is the totality of characteristics of a material or nonmaterial entity that bear on its ability to satisfy stated needs”. An earlier definition: all properties of a product or service that give them the ability to satisfy stated or implied needs”. Others define quality as “the ability of appropriate use and the value offered for spent money, all these permanently considering the “customers’ satisfaction” [6].

We could continue with many other definitions found in literature, as the notion of “quality” is part of our everyday language, and obviously has a different load from person to
person, based on different experiences and individual data, causing a number of differences, ambiguities or confusions. Not fewer are the interpretations of the term “quality” with reference to education in general and higher education in particular. Romanian scientist N. Drăgulănescu argues that “the quality of education is the set of features of a study program and of its provider, which meet the expectations of the beneficiaries, as well as the quality standards” [2, p.55].

According to Serban Iosifescu, quality in education means “ensuring conditions for the most complex and useful development for each learner” [4, p.49], and, as a complement to this definition, he states that “the content of the quality concept has a direct dependence of societies’ values in which the education system is functioning, such as the goals and criteria of the education policy”.

Quality in education designates a set of principles and practices that crosses the entire educational environment in all its components, oriented towards achieving superior results, related to standards and meeting the needs and expectations of education beneficiaries [5, p.3]. Although the given definitions differ, however, what is common for them is the fact that the quality is perceived by the need to satisfy the demands of beneficiaries.

In order to see if a process (in our case learning) is qualitative there must be some indicators that would allow us to make a conclusion: weather the process is of quality or not. In view of the above definitions, there is a subjective side (“stakeholders’ expectations” that differ from one school to another) and an objective one (“quality standards”, which are the same for both, state and private schools).

As far as the “quality standards” in higher education are concerned, they are largely determined by a series of indicators related to different components of the learning process, which are placed at the base of evaluation and accreditation of study programs. Currently, although there has been created the National Agency for Quality Assurance in Vocational Education in Moldova, it has not yet begun the activity of evaluation and accreditation, and, thus, there have not been developed certain “standards” yet.

We shall refer to the subjective side, which is very important, and very often it serves as the basis for drawing certain conclusions about the quality of higher education. We refer to “satisfying the beneficiaries’ education needs”. First, we should clarify who the beneficiaries of education are. Beneficiaries are students, receiving educational services offered by universities. Beneficiaries are also potential employers, who expect university graduates to be prepared to meet the demands of a job. However, the requirements of these beneficiaries are not always identical.

In economic theory, educational services are considered goods and services consumed by primary clients in order to achieve a certain level of education personnel, thus to store for future use, educational human capital.

Thus, in the current competitive environment, universities are beginning to recognize the growing importance of the services they offer and therefore focus on meeting the needs and expectations of students. In order to be successful, a university must identify the important issues for students and offer them what they expect. Particularly, in this new market, the university is encouraged to consider carefully the needs of its clients and customers in order to meet these needs with precision [3].

Today students are a heterogeneous contingent. Almost free access to education (basically a high school diploma is needed to be enrolled in a university) has allowed that a great part of them to come to the university, with motivations other than to become a good professional, to learn (for example, not to go to the army, to marry, etc.). Obviously, these students cannot be considered as bearers of quality requirements. The second part are those interested in making quality education and, namely, they often dictate certain requirements and impose somehow, once again, the teachers to be up-to-date with what is happening in the field. However, for many of them, as well as for a large part of society, the quality of
education is associated with employment.

Specialists state that university graduates are more likely to find a job than people with lesser skill level. Currently, we cannot definitely confirm or deny this fact, because, unfortunately, neither on the country level, nor at the university level, can be found a mechanism to track graduates’ employment.

We have tried using statistics, so as to see what the situation in this respect is. The information presented in figure 1 confirms, in a way, what has been mentioned above. Thus, we see an increasing share of both, active and occupied people, with higher education among the total population, respectively, from 11.8% to 25.2% in 2000 and from 11.9% to 25.4% in 2013. The growth rate of population with higher education, both active and occupied, is about the same for all years, which is confirmed by almost overlapping lines on the chart below. At the same time, we cannot overlook the fact that during the studied period has increased the share of people with higher education – unemployed in the total number from 10% in 2000 to 23.5% in 2013 [7].

Quite often, higher education institutions adapt too hard to changing needs of the economy and fail to anticipate or contribute to shaping trends in the labour market.

![Figure 1: Share of people with higher education among the total population](Source: www.statistica.md)

Employers are the other beneficiaries of university education. Theoretically, they should be very interested to work closely with universities, so as to have better-trained employees. But more often, employers adopt a relatively neutral position, although they admit that there is a gap between the required and the actual level of skills of graduates. In contrast, a large majority of lecturers credit the university system with much or very much confidence in its ability to provide the labour market with qualitative graduates. Images of these two types of actors contrast, the academia being more positive than the employers. Finding a solution to this tension is fundamental for the social involvement of the higher education system, which otherwise risks losing contact with the labour market and cause significant damage to its image in the future. On the other hand, we should not neglect the fact that the labour market is not sufficiently structured.

So, the main beneficiaries of educational services, offered by universities, are not always satisfied with the quality they are offered, very often only criticizing without getting involved in solving issues. And then, the university is forced to strive to remain competitive, at least on the national market.

The quality of educational services offered by academia is largely conditioned by the quality of human resources, i.e. the quality of lecturers. The minimum requirements,
necessary to ensure the quality of lecturers, are specified in the Education Code and other normative acts, but the role to motivate and encourage the maintenance of professional qualities and manage it intelligently and efficiently is given to universities.

Given that the role of higher education institutions is training of future specialists, a requirement to fulfil this mission is to provide highly qualified human resources. This fact involves a multitude of particular aspects: an efficient selection process; adequate motivation, supporting continuous professional development; a performance evaluation that would truly represent a step in the optimization work of lecturers; a proper reward effort and professional success.

In addition to these issues, the quality of lecturers is determined also by the efficiency of the educational process. Their professional performance in research and science are a criterion according to which is expected to be made part of the financing of higher education institutions and also a criterion for evaluating the university’s reputation. The quality of human resources will impose access to material resources (in many countries this has been happening for a long time).

In this regard, public universities, which starting with 1 January 2013 carry out their activity under financial autonomy, are free to find more efficient ways to motivate the academic staff, to highlight their individual performance.

Financial autonomy of universities is the freedom in ensuring income and using its financial resources under legal conditions and their efficient management. According to Education Code, university autonomy is implemented through the following rights [1, article 79, par.4]:

- to manage financial resources through bank accounts, including transfers from the state budget;
- to use available resources to conduct the statutory activity, according to its own decisions;
- to accumulate revenues from fees, services provided, performed works and other specific activities, according to the list of services provided, approved by the Government;
- to administer premises belonging to the institution and ensure optimal conditions for the development of the material resources base of the institution;
- to use the institution’s assets and rights for the authorized purposes of the higher education institution.

Financial autonomy of universities implies, first of all, a greater responsibility for the effective management of financial resources allocated by the state and private ones. Obviously, the claims that universities can offer their employees higher salaries are theoretically true, as everything depends on the university. However, in practice, has to be found the optimum, which would allow the development of the organization (creating an adequate technical and material base) and motivation of staff. We consider important both components of the educational process, which equally affect the quality of learning in universities. But, in order to give more money, additional ways of earning them have to be found. Financial autonomy offers universities more opportunities for accumulating funds through various activities, including entrepreneurship. The ability to diversify funding sources and obtain higher income depends largely on university management.

Unfortunately, today, the funds available to universities are chronically insufficient to enable them to compete with European universities; it is not possible to compete with universities offering programs for which is allocated ten times more money per student than in Moldovan universities.

As mentioned above, public higher education is financed by public and own sources. Financing from the state budget takes place according to the state order, (number of seats offered by the state to students of cycle I, Bachelor and cycle II, Master). State order is determined by the state’s needs in certain specialties, in correlation with the number of graduates, the cost per student, available financial resources, in coordination with the Ministry of Labour, Social Protection and Family and Ministry of Finance. Having decided on the required number for each specialty and having it approved by a Government Decision, early, the Ministry of Education finances these places for each public university that trains
specialists in the field, according to their own principles, without a transparency in this area.

Financing by the Ministry of Education of the Republic of Moldova is not done according to the needs presented by the higher education institution (taking into account the number of budget financed students and sanitary rules), but by the state budget possibilities. Higher education institutions are financed by the state budget, firstly, taking into account the following priorities:

1. Remuneration of labour according to approved units;
2. Contributions to the state social insurance budget;
3. Students’ scholarships (taking into account the contingent);
4. Partial financing of current expenditures on utilities – Payment for goods and services.

The remaining costs (including development costs) are covered by sources accumulated from paid services, i.e. out of special means.

Management and use of income is ensured by each higher education institution on the basis of revenue and expenditure budget, developed under equilibrium conditions in accordance with criteria established by the Ministry of Education. The revenue and expenditure budget includes financial resources aimed at achieve the objectives set out in the strategic plan of each institution of higher education during the financial year.

The fundamental principle which underlies the annual funding methodology could be called “financing goes to university”, which means, in our conditions, that, firstly, the public universities are allocated budgetary financed places according to specialties and, after that, according to their number and area, the amount of money is allocated from the state budget.

Currently, money allocations to universities by the state are carried out according to the number of budgetary financed students and cost per student, and do not take into account certain performance indicators of the training or research activity. Every university manages its resources coming out of state and own sources in accordance with the objectives, policies, and programs approved by the Senate, meeting all legal requirements in this regard.

When speaking about the lecturers’ motivation, it is worth mentioning that the state provides certain guarantees on remuneration. These include the state’s minimum wage, state’s remuneration rates in the budgetary field, as well as bonuses and increases as compensation guaranteed by the state and regulated by law.

Considering its financial situation, a university has the right to establish different rewarding systems regarding the salary increases and bonuses, or other incentive payments having consulted the employees’ representatives. These systems can be also established through collective labour agreement. However, besides the payments provided by the payment systems, the universities’ employees can be offered a reward based on the annual activities, out of the salary fund. Usually, the universities have developed various internal regulations that impose certain performance criteria. Employees who achieve better these criteria are also awarded.

However, the academic staff, in addition to lecturing, can perform scientific activity for additional remuneration, under contracts. At the same time, they can carry out teaching activities in other divisions and other universities, leading to increased personal monthly income. But this fact, undoubtedly, leads to decreased level of quality, and is currently one of the important issues related to the quality of human resources. This problem could be solved only by providing incentives, first employees’ wages, so that they are interested to work only in one place, to appreciate their work and show loyalty to the university. Unfortunately, even though today universities are trying to stimulate their academic staff in certain ways, their revenues are not sufficient to enable them not to seek additional income.

There is one more problem faced by universities. At the moment, can be highlighted a gap between the older and the younger generation of lecturers. It is considered that older academic staff has scientific degrees, is more experienced, but all at once, in many cases, with a conservative mentality, difficult to convince and change. Young academic staff instead does have scientific degrees, but are familiar with information technologies, know foreign languages, are more flexible and accept changes easier. The “middle” age generation of academic staff, combining scientific
degrees and experience with the dynamism and flexibility is less present in the universities.

The above mentioned allows us to make the following conclusions:

1. Higher education is the one that creates specialists who will lead in the near future our society and country’s economy. Therefore, preparing successive generations of students, in order to meet multiple demands of today’s society, largely depends on the quality of educational offer and provision of the educational environment. A number of factors, that led to the decline in the quality of higher education and decrease in the credibility of education among the population have emerged and developed, after independence in higher education. Here we refer to: the mass character of higher education, increasing number of higher education institutions, public and private, as well as the number of specializations, emergence and maintenance of unsolicited specializations on the labour market; chronic underfunding of education; dispersal of human, material and financial resources within a disproportionate number of institutions, faculties, degree programs and specializations, into a large network, continuous erosion of the status of the lecturer.

2. In the context of the above mentioned, we consider necessary to reduce the number of universities both state and private. Obviously, this must be a well thought process, taking into account the experience of other countries that have gone through such situations (ex. Denmark). Reducing number of students, poor quality of education imposes the need to optimize the state’s financial resources, focusing them in those universities that could really be competitive at least regionally.

3. Universities still remain in the search of a successful formula for quality assurance in training graduates. It is a complex and continuous process. The transition to a knowledge-based economy requires permanent changes in economic and labour market – from the growing importance of new technologies, changing ways of working, to phenomena associated with aging of workforce.

4. Reform and modernization of higher education in Moldova depend on the competence and motivation of lecturers and researchers. Often, recruitment of lecturers has not kept pace with the increasing number of students, which put further pressure on an already limited capacity. It requires better working conditions, including transparent and fair recruitment procedures, initial and continuing professional development, a higher level of recognition and excellence reward in teaching and research, so as universities could produce, attract and retain high quality academic staff that it requires.

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PROBLEMS OF HIGHER EDUCATION IN THE FIELD OF THE ICT IN RUSSIA IN COMPARISON WITH THE OTHER COUNTRIES OF THE BLACK SEA REGION

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The article notes 4 special problems of higher education in the field of ICT in the comparison with of the Black Sea region. STEM project and its principles. Examples of successful students from these centres are also given in the article

Key words: learning, education, Runet, ICT, research, projects, communications, scientists, doctors, achievements, knowledge, information

First of all, we’d like to mention how the ICT changed all education. There were formed new approaches:

- E-learning
- Lifelong Learning
- MOOC (Massive open online courses)
- facilitating access to scientific and educational literature (e-library, ETD)

Besides this, I’d like to highlight that the rate of knowledge changing and constant updating of ICT among the highest of all disciplines.

For a long time authors have been engaged in the problems of education. Most recently, the efforts of foreign companies were highlighted from Russian ICT sector in the education sphere. In addition to I’d like to highlight the contribution of the Russian Intel company to the experience of the country as a whole.

It has a program STEM (Science, Technology, Engineering, Mathematics), which was designed to awake the interest in child Invention and Innovation. The first Russian STEM-centre was launched in Nizhny Novgorod at 2011, and was named Research, Information and Volga Aerospace Education Centre.

Furthermore, the experience has been considered like successful and has been extended to several pilot regions.

In 2013, the initiative has picked up by MSU of Lomonosov and STEM-centres have appeared in Moscow and Moscow region.

Due to this, the Moscow Region received 250 applications from scientific leaders and more than 400 from students to participate in the program, which was lead to launching 50 laboratories in order to lead over than 100 projects.

At the end of 2014, in Moscow, the Moscow Region and in the Volga Federal District were running more than 155 STEM-centres, and in the centre of Nizhniy Novgorod have been already working 56 teams. Since April 2015, the whole Russia was covered by the influence of this program.
And now, we’d like to move on the basic principles of the project STEM:
- STEM-centres are opened on the basis of universities, technology parks or research centres and equipped with all necessary stuff.
- Research projects are supervised by adults innovators – (not professors), the graduate or senior students.
- Students work only at the concrete projects.

And now, we’d like to mention three successful students of these centres:

1. Max Smirnov is a student of 11th class from Moscow, invented the “gloves gesture” by which, the deaf and dumb may read the alphabet showing through their fingers. The gloves allowed to interpret characters in letters and via Blue Tooth are displayed on a compact display in the form of ordinary characters. Right now, the alphabet is only on the Latin language but by the summer it will be also interpreted (transferred) into Cyrillic one.

2. Siluan Asmolov – a pupil of the 7th class, designed model of “smart home”, the main features of which stand for the wind generator with unique engine and solar panels. This stuff allows cleaning the snow without any efforts due to rollover.

3. Pavel Kurbatsky – the winner of the international competition “Scientists of the Future” in 2013 – created cane-guide for the blind people with a GPS-navigator, which is able to move.

Now, we’d like to clarify all drawbacks which face the majority of the inventors

The first problem stands for the outflow of personnel from all countries of the Black Sea (especially ICT staff). To retain young talented people the government should allocate the sources for maintaining and developing the project. Therefore, the talents believe and assure that their achievements will be implemented in practice.

Unfortunately, the majority of countries in the region are poor, with the exception of the Russian Federation. And here, Russian feature appears. Most of those who leaves, has no willingness to return back home (perhaps because of resentment, what consequently could not be realized by the old principle – “Where he was born there and handy”). It is appropriate to recall Andrew K. Geim and Konstantin Novoselov – Nobel Prize in Physics in 2010 “for excellence with two-dimensional material – grapheme”.

The second problem appears in the specific relation to the Internet. The report of Nicholas Nikiforov – Minister of Communications is expected in April with a number of initiatives aimed at Runet sovereignty. Among the measures there are some which proposed independence from Western structures:

- The nationalization of a number of companies which own a key to communication nodes. Under state control the Independent Coordination Centre for national domain “.ru; .рф” should be launched to manipulate and monitor for the 4 key Russian Companies.
- The prohibition of private Russian companies to embellish communication lines crossing the state border of the Russian Federation.
- Fundamental changes may also affect the existing system of backuping DNS-servers and registering IP-addresses. As you have already known, today the DNS system is managed by the US Company, and the issuance of IP-addresses by Dutch one. The duplication contributes to the Runet work without any interruption of external influence.

The proposed model resembles with a Chinese version of the Internet – under tight state control over the key points of the infrastructure and also the nationalization of major companies. Earlier, in October 2014, in the Security Council was discussed a runtime version of the Russian segment of the Network in case of emergencies.

In general, measures amended the Runet can be divided into regulatory and technical.
Their implementation is expected on the mid of 2016. We are not talking about the creation of our own Internet. This is all about the improvement of reliable operation within existing systems, and enhancing tight control over the most important communication nodes in State.

The third problem includes the dominance tests for total control of knowledge and as a consequence inability to think.

The fourth problem includes the little number of partners of Russian universities in the comparison with the other countries of the Black Sea region.

The last problem stands for the increasing of financial burden on teachers from extracurricular work. It requires the publication of articles in journals from the list of the Higher Attestation Commission, or at least, a list of RSCI (Russian Science Citation Index). All these publications require payment. So, magazines from the list of the Higher Attestation Commission absorbs from 10 000 RUB (> 160 USD, or a little less than a third of the salary of professor) and more per article. As a result, young people cannot grow in the pedagogical title, while older teachers must either complete their work or hold positions of lower level.

The work has been performed in the framework of the Russian President grant for young scientists and medical doctors (MD-7339.2015.7).

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PRIORITIES AND VALUES IN TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) SYSTEM OF AZERBAIJAN IN SUPPORT OF ECONOMIC NEEDS OF THE FUTURE

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The question of competencies and skills that the technical vocational education and training system should provide for learners has become central issue in recent years. Rapidly changing needs of the labour market and economics require a different approach in workforce development with more attractive training process for learners and employment
opportunities for graduates. At present education providers face a new challenge for the provision of adequate skills that today’s and future labour market and society needs. This paper addresses the issue of priorities and values of technical vocational education and training in Azerbaijan with special attention to public-private partnerships and required skills for the labour market. Specifically, the paper examines career guidance, life-long learning opportunities, learning pathways, and recognition of prior learning in order to show the importance that technical vocational and training system of high quality should provide for the youth in employment and education, and adults for satisfying life-time realization.

The discussion also leads to public-private partnership role in technical vocational education and training and teaching entrepreneurial skills and revealing gaps. In conclusion, this paper, by closely examining what priorities and values of the technical vocational education and training are for the 21st century, sheds new light on how national policies should approach to meet these challenges.

**Key words:** technical vocational education and training in Azerbaijan, skills and competencies, priority and values of the 21st century education, demands of the future labour market, public-private partnership.

**Introduction**

After the collapse of the former Soviet Union the Republic of Azerbaijan has undergone rapid changes in economy and labour market. During these years TVET enrolment started to decline and youth pursued higher education in order to find better job opportunities and life conditions. The whole process entailed fundamental reforms in many areas, including education, and especially TVET system.

As there has been little done in the TVET system after 1992 it resulted in a drastically decline, loss of links with enterprises and education providers, lack of skills in labour market and external and internal brain drain challenge. As a result of economic development, new companies started to emerge in Azerbaijan that required employees with more sophisticated skills, more knowledge and experience with modern technology. Whereas there have been big companies that were able to establish their own TVET facilities and do on-the-job training, this was not the case with all small and middle enterprises, since they did not have enough resources. This brought to diversity of training providers, however, at the same time ineffective relations between industry and public providers resulted in gap of core working mechanism of TVET system – weak or absent contribution of business in education.

At present TVET system in Azerbaijan is challenged with providing workforce for the 21st century economy with required competencies trained adequately at VET providers of high quality. However, the TVET in Azerbaijan is not able to meet the need of the labour market with modern skills and faces obstacles.

1. **Reforms in the TVET system – transition phase and priorities for Azerbaijan**

Attention to VET system particularly grew within the past few years under consideration of the government’s aspirations for socio-economic development in the near future, which has also been highlighted in “Azerbaijan 2020: Vision for the Future” adopted in 2011. The reforms and structural changes in TVET governance, especially at initial and post-secondary vocational education and training level were strengthened starting from 2013 with adoption of a new strategy and initiatives to cooperate with business partners in training process. Accordingly, reforms in the TVET system are still in process and current vision focuses on essential priority issues in the TVET system including the following areas:

- Identification of the best working TVET model for Azerbaijan by implementing pilot projects and learning international experience;
- Curriculum improvement;
• Development of public-private partnerships;
• Fostering lifelong learning and adult training in TVET;
• Modernization of TVET infrastructure and optimization of network;
• Implementation of National Qualification Framework;
• Professional development of teachers, masters and education administrators;
• Capacity building of schools;
• Promotion of TVET status and provision of career guidance and counselling.


1) Creating competency-based education content;
2) Developing high quality education providers with innovative training methodologies and technologies;
3) Developing education governance system that is accountable for outcomes, based on transparent, effective management mechanism and public-private partnerships
4) Establishing educational infrastructure that is up to modern standards and provides life long learning;
5) Establishing an economically sustainable financing model that meets standards and utilizes different resources.

Both abovementioned strategy documents of Azerbaijan government set target of increasing the share of the funding for education in GDP (to 5-6% in 2012-2020) by creating mechanisms for education funding through effective budget planning and the financing of grants that promote per capita funding.

In Azerbaijan, industrial production in oil and gas extraction and related services represent more than half of GDP (52% in 2011, according to the State Statistical Committee of the Republic of Azerbaijan). There are limited opportunities for small-medium enterprises in this sector and most small businesses operate in low value-added sectors, such as wholesale and retail trade, agriculture and construction. Nevertheless, in recent years, Azerbaijan has made significant progress in acknowledging the key role of small business in the diversification of its economy and in setting up an institutional and legislative framework to start promoting entrepreneurship at schools and design appropriate program for outcome-based skills.

The implementation of the Torino Process in parallel with capacity building of the Azerbaijani stakeholders involves establishing platform for policy discussions and advocacy. The report (European Training Foundation: Torino Process 2014) shows that VET coverage has increased during recent years with implementation of pilot projects in different areas but it is in an early reform phase. The Torino Process puts forward developing education industry links involving stakeholders and putting into practice these discussions.

A key plan in the government platform is cultivating skilled labour for socio-economic development. Azerbaijan implements strategy of investing oil revenues in the human capital development for sustainable development of the country. Entitling this strategy “Turning Black Gold into Human Gold” the agenda for post-oil era is mainly diversification of economy and thus, providing skills at national general and TVET schools, universities as well as creating state programs for skills development. “State Study Abroad Program of Azerbaijani Youth” funded by the State Oil Foundation of Azerbaijan (SOFAZ) targets to send students to study abroad, gain international experience and return back to Azerbaijan with upgraded skills. Also there is a big gap for skills in TVET area and many on-going projects in Azerbaijan depend sometimes on foreign workforce, which makes influence in local labour market.
2. Different approaches to teaching competencies for the 21st century

Core paradigms of the education field in the 21st century are the competencies (knowledge and skills) which are demanded by complex, competitive, information-age, technology-driven economy and society. International organizations consider the below listed competencies the most essential:

- Effective communication skills
- Entrepreneurship skills
- Dynamical data-management and analysis
- Emotional intelligence
- Team work and problem solving
- Effective working and utilizing technology
- Creativity and critical thinking
- Civil citizenship

Since youth unemployment is one the key concerns of the world, the European Commission recommends entrepreneurial skills as one of the key competencies to teach for pupils in order to create more chances self-employment and foster development of small and medium entrepreneurship in future. Small Business Act by European Training Foundation conducted in Azerbaijan in recent years indicates that though mentioned in the strategy and national policies, entrepreneurial skills are not fully covered in the education programs at TVET schools.

Today schools are preparing kids for the 21st century, which means they should focus not only teaching hi-technology or ICT tools. Education models that have been used several decades were teacher centred, content driven and based on memorizing do not fit demands of the market anymore. Children should be prepared not only at the school but also “out of school” teaching models should be piloted for flexibility of learning. World economy is in rapid change and skills should be adequate to the speed as well. If analysed deeply, it will be surprising to reveal that skills of a 3 years old child today is totally different from the generation that used to be 20 years ago- they easily use cell phone, social networking and other ICT tools. So, exposure to technology has changed and kids’ brains nowadays develop differently than decades ago with especial attention given to text based-visual material or graphical information. Content of education should be interactive, differentiated and personalized to the learner and teachers should teach different tomorrow than today.

A child starting school today will graduate after 11-12 years. Is this child getting adequate skills for entering the labour market in future? This is a global question that researchers should address today forecasting the 21st century’s education challenges, priorities and values for change. Below, there is a scenario of the U.S. education field on skills forecasting:

- 65% of children in USA will end up doing the work that has not been invented yet.
- Over 6 million students benefitted from online courses in 2010\(^1\).
- 50% school courses were predicted to be online in future\(^2\).
- So reviewing all these forecasts for future we are standing in front of big challenges. This happens almost everywhere. What are the policy solutions or roadmaps for these problems in the 21st century? The answer is lifelong learning. A clear National Qualifications Framework with new qualifications, higher Vocational Education and Training (VET) qualifications that contributes to permeability in education and training systems serves as a bridge to higher education or a natural progression pathway for vocational secondary graduates. This will promote status of VET as well, getting rid of “dead end” of education that makes impediment in enrolment rate of students\(^3\)

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\(^1\)Retrieved from: http://www.worldwidlearn.com/education-articles/benefits-of-online-learning.htm

\(^2\) Retrieved from: http://educationnext.org/how-do-we-transform-our-schools/

Continuing Vocational Education and Training pathway should be provided for adults, non-traditional students (on-the-job training) who return to training in order to update and increase their skills. Recognition of non-formal and informal learning becomes important since more practice-based learning forms of education is getting more popular day by day. This can include apprenticeship, work-based learning, learning by volunteer experience, etc. The mechanism of independent, objective certification with standards and principles that are credible needs to assure the quality of these skills. It was stated in 2015 Action Plan of the State Strategy for Development of Education in the Republic of Azerbaijan that an adequate legal basis will be prepared for recognition of prior learning.

3. Values that Azerbaijan education pursues in TVET

Today’s development process in education system of Azerbaijan requires moving towards to global integration. Eight key competencies group has been recommended by European Council and the principle of equality and access to education and training for all is set as a core target. At the same time, social inclusion and equity implies providing a pathway for children from a lower socio-economic background, VET can play the role of a social lift, giving a chance to the youth who would probably not progress to academic studies. Involvement of vulnerable groups whose educational potential requires support (examples of such groups include people with low basic skills, early school leavers, the long-term unemployed, people with disabilities, migrants, etc.) and social realization essentially depends on broadening of education offer, increasing active labour market programs, implementation of inclusive education models is one of the directions put forward by stakeholders within Torino Process.

The 21ST century school mission is not only to prepare a child as a craftsman with skills and qualifications but also to develop them as responsible citizens for the society, with professional ethics and high values of humanity. National policies are designed today to pilot inclusive models of education, teach other children to respect diversity and integrate to environment. Accordingly, VET policies alone are not enough to address socio-economic challenges and make mobility and lifelong learning a reality. Therefore, comprehensive approaches are required which link VET to other policies, in particular employment and social policies.

As indicated in the United Nations post-2015 development agenda, insurance of equal access for all women and men to affordable quality technical vocational education is a key sustainable development goal. Education and skills provision should be accessible for people not depending on the social status. Therefore, optimization in financial model, considering human-based approach with increasing number of scholarships, in particular, in developing countries to provide decent skills for employment and entrepreneurship is becoming important.

4. Role of public private partnership in improving TVET system.

As discussed in the previous sections, the government has a new vision for VET, emphasizing more its potential economic function. The involvement of enterprises and cooperation with the private sector is crucial for ensuring the labour market relevance of VET. Support of the stakeholders is essential with focus on industry partnership, as this additionally pressures VET forward for more efficient and competitive performance. The government has started to involve social partners and companies in the development of occupational standards and 200 occupational standards have been prepared. However, there is a need to review the involvement of private sector actors in the governance of VET at national, sectorial, regional and local levels.

In order to create a permanent dialogue on the skills needs of economic sectors, in close cooperation with the Ministry of Education, the Ministry of Labour and Social Protection of Population and sectorial organizations' more work at all levels is needed further. Mapping of the social partnership initiatives is supported by European Training Foundation (ETF) experts with a view to develop a roadmap for social partnership development. The Azerbaijan Employers’ Confederation is involved in developing the concept of sectorial committees. In the sphere of social partnership, Azerbaijan implements “Modern Azerbaijani Craftsmen” Project – a national level initiative in TVET development and several private actors are involved such as KNAUF, BOSCH, Eldar Studio in curriculum design, internships placement and facility specification. This is the example of school-business partnership and the project has already made progress in terms of creating a modern concept of TVET in Azerbaijan vocational schools.

Industry-education partnerships in Azerbaijan are at emerging stage and limited with target sectors, but this is in evolving period with notable examples of private actors which also diversify training provision, by establishing their own training centres. These examples include State Oil Company of Azerbaijan Republic (SOCAR) and Statoil in the oil sector, Azersun Holding, Gilan Holding etc. There are examples of cooperation with these large companies; however this is realized with intervention of the government rather than the school itself directly.

The 21st century skills learning environment requires more work-based training, with emphasis on practice, “learning how to learn from others”, using knowledge in real-life settings. Cooperation with enterprises to provide career opportunities for students from education to the labour market should be priority for TVET schools. Schools may use approaches that facilitate gaining cross-disciplinary skills via authentic learning, demonstrations of learning or project-based learning comprising in itself practice in working environment. Thus credits which they get via internship, apprenticeship at the enterprises could be easily transferred to academic credits while also, the same skills can be content of learning standards in more traditional courses, but less effective learning outcome.

**Conclusion**

In conclusion, the 21st century skills that have been discussed should be key priorities of the national policy to be taught by the schools with participation of industry. Based on lessons learned from past experience, the reforms in education policy should focus on adequate certification of skills based on skills assessment. As cross-disciplinary skills are difficult to assess and there are no formal tests to assess “the 21st century skills” the issue of public perception of school performance level on teaching these skills can be a subject of debate. From the other hand, a proper mechanism of social dialogue should be established to raise interest of stakeholders, empower the sectors in order to involve them to serve as actors in TVET leading to increase employment of graduates, as well as financing of the TVET.

Additionally, given the demand of future labour market, forecasts on social issues, economic diversification and sector development in Azerbaijan, TVET education policies should provide demand driven skills rather than teaching content of the academic courses. Thus, today’s practical attractive education process of the workforce in the light of value-based approach and lifelong learning should provide youth and adults with the right skills for the labour market and development of Azerbaijan economy and society in the future.

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PRINCIPLES AND NORMES OF AN EFFECTIVE MULTIPLE CHOICE TEST CONSTRUCTION WITH THE AIM OF EVALUATING THE KNOWLEDGE IN THE ECONOMIC AND FINANCIAL AREAS

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In the narrow sense, quality education is a superset of quality curriculum, quality teaching, quality books (methodical materials), quality practices and a qualitative evaluation. This research refers to the main problems of effective construction of multiple choice tests to assess knowledge in economic and financial field, as a form a qualitative evaluation used in majority of universities and institution of vocational education and training in the world.

Multiple choice testing is an efficient and effective way to assess a wide range of knowledge, skills, attitudes, abilities, values, thinking skills, etc. Multiple choice testing brings an efficiency and economy of scale that can be indispensable. Because students can respond to dozens of questions in a class period, it allows broad coverage of content. Multiple-choice items are flexible enough to tap nearly any level of Bloom’s taxonomy.

Of course, these advantages only accrue when the items are well written and the test well constructed. That takes time, planning, creativity, and thoughtfulness.

Key words: quality of education, knowledge evaluation, multiple choice tests, effective construction of multiple choice tests, importance of recommended lists of basis literature.

Introduction

Education is the main component of the knowledge triangle together with research and innovation. More precisely, the knowledge triangle refers to the interaction between these. In fact, education represents the basis of the research and innovation.

As well, the education process comprises three stages: teaching, learning and evaluating. All these stages have a systematic action, each process affecting the other two, thus having a coevolution relationship.
In the narrow sense, quality education is a superset of quality curriculum, quality teaching, quality books (methodical materials), quality practices and quality evaluation.

We think that quality of education means not only quality components, but also a good interaction between them, because the evaluation process of the students implies at the same time (directly or indirectly) the evaluation of the teachers as well, of the teaching quality, of the educational institution as a whole, and at last of the educational system.

From the technical perspective, evaluation is the process through which it can be established if the system’s or the educational process’ objectives are being accomplished. The information that has been obtained from the evaluation activity is absolutely necessary for the regulation and the improvement of the teaching-learning activity.

The first scientific research of the teaching evaluation has been conducted by the French psychologist H. Pieron, in 1922, and as a result the docimology has been constituted (as an examining technique) as the science of examining and making notes, which systematically studies the examinations and the competitions, of the grading methods, of the grading variations for the same examiner and for different examiners, the subjective factors that influence the grading process, the means that contribute to insuring that the evaluation process is objective [9].

As an integral part of the education process, the educational evaluation delivers information regarding the quality and the functionality; reflect the efficiency of the educational process, insuring that the educational process is well known, adjusted and optimized.

The traditional evaluation methods consist of oral, written and practical exams. Unlike the efficiency of the oral examinations (which depends on: the clarity and logic of the questions addressed by the examiner; the diversity of the questions; the amount of time until the question is being answered; the tact of the examiner which puts additional question to help the student when it is necessary; the non-verbal behaviour which supports and encourages the students; etc.), the written examinations have a set of advantages: in a relatively short time, a lot of students can be examined; the examination is more objective, as the results are being reported to the same evaluation criteria; the stress level is diminished which is a great advantage for the timid students which have difficulties expressing themselves during an oral examination. At the same time, the written examination have also a limited character as they offer a weaker feedback, because the moment when the mistakes are being repaired is already delayed in time; it is not possible to help the person who is being questioned towards the right answer through auxiliary questions; sometimes the answers do not show the real knowledge level of the students (also because the students can cheat at written examinations) [8].

Each of this evaluation methods are considered efficient if the following conditions are respected:

− the capacities and the contents which are being evaluated are established;
− the reference objectives;
− the types of adequate items;
− the performance indices;
− the way that the results will be presented to the students and their parents.

The use of the test technique when verifying and evaluating the knowledge level of the students is one of the most used solutions for increasing the objectivity of the evaluation and for insuring the possibility of comparative evaluation for different groups, made by different examiners and in various periods.

The tests are recommended as a technique which helps diminishing the subjective evaluation errors, moderating the evaluation made by the examiners, and also as a technique which highlights the psychical mechanisms of the learning process, the types of difficulties and errors, this way constituting a good technique for the formative evaluation.

In general, according to some quasi-consensual opinions, are the most modern and the most common evaluation instruments.
Advantages of the multiple choice tests in the evaluation process

The multiple choice tests or the questions with multiple answers are an effective method when evaluating the learning results.

The main advantages of these tests are the following:

- **Versatility**: the multiple choice tests can be used for the evaluation of different result levels of the learning process: from the elementary memorizing to the application, analyzing and evaluation. Students chose the correct answer from a set of potential answers, but at the same time, there are obvious limits of what can be tested with the multiple choice tests. For example, they are not an efficient method of testing the organizational capacity of the students in the thinking process, of offering coherent explanations or of testing the creative ideas.

- **Reliability**: Reliability is defined as the degree to which a test constantly measures a learning result. A multitude of elements from the multiple choice tests are less susceptible to be guessed comparing to the Right/False questions, which makes them a more reliable evaluation method. The reliability is improved when a large number of elements of the multiple choice tests is concentrated on a sole learning objective. Also, the objective grading system of the multiple choice tests frees the examiner of problems, a risk that can affect the grading of the essay type questions.

- **Validity**: Validity is the degree to which a test measures the learning results. Because of the fact that students usually take less time to answer at a multiple choice test compared to an essay question, the multiple choice tests can usually concentrate on a relatively large representation of the course materials, this way increasing the validity of the evaluation.

**Construction of the multiple choice tests**

The key which can help exploring the advantages described above, depends on the construction of the multiple choice tests.

An item in the multiple choice test consists of a problem, known as question (stem), and a list of solutions, known as alternatives.

The alternatives consist of a right alternative which is the answer and of wrong alternatives, which are called distractors.

The question is an introductive phrase which tells the candidate what she/he has to do.

The complements (alternatives), which are identified through capital letters (numbers are not recommended), represent the multitude of answers from which the candidate has to choose.

The wrong variants are called distractors. The answer is the explicit selection made by the candidate from a variety of complements, which is made by selecting the letter on the examination paper. It can be correct or incorrect when reported to the expected answer.

### Which of the following price level measuring indices is constantly monitored by the European Banking System with the aim of realizing its main objective

<table>
<thead>
<tr>
<th>Distractor</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. General price index</td>
<td>A. General price index</td>
</tr>
<tr>
<td>B. Consumer goods index</td>
<td>B. Consumer goods index</td>
</tr>
<tr>
<td>C. The harmonized index of consumer goods</td>
<td>C. The harmonized index of consumer goods</td>
</tr>
<tr>
<td>D. GDP deflator</td>
<td>D. GDP deflator</td>
</tr>
</tbody>
</table>

### Types of multiple choice tests

There is a variety of multiple choice tests, which are adapted according to the thematic
or institutional evaluation needs or according to the peculiarities of the subjects which are being evaluated:

**Yes/No multiple choice test** is the simplest form of multiple choice test, but has some major disadvantages, which make it almost useless when evaluating the students:
- It evaluates the details and thus encourages the memorizing ability;
- It induces the emotional reactions of the candidates, attributable to the ambiguity of the standards for true/false;
- It imposes the difficulty of making a net delimitation between these two categories, in phenomena which belong to a certain continuum [2].
Nevertheless, the alternative test can be used for delimitative situations in fundamental subjects.

**Multiple choice tests with simple complement** ("one of the 5") require the candidate to select a single right complement from the 5 offered. The philosophy of this type of test is that all the complements have to be plausible, forcing the candidate to think. He/she will have to choose the information that he/she considers to be more correct and the rest which are false (negative distractors). In this case, a questionnaire with 60 tests can only evaluate 60 knowledge “units”, related to the question subject. [2]

**Multiple choice test with multiple complement** whether the base format of the multiple choice tests with simple complement are kept, these tests presume the choice of more than a single answer, usually from 2 to all 5 which are being offered. These tests are usually good for the evaluation of the knowledge from a chapter or related to a certain situation (problem). There are various variants here as well.

**Multiple choice questions “more than one from the 5”** which is the closest to the type A, the only difference being that there can be 2-5 complements which are correct. In this case, the question has to use plural.

**Multiple choice questions “true-false”** also called discrimination test, has a great popularity in the Anglo-Saxon countries, and unlike the previous variants, requires the candidate to identify each complement as being true or false. All, none or from 1 to 4 complements can be either true or false.

**Multiple choice questions with grouped complements** (type K) issues a question which is followed by 4 numbered complements, and the candidate has to respond with

A. if all of them are correct  
B. if all of them are false  
C. if only the affirmations 1 and 2 are correct  
D. if only the complements 1, 2 and 3 are correct  
E. if only the complements 2 and 4 are correct.

In this type of test, the formulation of the question in a negative and interrogative way should be avoided because it can create difficulties and confusions. This type has the advantage of introducing 4, 3 or 1 good complements or none.

**Association multiple choice tests** (matching items) these types are useful because they evaluate the capacity of connecting the notions between them. Thus, they exceed the simple factual memorizing process and belong to the intellectual synthesis area. There are two lists which include: a) complements presented firstly as letters, usually 5 of them and b) sources or declarations, which are the equivalent of the questions from the tests that were described above and are numbered. The contents of these two parts of tests are correlated.

**Model recognition multiple choice** (pattern recognition test, extended matching items) is closer to the evaluation needs in the subjects and themes related to diagnosis. It consists of four parts: a) the theme, b) the list of options, c) the question and d) at least two scenarios which match only one of the options.

**Relationship analysis multiple choice tests** which consists of composing a phrase from two sentences linked through a casualty conjunction (e.g. because). A single answer is required, as follows:
A. if both sentences are true and there is a cause-effect relationship between them;
B. if both sentences are correct but there is no casualty relationship between them;
C. if the first sentence is correct but the second is false;
D. if the first sentence is false but the second is right;
E. if both sentences are false.

Norms regarding the construction of efficient questions

The question has to be significant and has to represent a concrete problem. A question which represents a concrete problem permits to concentrate on the learning results. Nevertheless, a question that does not present a clear problem can test the “capacity to make conclusions from vague descriptions” and can serve as a more difficult test for evaluating the learning results.

The question should not contain irrelevant materials, which can reduce from the validity of the tests’ results.

The question has to be formulated in a positive way. The sentence can be formulated in a negative way only when the learning results require this.

The students often experience difficulties with the understanding of the elements in negative phrases. When a significant learning result requires negative phrases, the negative element should be highlighted in italic or capital letters.

The question has to be composed from a partial sentence. A question is preferable because it allows the student to concentrate on answering the question, rather than it holds the partial sentence in the work memory and sequentially filling it with each alternative. The cognitive task is increased when the sentence has an empty space at the beginning or in the interior, respectively this should be avoided.

No matter what its form is, the question has to be formulated directly, clear and as short as possible, so that the candidate does not have to read it more than once in order to get an idea of what he/she is reading.

Stereotyping should be avoided, as well as irrelevant difficulty sources (traps) (e.g. negative formulations: “which…are not?” or double-negative: “not unusual” or “not unexpected”), misleading syntactic structures (e.g. “the least frequent”, “the most relevant”) or the exclusivist ones (e.g.: “never”, “always”).

Norms regarding the construction of efficient alternatives

All the alternatives have to be plausible. The function of the incorrect alternatives can be that of distractors, which should be selected by the students who have not reached the learning results, but ignored by those who did. The alternatives which are not unlikely are not functional distractors, and should not be used. The common mistakes of the students constitute the best source of distractors.

The alternatives have to be clear and concise. The elements which are excessive are destined to examine the reading capacity of the students, rather than the accomplishment of the learning objective.

The alternatives have to be mutually exclusive. The alternatives which overlap one another can be considered “traps” and can lead to mistrust and loss of respect towards the testing process.

The alternatives have to have a homogeneous content. Alternatives which are heterogeneous can offer hints to the students regarding the correct answer.

The alternatives should not contain hints for the right answer. The sophisticated testing factors are attentive to the accidental hints for the right answer, such as differences in grammar, length, formatting, choice of an alternative language. Thus, it is important that the alternatives:

- Have their grammar in accordance with the question;
- Are parallel as form;
– Have similar length;
– Use a similar writing type (e.g. textbook writing);

It is not recommended to use alternatives as „all those mentioned above” and „none of those mentioned above”. When „all those mentioned above” is used as an answer, the testing factor can identify more than one alternative and can select the right answer, even if it is not regarding another alternative. When „none of those mentioned above” is used as an alternative, while trying to eliminate a single option, the elimination of the second option can be achieved. In both of these cases, students can use their partial knowledge to reach the right answer.

The alternatives should be presented in a logical order (for example, alphabetically or numerically), in order to avoid a prejudice towards certain positions.

The number of alternatives can vary among the elements, if all the alternatives are plausible. The plausible alternatives serve as functional distractors when selected by the students that have not reached the learning objective, and ignored by those who did.

We have to mention that there is a small difference in the difficulty, discrimination and reliability level among the tests that have two, three and four distractors.

No matter the type of test, the complements have to be equally relevant for the question because this is the element which facilitates the grading process.

For example, there are certain differences among the following two types of tests:
– In the form “one from 5”, the false complements (negative distractors) are in a plausibility relationship with the right one and the candidate has to choose the last one as being “the best possible” answer.
– In the form “true-false (± don’t know)”, the student is required to regard each complement as being independent from the rest, in order to be able to choose between these two alternatives.

There is a number of mandatory requirements to be respected when redacting the complements:
– The grammatical coherence assumes that the question and each complement can be read independently.
– When the question ends with a limiting punctuation sign (full stop, colon, question mark), the complements should be written with capital letters.

Personalities of evaluating the knowledge in the economic and financial areas

A great importance for the efficient construction of the tests used for the evaluation of knowledge in the financial sector has the teaching-learning process, and especially the quality of the methodical works which are the base of learning, the financial science being a complex one, and the financial processes having national peculiarities.

We have to mention that widely, the financial relationships include almost all the monetary relations, those in the public sectors, and those in the private sectors of the economy, of the economic agents, banks, households, physical persons.

Moreover, the term „finance” is used in diverse combinations: corporate, banking, local, private, personal, behavioural, etc.

Thanks to the borrowings from the foreign literature, the notion of „finance” also extends to an even larger area of economic relationships. For example, the economic science from the West interprets finance as financial, credit related, money and other relationships and transactions which appear in the public sector and private sectors of the economy, as well as in the process of their interrelations.

In the described context, we consider that it is very important to select the recommended literature for studying and to inform the students about the bibliographical list recommended for each of the studied themes and included in the evaluation tests.

During the evaluation process, the grading process is of great importance. From the qualitative perspective, grading is associated with validity and fidelity.
Grading is considered valid, correct when it expresses in the most just way the object which it measures (e.g. mathematical knowledge, not the behaviour of the pupil at the mathematic class).

Grading is considered valid when, if repeated, leads to an identical appreciation, at the same examiner in different periods of time, and at different examiners at the same time.

It also important the test validation: so, after pre testing supposed to be excluded from examination, tests which were solved by less than 20% of the sample and resolved more than 80% of the students, as either wrong or too simple or containing clues.

Adjustment of the scale is another important procedure.

**Conclusions**

Quality of the assessment of knowledge, correct interpretation of results of evaluation, capacity of adjustment of teaching process on results of evaluation are a important basis for quality of educational process.

Multiple choice testing brings an efficiency and economy of scale that can be indispensable. Because students can respond to dozens of questions in a class period, it allows broad coverage of content.

Multiple-choice items are flexible enough to tap nearly any level of Bloom's taxonomy. It also prevents students from trying anything to get some points: either they know it or they don't.

Students and teachers alike shall not associate the evaluation with failure, sanction or control, rather with the possibility to reflect on the results, with the formation of a correct self-image (assessment), not only with the shortcomings, but also with the qualities than can be improved from now on.

Though often maligned, and though it is true that no single format should be used exclusively for assessment, multiple choice testing still remains one of the most commonly used assessment formats.

There is some evidence that using content standards and assessments can help teachers focus their instruction and obtain feedback on the effectiveness of their instruction. It is also important to create a match between educational objectives, teaching strategies and learning activities.

In conclusion, we would like to mention that we should always be conscious that though the traditional didactic applies certain cognitive indicators at the basis of the evaluation, the contemporary pedagogy considers that these factors are insufficient: the evaluation has to extend over other factors, cognitive (e.g. the capacity to apply the theoretical knowledge in practice or the level of intellectual development), as well as the personality of the student and his/her behaviour (e.g. skills, interests, values, attitudes).

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BASIC PROBLEMS OF PROFESSIONAL EDUCATION AND
TRAINING OF SPECIALISTS FOR AN EFFECTIVE ACTIVITY AT
THE ENTERPRISES OF THE REAL SECTOR OF ECONOMY OF THE
REPUBLIC OF MOLDOVA

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The problems of professional education and training of specialists for qualitative and
effective activity at the enterprises of the real sector of economy in our country are permanent
and consist of three main parts. They cause the situation with a complete mismatch of
knowledge, abilities and skills of the graduates of professional schools and colleges to the
real needs of the economy of Moldova, this fact having a negative and determining impact on
its competitiveness.

Key words: professional education, research, innovation, business environment,
knowledge, economic development, re-training, modern economy.

What are the main problems in the sphere of vocational education, which strongly
inhibit the economic development of Moldova? First of them is a complete separation of
curricula and educational programs of professional schools and colleges from the actual needs
of the enterprises of the real sector of economy of the Republic of Moldova. Simply, our
future professionals study neither the material required, nor in the way required by the
modern economy.

It’s not a secret for anybody that the vast majority of graduates come to us not only
without those skills they must possess at least at the primary level, but also without a solid,
lasting and profound knowledge, without which it is impossible to raise them to be highly
skilled professionals. Ultimately, our task in the process of business activity is to
transform aspiring specialists into real high-level professionals, without which our whole
economy is doomed to chronic backlog and stagnation on the margins of the world
economic system. The second problem is that our state bureaucracy considers itself fully
competent and self-sufficient for the formation of public “order” regarding the training of
those aspiring specialists, without having consultations with businessmen, without
conforming to their needs and not relying on their opinion in the preparation of this
strategic and very important document and process.
However, it is clear to all of us that our bureaucrats are spending money on an illegal “order” of specialists for our economy not from their own pocket, but from the public budget, whose main donor are business companies. Thus, the system of vocational education poorly prepares the future specialists and, furthermore, it prepares (even if at a poor level) not (or mostly not) those specialists that are required, not in the required number and not at the proper time, and still for our money. This double and even triple discrepancy, noted by me earlier, leads to a total deficit of qualified young (and not only young) specialists in almost all sectors of the national economy of Moldova. And the third reason: the almost complete absence of a modern and developed material and technical base at the vast majority of secondary specialized educational institutions in the Republic of Moldova.

However, it is clear to everyone that its absence generates not only technical and technological backwardness of the young specialists, but also very significant and burdensome additional direct and indirect costs for the enterprises regarding the re-training of these specialists. In combination with the lack of guarantees on the part of employees on return of investment made by the employer regarding their training and re-training, the problem becomes deadlocked. I would like to emphasize that the investor-employer not only does not have any assurances from the employee, in our country these assurances are not granted to the investor at all, neither at the legislative, nor at the institutional level. For this reason, professional training and re-training at the enterprises of the real sector of economy of the Republic of Moldova is carried out with such difficulty. I myself, as an employer and investor, many times faced this problem and continue to face it.

Thus, you perform the training of new specialists, mostly graduates of professional schools, and after training they go abroad or, even worse, go to work for the competitor companies! We can say that we need to better motivate staff and then he will not go abroad or go to the competitors. However, we must understand that training and re-training in the conditions of a real functioning enterprise makes it impossible to pay for the work of a novice, not yet solid in its knowledge (not to mention skills) specialist at the level of a mature professional. And the level of salary requested by the vast majority of students is just like that.

To raise the general level of wages without a significant growth of the labor productivity, which is determined by modern knowledge, superior skills, ability to use high-performance and efficient equipment and technologies – is not possible, in principle. Only a society built on the modern knowledge, technologies and systems can claim an equal, or at least decent, participation in the international division of labor and, consequently, a high level of wages for the employees in the national economy of the Republic of Moldova, including novice specialists. The solution to all problems mentioned above lies in the domain of cooperation between the Ministry of education, professional schools and colleges – on the one hand, and business people – on the other hand. Thus, business community should actively participate in the preparation and/or adjustment of curricula, programs and public “order” regarding education and training of new specialists.

In the latter case, the opinion of business circles of the Republic of Moldova should be a determining and dominant factor. I am convinced that businessmen are those who should form the basis of public “order” regarding education and training of new specialists. We are ready to actively participate in the association, and at a certain stage in the clustering with professional schools and colleges, and it is necessary also to include the universities, regarding training and motivation of young specialists for further work at the enterprises located both in Moldova and abroad, but which work for our national economy. We are ready to consider seriously, constructively and from a practical point of view the projects of public-private partnership in the sphere of secondary and even higher technical and economic education. All this applies not only to the training of new specialists, but also to re-training and continuous development of the “old” ones.
So it is the leading enterprises in industry, agriculture, construction, trade and financial sector, and also in the services sector that should become "a production base" for secondary and even higher education institutions from the sphere of professional education in the Republic of Moldova. The Government shouldn't invest in a very expensive and capital-intensive production and technical base of our professional schools. Instead, this will be successfully accomplished by the entrepreneurs themselves at their enterprises, providing the national system of vocational education with a real opportunity to train specialists on the equipment and technologies, on which and with which graduates will have to work.

It is important and necessary to mention that professional schools' graduates should not only be able to work, in general, on modern equipment, as a synonym for the phrase "know how to use it", but also should be able to get involved immediately in the main production process, quickly mastering the new modern technology, reaching the necessary productivity level and getting a very decent salary according to the results of this effective work. This is the only way we can overcome the systemic crisis not only in the system of vocational education in the Republic of Moldova, but also throughout the economy of our country.

Thus, the real and not the imaginary and fake partnership between the Government and the business community (as a vanguard of the civil society) will help to establish an effective and high quality system of vocational education, to include the young specialists in the business processes of the real sector of economy, to reach a new level and quality of labor productivity, and also to provide thereby a substantially higher level of competitiveness not only of certain companies and industries, but of the entire economy of the Republic of Moldova and also a higher level of salaries paid and, therefore, a higher level of fiscal revenues.

EDUCATION MARKETING AND THE ROLE OF IT TECHNOLOGIES IN ITS DEVELOPMENT

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Implementation of IT technologies in education, at both the level of general education and of the professional or higher education, is no longer a luxury but a necessity to keep rhythms with the development and competitiveness of other countries. A good base in IT education is often the core advantage in employment of many youth. However, it should be kept into account the fact that implementing IT solutions for students should come together with the development of these skills among teachers, and implementation of IT solutions in educational institutions and public institutions that manage this system.

Key words: educational system, education marketing, education, data, IT technologies

The educational system, as certain present market premises: as demographic decrease, emigrations, national and international mobility, the emergence of private educational institutions, eventually increasing competition in the market of educational services, needs a new approach oriented to its customers – children and their parents.

Since 1969, Ph. Kotler suggests that marketing should be extended to non-profit organizations. In 1971, Ph. Kotler and G. Zaltman introduced the concept of social marketing.
As the success of the activities of non-commercial sectors cannot be determined directly by the profit obtained, the role of these new types of marketing is to highlight the most appropriate strategy to guide actions of such organizations by the customer / beneficiary as of any economic agent market, but in order to promote and support ideas or humanitarian purposes, to produce benefits to society or to provide protection. To achieve the proposed objectives, these organizations are forced to attract different financing funds. Experience has shown that to be effective in the competition for funds, subsidies from the state or community, donations and grants, etc., non-commercial sector entities must satisfy certain requirements of customers [1].

Definition of the education marketing was given for the first time in 1985 by Kotler and Fox: “Analysis, planning, implementation and monitoring of programs to ensure the voluntary exchange of values with target market to achieve institutional goals. The marketing involves the design and management of educational institutions so as to meet the needs and expectations of the target group and the use of effective ways of valuing, communication and distribution of educational products and services to serve, motivate and inform the community” [2].

Although the concept was developed since in 1985, about the education marketing in Moldova started to speak only in 2010-2012, along with discussions at European level of development of the economy based on knowledge.

Speaking about the premises of educational marketing, according to university lecturer Dr. Catalin Glava it is necessary to mention such phenomena as:

− Continuous decrease of the number of students;
− Increasing autonomy the of educational institutions;
− Increasing competition not only between the private and public but even among the public schools;
− Diversification of the expectations of the virtual beneficiaries.

Although the word “education” is well known, unknown or variable factor are the finalities of this process. Some emphasize that the purpose of the study process on the set of knowledge, attitudes and skills held by a person other on its ability to be inserted on the labour market. Whatever were the offerer’s objectives of educational products, in order to achieve higher degree of satisfaction of his client, he must know: Who is the customer? What he wants? Where is located? How can it be informed? How much is ready to pay for the products? and What are the products that will meet the need?

The research on educational marketing has led to reiterating the role of education quality as a prerequisite for ensuring a competitive education, able to meet the needs of education and training to a quality standard that allows individuals and society to become proficient and competitive in a globalized environment in constantly changing [3].

If in the classic concept of the marketing mix are present 4Ps: product, price, place and promotion. Extension of the concept to the educational marketing involves most likely an extension of the approach. Thus, we can distinguish in the educational marketing 6P: Product, Price, Placement, Promotion, Personnel and Process (didactical).

In an educational system oriented entirely to the customer we have a maximization of the 6P functions at all education levels.

In order to bring this new dimension in education, given the current worldwide and especially at European level reforms of education systems, in an economy and society based on knowledge, in Moldova has been started a comprehensive set of reforms in the education system at all levels. As is well known, for any reform, the definition of objectives, the choice of strategies and policy decisions should be based on objective data. Many countries have an education database based on school censuses and/or ad hoc surveys. However, the relevance and quality of data are yet to be improved in most cases [4].
In this context, the formulation of educational policy and the monitoring of the education system, more and more states have introduced in the education system Education Management Information System. An Education Management Information System (EMIS) is a Management Information System designed to manage information about an education system. An EMIS is a repository for data collection, processing, analysing and reporting of educational information including schools, students, teachers and staff. The EMIS information is used by Ministries of Education, NGOs, researchers, donors and other education stakeholders for research; policy and planning; monitoring and evaluation; and decision making. EMIS information is specifically used to create indicators that monitor the performance of an education system and to manage the distribution and allocation of educational resources and services [5].

Figure 1: Global Trends of data organization flow

Source: [6].

Any EMIS platform follows an annual life cycle [5]:
1. Data Collection – survey instrument design, distribution and collection of data from schools;
2. Data Processing – organizing, processing, checking and cleaning of data;
3. Data Analysis – aggregation, calculation and interpretation of data;
4. Data Reporting – publication and dissemination of information.

Often, even in countries where EMISs are available, they are hardly used to guide education policies. This is partly a problem of presentation: the data are published in raw form in statistical yearbooks without any accompanying analysis. Policy and decision-makers and other planning managers need clear, easy to interpret comprehensible documents, accompanied by relevant analyses on which to base their policies [4].

Thus, the creation and implementation of an efficient SIME offers decision makers a solid platform for its decisions to streamline the education system.

Here it should be mentioned that a key factor of a successful SIME is access and use by the institutions of the data that they have entered. Thus, there are few cases where representatives of institutions abandon entering data or enter data in an erroneous form subsequent lack of access to data or non-perception of their usefulness.

Main premise for the EMIS is the start of implementing the E-Government, which was initiated in Moldova in 2009. Its purpose is to increase the efficiency and transparency of decisions in public institutions. Realizing the importance and advantages of IT resources in foundation and optimization of decision was one of the key elements of the IT solutions implementation and shift from paper based registers, to the online platform that enables easy adaptation of indicators collected, rapid collection of information, reduction of mechanical errors etc.

Thus, policy makers and education have resorted to implementing IT databases, which provide benefits for the management of system. In the world there are many types of EMIS,
some resources are open and can be adapted to the needs of the country, others are paid. Here should be mentioned the UNESCO initiative from 2011 to create an open solution database for the EMIS that provides all the necessary toolkits for data collection and analysis, and trainings for the responsible of data input and their analysis [7]. However, the authorities may opt to create their own system, depending on the specific country and indicators that wants to collect.

Also, organization of the data collection varies from country to country. Some countries collect data via the Internet, other, less common through mobile telephony.

In contrast to many other developing or developed countries, Moldova has an undeniable advantage in implementing this technology, here speaking about territorial and financial accessibility of the Internet, but also its speed.

In Moldova, the implementation of the Education Management Information System started in 2007 with the Government Decision no. 270 of 13.04.2007 on approval of the Concept of educational information system [8]. The first pilot round of data collection took place in 2011-2012 [9]. Subsequently, in 2013 SIME has been adapted and implemented in all institutions of general education level.

As can be seen, currently, the EMIS system includes an extended spectrum of indicators on:
− Institutions;
− Staff;
− Pupils.

The platform is placed on the site www.ctice.md (Centre for Information and Communication Technologies in Education) and has support materials for data entry. The data collection is carried out according to the scheme [11]:

![Figure 2: Moldova EMIS interface](source: [10].)
The EMIS benefits are obvious when it allows the ministry to monitor current educational system, evaluating the results of reforms, education policy decision making, identifying cases of abandonment etc.

Also, with the support of Open Society Foundation through Soros, interested persons can access public data to evaluate the performance of an institution or to use the data in the substantiation of analysis and research.

Although in the Government Decision was described the EMIS implementation at all levels, it is currently available only for general education. Its existence only at this level, significantly reduce the availability of information necessary for decision making at the entire educational system. Thus, there are many cases where officials in need of some information have to use the phone. This method is demanding for both the central authorities and for institutions, making inevitable duplication of effort and information.

Even though telephony and ad-hoc reports are solutions in the some cases they do not provide answers to complex issues such as the pupils tracing is an impossible task for all stakeholders. At the same time, one of the biggest problems of professional and higher education systems is the impossibility to determine the rate of employment of students on the labor market, which in fact is one of the main indicators for determining the effectiveness of these two levels of education. In this context, the institutions from these levels operate in uncertainty of competences, attitudes and skills relevance offered to students.

According to some experts, namely at the level of secondary professional education is most often found lack of data on students 12. Another necessity of implementation of the EMIS especially at the secondary professional level is to shift the financing of institutions based on the new financing formula for the application of which is required current information on the number of students in the school, the professions which are taught etc.

Currently, the implementation of the EMIS is no longer a problem of technology creation but of information management. Thus, the biggest effort in the implementation of the EMIS at the professional and higher education levels is to determine the information flow and indicators to be collected, other things being easy to solve.

Along with the implementation of SIME at all education levels and obtain of current information will be possible to perform a comprehensive monitoring and evaluation of the
impact of reforms implemented and a proactive marketing approach of the educational system.

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UNLEASHING THE POTENTIAL: TRANSFORMING TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

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In view of steadily rising expectations on technical and vocational education and training (TVET) systems the authors ask, ‘What would it take to unleash the potential of TVET systems?’ An integrated analytical approach is proposed through which economic growth, social equity and sustainability perspectives can be strategically and flexibly combined, according to context, so as to address contemporary policy concerns such as youth unemployment, gender disparities and climate change. Policy-makers and other stakeholders may use this approach for the analysis and assessment of TVET systems, to identify appropriate strategies and key enablers for their transformation.

Key words: Technical and vocational education and training (TVET), TVET systems, TVET policies, transformation, sustainable development

Introduction

In our book, Unleashing the Potential: Transforming Technical and Vocational Education and Training, international trends, TVET policies and policy measures between the Second International Congress held in Seoul in 1999 and the Third International Congress on TVET held in Shanghai in 2012 are reviewed. It is found that, whilst a good many countries have achieved commendable results, a lot more countries have not been able to reform their TVET systems to achieve their full potential. An expanding disconnects between the external demands of economic growth, social equity and the sustainability of development and the skills being supplied is identified. Many TVET systems, as currently organized, appear in need of transformation if they are to fulfil their potential contributions to human and sustainable development. We therefore ask, ‘What would it take to unleash the potential of TVET systems?’ and a flexible, integrated analytical approach is proposed.

An Analytical Approach for Transforming TVET Systems

In the twenty-first century, the demands on TVET systems are diverse, complex, unpredictable and rapidly changing. But they can be broadly characterized mainly pertaining to economic growth, social equity and the sustainability of development. Although there are many success stories to be found and examples of strengthened TVET systems, in general it appears that in their present form most TVET systems cannot sufficiently meet the triple external demands on them, and do so in a balanced manner and/or in a strategically weighted

1 This article is an extract from Chapter 4 in Marope, P.T.M., Chakroun, B. and Holmes, K. (2015). Unleashing the Potential: Transforming Technical and Vocational Education and Training. Paris, UNESCO Publishing: http://unesdoc.unesco.org/images/0023/002330/233030e.pdf. The designations employed and the presentation of material do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. The ideas and opinions expressed in this paper are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

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manner. Across many contexts, policies, policy measures and programmes seem to have emerged in a reactive, even sometimes spontaneous way, rather than in a carefully orchestrated proactive manner. Not surprisingly, the results have mostly been imbalanced, uneven, insufficient, uncoordinated, fragmented and sometimes even inconsistent in policy and programmatic responses. Moreover, while some of the policies and policy measures were a response to one or more contextual demands, they tend to have developed without sufficient cross-referencing or rigorous analysis.

Part of the reason has been the fragmented approach to policy-making by different government ministries. It has often proved difficult for governments to coordinate or connect related parts of the TVET system. Policy ‘solutions’ have sometimes been transferred uncritically from one context to another. However, there appears to be a more fundamental problem. This is the absence of a suitable, shared and inter-sectoral approach which could help to connect the analysis of TVET systems with intended development outcomes.

This article seeks to advance TVET policy development by proposing a new, integrated, analytical approach that combines economic growth, social equity and sustainability concerns in a balanced and strategic manner. The authors argue that its application should help TVET systems to learn better from the past so as to better meet the challenges of the future. The approach is intended to move TVET systems towards a more proactive posture when formulating their contributions to holistic development. Whereas in the past, many TVET systems have reacted to the demands placed upon them without significant analysis of contextual information and data, the proposed approach advocates for in-depth analytical work to precede and to continuously accompany TVET system reforms. This should help TVET fulfil more of its development potential.

It is important that while the analytical approach presented should be generally applicable to the wide diversity of TVET systems, it should also be operationally flexible enough, and adaptable enough, to address demands that vary widely across spatial and temporal contexts. The analytical approach should be theoretically grounded, yet at the same time it should be practical enough to be applicable by TVET authorities and other stakeholders even where local research and analytical capacities are relatively weak.

The analytical approach proposed takes account of these requirements. It uses the metaphor of three interlocking lenses, each of which corresponds to one of the three demands: economic growth, social equity and the sustainability of development. Thus it facilitates the analysis of TVET systems from the perspective of these three demands (figure 1). The handles of the lenses signify that the control over how the three analytical perspectives are used separately or in a weighted combination to be determined by the specific context of TVET policy-makers and stakeholders.

The metaphor of these three lenses underscores the reality that for strategic and even practical reasons, a TVET system can focus – as though through a lens – on responding more to one demand than to the others, or even more to certain aspects of that demand than to others. The system’s choice of the lens through which to focus is determined by the challenges in its particular geographical and temporal context. For instance, a country – or other geographical demarcation – going through a recession may need to adjust the attention of its TVET system more towards economic growth than a country facing an environmental catastrophe. Yet still, a country may change the balance of attention of its TVET system over time as the demands and challenges change. Together, the lenses are an approach for deepening the analytical resources and knowledge base that should guide the transformation of TVET systems in particular contexts. They are therefore about optimizing the contextual responsiveness of TVET systems, or simply about unleashing their potential in particular geographical and temporal contexts. The arrows circling the lenses signify that the combined transformative effect of the lenses is greater than the sum of the parts. They also illustrate that transformation is continuous.
The interlocking lenses are not mutually exclusive. They partially overlap to demonstrate zones of complementarity and interdependence. Each of these lenses also contains a number of elements upon which, similarly, greater or lesser emphasis may be placed, depending on context and priorities. In countries marked by slow growth and job creation, attention will naturally focus on economic growth and the role TVET can play in this, but at the same time, this growth will draw attention to TVET’s connection with social equity and balancing economic opportunities for all. Not all growth will be sustainable or neutral in its effect on the environment. TVET can also play important roles in promoting green economies and environmentally friendly development. TVET thus interacts through these three lenses, and the balance of attention to each may vary with time and context. This approach endorses the need to expand TVET systems in order to meet the growing demands on them. However, it underscores that the systems should not be expanded in their current state of unmet potential. It propagates the view that expansion must be preceded by, and then constantly accompanied by, evidence-based transformation of TVET systems.

The economic growth lens
Economic agendas have dominated much of the conventional thinking about the purposes of TVET, even where national economic policies and priorities have differed. At a macro level, the economic growth lens focuses the analysis of TVET systems primarily on how to provide people with the knowledge, skills, dispositions and technological know-how required to support higher value-added productivity, sustained growth and competitiveness. Globalization and the movement of economic production across national borders have accelerated change in many country settings, and brought increased attention to TVET through the economic growth lens.
At the micro level, the economic growth lens enables TVET systems to focus on equipping individuals with skills for employability and for earning a living. For young people entering the labour market for the first time, this lens focuses the system on equipping them with work/job-ready skills that ease their transition from school to the world of work, as well as the broader base of skills needed to meet the demands of the new development paradigm. For youth and adults already in employment, the economic growth lens focuses the system on the provision of in-service, continuing TVET and lifelong learning. For adults and ageing people in particular, the lens can focus the system on providing opportunities for the constant retooling and upskilling required to keep them current and productive in various forms of work over longer periods of time. Workplace learning is especially important where modes of work are radically changing and thus require new skill sets.

At both the macro and micro levels the lens permits analysis of how TVET systems can contribute to growth and to employment creation. The application of the lens is cognisant of the reality that growth can be accompanied by structural changes in employment and unemployment. Concurrent promotion of growth and employment may involve the prioritization of skills development in specific labour-intensive sectors, or championing entrepreneurial learning and the development of small and medium-sized enterprises. A further element to the economic growth lens is the relationship between TVET systems and new modes of work. As already indicated TVET needs to both respond to demands and shape its future contexts. Workplace learning and transversal employability skills are especially important for ensuring that people can adjust to new modes of working.

**Productivity and growth**

In today’s competitive economic environment, investors are seeking to maximize returns on their investments and companies are under pressure to increase the contributions made by their human resources to the bottom line. Process designers, across economic sectors, know that increasing productivity needs the right mix of technology, knowledge, skills and work-appropriate dispositions. At the macro level, this element of the lens looks for the optimum investments in and combinations of skills to achieve the highest levels of productivity, whether for firms, investors or entire economies. Specialized skills related to priority economic sectors are clearly important, even in contexts of high unemployment; demand for skills often outstrips supply, especially in technology-intensive occupations such as engineering, ICT and knowledge-related occupations, each of which demands a solid grounding in mathematics and the applied sciences together with technical understanding and know-how.

With the restructuring of the global economy, countries have attempted to add value in the extractive industries through various forms of processing, often involving middle and higher-level skills. While primary industries undoubtedly remain important sources of wealth, especially in developing countries, many companies are seeking to move up the value chain. Human resource development strategies for productivity can aim to upgrade the skills of the workforce, as well as to target the skills needs of specified industries in which the country has a comparative advantage.

In some cases economic restructuring has involved the closure of traditional extractive industries and the relocation of manufacturing and processes facilities to countries with lower costs of production and hence changing opportunities. Some countries, and regions within countries, have experienced the growth of service sector employment with its contrasting skills demands. In some parts of the world, political transitions from centrally planned to market economies have had a dramatic impact on the skills required for productivity and growth.

Industries have had to become competitive, smarter and more responsive to consumer needs and demands, involving new models of business planning, management, marketing, accounting and customer relations.
The analysis of TVET from the perspective of improving productivity and growth thus may begin with an assessment of new economic opportunities, and be part of wider industrial or trade and investment strategies. For countries seeking economic transition, investing in skills for productivity can help to attract business investments that further contribute to productivity and growth.

Employability
There is a clear intersection between the skills required for productivity and growth, and the skills required by a changing labour market, whether in primary, secondary or tertiary industries. Given the pace of change, societies and individuals are increasingly realizing that they cannot count on current patterns of employment continuing into the future. Where there are fewer ‘jobs for life’, and occupations quickly become obsolete while others quickly emerge, transferable employability skills are needed to enable individuals to enter and navigate the world of work, as well as to move between occupations within and across economic sectors. These skills include, for example, critical thinking, communication, teamwork, negotiation, adaptability and most importantly knowing how to learn. A conscious focus on employability skills is a promising strategy for improving collective and individual resilience to rapidly changing economic circumstances. Job-search skills, for example knowing how to prepare a CV, and qualities such as punctuality, reliability, integrity and trustworthiness also enhance employability. With employability skills, young people and adults are able to minimize the time taken to find a job, or to move jobs. Whether for addressing youth unemployment or for keeping ageing adults productive longer, employability potentially reduces dependency on the state as well as on families and communities, while contributing to economic growth.

Employment creation
While TVET systems can contribute to productivity, growth and competitiveness, and these can support employment creation in existing enterprises or new enterprises, it is by no means guaranteed that new jobs will emerge. A skilled and productive workforce is still subject to the vagaries of the wider economy. Some economic sectors and types of organization are better at creating jobs than others. Indeed, jobless growth can occur, where technological advances lead to the automation of production and services. New organizational arrangements can also lead to increases in profitability of firms without necessarily creating additional employment. Technological advances may also mean a reduction in the size of a company’s workforce or a change in the skills profile of its employees. TVET systems should therefore take account of their potential contribution to employment creation.

This element of the economic growth lens therefore raises questions for analysis about which parts of the economy are most likely to generate new employment, and how skills supply should react. While this differs from place to place, in many countries small and medium-sized enterprises represent a large share of the present total employment. Furthermore most new jobs are likely to be created within small and medium-sized enterprises. This is in part due to an increase in the outsourcing of goods and services to smaller and medium-sized enterprises, by relatively large private and public sector organizations.

Looking at TVET from the point of view of employment creation we need to go beyond the supply of skills, to consider future demand for skills. This necessitates questions about the nature of the business climate and the ease of doing business in a particular country. National or international entrepreneurs also have an influence on employment creation, and depending on the characteristics of, and prospects for, the economy, some skills may have more potential for employment creation than others. Support to the development of entrepreneurial skills in the informal sector may have especially good prospects for job
creation in some countries. However it is not only the numbers of jobs that should be considered, but whether the jobs are of acceptable quality.

**New modes of work**

Related to the quest for increased productivity, employability and employment creation are changes in the organization of work. This includes for example the shift from mass production, and mass-market services, to a more customized approach to meeting individual consumer preferences. Technological innovations have contributed to the changing character of consumer demand: for example the surge in mobile communications and online retail has created further changes in demand for skills. Technology has also facilitated changes in the workplace, and made changing modes of work possible. These new modes of work have both temporal and spatial dimensions. A key source of competitiveness is achieved by reducing the turnover time of capital, which means having fewer warehouses to hold stocks, manufacturing goods on demand and ordering ‘just in time’. As outsourcing results in less job security, there is an imperative on workers to be ready to make career changes, to be able to transfer their skills, abandon obsolete skills and to learn new ones. At the individual level networking and interpersonal skills are increasingly valuable.

Technology has also enabled task teams to be established in a more flexible way, around specific time-limited projects and using the Internet to overcome the barriers previously created by distance. Now that workers no longer need to be in the same location to cooperate, and there has been a rise in teleworking, this geographical dispersal has implications for how organizations work and the capacities required by their staff. International, multicultural project teams are increasingly common. As specialized knowledge and information has become more widely available, the skills demanded by the new modes of work increasingly go beyond what a person knows, to include their abilities to find relevant knowledge and information on a range of topics, and to be able to remain up to date. Analytical and ‘soft’ skills such as communication, intercultural understanding and interpersonal skills have therefore become increasingly important from an economic point of view.

Other changes in modes of work are a consequence of new organizational designs and supply chains, as we alluded to with reference to employment creation. At one level, mergers and acquisitions continue apace, and some economic sectors are dominated by relatively few multinational companies. Yet at the same time there is a trend in favour of outsourcing to smaller and medium-sized enterprises, which has in some cases reduced the core workforce in larger organizations, but created opportunities for new enterprises and subcontractors to provide goods and services on demand. Taking these elements together, the economic growth lens analyses whether TVET systems are contributing as much as they can to the demands of the economy. While the picture varies across countries, in general TVET systems have focused on programmes in a relatively narrow range of occupational areas. This lens suggests that TVET systems should in principle widen their relevance to all occupations for which there is effective demand. This means going beyond the traditional trades and occupations found in TVET instruction to expand and diversify the skilling opportunities offered to meet present and anticipate future demands for skills. At the same time, it means in analytical terms developing the capacity to analyse changes in the world of work and anticipate their skilling implications.

Where TVET systems have fallen short of their economic potential this can partly be explained by insufficient coordination within government administrations, between the various TVET providers, and between the demand and the supply side of TVET systems. It may also reflect structural barriers to flexibility and capacity for managing change. Furthermore, students have not always been adequately consulted about their occupational aspirations, and may not have sufficient knowledge of the economic opportunities available to them when selecting between TVET learning opportunities. The economic growth lens therefore poses questions regarding the effectiveness with which TVET systems meet labour
market demands for knowledge, skills, dispositions and technological know-how, provide the skills for higher value-added productivity and provide the skills to support employability, earnings and quality of life.

Although the intention that TVET should contribute to economic growth is often expressed in policy statements and TVET strategies, TVET has often been considered primarily in terms of the supply of programmes rather than the demand for skills. In this framework, TVET systems are under-valued for their impact on economic growth and employment outcomes. The economic growth lens can be useful for analysing TVET systems in terms of their contributions to human capital formation, private sector development and the economy as a whole. The analysis typically considers questions such as the responsiveness of the TVET system to changing economic and labour market demands, and the roles of the private sector in governance and decision-making.

While the economic growth lens is one of the three lenses considered necessary for analysing and transforming TVET systems, this section has shown that even though there is a strong economic rationale for investing in TVET, optimizing the economic contribution of TVET is more complex than it may at first seem.

**The social equity lens**

The social equity lens helps to focus the system on equitably increasing access to effective TVET learning opportunities, and by implication, the associated benefits for individuals and societies. This focus draws from another of UNESCO’s core mandates, to ensure inclusive and equitable lifelong learning for all. The lens raises such questions as who gets access to TVET in its different forms and how equitably learners are able to use TVET to enhance their learning, and the equity of outcomes of this learning in the world of work and in society.

In essence therefore, the social equity lens can be used to examine how far TVET systems provide learning opportunities that support social equity and inclusion in development. It highlights that over time and space, economic growth should be shared growth, and development should be inclusive. However, from the sociology of education it is known that education systems can sometimes appear meritocratic but can actually reproduce or even deepen social inequalities. By considering social equity and inclusion in development as a whole, the lens can help to examine how far TVET systems, and specific policies and policy measures, are equitable.

Equitable opportunities for learning should help individuals and collectives, like families, countries and indeed the world, to improve their prospects for material security and total well-being. The social equity lens has two major elements, redistribution and inclusion, which are described in turn.

**Redistribution**

In theory at least, the learning and upgrading of skills should have a powerful redistributive effect in terms of improved opportunities to enhance income, and material and social well-being. TVET learning is sometimes promoted as a way of increasing and sustaining social welfare, as people who have the skills and social capital to recover from changing fortunes are less likely to become dependent on others. This provides a strong rationale for expanding the number of quality TVET learning opportunities, especially in rural areas and across genders, and for focusing efforts on strengthening the livelihoods of vulnerable populations, to narrow the divide between rich and poor. TVET learning and qualifications can dramatically improve access to employment, self-employment and social inclusion.

**Redistribution of material wealth**

Knowledge and skills are forms of social and human capital that when equitably distributed can empower individuals and reduce income gaps. There are numerous, and often heroic, efforts across the world by NGOs and donors to support the training and skills development of disadvantaged groups, such as homeless people, youth at risk, and people
with physical or learning disabilities. These efforts sometimes have their roots in a philanthropic tradition of TVET.

The social equity lens, however, goes beyond simply targeting poor and vulnerable populations by also focusing attention on the relationship between TVET and the justice or injustice of educational, social and development outcomes. When it comes to inequalities based on gender, social class, ethnicity or disability, the social equity lens provides a way of posing questions, and sometimes difficult questions, about whether TVET systems and specific policies are part of the problem or part of the solution. When and where TVET has been positioned as leading to occupations with relatively low status or low income, and where participation in TVET is influenced by stereotyping by gender or other socially determined attributes, it is difficult to claim that TVET is fulfilling its potential for the redistribution of material wealth. While using the social equity analytical lens reveals how many TVET systems have a long way to go in providing equitable access to effective TVET learning, the lens also has the benefit of drawing attention to the place of TVET learning in relation to wider learning and development opportunities.

Recognizing that material inequalities partly reflect unequal opportunities for learning, and that these then often translate into inequalities in the world of work, the social equity lens takes a relational approach. This seeks to address the social relations that underpin and perpetuate inequality. It recognizes that advancing the equality of learning opportunities depends not only on empowering disadvantaged groups but also on the willingness of advantaged social groups to reduce the inequalities in society. For example, urban elites have a crucial role in addressing material and intangible disparities between rural and urban areas, and able-bodied people have a role in addressing the social inequalities between able-bodied and disabled people. Similarly, gender equality will not be achieved by targeting the most disadvantaged gender group (most often women) alone. Achieving gender equality requires attention and actions by men and women.

The social equity lens thereby considers TVET from the perspective of addressing inequalities and promoting equality of opportunities. Skills gained through relevant TVET can significantly increase the prospects for income generation, through wages or self-employment. Entrepreneurial skills, regardless of whether they are learned through formal, non-formal or informal TVET, are beneficial if learners are then able to set up their own enterprises. Where these enterprises become competitive, in whichever field of endeavour, they can employ others and benefit from a greater share of economic growth.

Redistribution of intangible wealth

TVET systems can have enormous social benefits, for example, for the health and well-being of families and communities, including enhancing the social and cultural capital needed for full participation in society. Well-designed TVET systems can therefore have a redistributive effect on intangibles including the knowledge, skills, values and attitudes needed for responsible citizenship in democratic societies. The economic value of cultural heritage is increasingly recognized, and this too has intangible value, for affirming cultural identities, local languages, knowledge and traditions. One of the most valuable aspects of intangible wealth to be shared is learning to learn, as this above other capacities can equip a learner for life.

Intangible and material wealth are of course related; indeed intangible wealth can reinforce material wealth, as occurs when TVET builds social esteem, confidence and the ability to recognize and use talents in ways which are recognized and valued by wider society. Participation in TVET can improve the prospects for individuals to develop their social and professional networks, to obtain employment and to succeed in the world of work, communities and the wider society. Learners can increase their social status and have improved influence on the decision-making processes which affect their lives.

However, experience from many countries shows that whereas skills can help strengthen individual incomes and livelihoods, pathways do not necessarily exist between
TVET learning, further learning, and career and social mobility. Furthermore, partly a result of this priority focus on the most disadvantaged and vulnerable groups, in some places TVET has become associated with low-level skills and in some cases is seen as a compensatory provision for learners who have been underserved by formal education. The social equity imperative would therefore imply transforming TVET so as to improve opportunities, first for people with low-level skills to access the learning of middle-level and high-level skills, and second for those already with high-level skills to sustain and keep them current.

Regrettably the potential redistributive effects of TVET remain underexploited. Formal TVET institutions often cater for a small, rather privileged, minority in urban centres of developing countries, and even this provision is not necessarily of good quality. A much broader base of participation in quality and relevant formal and non-formal TVET programmes, and informal TVET, is needed to enable better wealth distribution effects.

**Inclusion**

The inclusion element in the social equity lens addresses inclusion within opportunities for TVET learning (formal, non-formal and informal) as well as the overall inclusive effects of TVET in the world of work, for ‘decent work’, and on holistic and humanistic development. The idea of inclusion addressed by this lens goes beyond the social outcomes of TVET. It regards TVET as a right whether or not learners choose to use the skills they have learned for economic activities. As for other forms of education and training, learning in TVET has intrinsic value beyond its utilitarian value.

The concept of TVET as a right is articulated in UNESCO’s relevant normative instruments. The 2001 Revised Recommendation concerning Technical and Vocational Education states that:

*Technical and vocational education, being part of the total educational process and being a right as described in Article 26 of the Universal Declaration of Human Rights, is included in the term ‘education’ as defined in the Convention and the Recommendation against Discrimination in Education adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization at its 11th session (1960) and the Convention on Technical and Vocational Education adopted by the General Conference at its 25th session (1989) [UNESCO, 2001, p. 7].*

The States Parties to the 1989 Convention on Technical and Vocational Education have agreed to ‘work towards the right to equal access to technical and vocational education and towards equality of opportunity to study throughout the educational process’ (UNESCO, 1989). Furthermore for the 2001 Revised Recommendation, technical and vocational education should:

*contribute to the achievement of the societal goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of all individuals, both men and women, for active participation in the establishment and implementation of these goals, regardless of religion, race and age. [UNESCO, 2001, p. 9]*

In 2012, TVET featured prominently in the Report of the UN Special Rapporteur on the Right to Education, who noted that:

*International human rights instruments clearly establish technical and vocational education and training as part of both the right to education and the right to work. Transmission of knowledge, skills and competencies through technical and vocational education and training, empowering its beneficiaries to play their roles in social development as active citizens, is a collective responsibility, falling primarily to States [Singh, 2012]*

This Report identified principles to guide action by States in the establishment, expansion and consolidation of TVET, including the principle of social justice and equity. It calls for particular attention to the skills development of disadvantaged groups, youth and women [ibid.].
Assuming that access to quality and relevant TVET learning will improve the development outcomes for all individuals and their societies, the lens draws attention to the need for equal access to quality TVET and equal opportunity for diverse learners, while recognizing that TVET learning takes place in many different settings and at various moments during people’s lifespan. Progress towards the right to TVET appears more complex to assess than progress towards general education. However this lens suggests some possibilities. First, it is possible to examine whether there are policy frameworks in place that guarantee TVET access for all or for more people. This element of the social equity lens explores the extent to which policy commitments specify particular groups, such as young people, women or people living with disabilities. These perspectives may include training functions of other ministries, non-formal and private provision, as well as learning that takes place in formal and informal workplaces. TVET opportunities should be affordable and accessible. As McGrath [2012, p. 626] observes, ‘New learning technologies may offer benefits in increasing access for the previously marginalized […] However, it is important to note that such technological solutions do not necessarily guarantee improved accessibility. A digital divide exists in all countries and the poorest learners are often also least able to access certain technologies’. A very important part of improving the quantity of TVET lies in considering the possibilities, but also limitations, of intervening in less formal modes of TVET learning. The recognition of prior learning is a potential avenue to valorizing the learning and skills that have been acquired informally, and thus empowering learners to further their learning and career progression. Addressing discrimination in TVET systems is essential for advancing the right to TVET for all, as well as advancing the utilitarian value of TVET for all. Regrettably, gender, ethnicity, religion, caste, class, disability, location, HIV status and many more factors of exclusion are used on a daily basis to discriminate against some learners. Such discrimination may be by individuals through words and actions, but it can also be deeply institutionalized in curricula, timetables or facilities provided. It may also occur in workplaces. Access to traditional apprenticeships, for instance, is often influenced by matters of ethnicity, gender and caste [McGrath, 2011]. It flows from this discussion of accessibility that TVET should promote effective opportunities to acquire skills by all learners, male and female, regardless of class, ethnicity, age, disability, location or other socially ascribed traits. At present, access to TVET often depends on educational attainment level and socio-economic characteristics. In some countries, participation in TVET is related to being denied or otherwise excluded from other learning opportunities, and it is not necessarily the most advantaged people who are enrolled in TVET programmes. From the perspective of the social equity lens, TVET should cater for the present and future needs of all learners. There are, however, limits to the extent to which ideas about ‘access’ and ‘inclusion’ that have developed in relation to basic education can be applied meaningfully to TVET systems. In this sense, working towards the right to equal access to TVET, while important, is not sufficiently ambitious. However, at the same time the practical challenge is enormous, not least because of the historical divide between academic and vocational education which is evident in many countries. The assumption that TVET qualifications can improve the equality of opportunity to benefit from decent work does not hold where employers, for historical reasons, are discriminating against people with ‘vocational’ qualifications in favour of those with ‘academic’ qualifications. Moreover, the way in which TVET faces the labour market, indeed is typically delivered in workplaces, requires that equity be thought of in terms of outcomes as well as access. There is a risk that TVET access may be to programmes that do not generate real improvements in labour market opportunities and status, an issue that is not confined to public providers. Or it may be that access to good quality pre-employment TVET becomes more equitable but that discrimination in the labour market prevents graduates from realizing the
full benefits of their learning. Gender equality has received significant international attention in recent years, and this has been reflected in a reduction in gender participation gaps in both primary and secondary schooling. Efforts to analyse and address gender equality in TVET are relevant to other aspects of equity and dimensions of inclusion/exclusion. In almost all parts of the world, the proportion of girls to total enrolment in secondary education defined as TVET is less than for ‘general’ secondary education [UIS, 2012]. Beyond formal TVET, it is important that equity is understood as applying to the full range of occupations and livelihoods, including those that are pursued in rural subsistence and non-farm activities. Knowledge and skills for agriculture and rural livelihoods enhance not only incomes, but also the health and nutrition of individuals and their families. How households’ livelihood strategies are made possible by activities that are not necessarily considered as part of economic activity should be considered. The example of how women textile weavers in Lao People’s Democratic Republic acquire their skills from their mothers and other female family members is a case in point. For many weavers, weaving offers both a livelihood and a way to sustain their cultural identities [Shiohata, 2011].

The social equity lens focuses attention on the fact that expanding access to TVET learning cannot be limited to a view of how to expand provision that is public, formal and initial. Rather, it is important to realize that TVET learning is integral to being fully human and to living in society. When TVET systems are analysed using the equity lens, a key question is whether the forms of TVET that people are accessing are improved, and how learners can be assisted to have better and more equitable access to expanded TVET opportunities that take account of their broader learning throughout life and work needs, the priorities of enterprises and communities, and the possibilities of new developments in accessing high quality learning opportunities.

The Shanghai Consensus of the Third International Congress on TVET made the following recommendations on expanding access and improving quality and equity, including to:  

*Take innovative measures to provide quality and inclusive TVET, especially to disadvantaged groups including learners with disabilities, marginalized and rural populations, migrants and those in situations affected by conflict and disaster.*

*Improve gender equality by promoting equal access of females and males to TVET programmes, particularly in fields where there is strong labour market demand, and by ensuring that TVET curricula and materials avoid stereotyping by gender.* [UNESCO, 2012].

A broad perspective on social inclusion, which is offered by this analytical lens, includes but goes beyond assessing inclusion in TVET programmes, the TVET system, or even inclusion in the labour market, and considers the relation between TVET and society as a whole. This analytical lens can therefore help to assess whether innovations in TVET systems are likely to contribute towards decent work for all and the broad objectives of lasting peace and social cohesion, or may actually perpetuate historical segregation, for example by gender, ethnicity or social class, perpetuate social injustice and add to the fragility of world peace. The social equity lens permits an analysis of TVET’s contribution to social equity both from within the TVET system and from broader societal perspectives. In both cases, most if not all TVET systems are in a state of unmet potential with regards to social equity and the right to TVET.

The sustainability lens

The sustainability lens adds another indispensable dimension to this analytical approach, without which any assessment of TVET systems in the twenty-first century is incomplete. The Rio+20 United Nations Conference on Sustainable Development in June 2012 emphasized that sustainable development goes beyond environmental issues. Sustainable development ‘rests on integration and balanced consideration of social, economic and environmental goals and objectives in both private and public decision making’ [United Nations, 2012].
Key elements of the sustainability challenge identified at Rio+20 include creating clean and decent work; producing clean and sustainable energy and delivering it to all; ensuring that all have access to the food, water and nutrition necessary for their health and well-being; managing sustainable cities; building clean and facilitative transport; protecting the oceans; and building resilience in the face of natural disasters. Well-functioning TVET systems can potentially play a crucial role in addressing each of these challenges. The Rio+20 outcome document, *The Future We Want*, stated that:

*We recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all.* [United Nations, 2012, p. 2].

This analytical approach focuses attention on the sustainability of societies and is in itself an integrated perspective with social, economic and environmental considerations. The sustainability lens links to wider issues of human-centred development in which the development of individuals and societies is given centre stage in thinking about development, and this is understood as a long-term and intergenerational challenge. Most importantly for this framework it focuses on the rights of future generations, an aspect which could otherwise be overlooked.

The fact that sustainability is an integral part of any meaningful notion of development is now generally accepted; however, in most cases the demand on TVET systems to contribute to sustainability has not been met. Indeed, this demand represents an enormous transformational challenge in view of the fact that the evolution of modern formal TVET systems developed in conjunction with the industrial patterns of production and consumption, some of which are now regarded as unsustainable. The sustainability lens has three elements: greening economies, intergenerational rights and global citizenship and is necessary to optimize the contribution that TVET systems make to the sustainability of development.

**Greening economies**

As collective understanding of the impact of climate change deepens, it is not just skills, but green skills, that nations seek. Clean sustainable jobs that contribute to decrease energy and resources consumption, reduce carbon dioxide emissions, protect land and marine ecosystems, sustain biodiversity, and minimize pollution are gradually emerging as preferable to the ‘business as usual’ approaches, as countries and organizations seek to demonstrate their green credentials. The need to transition towards a more sustainable model of development is creating opportunities for new technologies, investments and jobs in green sectors such as renewable energy, energy-efficient construction, sustainable transport and organic farming (ILO, 2012a). Education and training is not only an imperative but also an untapped opportunity in transitioning to green economies and societies. Progress towards sustainability implies the creation of new and additional jobs, skills being substituted, certain jobs being eliminated without replacement and some existing jobs being transformed [UNEP, 2008; Strietska-Iлина et al., 2011].

TVET systems can anticipate the need to respond to the rise of new environmental products and services, including renewable energy and green technologies, and also to innovations in production processes that reduce resource use and waste generation. From this perspective, TVET systems will need to train people for new green jobs and for the greening of many existing jobs. Some of this will be through new pre-employment programmes.

However, much of the response will come from additional TVET for those who are already working in sectors such as engineering and construction. As with sustainable consumption, there is also a powerful argument that TVET should be a site of learning about environmental sustainability, both with respect to its importance for the workplace and as a citizenship and values education issue. Such debates are in their infancy, and have tended to begin with a focus on public TVET providers.
However, it is important also to consider how such arguments could be taken forward in other TVET settings. There are internal incentives in some firms that encourage them to educate their workers about sustainability issues in a way similar to addressing health and safety agendas, but there may also be a role for sectoral bodies and national agencies to provide incentives and disseminate best practices in this regard.

Much is at stake, as shortages in skills that match the shifting labour market demands in the energy sector, building and construction, transportation and farming, for example, could seriously hinder progress towards sustainable development objectives.

‘Greening TVET’ is an attempt to use TVET to help reconcile what UNEP (2011, p. 16) calls the ‘competing economic development aspirations of rich and poor countries in a world that is facing increasing climate change, energy insecurity and ecological scarcity’. It also draws attention to the need for TVET providers themselves to operate in an environmentally and socially sustainable way, for example by reducing waste, promoting recycling and saving energy, and acting consistently with the green skills that formal and non-formal TVET programmes are trying to impart.

Intergenerational rights

In a study conducted by the UNESCO-UNEVOC International Centre, Fien and Maclean (2009) stressed that economic sustainability requires greater attention to modes of production and consumption that are sensitive to the needs of current and future generations. Indeed, intergenerational concerns are integral to the very concept of ‘sustainability’, as identified in the Rio Declaration on Environment and Development, ‘The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations’ [United Nations, 1992]. This long-term perspective which seeks to anticipate the future in order to defend the interests of future generations is integral to the sustainability lens.

The lens draws attention to the need for TVET systems to better respond to changing demands for skills for sustainable economic activities and to foster social behaviours and values which do not compromise the ability of future generations to use the environment sustainably to meet their own needs.

The sustainability lens necessarily extends the role of TVET systems beyond the conventional scope of learning for work, to encompass considerations of their internal sustainability and the long-term sustainability of societies. As the Bonn Declaration on Learning for Work, Citizenship and Sustainability [UNESCO, 2004] anticipated, it is increasingly important to see the sustainability of TVET as a major policy goal. For this purpose, a stronger focus by TVET on the ethical and moral dimensions of development becomes necessary.

Global citizenship

The sustainability lens takes into consideration the relationship between people and the planet, including both the local and global environment. It includes a heightened awareness that the current generation has a duty not to exhaust natural resources and a duty to minimize the harmful environmental impacts of resource use, so as to safeguard the functioning of environmental systems for future generations. Since the Earth’s resources often transcend nation states, and the environmental impacts of development often extend beyond political territories, there is a significant supranational, indeed global, dimension to environmental responsibility. Recognizing which patterns of human behaviour, and forms of social and economic organization, are unsustainable is an essential starting point for envisaging a sustainable future, and anticipating the knowledge, skills and values which TVET is required to develop. The global citizenship aspect of the sustainability lens thus includes the idea that individuals must be accountable, to some extent, for the collective good at the global level. In the contexts of social, economic and environmental problems that
extend across nation states and continents, national level ‘citizenship’ alone is insufficient for safeguard the wider public interest for present and future generations.

At present TVET systems often seem to have difficulty remaining current and relevant to changes in the workplace, including the introduction of green technologies, environmentally sensitive production processes and services. The added value of the sustainability lens is also evident through the attention it draws to human and ecological interconnectedness. Indeed, the idea of sustainable development conceptualizes the world as an interconnected system, across both space and time.

**Conclusions**

The analytical approach outlined here advocates a holistic and integrated analysis of TVET policies and systems, with a view to optimizing their contributions to holistic and sustainable development. The approach acknowledges that the weighting to be given to economic growth, social equity or sustainability aspects of development varies across geographical and temporal contexts. These three integrated dimensions of holistic and sustainable development are visually represented through intersecting and inseparable lenses which are proposed to strengthen the analytical underpinning of TVET transformation. While at times tensions will occur, for example in the balance between economic growth and sustainability, there are also clear complementarities between the lenses. For example increasing participation in quality and relevant TVET learning may be beneficial for meeting all three demands: economic growth, social equity and the sustainability of development over time. The social equity lens focuses attention on redistribution, inclusion and the right to TVET. At the same time, it simultaneously has potential for facilitating shared economic growth by broadening the base of people with good quality and relevant skills. This marrying of social equity and economic growth concerns in turn adds to the transformative possibilities of TVET, thus demonstrating how TVET can actively shape, as well as respond to, its contexts.

Collectively the three analytical lenses equip policy-makers and other stakeholders with a powerful and yet flexible tool for assessing current TVET systems relative to development outcomes in an integrated way. Using these lenses, the question is asked, to what extent does TVET in its many forms and settings contribute to economic growth, social equity and the sustainability of development in national and regional contexts? Answering the question is a first step towards the transformation of TVET. The lenses also can enhance the assessment of the value of recent policies and measures in the light of rapidly changing contextual demands. For example, policy-makers will be able to assess whether certain policies respond to one or more of the contextual demands. They will also be able to determine whether policy responses are aligned with their contextual strategic priorities. The analytical approach can also facilitate consideration of the intended relationship between changes to the internal working of the TVET system, for example the modernization of TVET provision, and the hoped-for outcomes for development as a whole.

The added value of the analytical approach is that it provides a holistic way of assessing how a particular policy or measure is related to wider external demands. Experience over the review period shows that more often than not, TVET policies and the associated measures attempted to respond primarily to one category of demands, often economic demands. This is not only at the expense of the other categories of demands, it can unbalance and distort the TVET system. It is therefore necessary to ensure that the analytical approach is itself sufficiently integrated and balanced to ensure that the analysis is not overly dominated by one demand or another, or that if it is so dominated, this is a strategic choice rather than an omission. The ideal application of the analytical approach would ensure attention to economic growth, social equity and the sustainability of development in an inter-sectoral, balanced and holistic way.

Wherever the balance of priorities lies, geographically or temporally, the discussion above suggests that TVET can do much more to meet these demands. This reinforces the view that the transformation of TVET systems is urgently needed, and that TVET should not simply be scaled up in its current form of unmet potential. Until now it has proved difficult
for TVET systems to look critically at themselves. The analytical approach proposed here is a modest contribution to providing a new, more integrated and iterative way of thinking about, studying, analysing and evaluating TVET systems, which will itself evolve over time. What is clear is that the further development and eventual optimization of TVET systems requires an integrated and interdisciplinary approach. This needs to be both universal enough to support global dialogue on transforming TVET, and flexible and adaptable enough to meet the needs of particular geographic or temporal circumstances. It has to be theoretically informed while also having value for the policy-makers and practitioners in the TVET community.

Beyond the analytical approach, the authors find that new partnerships and expanded networks will be key enablers of transformation, to mobilize the necessary inter-disciplinary and inter-sectoral knowledge and expertise. Other enablers include strengthening the knowledge and the information base, developing a culture of learning in TVET systems, improving incentives and accountability and the development of capacities at all levels. The transformation of TVET also requires adjustments beyond TVET itself, most importantly a balanced and comprehensive approach to the development of the education sector. A national framework for lifelong learning is needed to make for a seamless framework that facilitates horizontal and vertical learner pathways and transitions, within education and training, and between this system and the world of work. Furthermore, for the sustainable development potential of TVET to be unleashed, it appears that inter-ministerial cooperation and dialogue between all stakeholders, strengthened governance and visionary leadership, will be required.

Bibliography:

The article emphasizes the problem of sustainable development, with focus on the education quality as the main factor of sustainable development. The author describes the strategy of advanced education. As the dominant innovative approach offers cluster and research approaches to education.

**Key words:** sustainable development, quality of education, education strategy, innovative approaches in education, advanced education, cluster formation, research education.

In recent years, the idea of sustainable development of society is becoming increasingly popular and it can be argued that it is becoming the paradigm of modern scientific knowledge and the principle of social practice.

The basis of the modern concept of sustainable development, constitute provisions of that doctrine of sustainable development is the harmonization of life in terms of equal access for all members of society to potential opportunities to meet their needs and striving for a better life. It is important to emphasize that sustainable development required to meet the most important needs for the life of all people and giving everyone the opportunity to satisfy their desire for a prosperous life equally, thus avoiding all sorts of disasters and conflicts arising in society (Mayorov M.I.). In the broadest sense, sustainable development philosophy – is non-regressive, safe development, the aim of which is to preserve and co-evolution of civilization and the biosphere. In this process, the fore intellectual and moral factors provide relevant «information and knowledge» nature.
It should be noted that sustainable development does not mean stagnation, rather it is a process of harmonious development, in which the process of production, exchange, management, distribution and exploitation of natural resources in a mutually supportive and directed to the benefit of individuals living in the community.

The idea of sustainable development requires new thinking and forecasting activities norms of social institutions, in varying degrees, extending from unsustainable development. The transition to sustainable development changes, first of all, the nature and the strategic orientation of education as dominant in socio-economic development and the main resource of the future for the state, the basis of his spiritual and material reproduction.

In this context, a new development put the main issue - the issue of quality of education [4]. Since the founding of the first University (Italy, Bologna) and to the middle of the XIX century, higher education in the framework of the European intellectual tradition was seen as an absolute good, relative to which qualitative assessments were considered inappropriate. Society, the state and the person did not have criteria that provide high-quality evaluation of higher education institutions. And only in the XIX century, the concept of “quality” has been used in relation to higher education, and the nature of the term has acquired in the second half of the XX century.

The current stage of development of the national education system is characterized by significant changes in the understanding of the quality of higher education. In the process of the formation and the many stakeholders - the state, society, personality, but are interested in different ways, reflecting the different approaches to the concept of quality in higher education at public officials, employers, teachers, students, etc. Institutions are also independent stakeholders.

According to the policy document “Reform and Development in Higher Education”, adopted by the General Conference of UNESCO in 1995, the concept of “quality of higher education” applies to research, teaching, training, infrastructure, educational environment, universities, etc. Quality of higher education - is a balanced line education and training as a process and the result of the diverse needs of individuals, society and the state. The quality of education is determined by a set of indicators describing various aspects of the training activities of educational institutions: educational content, forms and methods of training, material and technical base, personnel structure and others that ensure the development of competencies.

Functions Evaluation of Education delegated, primarily employers as customers the performance of education systems, which requires higher education to the labour market orientation. Ideally, universities adequately respond to the changes taking place in society, follow the labour market, in some cases – their own form. However, in practice, now the educational market and the labour market are largely mismatched: lagging behind offers educational services to the needs of the labour market. All this is reflected on the state of the educational system in the path of modernization, and the labour market, which, in the presence of a huge number of people with higher education cannot meet their needs in the right specialist.

The efforts of the scientific community focused on an intensive search for innovative models of vocational education in accordance with the changing requirements of the graduates. The search for new conceptual ideas that enhance the quality of education, held primarily in the context of innovative development scenarios. The question arises: what changes are needed in the education system so that it was appropriate challenges of the times, able not only to function effectively in the new environment, but also become a factor in the sustainable development of society?

First of all, there is a need for drastic reorientation of education strategies. It is evident that supports change, conservative - behindhand (from science and life) education model of unsustainable development on advanced education. The essence of any school, including professional, is not only to prepare students for “adaptation” to the existing socio-economic system, but also to orient them to operate in more advanced systems; otherwise there will be no development production of society in general. “The school should lead the society, and not
vice versa ...” - claimed a famous Russian scientist and teacher V.V. Davydov. The strategy of advanced education is precisely to not only focus on developing production and changing socio-sphere, not even to promote the development of production, but the main thing - to focus on the anticipated future. In this case, the most important task is skillful forecasting of production and of society itself. Orientation of education on future needs of society and the development trend of production and non-production areas - a new quality of educational training of students, the development of human capacities and capabilities to define themselves in a professional activity, its preparation for dynamically changing production and socio-sphere, the formation of the ability to learn, improve their knowledge throughout life.

In general, the strategy involves advanced education focus of the educational process and its content in the advanced development of the personality of the future specialist, the formation of his readiness for future modelling to predict their own development options, to address innovative professional tasks.

The strategy of advanced education is fundamentally changing the requirements for the structure, content and didactics of education.

One of the innovative approaches to change the structural organization of education, in our opinion, is the cluster approach [4]. The innovative character of the cluster approach is primarily associated with mutual development and self-development cluster members based on the implementation of sustainable social partnership. The main requirements of the cluster approach in education in the principles laid poly subject, multi-areas, multi-level, complementarity and technology in order to optimize the multi-stage continuous process of professional development specialist.

Of particular importance is the principle poly subject, involving the implementation of the triple helix model (Triple Helix Model), which is based on partnership between the three institutional sectors - government, business and science / universities, and the universities are displayed on the positions of the leading actors [3], the role of universities in the Education Cluster is the development and implementation of new social technologies and methodologies, training, retraining and advanced training of professional personnel for institutions / companies - cluster members, accumulation and transmission of knowledge between them, and consulting in various areas of their activity [1]. Speaking guide and source of innovation, provides university institutions, organizations and businesses with new competitive and socially significant projects, developments and technologies.

Advanced education strategy calls for changes in content-didactic education, which must take into account the social and cultural complexity of the world, caused by the actions of human and artificial systems, the dynamics of the growth of knowledge and technology development, intensification of cognitive effort in an uncertain outlook. These requirements imply, first of all, pedagogical paradigm shift from the formal and universal at the scientific-oriented, i.e., education should become a research [3]. That research, education is now actively developing the cognitive system to fully meet the requirements of modern society and maintain an innovative society [2].

Feature today was the realization that the education system is not only directly determines the possibility of economic growth, but also solves the problem of advancing the cultural growth of the person who will be able to create an economy, as well as tomorrow's society. Research approach is consistent with trends in the development of educational theory and practice in general, the philosophy of modern education, as it combines the principles of student-centred learning, co-creation of students and teachers, the imperatives of psychopedagogical monitoring and control of the quality of education, the integration of educational institutions and higher education Under this approach, education is seen as education, research suggests that the learning process as a teaching and research, design research and research activities of the students.
Thus, the quality of education is the dominant factor in the sustainable development of society. In modern conditions the problem to improve the quality of education is, first and foremost, in approving the strategy of advanced education, requires the implementation of a cluster of research and education. It is these priorities in education will contribute to the country's transition into the world economic space and allow integrating its intellectual and cultural potential in an entirely new field of activity.

Bibliography:

FUNDAMENTALS OF TEACHER’S IMAGE SHAPING

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The article deals with the teacher's image, its essence, the subjectivity of the image, the content, including its internal and external constituents, as well as self-image taken (perceived) image required, and formed image of a teacher; teaching imageology as the doctrine of the image of the teacher and further need of its formation, the phenomenon, which has considerable impact on the formation: positioning, mythologization, emotionalization, distancing, visualization.

Key words: teacher, image, teacher's image, self-image, imageology, pedagogical imageology, mission, specialist, self-development, values, relationship

Image of a teacher, educator, or higher school teacher is the subject of particular concern. It’s affected by the mission, the status and prestige of a teacher. The mission defines the purpose and requirements of a teacher, and the status and prestige - attractiveness of the profession, the opportunity to select those who are most suited for professional designation.

Mission (from lat. mission — sending) – sense of existence, destiny. The mission of an educator is special - he does not only teach and educate the student, but also develops his personality. Herbert George Wells (Herbert George Wells 1866 - 1946) English author and journalist wrote about the mission of the teacher: “No conqueror cannot change the essence of the thread mass; no politician can't raise the affairs of the world above ideas and abilities adult generation with whom he deals. But the teacher - I use this word in its broadest sense - can make more than a conqueror and governors. They, the teachers, can create a new imagination and
release the hidden power of humanity” [5, p. 104]. British statesman and politician Winston Churchill (1874-1965) emphasized: “School teachers possess the power of which Prime Ministers can only dream” [5, p. 92]. This is the highest mission of the master to the Fatherland. The highest mission of the teacher is the process to professionally train personnel for the development of various spheres of economy and spheres of professional activity.

It’s been written so much since ancient times about teacher and his moral duty to the state and society. Ancient philosopher of China, Confucius (551 BC - 479 BC) wrote the following: “...According to the ritual, even called to the sovereign, the teacher does not make him the bow – that’s so high the ancients revered the teachers” [5, p. 116].

The role and mission of the teacher are influenced by the needs of that society, for which the youth is being formed. At the same time, there is something in common, which always made the designation of teachers’ formation of the personality of the younger generation. The teacher as the carrier of culture of a given environment and time, contributed to the formation of generations of people demanded this time and culture.

Anton Semenovich Karabalin, a famous Russian teacher, son of pupils of A. S. Makarenko, rightly drew attention to the fact that in life, young people should reach “a just, healthy world, able to work, to be Mature, highly cultured, moral, and loyal to the Homeland”. This essentially acts as social ordering of state and society, which is presented to the teacher (teacher), his pedagogical activity.

M. M. Rubinstein (1880-1953), large domestic psychologist, philosopher, educator, organizer of higher education, recognized as teacher of teachers in work "Problem teachers", stressed: “the teacher is a social worker acting on behalf of one or another social organization or on their own initiative and putting the task expediently organized aiding the growth of young people in the direction of best general and specific adaptation to the surrounding natural, social and cultural conditions, economic assimilation purchased in the cultural experience of the past knowledge and skills, strengthening their individual and social nature, and disclosing them in the in-depth interest and creative relationship to cultural values, acting part direct, part sideways, as an organizer of experience, as an exponent of the state and public in the interests of social adjustment, as the bearer of the sower and cultural values” [3, p. 23].

It can be argued that the teacher is the person who takes the liberty and ultimate responsibility to execute this state order to grow each child entrusted to him, worthy of the citizen-rights of his Fatherland.

A. S. Karabalin emphasized: “I imagine the designation of any teacher in the following way – he should make the child happy”. This is the greatest mission of the teacher. What teacher wants to see his students in the future, so must he be for them. This is because in their teacher children see their ideal which they should reach. Amazing fully characterizes the identity (image) teacher Galina Konstantinovna Kalabalina: “a Teacher should... be a personal example to mobilize children, teach them to do everything excellent” [1]. This fully applies to the teacher.

The teacher, as a professional, is the primary and a vivid example to students, their personal culture, professionalism, culture of professional activity. Many well-known scientists, specialists with great pride consider themselves disciples of the leading pre-feeders of the universities at which they studied. This is a tribute to them. Known fact: “At a dinner at the St. Petersburg Academy of arts, in the auditorium, where he was exposed to the painting by Karl Pavlovich Bryullov (1799-1852) “last day of Pompeii” and it was solemnly crowned with a Laurel wreath. I put this wreath on the head of his teacher A. I. IVA-Nova” [5, p. 30]. Great artist emphasized his act as special respect to his teachers, to whom he owes his skill.

The image and prestige of a teacher is determined by the personality itself, its individuality, uniqueness and originality. This fact is reflected in the Proverbs of many Nations: “the teacher is judged on the students”, according to a Mongolian proverb, - the students learn teachers”; Mordovian proverb says: “What teacher, and such students”; Abkhazian proverb: “the Student teacher know”.

Image (Engl. image - , “image”) is external, that is generated by the subject, in order to cause a certain impression, opinion, respect others; the set of properties ascribed to advertising, propaganda,
fashion, prejudice, tradition, etc. of the object in order to provoke certain reactions towards him. From the presented definitions, it follows that the image is of a subjective (personal) and public (environmental), and prescriptive (regulatory) and imposed (propaganda) character.

Subjectivity is determined by the uniqueness of a particular specialist, the development of his vision of the image of who he is and who he wants to be, and the work on self-development, Fort-to the creation of myself as a person specialist. This image largely is determined by the fact that he formed the previous period in the form of a certain image, defining the uniqueness of personality, its claims and aspirations.

The public image of the particular specialist determined traditions (if they occur in relation to the specialist), his mission, status and prestige, which is formed in a specific society. Respecting the teachers are traditions that still exist in many countries and regions.

The prescribed image, to a certain extent, determined by the normative documents, defines the requirements to the personality and professional training of specialists. They become the requirements governing the preparation of the expert, which guide educational organization. In essence, these requirements reflect the state policy in relation to the specialist and his professional training.

Imposed - is one that is formed under the influence of any factors, including mass media, public opinion. It is often considered a consequence of the activities of the professional (specialists) in the preceding period or social order of certain groups that initiate its formation. It is especially great in certain societies and small regions.

Image (description) is typical for teachers (the teacher), the teacher of the high school.

Analysis of the merits of the image of a particular teacher - personal (individual) image allows distinguishing in it the unity - internal and external.

Inner image - ideal, example, formed in the subconscious mind of the teacher image, which he must conform, and to which to aspire. It is a precondition of the formation of identity, OS-new symptoms the image of the teacher. Inner image largely determines its identity, determines amounts of targeted self-educational activity of the teacher on you. Constructive, attractive, as a rule, and determines the perspective in the formation and improvement of the image of the teacher. In this respect it is important to consider which image is formed and how the teacher is predisposed to this image, as well as active and rational in its formation.

External image may coincide with the internal, but may not be the same. Not a coincidence due to the fact the extent to which the teacher tries to show himself in this situation. At the same time, the teacher is judged for the external image and his inner basis. This fact shows the greatest interest to the external image of the teacher. External image release: submitted (self-image) and perceived; the desired and the generated image.

Given (self-image) - generated image of the attitude of the teacher towards themselves, their place and role in the educational organization, appearance, learners, parents, colleagues, its activities, its results, the pursuit of self-improvement. External and served (self-images) can coincide, when self-image has become the norm for existence of a teacher and reflects the prevailing in society memory image of his appearance, attitude and its result, and may not be the same when the teacher, depending on the situation tries, as they say "play", is to imagine yourself in embellished form than it is in everyday fulfilment.

Given image may be different from the everyday shown image (real image) in some cases, when the teacher of a hundred-about to create the object of its perception of a certain impression, for example, when applying for a job with the administration of the educational organization, open sessions, and so the image is largely determined by the position of the subject (teacher), what he wants to be in the company or other person audience (situation self-expressing), and, depending on this, it is the aspiration to create a certain external appearance, the image of activity. This fact is the evidence which reflects that the given image may differ depending on the situation it is presented to the teacher, for example, in the classroom, when meeting with parents, communication with colleagues, administration, etc. It is the same that is largely dependent on the unity of internal and external shown the office.
Accepted (perceived) image - how you see a particular teacher, a certain category of subjects (how both perceive it in a certain situation). It can be typical in current situation, when an opinion on the teacher was formed, and may be different in relation to one and the same person (the object of perception) and is associated with the formed subject of the image of the teacher, and previous experience of the perception of such images. It should be observed from the position of the student, his parents and his colleagues in sociocultural environment of the educational organization, pedagogical community.

The perceived image of the teacher people around him, including parents and students, is largely determined by government policy in relation to teaching staff, its status, prestige teaching activities, mass media, representing this way, the prevailing public opinion, traditional relation to teachers, the professional activity, as well as established earlier with respect to a particular teacher. Each person depending on life experience and an established position perceives the image of a pedagogue.

The required image (teacher) - those requirements to the image of a specific teacher and certain image characteristics are essentially and are certain guidelines, which guide administrators in the selection of the academic staff to fill vacant positions (master of pedagogical activity or convenient for the administration); for pedagogical universities as benchmarks in teachers training and evaluation results of their training, and also for the teacher to work on self-development.

Requirements for the teacher in modern conditions are represented in the Federal state standard of higher (secondary) education. At the same time, there is an opinion that any well-trained specialist can be a. That leads to the decision that if students are trained in any subject area and suddenly decide to become a teacher, it is enough to switch to the educator profession and to get teacher’s diploma. This is also an opportunity for one who has completed the bachelor degree and enrolled in master's training in teaching the specialty. The question of professional selection is not put. And it is well known, being a teacher is a vocation and not everyone can be a teacher. Every teacher needs a special training provided by the socio-cultural environment of pedagogical University, including teaching staff. It’s acknowledged – a personality forms personality. Those who become teachers – assume the responsibility for shaping the emerging personalities.

The generated image is the result of the formation of its image as a particular teacher, the image formed in a certain sociocultural environment of the educational organization, teachers College, of the University in accordance with established it traditions. This fact indicates that the image of the teacher in each educational organization is formed by the subculture and has originality. This also applies to pre-school and general secondary educational institutions, when talking about their teachers and about teaching for the reference, when they say and originality of the graduates.

The doctrine of the image of the teacher belongs to pedagogical imageology. It explores the essence of the image of the teacher, its formation and the factors influencing it. Researches in the field of pedagogical imageology show that the formation of understanding of the image of a teacher is affected by various factors, whether of subjective (interior) and objective (external) nature.

Teacher can be a subjective factor as well as the uniqueness of his personality, formed due to his domestic image. External groups (students, parents, and fellow teachers), generate the image formation in the social cultures environment, public opinion in society and society in general. Under the influence of internal and external factors there are formed phenomena, processes, which significantly affect the formation of the image of teachers, a certain category of teachers. These phenomena should be attributed:

- positioning - focusing on the "right", "correct" traits and characteristics of a teacher that are wanted to be seen by the public (students, colleagues). It is public opinion that determines what should be the image of the teacher in the specific educational organizations or teaching a cycle of disciplines of higher education;

- mythology - the appeal to images that have developed over time from the individual and his social environment, the society and in society in general about the way the teacher of a higher educational institution. This fact suggests that the image of the teacher developed historically and is of a historical-regional (national) character. This can explain that the image of the teacher is relatively
resistant in nature and ensures its uniqueness. At the same time, the formed prior to the image of the teacher will differ depending on the region of Russia, of the city or village traditions, which was formed in it and define its re-acceptance;

- **emotionalization** - emotional support of the personality of the teacher and its activities and the results of this activity is designed to teach others, to ensure the formation of the personality. It influences how you perceive your position as parent and teacher in relation to a particular child, as stakeholders in the success of the formation of the growing child (specialist) or, who, what and how much to do. The emotional attitude also occurs from the teacher to the teachers object-call activity, its parents, colleagues, its activities and its results. This is reflected in the fact that one of the most important characteristics of the teacher performs his love for those he teaches, and it is designed to teach the student, to make him happy in life;

- **disting -** separated and far from the negative Association of Nations formed image. This is related to the fact that in the character of a teacher we all (learners, their parents) want to see the best, a real example for the trainees, as it is the example is one of the most important factors in the success of training and education of the younger generation of training for any field of professional activity and the teaching;

- **visualization** - focused image effects on the audience. A significant portion of the population and, first of all trainees, their parents, receive the profession, improve their skills thanks to teachers who have consistently demonstrated a real image. This fact suggests that every teacher must constantly worry about their image;

- **implementation of models of perception** - the formation of a certain model, estimation and perception of the audience. In essence whenever it comes to the personality of the teacher always is present a certain image, highlighting certain image characteristics.

Shaping of the image is controlled by the teacher, and the public, contributing to its establishment, in accordance with the evolving situation in the society (socio-cultural environment professional educator).

Whatever is the level of proficiency in the methods, means and techniques applying them in practice implements specific personality - a teacher. It either enhances or reduces the effect of their manifest in the educational process; either enriches or weakens the personality, or it deforms. Not by chance, having been on the interesting, instructive lesson, and to see new methodological methods, the teacher tries to apply them in their activities. The result of their application is not always necessary to correspond to the V-profile. Means and techniques in teaching activities can be repeated. However, the embodiment of their richness and originality of the personality will come to this implementation with different effect.

Often, when the effect of the follower of a particular experience (AE certain means and methods) does not match the forecast, is not unwittingly formed a negative attitude to what is new in front of the PTO, which he tried to implement. It is a truism in teaching me-TOD detects a teacher, and the teacher method. It introduces a method to itself, its identity and ensures its effectiveness, originality in the situation of teaching. To separate leach-ness from his individual style of pedagogical activity of the teacher is impossible.

This is the teacher's image and the factors influencing its development and manifestation.

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RECENT ROMANIAN INITIATIVES IN POLICY AND PRACTICE TO PROMOTE EMPLOYABILITY OF HIGHER EDUCATION GRADUATES

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The paper outlines the potential role of higher education institutions in enhancing employability, and reviews the most important policies and practices which public authorities and higher education institutions in Romania are recently using to support the graduates’ employability and to facilitate the graduates’ transition to the labour market.

The first section underlines some challenges and limitations regarding the promotion of graduates’ employability. In the context of the recent Romanian initiatives in policy and practice to promote employability of higher education graduates, the second part examines the role system-level information and planning plays. The third focuses on the higher education supply and the mechanisms to increase the relevance of the higher education provision, including employer involvement, work-based learning and development of professional higher education. The fourth section refers to the incentives which public authorities in Romania are trying to use to increase the graduates’ employability, including funding and quality assurance.

Key words: graduates’ employability, higher education, education policy, skills demand, labour market, cooperation, prospective students, incentives, job opportunities

I. PROMOTING “EMPLOYABILITY” IN HIGHER EDUCATION

I.1. Introduction

Higher Education (HE) - whether academically or professionally oriented - prepares students for current and future labour market needs, so that the maximum attention has to be paid on how they prepare their students for increasing their chance of employment.

How much are increasing societal concerns for the young people’s transition from education into work, as much the topic of graduates’ employment becomes a hotter topic in our days.

This paper intends to answer some key questions on “Promoting Employability in Romanian Higher Education”, such as: a) to what extent and how is enhancing “employability” included in the strategy of national higher education system and in the strategies of Higher Education Institutions (HEIs); b) what is the approach at system level to establishing the number of higher education graduates needed; c) to what extent are skills and employment forecasts used in strategic planning in higher education; d) how are graduate “tracking” systems being used at system and institutional level, how is the information used and to what extent is useful; e) how is the experience with the employers and other social partners involved in system-level and institutional planning and in study program design; f) how is the “employability” of graduates measured and how is the effectiveness of different initiatives to enhance employability assessed.

I.2. Challenge and limitations

Promoting “Employability” in higher education is a challenge both at system and institutional level. The societies and economic systems are increasingly fast-changing and unpredictable. Thus, there are many questions to address in this respect, such as which disciplines lead to the best employment opportunities and how higher education programs can be tailored to equip the students with those types of knowledge and competences they need to succeed in societies and economic systems.
While the dynamism and unpredictability of the labour market makes aligning the higher education with current labour market requirements to be risky, also migration reasons make the promoting “employability” in higher education to appear not only as a challenge, but with limitations: it is both crucial and difficult to forecast the proper knowledge and skills only inside the nation borders.

I.3. Definitions and approaches

First interest matter is how the “employability” is defined. According to David Crosier (2015) ¹, there are two approaches for “employability” in the HEIs in the 27 countries surveyed: approach that responds to needs - is based on labour market needs (7 countries), and approach that responds to graduates offer - centred on the competences of graduates (8 countries).

The Eurydice Report² definitions of employability focus on graduates' transition to the labour market after finishing higher education. There are two main types of definition: employment - centred and competence – centred. An employment - centred definition of employability is used for example within the ET 2020 process³, as a combination of factors which enable individuals to progress towards or enter employment.

An alternative definition of employability is competence - centred, especially if it is formulated as in Yorke (2006)⁴. This approach of employability is focus on the knowledge, skills and competences that higher education students gain during their studies to increase the chances of successfully gaining a suitable job and developing a career. In this case is about a set of achievements relevant to that job. In this context the next question is what kind of study programs a university has to supply such that to meet the needs of the labour market. On the other hand, there are many factors that influence the employment prospects of an individual, which means that not all graduates who attend the same curricula in a university have similar labour market opportunities.

I.4. Romanian context

The issue of the labour market relevance of higher education also arises frequently in country-specific recommendations (CSRs) adopted by the Council as part of the European Semester. In this respect, Romania received in 2014 a CSR on higher education about improving quality by better aligning higher education outcomes to labour market needs and improving employability. In the last period this has been a top priority for the Romanian Ministry of Education so, we have developed several initiatives to address it.

It should be noted here also that within the ET 2020 strategy, the Council of the European Union adopted a benchmark on graduate employability in 2012⁵. According to this benchmark, „by 2020, the share of employed graduates (20-34 year olds) having left education and training no more than three years before the reference year should be at least 82 %”.

II. INFORMATION AND PLANNING AT SYSTEM OR SECTOR LEVEL

II.1. Skills demand and labour market forecasts

At European level, the CEDEFOP’s online platform offers skill supply and demand forecasts which complement national forecasting initiatives⁶: forecast data for labour force by

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¹ “Key trends in policy and practice to promote employability in higher education”, David Crosier presentation at ET 2020 Country Focused Workshop on promoting employability in higher education, Brussels, 2-3 February 2015.


⁴ Yorke, M., 2006. Employability in higher education: what it is – what it is not. ESECT Learning and Employability Series 1, York: Higher Education Academy.


gender, by age, by qualification; forecast data for employment trends by sector, by occupation, by qualification; forecast data for job opportunities by sector, by occupation, by qualification.

According to Eurydice (2014), the labour market forecasting is used as a „policy function“ to inform policy planning, and also as an „information function“ on labour market trends, to influence the design study programs, determine the number of state funded places or allocate public funding.

Regarding the skills forecast, foresight or planning activities that have been undertaken and used in Romania to generate information about likely demand for different types of high-level skills, and methods used, we point the following two initiatives:

The National Law of Education, art. 218(1), provides that the responsibilities of the National Council of Higher Education Statistics and Forecast are the development and continuous updating of higher education indicators for monitoring and forecasting its evolution in relation to labour market dynamics. This council publishes the annual data corresponding to these indicators.

Through the study “Assessment and forecasting potential labour demand for the university graduates, in the occupational structure, by 2020, in order to develop appropriate policies on university education and training” - developed by the National Institute for Research on Labour and Social Protection (INCSMPS), December 2012\(^7\), were developed medium - term projections of demand for labour in the occupational structure; INCSMPS conducted 16 focus group reports at regional level with stakeholders from education and from the labour market and also 98 forecasts of labour demand dynamics at national and regional, on occupational groups and subgroups. Regarding the forecasts analysis of demand for labour in the fields of training, the results in the areas of training with increased demand for labour of graduates, over the average demand were the following: with increased demand: computer science (18% increase); health (16% increase), architecture and construction (13% increase), business administration (11% increase), engineering (10% increase); with deceased demand : arts (decrease 8%), education (decrease 7%), agriculture (decrease 2%).

There are some limitations to the use of forecasts data for labour force in order to foresee predictions of high-level skills demand and it seems that does not really face with the dynamic character of global economy. As forecasts are based on past trends, they do not deal with the economic crisis or with the speed of technological change and globalization. Another problem is the difficulty to forecast future migration and its skills composition.

In practice, the case of some universities such as the Technical University of Cluj-Napoca (TUCN), the development of study programs and curricula has been performed in close relation with the requirements of regional industry and target a sustainable employability. Some of the companies in their area of interest are grouped according to field (e.g. IT), zone (e.g. the Consortium of Industrial Companies in Bistrita) or companies’ language (e.g. Romanian-German Cooperation Council) and contribute plenary to the curricula development strategy in connection to their foresight. More, large scale companies (multinationals) propose and sustain by equipping laboratories their view for the skills of future engineering graduates\(^8\).

### II.2. Regulation of study places

Authorities may also use controls on the number and type of study places to align HE provision to labour market needs and steering enrolment towards fields of national needs.

Controlling the number of publicly funded places can be a powerful policy lever, but with some limitations also, such as lack detailed data about graduate employment outcomes

\(^7\) Study can be found on the website [http://prevedu.ro/](http://prevedu.ro/).

\(^8\) The Technical University of Cluj-Napoca (TUCN) is the only university of this type in the Northern part of Romania. It is a geographically dispersed university, with two main campuses, in Cluj-Napoca and Baia Mare and other 4 subsidiaries in Alba Iulia, Bistrita, Satu Mare and Zalau, as a result of the demand of the industrial environment.
and prospects on study places, a mismatch between student preferences and the supply of study places that can lead to distortions in behaviour\(^9\), or skills policies which conduct beyond the national borders.

In Romania, the total number of study places at all levels is attributed by the Ministry of Education and is allocated to universities taking into account the former results. Employability is taken into account in somehow, but quality of education is a main priority. E.g. – Computer Science and IT graduates are extremely demanded by the more than 800 companies with this profile activating only in Cluj-Napoca but the education capacity, as a quality requirement, limits the number of students. On the other hand, the constant contact with the employers leads to an equilibrium of the specialization fields and to the opening of new / closing of old study programs, without changing the overall number of students.

**II.3. Graduate tracking and surveys**

Graduate tracking, surveys or tracer studies can help understand, monitor and improve the HEIs performance and alignment of higher education with the labour market needs.

Graduate tracking information can also guide prospective and current higher education students to make informed decisions about the field of study and institution.

Such initiatives can help not only to measure the percentage of graduates finding employment after graduation, but also and describe the quality of jobs, the length of the job search period, graduates' job satisfaction, and the match between competencies and job requirements.

It is in discussion the usefulness of such approach of graduate tracking and surveys to be done at the institutional level versus system-wide. In Romania we do not have a system level tracking to monitor the employment outcomes of higher education graduates.

Regarding the monitoring instruments of higher education graduates insertion in the labour market, the project entitled „Management of the correlation of the education system with the labour market“ involved uploading the data management systems of the 50 universities. The ESF-funded Project was completed, and the data base developed within the project has to be updated permanently.

Also, there was some tracer studies conducted in the last years: „University Graduates and Labour Market“ project was implemented by the Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCIDI) and the National Council for Higher Education Funding (CNFIS) in partnership with The International Centre for Higher Education. The research study (INCHER) Kassel\(^{10}\) consisted in two phases, based on questionnaires that tracked the graduate's educational and professional background. The first phase (November 2010 – March 2011) addressed graduates that finished their studies in 2005 and 2009; the second phase (2 April – 30 April 2012) addressed graduates that finished their studies in 2006 and 2010. In the first phase: 55 public and private universities participated, and 39293 respondents; in the second phase: 42 public and private universities participated, and 9294 respondents. The data was organized in a series of analysis categories such as socio-biographic characteristics of the graduates, studies and course of studies, competences at the time of graduation and professional requirements, central aspect s of job search, employment situation, and indicators for professional success. The break variables were the following: domain of study, region of high school, type of high school and gender\(^{11}\).

Currently, the strategic project “Evidence-based policies and labour market impact” (INFO-HE) is being implemented by the UEFISCIDI-CNFS, and has the overall objective of implementation of national integrated tools for tracking path of youth education and employability of graduates.

\(^{9}\) Such as school leavers targeting publicly funded places with the expectation of transferring to a preferred field of study at a later stage, or cross-border movements of students who seek entry into their preferred study field in neighboring countries.


One of the INFO-HE component is the Integrated Education Registry (REI) designed to ensure interoperability between existing data management systems, such as: National Student Enrolment Registry (RMU), Integrated System of Pre-university Education (SIIIR), Integrated Systems of Continuing Training (postgraduate courses - National Authority for Qualifications), and the application ReviSal (managed by the Ministry of Labour) which allows the registration of employees and their work contracts for a particular employer.

INFO-HE ensures the sustainability of the above project results, completed in 2012. Also, the project aims the realization of a platform that has to facilitate access of the universities to the already developed monitoring tools, the adaptation or customization of them according to specific needs of the monitoring studies, thus facilitating information exchange and correlation analysis of educational supply to labour market requirements. The inclusion of a social media component will support networking between universities, graduates and economic environment, facilitating the exchange of experience and helping to build a virtual community.

So far they have identified a number of instruments used by universities / institutions to consult other students and have integrated the results of previous projects at national and international level (questionnaires, surveys monitoring methodologies applied, applications for contact and achievement data analysis, etc.). Also it was completed the methodology for implementation of a new national study.

Regarding the employment outcomes evaluation, besides quality assurance (QA), there are some other mechanisms to evaluate the employability performance of higher education institutions/programs. Most of the higher education institutions use questionnaires a year after students graduate (sometimes three times after graduation, at 6 months, at one year and at eighteen months) to evaluate the employability performance of higher education institutions/programmes. Usually, the graduates fill a specific form when taking their diplomas, about 1 year after graduation. The form contains information on the employer, type / level of job, as well as satisfaction related to the knowledge gathered in the university, employment and salary. On the other hand, the university is monitoring the satisfaction of companies towards new employees.

II.4. Prospective students and students supported to make informed choices about their study and career options

Recently, the Order no. 650/2014 approved the methodology framework for the organization and operation of the centres for counselling and career guidance at the level of higher education institutions, hereinafter CCOC. Prospective students and students are supported by CCOC to make informed choices about the studies followed and career options.

The activity of CCOC involves, among others, some actions related to increasing labour market insertion of students and graduates by offering services such as developing and implementing specific tools to monitor graduates insertion on the labour market.

The National Council for Higher Education Funding (CNFIS) proposal for the next funding methodology includes a quality indicator on institutional transparency, and on existing of the services of career orientation and counselling for students of the university.

Almost all Romanian universities have such centres for counselling and career guidance which aim potential students who opt for university admission, students, graduates, and companies.

The role of these canters in HEIs is educational counselling to potential candidates at university, information and careers advice for students, counselling graduates to integrate on labour market, intermediation of the relationship with institutions and companies in the field, development of materials for information, guidance and counselling for students.

The activity of CCOC involves, among others, actions related to increasing labour market insertion of students and graduates by offering services such as: a) training sessions for employment portfolio, simulation job interview; b) organizing company presentations; c) training for the development of transversal skills of students; d) studies and periodic analysis on the integration of graduates in the labour market impact of counselling and guidance services and propose measures for
their improvement; e) developing and implementing specific tools to monitor labour market insertion; f) participation in activities organized by the alumni;

Prospective students are approached in the major high-schools in the area both by the representatives of faculties and by delegations of students, one of the main subjects being the career options. The website of the university contains, also, a special main page dedicated to prospective students. In order the prospective students to make the right choice and be informed about the admission, the CCOC may organize caravans, educational fairs, university open days, competitions and practical applications in universities, student life simulation through summer universities.

Regarding the information and career counselling to students, the CCOC may organize the following actions: first steps in college guidance, informing students through various communication channels, educational counselling, psychological counselling, visits to companies, company presentations, „career days” events, aptitude test, and training for personal development of students, and trips with technical objectives.

For counselling of graduates in order to integrate into the labour market, the CCOC may organize training sessions for employment portfolio, simulation of job interview, educational counselling for those who wish to continue their studies, company presentations, „career days” events, identify job offers. The CCOC also facilitates the application of questionnaires to identify percentages of graduates’ insertion in the labour market and obtain feedback in this regard.

Companies play also an important role in keeping students informed about career opportunities, either directly, through presentations and internships, or by participating to job shops organized by students’ organizations. In this respect, the CCOC may organize the presentation of the university specialist’s offer, the identification of opportunities for students’ professional training, such as visits to company, company presentation, jobs offers, working and practice placement, diploma projects, simulation of job interview, scholarships offers for students, and so on.

The CNFIS\(^{12}\) proposal for the funding methodology will take into consideration the quality indicator on institutional transparency and on existing services of career orientation and counselling for students in each university. This is expected to directly contribute on strengthening the counselling process of students.

III. MECHANISMS TO INCREASE THE RELEVANCE OF THE HIGHER EDUCATION PROVISION

III.1. Changes in the supply of higher education - Professional higher education

The distinction between “professionally oriented” higher education and “academically oriented” higher education is clearer in systems with a binary divide between institution types.

In Romania we have no short-cycle higher education, and no HEIs exclusive oriented in one or another way. However, even if the tradition of academically oriented courses is still holds, the recent trend is to the professionally oriented courses in those specializations which are suitable and thus leading to their redesign. E.g. law or engineering courses, which are often strongly professionally oriented, but taught in academic institutions.

Due to the change of status of master and doctoral studies from postgraduate into university studies, according to the Bologna process, the new regulations introduced a) Postgraduate training programs and continuing professional development - for graduates who have at least university degree or equivalent diploma, and can be organized by accredited higher education institutions; b) Postgraduate professional training programs for graduates holding at least diploma of short-cycle higher education.

\(^{12}\) National Council for Financing Higher Education
During the last years, some professional master courses were organized, based on the demand of the industrial partners. Technical universities are supporting the initiative of companies in the area to develop professional education.

Recently it was regulated the non-university tertiary education which is organized for the graduates of pre-university education, with or without a baccalaureate degree, and can be organized by accredited higher education institutions within structures called colleges. The length of such study program is 1 to 3 years, depending on the complexity of the qualification and the number of credits acquired. The non-university tertiary education is conducted based on professional training standards approved by the Ministry of Education for respective qualifications.

According to the regulation, employers can be involved in higher education planning and management, such as: curriculum development in HE, teaching, participation in sectorial/national/regional bodies that influence decision-making in HEIs, and participation in governing bodies of HEIs.

Also, the Romanian QA external methodology has standards and performance indicators, such as „Relevance of study programmes”: study programmes are periodically revised on the basis of peer reviews together with students, graduates and representatives of employers.

III.2. Cooperation with social partners

The public funding allocated into cooperation projects between the higher education sector and business were used to co-finance structural funds projects. ESF project “The correlation management of education system with labour market” aims to create a network of data collection, and development of tools that will constantly update their knowledge and skills provided by the university system in line with labour market needs. Database integrated into management systems of universities on the platform http://joburi-absolventi.edu.ro enables the interconnection of both potential employers and candidates in the labour market (students / graduates).

There are also some master programmes in specific fields that have been developed in close cooperation with large scale employers. Renault Group Romania decided to extend support for the development of the university system in Romania through its involvement in a new master program. In the 2012-2013 academic years, Renault Technologie Roumanie engineering centre (RTR) is a partner of the University „Politehnica“ Bucharest to conduct master program “Noise and Vibration Control”. The new master comes from the need for specialists in the field of acoustics, but also good cooperation in recent years with the University „Politehnica” of Bucharest.

Industrial partners may directly contributing to the educational process through: assuring laboratories with specific equipment, participating to the design of specialized courses curricula, sharing experience in lecture course modules, supporting research projects and students’ graduation projects, internships for young academic staff, in order to adapt the lecture courses towards the real practical applications, and many other creative contributions.

III.3. Development of “employment-relevant” skills in academic higher education

According to the National Law of Education, art. 150(4), the students are participating in work placements/practical training during their studies as part of the programme. During the bachelor’s degree education, practice is mandatory. Universities have the obligation to provide at least 30% of the required practice places, out of which at least 50% outside universities.

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13 The Romanian Agency of Quality Assurance in Higher Education (ARACIS)
15 One such example is http://www.renault-technologie-roumanie.com/descopera-rrt/comunicate-de-presa/controlul-zgomotului-si-vibratiilor-un-nou-program-de-master-sustinut-de-grupul-renault-romania/
In this respect, the Romanian external QA methodology includes the indicators that look at internship and practical training for all study programmes\(^{16}\).

The project “From theory to practice through simulated enterprise” (financed by the ESF) aimed at developing the skills of people working in transition from school to work, using innovative learning method of “simulated enterprise”, with results in the facilitating insertion and maintenance of graduates in the labour market, anticipating actual job requirements, participating in simulated business activities, and facilitating the exchange of experiences on the simulated enterprise between two Member States of the European Union, Romania and Austria respectively.

Benefits for students were: the work experience through practice carried out under simulated enterprises, development of key skills that enable them to achieve successful in the real world, no matter what they choose to work, direct learning at work without the threat of risks behave a real job, implementation of creative ideas in a real context, develop collaborative relationships with potential future employers, communication skills with external partners.

Benefits for universities were: the increase the quality of education through practical approach to learning process, adaptation of university curricula to the labour market, boosting competitiveness and innovation in academia, attracting more students to the university involved in the project, ensuring an increased rate of graduates entering the labour market, closely knowledge of the requirements of employers on preparing students.

All practical training of students is performed through company placement. Summer internships are compulsory once during the bachelor studies and the many universities benefits of placements for 6 months in foreign companies within the Erasmus + Program. Also, many of the students are preparing their graduation theses in companies, on company-required subjects. The entrepreneurial education is promoted mainly through non-formal ways, such as trainings provided by NGOs or companies, as well as competitions developed by students’ organizations. Some private study grants are awarded by companies through open competition amongst students\(^{17}\).

IV. INCENTIVES TO INCREASE EMPLOYABILITY - FUNDING AND QUALITY ASSURANCE

Recently, the employment outcomes of graduates are taken into account in higher education funding. A new financing methodology and steering documents are being developed. CNFIS proposal on the methodology of funding for 2014 aims at quality indicator on monitoring students’ employability (the quality criteria IC4.5), stimulating in this way, the universities to implement internal procedures for collecting information on socio-professional status and employment of the graduates of bachelor and master of science branch (12 months after graduation).

Also, the employment outcomes of graduates are taken into account in quality assurance system. The Emergency Ordinance OUG 75/2011 regarding quality assurance of education introduced the new criterion “employability” in the field “Educational effectiveness”.

Other incentives are given to all HEIs to include work placements/practical training for students in the 1st or 2nd cycle or both in higher education programmes (through covering part of the costs of internships by public funding).

V. CONCLUSIONS

At system and institutional level, there are some trends towards a greater use of planning and monitoring tools including labour market forecasts and tracking graduate employment outcomes. The question for higher education institutions and policy makers

\(^{16}\) http://www.aracis.ro/fileadmin/ARACIS/Proceduri/Metodologie_de_evaluare_externa.pdf (e.g. IP B2.1.4)

\(^{17}\) e.g. Roberto Rocca grants, TUCN.
remain how useful and effective such tools and approaches really are and how best to use them to support improvement of employment outcomes among graduates.

Should be mentioned that the effectiveness or the impact of all above outlined initiatives to support the employability of graduates have never been evaluated or assessed. The Romanian education system still has difficulties in complying with the evaluation of the impact for most of sectorial initiatives, not only regarding the employability of graduates. The employability measures on disadvantaged students are still neglected.

However, in terms of monitoring and evaluation, based on quarterly reports to the Romanian Ministry of Education, universities are evaluated / track the progress made in implementing a set of measures agreed with the World Bank experts on correlating study programmes with the labour market demands, such as:
- elaborating study programs appropriate to the labour market;
- elaborating forecasts on the labour market and disseminating the results;
- elaborating a specific assessment methodology for the competencies acquired during studies;
- constantly correlating the study programs’ content with the competencies required by the labour market;
- disseminating information on salaries in various professions, employment rates, typical jobs available for graduates, the views of employees;
- involving representative social partners into the analysis and design of the occupational standards and qualifications.

Although there is an increasing priority on "employability" as educational policy, there is still much space in the approach and the implementation of employability policy to be more efficient and effective, and also to improve monitoring, with better use of the results of surveys among graduates and better use of the results of the quality assurance process. The question of what knowledge and skills higher education system as a whole should focus on to support graduates in later life have remained both crucial and difficult to handle.

Bibliography:
VALUE FOUNDATIONS OF MODERN PROFESSIONAL EDUCATION

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Honourary worker of Higher School of the Russian Federation

The author emphasizes the problem of axiological approach in vocational education, the formation of values in higher education, future teachers in the pedagogical trends in education, clarifies the essence and the content of concepts, and describes the parts of the study of the problem of value orientations and new development paradigm of modern education.

Key words: value, axiological approach, the paradigm of education, innovation competence, the quality of education.

The axiological approach in education is associated with its humanization that is human-centred as the highest value of social life and treating it as the subject of cognition, communication and creativity. It allows us to analyse the process of formation of a specialist in higher education through the determination of value-semantic relationship of the individual to educational activity and to their abilities and professional qualities.

One of the primary tasks of modern pedagogy in higher education is to identify the humanistic potential of the individual as a citizen and professional. Its solution is connected with the consideration of the axiological (value) fundamentals of education and the rejection of the prevailing “knowledge” – the long-dominant - paradigm of education the emphasis on the systematic formation of knowledge, abilities and skills.

The definition of “value” we understand as a category of beauty, the aesthetic category. However, we recognize the important semantic (meaningful) characteristic of spiritual values (the meaning of both fixed installation and even as an axiom of consciousness). It goes back to the vital for the individual axiological entities (the ideal, the concept, beliefs, principles), which builds a hierarchy of values and associated with the worldview of the individual, the formation of her identity.

An important role in understanding the humanization of modern education is the paradigm of sustainable development of society. In 1992 in Rio de Janeiro (Brazil) on environmental session of the United Nations, which was attended by the heads of States and governments of 179 countries on the planet, including Russia, adopted a number of important documents, in particular “Agenda for XXI century” program as a new model of social development [3].

Study compared a new paradigm of social development with traditional (dominant paradigm), and after that and paradigms of education, allows us to represent the complexity of educational work by changing the worldview of the individual.

<table>
<thead>
<tr>
<th>Comparison of competing paradigms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Dominating Social Paradigm</strong></td>
</tr>
<tr>
<td>I Low the value of nature:</td>
</tr>
<tr>
<td>- nature exists for the production of goods,</td>
</tr>
<tr>
<td>- the domination of man over nature,</td>
</tr>
<tr>
<td>the preference for economic growth over the</td>
</tr>
<tr>
<td>protection of the environment.</td>
</tr>
</tbody>
</table>

Table 1
The modern practice of education and professional education is determined, on the one hand, by the new paradigm of sustainable development of society, which accents existentialist of human existence (spiritual freedom, spirituality, responsibility). Basic ideas of personality development are: the idea of unity of the world (V. I. Vernadsky, N. N. Moiseev, A. D. Ursul); the idea of the universal destiny of personality (L. I. Novikova, M. V. Sokolov, G. Poldi, G. Schaeffer); the idea of unity as the identification of the individual with the whole, (N. D. Nikandrov, K. Kasyanov); the idea of a national home (E. P. Belozertsev); the idea of ethical intelligence (A. D. Ursul); the idea of non-violence (L. N. Tolstoy, G. S. Batishchev); the idea of co-evolution (N. N. Moiseev). They are based on the leading values of modern humanity - the values of Nature and Man, and the idea of cooperation of people on the planet on the humanization of their coexistence.

Today the focus is on spirituality, conscious focus on the highest value, for it is the spirituality to what humanity owes its progress.

On the other hand, the development of education today is directly related to the understanding of the new interpretation of the humanistic ideal - spiritual level of development (due to the peculiarities of Russian culture - V. S. Solov'ev, I. A. Ilyin) in the information society, which not only puts this vertical Cosmo planetary level, but also determines the leading role of self-consciousness, affirms the intrinsic value of human individuality. The latter is understood today through the dialogue, which appears as the only possibility of its very existence and the inner self (V. Lektorsky). This spiritual freedom, spirituality, responsibility, as existentialism of human existence, are considered through the idea of dialogue (relationship) in the coexistence of man and the modern world - of nature, of society, of another person.
Pedagogical aspect paradigms of education in humanistic ways of mankind according to Siberian philosopher V. N. Turchenko [5, 44] is as follows (table 2):

Table 2

<table>
<thead>
<tr>
<th>Principles</th>
<th>Traditional paradigm</th>
<th>New Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means of education</td>
<td>Verbal/text</td>
<td>Converter-activity</td>
</tr>
<tr>
<td>Content of education</td>
<td>Certain amount of known</td>
<td>Creativity in material and</td>
</tr>
<tr>
<td></td>
<td>knowledge, skills</td>
<td>spiritual production</td>
</tr>
<tr>
<td>Hierarchy of structure stages</td>
<td>The highest priority</td>
<td>The lowest priority</td>
</tr>
<tr>
<td>Pedagogical significance(criteria)</td>
<td>Formal results</td>
<td>Results of Public practice</td>
</tr>
<tr>
<td>Form or organization</td>
<td>Individual-Group</td>
<td>Collectively individual</td>
</tr>
<tr>
<td>Pedagogical function</td>
<td>The impact on the student as</td>
<td>Activation student as the subject</td>
</tr>
<tr>
<td></td>
<td>an object</td>
<td></td>
</tr>
<tr>
<td>Tendency</td>
<td>Dynamics</td>
<td>Stability</td>
</tr>
</tbody>
</table>

The choice of a new paradigm of education raises questions about its instance. Immediately after the environmental session of the UN philosopher V. N. Turchenko proves the priority of the revolutionary strategy of education over evolution, because it is necessary to change attitudes in the shortest possible time, dictated by the peculiarities of modern society [5, 45], (table 3).

Table 3

<table>
<thead>
<tr>
<th>Education strategies paradigms</th>
<th>Professionally-revolutionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate reflection of life</td>
<td>Creative improvement of life</td>
</tr>
<tr>
<td>The response to the changing</td>
<td>The formation of new</td>
</tr>
<tr>
<td>industrial and social</td>
<td>industrial and social</td>
</tr>
<tr>
<td>needs of society</td>
<td>the needs of society</td>
</tr>
<tr>
<td>The consumption of material</td>
<td>The production of material</td>
</tr>
<tr>
<td>and spiritual values</td>
<td>and spiritual values</td>
</tr>
<tr>
<td>Adaptation of human qualities to</td>
<td>Adaptation of production to</td>
</tr>
<tr>
<td>production requirements</td>
<td>the requirements comprehensive</td>
</tr>
<tr>
<td>Orientation on the use of</td>
<td>the development of human</td>
</tr>
<tr>
<td>“established” (traditional)</td>
<td>Orientation on the use and</td>
</tr>
<tr>
<td>educational technology</td>
<td>creation of new (including</td>
</tr>
<tr>
<td></td>
<td>“risky”) pedagogical</td>
</tr>
<tr>
<td></td>
<td>technologies</td>
</tr>
<tr>
<td>Residual financing</td>
<td>Priority funding</td>
</tr>
<tr>
<td>Preventing output of the system</td>
<td>The promotion system</td>
</tr>
<tr>
<td>at the bifurcation point</td>
<td>bifurcation point*</td>
</tr>
</tbody>
</table>

As you can see, the new paradigm sets new basic ideas of modern education, which need to be translated by pedagogy into educational practice: the idea of dialogue, cooperation, co-creation, collective action, respect for the individual, the need for understanding someone else's point of view, etc. Through education should be defined a new understanding of the meaning of human life, defining the contours of the future development and unity of action aimed at creating a better future for earthlings. The essence of a person largely depends on the system of values he adheres to, what motivates him to work, what goals they pursue. Not only had the destiny of the country, but also the future of humanity depended on this. Pedagogy of higher education today is legitimate is based on the principle of the leading role of consciousness in the formation of a specialist of higher qualification.

Humanistic purpose of education, rising to the formation of comprehensively developed personality, demands revision of educational content. It should include not only the latest technical and scientific information, but also humanitarian personal developmental skills, experience of creative
activity and emotional-value attitude of a personality to the world and man in it, as well as the system of moral and aesthetic feelings, which determine its behaviour in diverse situations.

The modern system of education, as a social mechanism for improving society (A. D. Ursul), must perform the axiological function:
- environmental, focuses on the preservation of the biosphere, nature in general (earth and space);
- neo-humanistic, which reduces to the orientation of educational process on the survival and on-going development of humanity, the approval of humanity.
Higher education, as noted in the “world Declaration on higher education for the XXI century...” [2] intended to perform a number of important tasks:

1) Ensure the training of highly qualified graduates and responsible citizens able to meet the needs in all spheres of human activity by providing the possibility of obtaining the relevant qualifications, through the use of courses and curriculum, which is constantly adapted to current and future needs of society;

2) Provide opportunities for continuing education through flexible nature of higher education, providing students with an optimal range of choice and the combination with the possibility of self-development and social mobility of a personality, with the aim of educating it in the sense of citizenship and active participation in society, adhering to human rights, sustainable development, democracy and peace in the spirit of justice;

3) Provide the mankind with the necessary knowledge for the purpose of providing assistance in the field of cultural, social and economic development, promoting and developing scientific and technological research, and research in the field of social Sciences and Humanities and creative activity in the arts;

4) Explain, advocate, interpret, preserve, enhance, develop and disseminate national and regional, international and historic cultures in terms of cultural pluralism and diversity;

5) Protect and strengthen social values, ensuring the education of the young in their spirit, shaping the civilization of the person and thus broadening the perspectives of humanism;

6) Promote the development and improvement of education at all levels, including through the training of teachers with a high level of General and professional culture.

In the context of these tasks and functions of higher education are developed major recommendations of the commissions and conferences at the International level. Mega systems of modern education successfully coexist nowadays: the Bologna process, American, British education system and the educational System in the Pacific Rim.

Distinguishing characteristics exhibiting the humanistic value of education are:
- *universality* of humanistic ideas, which is caused by their use to all individuals and social systems regardless of ethnic, economic, religious, racial or ideological differences. This is reflected in the right of all people to have life, love, education, moral and intellectual freedom, etc. Universal values interact with national, which provides the transition to the variety of cultural and humanistic positions, combined and complementary;

- *openness* of education, which expands the boundaries of human interaction (its system of values) and new information. The creation of a global system of distance education, allowing on the basis of new information technologies to provide direct communication between the teacher and the student (this has always been a priority and the feature of full-time study), cannot, however, replace the value of live communication. The last one is that the teacher teaches the meanings, including the meaning of life, and acts as a spiritual mentor.

Exercising freedom of choice of educational programs, technologies, people need to have a system of values (meanings, criteria) that allows you to make a choice and not "choke" in the information flow. It has not only increased the possibility of obtaining more detailed knowledge about the objects of study, but also has necessitated the building of a new philosophy of scientific research;
- *the fundamental nature* of human values, which is determined by their priority. For example, the priority of the idea of freedom in the system of humanistic values exists due to the fact that it helps to realize other social values, such as equality, justice, etc. The idea of freedom applies to all areas,
including politics, science, education, morality. In the content of modern education, in the structure of personal values and imperatives along with the targets of development accumulated by society, culture, formation of value attitude to the natural and social environment, a special place belongs to the change of human creativity, the development of its abilities to transform the existing reality. Freedom manifests as freedom of thought and spirit;

- *continuity* of education, which focuses on the value of mastering the most essential, fundamental, stable and long-lived knowledge underlying in the base of scientific picture of the contemporary world, presented world of the cosmos, the world of human civilization, the world of man and society, and the global fundamental processes.

Specificity consists in the fact that the educational system must be able not only to give knowledge of the learner, but also, due to constant and rapid updating of knowledge in our era, shaping the need for continuous self-mastery, and skills of self-education, as well as independent and creative approach to knowledge throughout their active life. For this it is necessary to diversify the structure of educational programs, giving everyone the opportunity the educational path that best suits their educational and professional abilities, the transition from the principle of “education for life” to the principle “education through all life”.

Axiological principles of modern education need to ensure its dialogism and claim respect in the framework of a unified humanistic system of values of different philosophical views, ethnic characteristics and cultures. It is the concept of interdependent and interactive world which is located in the centre of the axiological thinking. It claims the world is holistic person, so it is important to learn to see that common what unites the humanity, and the inherent value of each individual. Adult education is aimed at the harmonious development of the personality, which is a destination, a vocation and a designation for each person. In subjective terms, this goal serves as an internal need for human development in a holistic personality.

**The integrity of professional identity** involves 1) a high level of self-awareness, and the ability to achieve the ideal, future-oriented, which directly involves the future specialist, building value hierarchy in accordance with the concept of professional life, the capacity for self-reflection and self-assessment; 2) the intellectual ability to create an objective picture of the world the formation of natural-scientific and socio-philosophical worldview; 3) awareness of the value of filling your “I” from the position of the altruism, the formation of the spiritual needs of the dominant “all other” (A. Ukhomsky); 4) the formation of the General culture and awareness his involvement in the world of culture (ethnicity, homeland, professional groups, training of staff), understanding mnogomyernost subjects; 5) the manifestation of moral purity in the implementation of the responsibility for the harmony in building relations with the world, the willingness and ability to multilateral co-creativity; 6) the formation of the needs and skills of creative activity, manifestation at all levels of the sense of improvement through conscious involvement in public life; 7) cognitive activity as the leading type of creative activity, readiness for further self-education and self-education.

Today, the holistic formation of professional identity requires higher education pedagogy the introduction of axiological bases of the new world. It requires treatment in teaching practice such values as human spiritual life, spiritual world, spiritual relationships, etc. They should enter into the pedagogical thesaurus.

The most common and most wide-scope concept is the human spiritual life is real living process of perception of the world of existence in it. It is determined not only by education and intelligence, and sensitivity, modesty, tact, delicacy, and also the ability to see and respect the spiritual world of another person - the world of the human spirit - and is reflected in the activities, the knowledge at any level - from the everyday to the highest soaring of imagination, creativity. Spiritual life is manifested in “the first flush” (V. V. Zenkovsky), as an unconscious reaction to an event, a phenomenon, where it shows in the quality of the feelings and thoughts of a person.

**The spiritual world** is the thoughts, feelings and emotions, experiences, evaluations, opinions, knowledge, beliefs; awareness of themselves and their place in the world; the ideals of beauty, good
and evil, truth and falsehood; the concepts of patriotism, selfishness; the love of parents, children, friends.

Spiritual activity consists of purposeful actions, man’s efforts that consume your energy, will and senses, mind and imagination. All these efforts of the soul (working) aim to materialize the human mind and emotions, thinking and imagination, cognition and attitude towards life, other people. It develops personality, because, firstly, they create new spiritual values through the formation of abilities and qualities of the personality, state of mind (happiness, spirituality, happiness); secondly, mobilised the efforts of the subject to overcome obstacles (resolving conflicts), which is the possibility of a new increment of a culture of thinking, emotional culture and the culture of expression.

Spiritual production is broader in scope than spiritual activity. It includes not only specific human activity, many people, but also the social organization within which this activity becomes a mass scale in the scale of society. The production is a necessary condition for the existence and functioning of the created values.

Spiritual relationships are a form of spiritual activity. These connections, which arise, for example, between teacher and pupil, and between the different subjects of teaching activities (e.g., school and family, etc.) about the education and training people, forming them as individuals.

We can identify the following relations of man: for peace from the world, to yourself and with yourself (A. V. Mudrik). Attitude to the world is manifested in the generalized system of views on natural and social environment; the relation with the world shows a human involvement in the world - nature, space, society; the attitude of a man is determined by how he sees himself, what is his image of the “I”; the relationship with oneself is expressed through the success of human self-realization, the level of self-esteem.

The motives of the spiritual activity of man are spiritual needs, interests, and goals as a phenomenon of the highest order. Spiritual needs – making part of the higher social needs with a focus on the other. They represent the rich spectrum of social relations, which manifest as transpersonal interests. The need – the fundamental principle of human activity, human activity. This deep Foundation of faith, which arouses interests and goals. Poverty interests and the senselessness of life related to the lack of spiritual needs, which leads to degradation of the personality.

Spiritual person develops faith in the unlimited potential of creative intuition peculiar to the inquiring mind. Thanks to it, there is a confidence and ability to rule over circumstances, to overcome difficulties.

Spiritual values are the product of spiritual activity of people. They form and develop the spiritual world of a man, enrich it by energy, knowledge, ideas, ideals, principles, goals and more.

Spiritual abilities - individual psychological characteristics of personality conducive to its spiritual growth and development - ability to self-exploration, self-awareness, self-organization, empathy, etc. according to V. D. Shadrikov, spiritual ability is “the ability of a spiritual state, which is formed on the basis of spiritual values of the individual, and on the basis of the temptation of repudiation to follow the idea, faith, spiritual values” (651, 21). To the spiritual abilities a man rises after attainment of normal abilities, overcoming the power of instinct. Outside of this sequence spiritual growth of the individual is impossible.

The introduction of these values into the educational process is of great social significance. However, modern pedagogical practice shows that the work in the direction of spiritual development specialist, the formation of his subjectivity is poor. The student continues to be the object of impacts, there is a low efficiency of use of its educational potential. Along with this, we have to admit a low level of pedagogical technologies in this field. There is a need to develop methodologies (different levels) to improve the teaching process in higher education. The complexity of modern socio-pedagogical situation is that the educational system itself produces an ideological crisis, which manifests itself most often in the form of excess of universalism, optimistic fatalism and theoretical reductionism.

Excessive universalism - ignoring scientific and practical evidence of the diversity of human civilization (what in the West is called “pluralism of civilizations”). Here the teacher does not attach
importance to the uniqueness of the national culture and the need for training to implement the dialogue of cultures.

On the planet at the same time there are ancestral consciousness (primitive culture), collective consciousness (mythological culture), religious consciousness (culture of the “sacred Scriptures”), individual identity (contemporary culture), and planetary consciousness (culture of the future). This indicator and the evolution of culture, depending on the forms of social consciousness, are the vector of perfection of self-consciousness.

The transition to planetary consciousness allows us today to understand the need to appeal to universal values of being, and providing pedagogical dialogue forces of the planet with different levels of consciousness on education future human - Human spiritual, exchange of teaching experience. In Western models of education, for example, the increasing popularity and credibility gaining acquaintance with the classics (there is growing interest in symphonic, dance and Opera); respect for religion (due to religious revival and the rise of interest in Eastern teachings and new “religions”). Question about spirituality steadily began to sag under the concept of “religious identity” parenting the love of country through the introduction to history (the opening of museums), national art, and national traditions. Along with the uniqueness of ethnic culture is present, due to the globalization of lifestyles, the appeal to human values, and spiritual closeness of people of different States. Universal values exist as invariant group that in any model of education attaches to the world culture.

It should be noted that the mechanical transfer of the borrowed in the West teaching experience, as a forward, not always is good. So the assertion of individualistic dominant in our country has led to disunity among the teachers, the destruction of axiological frame (traditions, ideals, ideas) teacher's group. In the works of N. D. Nikandrov, B. T. Likhachev, E. P. Belozertseva, etc. is a theoretical concept idea for the modern state of the Russian education system.

In the circle of the teaching community is present and optimistic fatalism - the belief that the future of humanity and the future of our countries and peoples, guaranteed historical laws “steady progressive development”.

This serious defect mono channel line vision problem of a spiritual crisis in education is associated with a naive belief in the historical safeguards of the human future. The history of the last decades of the status of the domestic education system proves able to "escape" from the world leaders in the short term.

Theoretical reductionism, prevalent among the teaching community, most often appears in the form of “economicism”. However, modern pedagogical practice shows the impossibility of overcoming the global crisis of education with money. It was proved by world-renowned pedagogical experiment in Kansas city (USA) 1986, where an experiment in 56 schools funding per student place in 36 thousand dollars revealed an inverse Association of educational achievements on the magnitude of financial costs: rising costs lead to lower academic achievement [5].

The results of sociological surveys also provide a basis to say that the deviant behaviour of students is not so much the result of economic turmoil, as lack of culture. This is evidenced by the results of the American national programme to reduce crime. The game on low human senses, inciting “animal passions”, kills the humanity.

Axiological foundations of modern education is based on humanization of this real operating systems, providing a unity of continuous cultural, socio-ethical and professional development of a person taking into account public needs and personal requests. This requires a revision of the objectives, content and technologies of education and linked to the humanization of society.

Bibliography:
The development barriers, which the developed countries faced in the late twentieth century, determined the appearance of the concept of sustainable development. Education is one of the key factors in the model of sustainable development due to the impact it has on the quality of human resources. The quality of the workforce trained within the framework of the professional education is largely dependent on the key competencies formed within the framework of the general education. The role of the key competencies in the process of workforce training is demonstrated by the growing interest of employers in these skills during the staff selection process.

Key words: professional education, general education, educational finalities, skills, key competencies.

The economic growth models, applied by the developed countries during the twentieth century, led both to the increase of the macroeconomic indicators of these countries and the emergence and amplification of the ecological and social problems. In this context, the concept of sustainable development emerges in the scientific environment; furthermore, it involves identifying the factors with an impact, in the long-term, on the economic growth potential. The promoters of the concept of sustainable growth have reached the conclusion that one of the factors capable of ensuring the sustainable economic growth is education, the transmission channels of education finalities on the economic growth being multiple.

Starting from the complex nature of the education system, particularly in terms of its division on ISCED levels, the following question arises: Which of them is responsible for the training of the human qualities capable of ensuring the foundations of the sustainable economic growth? At first glance, it would seem that such responsibilities are incumbent on the tertiary education which has the responsibility to form skills and professional competencies. Meanwhile, with the advancement of the knowledge economy, we observe an increasing interest of employers in the workforce dimensions which are formed in the levels preceding the vocational education.

The results of the “Key constraints on the business environment in Moldova” study, conducted by the National Trade Unions Confederation of Moldova in 2013 on a sample of 205 companies, shows that in the staff selection process employers pay attention to a much wider range of candidates’ characteristics for the vacant positions than to those with reference to their professional competencies. Some of the employers’ requirements, in the Republic of Moldova, towards their future employees (according to the study) are presented below:
General qualities and personality characteristics: health, general knowledge, intelligence, logical thinking, objectivity, attention, correctness, teamwork, initiative, responsibility, kindness, hygiene / aesthetics, flexibility, honesty, discipline, punctuality, skill, sociability, reliability etc.

Knowledge, professional competencies and working skills: willingness to work, experience, creativity, production knowledge, customer orientation, contracts management, quick learning abilities, language skills, computer skills and the use of advanced technology, higher education, effective communication, oratorical art, the ability to persuade, conflict resolution ability, working capacity / professionalism, work quality, studies in the field, loyalty to the company, interest, original thinking, the ability to collect and process information etc.

The long list of employers’ requirements towards their candidates for the vacant positions demonstrates that having professional knowledge is not sufficient; moreover, in some cases it is not among their first priorities. In the same line of ideas are representative the results obtained by the study “Labour Relations in Moldova: the Companies Perspective”, conducted by the “Expert-Grup” analysis centre in 2007. According to this study, Moldovan enterprises select their candidates for various positions depending on a number of criteria which go beyond the professional skills (table 1).

| The criteria of staff selection used in the enterprises from the Republic of Moldova |
| --- | --- | --- |
| Selection criteria of:* | workers | specialists | managers |
| Driving license | 58 | 9.3 | 10 |
| Knowledge of foreign languages | 12 | 22.3 | 24 |
| Leadership abilities | 2 | 13 | 52 |
| The sense of responsibility | 40 | 40.7 | 44 |
| Work experience | 44 | 51.9 | 50 |
| Education | 26 | 63 | 64 |
| Professional abilities | 36 | 44.4 | 46 |
| The level of professional knowledge | 56 | 57.4 | 62 |
| The level of general education | 58 | 33.3 | 38 |

*the figures in the table show the quota of the total number of respondents who selected this answer.

The table proves that along with the employers’ interest for education, experience and professional knowledge of the candidates to vacant positions, great attention is paid to the employee’s general knowledge and the sense of responsibility of leadership qualities (in case of hiring managers).

The increase of the employers’ interest for the human skills trained at the level of general education (primary and secondary levels) is explained by the specifics of the business environment of the firms as the knowledge economy advances, and which becomes very dynamic. Accordingly, the professional knowledge of the human resources is to be complemented by various professional and fundamental skills able to ensure the competitiveness of the enterprises. These circumstances have led to changes in the expectations towards the education systems finalities, an increasing number of countries formulating the skills development requirement.

The economic importance of the transition of education systems towards the objective of competence training can be emphasized starting from the synchronization of the competencies formed in the education system with the objectives pursued by the households and firms. To highlight the importance of the human factor skills in meeting the objectives of profit maximization pursued by companies, Le Dienst and Winterton correlate the ability of the companies to achieve their objectives with the multidimensional framework of skills characteristic of the workforce (figure 1).
Figure 1: The multidimensional framework of skills addressed from company standpoint

Source: [3, p. 27-46]

The cognitive competencies, together with the functional ones, determine the qualification level of the workforce, while the social competence explains the behaviour and attitudes of individual workers. The set of cognitive, functional and social skills ensure the ability of human resources bearers to effectively integrate in the technological and managerial systems characteristic of companies, simultaneously contributing to the promotion of marketing policies focused on customer interests. As the knowledge economy deepens, the companies assign an increasing importance to Meta competencies aimed at the individual's ability to learn, adapt, anticipate and create, these ensuring the competitiveness of firms due to the ability of the human factor to find original solutions for the problems faced by the company. In this line of ideas, the educational finalities, quantified by means of competencies, will determine the economic performance of companies, education becoming into an important component of the reproductive process.

The economic impact of the competences formed within the educational process is proven by some empirical data. In order to identify the correlations between the cognitive skills and the global macroeconomic performance, we will provide a correlation of international test results conducted by PISA methodologies, in 2009, and the macroeconomic indicators - GDP per capita, investments in research and development, on a sample of 18 countries, divided into 3 blocks according to their social and economic development (table 2).

<table>
<thead>
<tr>
<th>PISA test results, GDP per capita, R&amp;D investments, in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>OECD countries</strong></td>
</tr>
<tr>
<td>Finland</td>
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<tr>
<td>Australia</td>
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<tr>
<td>Germany</td>
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<tr>
<td>Great Britain</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>Italy</td>
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<tr>
<td><strong>Former socialist countries, current EU members</strong></td>
</tr>
<tr>
<td>Slovenia</td>
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<tr>
<td>Hungary</td>
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<tr>
<td>Poland</td>
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<tr>
<td>Lithuania</td>
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<tr>
<td>Bulgaria</td>
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<tr>
<td>Romania</td>
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<tr>
<td><strong>Ex-USSR countries, the current members of the CIS</strong></td>
</tr>
<tr>
<td>Russian Federation</td>
</tr>
<tr>
<td>Kazakhstan</td>
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<tr>
<td>Azerbaijan</td>
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<tr>
<td>Moldova</td>
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<tr>
<td>Georgia</td>
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<tr>
<td>Kirgizstan</td>
</tr>
</tbody>
</table>

Source: Data provided by the World Bank databank.worldbank.org, PISA www.oecd.org/pisa
The data from the table shows a positive correlation between the macroeconomic indicators and PISA test results, the national economic potential being subordinated to the quality of formal education. The cognitive competencies acquired in education contribute to building human skills that make possible the development, adaptation and implementation of new technologies. The correlation of the PISA results with the investments in R & D shows that the high results of PISA tests are associated with high levels of investments in R & D, which as well highlights a trend of decreasing return on investment of this kind as the cognitive competences acquired in national educational systems decrease.

The interests of the company in the quality of the human factor determine the amplification of the collaboration trends of the education system with the real economy, this being achieved, essentially, through both the government sector and the households, as well as a result of a direct collaboration of the business environment with the educational environment (figure 2).

According to figure 2, we can highlight three channels which are used to transmit the requirements of the business sector, in relation to human resources parameters, to the education system. Traditionally the transmission of company requirements to the education system takes place through the households, as beneficiaries of educational services, and by means of the government sector, which has the ability to perform comprehensive analyses of the labour market, to forecast the further development of the economy in general, and the human resources market in particular. However, at the beginning of the XXIst century, there is a more active involvement of companies in the educational process as a result of essential changes that occur in the business environment, the increasing role of knowledge and human qualities in the economic performances achieved by the business. One way of involvement in this regard is the practice of the private sector participation in formulating the requirements for the finalities of education, which is becoming more widespread.

Based on the above, we conclude that, in the knowledge economy, there is a subordination of the educational system to the needs of the business sector, in relation to human resource parameters. In this context, the ability of the human factor to participate in reaching the business objectives is subordinate to a set of competencies acquired in the educational system. Taking into consideration that skills training is a long process, the developed countries use the practice of formulating the requirements of the real economy in relation to the product of the education system. Thus, the 2000 report of the Secretary’s Commission on Achieving Necessary Skills within the United States Department of Labour (SCANS) groups the competencies claimed by the real economy into five main categories (table 3).
### Table 3

<table>
<thead>
<tr>
<th>Groups of workplace competencies, according to SCANS</th>
<th>Competency contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources management competencies</td>
<td>Allocating time, money, material, facilities and human resources.</td>
</tr>
<tr>
<td>Interpersonal competencies</td>
<td>Team work, teaching others new skills, exercising leadership and negotiation, working well with the representatives of diverse cultural backgrounds, focusing the activity towards satisfying customers' expectations.</td>
</tr>
<tr>
<td>Information management competencies</td>
<td>Acquiring and evaluating information, management of documents, interpreting and communicating information, use of computers to process information.</td>
</tr>
<tr>
<td>System competencies</td>
<td>Understanding the working mechanisms of social, organizational and technological systems. Monitoring and correcting the systems.</td>
</tr>
<tr>
<td>Technological competencies</td>
<td>Choosing equipment and tools, applying technology to specific tasks. Maintaining and troubleshooting equipment.</td>
</tr>
</tbody>
</table>

Source: [7, p.10]

An obvious example, which demonstrates the tendency of an active involvement of businesses in formulating the requirements regarding the aims of education, is the American organization Partnership for 21st Century Skills, consisting of educational institutions, foundations, non-profit organizations and representatives of the US business. The above mentioned organization developed the model graduate of the education system in accordance with the requirements of the XXI century economy. According to the Partnership for 21st Century Skills coalition, in the context of globalization, both capitalizing the personal human potential and ensuring the economic development are based on the quality of the output of the education system. Under these conditions, the economic success of the individual, and ultimately of the country, is correlated with the set of knowledge and skills acquired in the education system (figure 3).

According to this model, the competitiveness of the output of the education system is provided by a set of skills built on the fundamental skills of reading, writing, doing calculations and knowledge in the fields of native language and literature, foreign languages, art, mathematics, science, geography, history, governance and civil society. Additionally, the educational system should promote the academic contents of some themes fundamental to the existence of human society in the XXI century: global awareness; literacy in the entrepreneurial, finance, and business fields; civic education; health education and environmental education. The proposed model includes a set of skills that are meant to ensure the competitiveness of the individual and the national economy: 1) *life and career skills* (flexibility and adaptability, initiative and self-control, social and cross-cultural skills, productivity and accountability, leadership and responsibility); 2) *innovation and learning skills* (creativity and innovation skills, critical thinking and problem solving skills, communication and collaboration skills); 3) information, technology and media skills (literacy in these three areas). At the same time, the model suggests the compliance of the activity of the education system with the objective of forming the given set of abilities and skills, thus the standards and assessment methods, the curricula and the professional development of the teachers, and the entire infrastructure that form the learning environment are geared towards optimizing the output of the education system to its compliance with the socio-economic requirements.
In this context, the European Council of Lisbon, 2000, highlights the ability of the European Union to become by 2010 the most competitive and dynamic society, based on knowledge, in strategic development directions, education being addressed as part of economic and social policies necessary for the transformation of Europe's economy. The Lisbon process 2000 identified five areas of key competences that make it possible to ensure the conditions of sustainable economic growth and to achieve a high degree of social cohesion in Europe: 1. Information Technology and Communications; 2. Technological culture; 3. Foreign languages; 4. The entrepreneurial spirit; 5. Social skills.

The model of the key competences recommended by the Council of Europe is reflected in the regulatory framework of the educational system in Moldova. Thus, under Article 11 of the Education Code of the Republic of Moldova, which came into force on 11.23.2014, education aims at training the following key competencies: a) communication competences in Romanian; b) communication competencies in their native language; c) communication competencies in foreign languages; d) competencies in mathematics, science and technology; e) digital competencies; f) the learning to teach competency; g) social and civic competencies; h) entrepreneurial and initiative competencies; i) cultural expression and awareness of cultural values skills [1].

The above presented education models focusing on skills development refer to the basic competencies to be trained in the educational system as a priority of the general education. It would seem that they are no longer useful when you get to the vocational education stage, each professional field being characteristic of a specific set of skills. Although, the key competencies do not refer to the professional education, the extent to which they have been developed at the level of the general education determines the development potential of the professional abilities.
and skills. In this context, the efficiency of education at the level of professional education largely depends on the skills possessed by the graduates of the general education.

Furthermore, in the process of recruitment and selection of candidates for the vacant positions in the enterprises, there is a tendency to transfer the emphasis from the requirement of professional knowledge to identifying the key competencies possessed by the candidates. This transfer of emphasis during the selection process is explained by the constant changes that occur in the business environment where businesses operate. The dynamic nature of the business environment determines the companies to select the human resources able to cope with the constantly changing consumer behavior as well as with the legislative, technological, and competitive environments.

Under these circumstances, the staff selection is to take place according to the human potential of the candidates, and which is divided into several levels (figure 4).

![Figure 4: Structure of human potential approached from a business perspective](Source: adapted from source [9])

According to the above presented figure, the human potential of an individual consists of several constitutive elements, each responding differently to the educational efforts. Thus, the functional competences, corresponding to the nature of the professional activity, are flexible to the educational efforts, being easily formed either within the education system or based on practical activities, at the same time, the key personal competencies are rigid to the educational efforts, their training requiring much effort and special educational techniques. The training of such competencies is a priority of the general education.

The elements of human potential of an individual are correlated with some of his key personal competencies (table 4).
Table 4

The convergence of the basic skills with the elements of the human potential

<table>
<thead>
<tr>
<th>The type of potential</th>
<th>The competencies which form the foundation of the potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual</td>
<td>Creativity and Innovation availability</td>
</tr>
<tr>
<td></td>
<td>Finding solutions</td>
</tr>
<tr>
<td></td>
<td>Information processing and interpretation</td>
</tr>
<tr>
<td>Volitional</td>
<td>Reaching the set objectives</td>
</tr>
<tr>
<td></td>
<td>Self-control and setting objectives</td>
</tr>
<tr>
<td></td>
<td>Initiative and promptness</td>
</tr>
<tr>
<td>Communicational</td>
<td>Communicability</td>
</tr>
<tr>
<td></td>
<td>Self-confidence</td>
</tr>
<tr>
<td></td>
<td>Positive attitude towards other people</td>
</tr>
<tr>
<td>Vector</td>
<td>The creative energy</td>
</tr>
<tr>
<td></td>
<td>Orientation towards development</td>
</tr>
<tr>
<td></td>
<td>Constructive attitude towards other characters and ideas</td>
</tr>
</tbody>
</table>

Source: adapted from source [9]

According to Table 4, each element of the human potential is composed of certain skills that make possible the carrying out of the tasks corresponding to the various functions in the organization. Thus, the efficient execution of an employee’s duties in the "Sales" department is based on his Communicative potential, and for the specialist employed in the new product development, and technologies, the competencies forming the Intellectual and Volition potential become paramount.

If we return to Figure 4, we observe that another important element of the human potential addressed by the employer are the candidates’ values, the convergence of the personal values with those of the employer being a priority in the recruitment process. Under these circumstances, education has the function of creating values which correspond to the interests of the real economy along with the function of providing knowledge and of competence development. This function is also carried out largely at the level of general education, even if family, religion, media, and other formal and informal institutions also have a great impact on their personal value system.

Both the statistical data resulting from the studies initially presented, as well as the models of the educational outcomes presented, and that of the human potential approached from the perspective of economic units, demonstrate the existence of a strong relationship between the quality of studies, at the level of tertiary education, and ability of the general education to form the set of the key competencies. In these circumstances, the orientation of the education system in the Republic of Moldova towards the key competencies training, as provided in the Education Code, demonstrates the receptivity of the legislative framework in regards to the education system to the requirements of the real economy. At the same time, it is understandable that this adaptation of the legislative framework was carried out largely under the incidence of the general trends of harmonization of the legislation and of the policies promoted by the Moldovan state to the European practices.

Regardless of which were the factors that determined the estimation of the finalities of education through the key competencies (as provided in the Education Code), the important thing is to have this objective implemented in practice. If we refer to the ability of the education system to reach this objective, it is important to understand that the practical implementation of this objective is an extremely difficult process. Experience shows that even if, in 2000, the EU countries declared their orientation of the educational systems towards the development of key competencies, until today, there are no clear methodologies to measure some of the skills included in the set of the key competencies (table 5).
Table 5
The national tests of key competencies in the compulsory education in some European countries, the academic year of 2008/09

<table>
<thead>
<tr>
<th>Type of competencies</th>
<th>Belgium</th>
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Source: adapted from source [6]

In conclusion, we report the following: 1. the economic performance of the enterprises in the Republic of Moldova is dependent both on the quality of education at the level of vocational education, as well as on the key competencies developed within the general education; 2. the quality of the professional education is dependent on the extent of the successful training of the key competencies in the general education; 3. even if at the level of the regulatory framework, by adopting the Education Code, the key competencies are considered to be the finalities of the educational system in the Republic of Moldova, the implementation of these objectives into practice requires a long time.

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109
DEVELOPING SKILLS FOR IMPLEMENTING CREATIVE METHODS IN MAKING DECISION

PhD Carolina TCACI,
„Alecu Russo” State University of Balti, Moldova

In management, decision-making mechanism is based on two basic elements: decision makers (decider) and environmental factors where decisions are adopted. Based on the human unrepeatable characteristics of possession of the will, the ability to react, imagination, intuition, objectivity and analytical spirit, in process of making decision, decider plays the main role. The second factor – environment – is becoming more complex, being able to facilitate making-decisions or create barriers and uncertainty in process of making decision.

Key words: organizational changes, main factor of changes, methods and techniques to implement changes, creative methods to implement changes, creativity, organizational blockages, individual, extra organizational, strategies of changes.

The economic crisis has deepened the uncertainty of the external environment of all organizations. But, in conditions of stability, organizations need to introduce changes by different gender, degree of intensity and urgency etc. as response to the demands of the external environment. At the same time, is well known that for organizations and individuals are characteristic the state of homeostasis (homeostasis - property of the body to maintain, very close limits, constants of internal environment [3]). Organizations and individuals oppose the changes an instinctive resistance even then, they are able to "heal" the system, to improve the state of things, to facilitate the using of potential or eliminate the causes of difficulties and problems.

The specific role of decision-making subsystem is argued by affirmation that it establishes the place and role of each link functional organizational in management system, ensuring and increasing the potential viability of the company.

Deeping knowing of management subsystem is obtained by investigating and diagnosing its constituents, the factors for rational orientation, foundation, adoption and control of decisions realization.

In management, decision-making mechanism is based on two basic elements: decision makers (decider) and environmental factors where decisions are adopted. Based on the human unrepeatable characteristics of possession of the will, the ability to react, imagination, intuition, objectivity and analytical spirit, in process of making decision, decider plays the main role. The second factor – environment – is becoming more complex, being able to facilitate making-decisions or create barriers and uncertainty in process of making decision.

Management decision, as a management tool and socio-human relationship, including staff, is forced to take certain measures and actions in order to achieve a noneconomic effect or economic result. In addition of using scientific methods and techniques for decision-making and implementation of intuition, deciders, transpose on process of making decision and the decision taken their psychological characteristics. In management this in known as „individual decision profile”.

For defining the parameters of the present state in which is the organization and to predict it in the future, there are various models proposed by scientists. One of them, based on factors of internal organization environment, is the diagnostic model of Nadler and Tushman (figure 1). As main components of this model are tasks (resulting from goals) made by organization, organizational structures and systems, its culture and people who working in it. In addition, we consider important that the model highlights the need to identify the collective vision shared in organization and by individuals (or groups) that can facilitate changes.

It is undeniable that the main factor of decision is employees of the organization. People come with their different skills, knowledge, experience, personality, values. The main
characteristics of human factor, important in process of making decision, remain their attitudes and behaviours, and the ability to be creative, to generate ideas and transpose them into organizational practice as new results, improvements, enhancements, performance.

![Figure 1. Elements of model Nadler-Tushman](image)

Methods of implementation of organizational decision represent a set of processes, techniques and ways to transform intra organizational processes under the influence of pressures from its internal and external environment.

Synthesizing existing research in this field through analysing economic literature, we highlight the following methods and techniques of adoption/implementation of organizational decisions (table 1).

The processes of globalization, information technology, economic crises and accelerated changes that take place in modern society require having attention on the creative side of management. The term creativity was first used in 1938 by GW Allport in the context of understanding that the favourable substratum of creation implies a general predisposition of personality toward new. In essence, creativity is based on the novelty and originality of ideas, of solutions or individual behaviours.

**Methods and managerial techniques used in process of making decision**

<table>
<thead>
<tr>
<th>Classic methods</th>
<th>Modern methods</th>
<th>Creative methods</th>
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</thead>
<tbody>
<tr>
<td>Management by objectives</td>
<td>Portfolio analyse</td>
<td>Methods and techniques for redefining ideas (technique Why?; the 5 W and H etc.)</td>
</tr>
<tr>
<td>Management by projects</td>
<td>Business Process Reengineering</td>
<td>Methods and techniques for generating ideas (Synectic, Brainstorming; 6-3-5; Philips 6-6, etc.)</td>
</tr>
<tr>
<td>Management by product</td>
<td>Focusing on basic skills</td>
<td>Methods and techniques for selecting and evaluating ideas (battle metaphors, selective confrontation etc.)</td>
</tr>
<tr>
<td>Management by budgets</td>
<td>Model of spheres of influence</td>
<td>Methods and techniques for implementing ideas and solutions (MESA, morphological analysis, functional analysis, graphical analysis, crushed etc.)</td>
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<tr>
<td>Scoreboard</td>
<td>Balanced Scorecard</td>
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</tbody>
</table>

Creativity can take various forms: individual, collective and social - by the magnitude of the participants; economic, technical, artistic, political, etc. - by the content he has etc.

Referring to the typology of creative methods in the process of adoption / implementation of decisions, in another sense, we highlight: imaginative methods (brainstorming (method can be found under the names brain storm, "great yes" or onset of ideas), synectic, Philips method 6-6, method of collective book), heuristic methods (morphological method, the matrix of discoveries, crushed), methods of logical approaches (functional analysis, morphological analysis, graphical analysis).
Like the entire decision-making process in the organization, creative methods of implementation are disturbed by a number of barriers. In the process of research, the author has highlighted these obstacles:

- organizational blockages – blockages appeared within the organization: manager's leadership style (for ex, authoritarian leadership style "destroy" initiative and creativity or liberal leadership style where creativity is "superfluous"), functional rigidity, strategic barriers (lack of personnel management strategies), low organizational culture, negative moral-psychological climate, divergence organizational values / individual values, intrinsic motivation of creativity, narrow specialization of team members, stimulating of conformism, remuneration and promotion by formal and administrative criteria etc.;

- individual blockages - psychological blockages (psycho-emotional) of the individual: fear of criticism, fear of appearing ridiculous, discouragement (self-discouragement) self-imagination, lack of imagination, education and life experience ("initiative is punished"), insufficient activation of creative imagination etc.;

- extra organizational blockages – blockages that come outside from organization: complex and turbulent external environment leads to time insufficiency for implementing creative methods; strict regulation of the external environment, which does not allow using of creative methods etc.

According to scientists-psychologists, overcoming the barriers that limit creativity can be achieved through training group, so it is "educable", although born qualities have a considerable importance. For this purpose, managers should encourage teamwork, employee participation in training, both in organization and outside it (seminars, round tables, debates), to create social-psychological favourable climate in collective, to stimulate staff creativity.

In practical aspect, we consider that preferential use of creative methods of adoption / implementation of organizational decisions will allow managers to achieve the following benefits:

- alternatives of solving the problem will grow, many solutions will allow to choose the most efficient option;
- competitive advantage of the organization will grow by using innovative solutions;
- using of human, material, financial, informational resources will be more efficient;
- creative methods are "cheap", in financial terms do not require large expenses, having intellectual nature (there are some exceptions);
- increase staff motivation and their involvement in solving organizational problems;
- is reducing resistance to change (increase tolerance to change) because employees are the driving factors, "carrier" of changes;
- is reducing uncertainty by collective approach of solving problem, etc.

Organizational decision strategies appear only in imagination of caretakers. Often, organizational decisions do not transpose into goals, and their degree of materiality is so low that there is an extended space for manoeuvre for using only creative methods to implement the decisions. By adopting / implementing the decisions, organization must "discuss" about existing discrepancy, to find a consensus at the level of methods that will be used in order to achieve the intended purpose.

**Bibliography:**

In this paper, present an successful example the experience of the Innovative Incubator and Innovative Educational cluster with the leading role of innovation incubator “InnoCenter KDU” of the Comrat State University. Since 2012, Innovation incubator of implements innovation projects and developing the infrastructure both inside and outside of the university borders - in close cooperation with the main actors of the regional innovation space.

**Key words:** InnoCenter KDU, Comrat State University, innovation policy, innovative development, research and development, business innovation funding mechanism

**Introduction**

Improving the competitiveness of the regions innovation space by increasing innovative SMEs, commercialization and technology transfer in accordance with regional innovation smart specialization improving the competitiveness of the regions innovation space by increasing innovative SMEs, commercialization and technology transfer in accordance with regional innovation smart specialization are the mission of the InnoCenter KDU

The main directions of the InnoCenter KDU:

- **Innovation development agent:**
  - Analysis the innovation environment and infrastructure;
  - Development interregional and international relations in the innovation field;
  - Creating regional innovation development programs;

- **Commercialization and technology transfer:**
  - Administration of innovation projects;
  - Technology transfer between the science sector and companies;
  - Looking for partners to cooperation in the implementation of new technologies;

- **Consulting support of innovations projects** (potential and existing residents):
  - Consulting: optimizing business processes, marketing of innovation projects, financial management, preparation of investment projects, protection of intellectual property rights;
  - Develop corporate and individual educational programs;
  - Organize seminars, workshops, round tables, scientific conferences.

Research and development institutes (RDIs) in the Republic of Moldova (RM) are a legacy of central planning system and were a part of a production system “which was not directly driven by production needs or market demand” [2]. During the socialist period existed a lack of a market for technologies and feedback mechanisms between end users and inventors. All this factors limited the diffusion of technology and innovation. The separation between the supply and demand for innovation was particularly visible, industry - the responsible ministry mediated research links.
Typically, the former Soviet Union countries had three main actors in the Science and Research system: the Academy of Science (AS) with own research institutes (now only 17 from 45 in 1991), branch sector and universities. The first actor focused only on the fundamental research, second - developed mainly military - industrial complex with extensive, top- down characteristics. The third actor – Universities focused on teaching process.

Today the innovation system in Moldova presented by several organizations of the AS: Centre for International Projects (CPI), Department of European Integration and International Cooperation (DIECI), Advisory Expertise Council (AEC), Public Centre for Fundamental and Applied Research Funding, Agency for Innovation and Technology Transfer (AITT). Supreme Council for Science and Technology Development has created the Agency for Innovation and Technology Transfer (AITT), which functions in accordance with the statute approved by the Supreme Council. The partners of the InnoCenter KDU is, on the:

- national level:
  - Agency of Innovation and Technology Transfer;
  - Agency for Protection of Intellectual Property;
  - Chamber of Commerce and Industry;
  - Department of Technological Development and Competitiveness; -regional level:
  - Department of Economic Development in Gagauzia;
  - Association of Agriculture Development in Gagauzia;
  - Educational institutions in the area;
  - Association “Solar energy”;
  - Association of Entrepreneurs in Gagauzia

State policy in the R&D

State policy in the R&D was determined in the “Code on Science and Innovation” and the first Government Partnership Agreement with the Academy of Sciences for the period 2005-2008, supported and subsequent Government Decisions on partnership between the Government and ASM. According to recent government decision established that the parties to the agreement for the funding of science and innovation in the 2013 budget allocations was made in the amount of at least 0.34% of GDP. Research and development is one of the most significant drivers of innovation. It is assumed that they have a direct significant impact on the activities carried out in business innovators, and spending on R&D is a way to measure a country's innovation potential. Treaty of Lisbon provides for spending 3% of GDP to research and development (R&D). In 2013 27 EU countries are placed at about 1.71% of GDP [3].

The previous agreements were established during more favourable conditions for financing the development of science and development. This first agreement envisaged an increase in the amount of allocations for science and innovation from 0.35% of GDP in 2005 to 0.80% - in 2009. Real allowances were increased, but did reached the expected level in 2009 accounted for 0.70%. In 2010, in connection with the critical state of the national economy, the parties agreed that the allocations for science and innovation will be 0.53% of GDP, which is 0.42% real GDP [4].
Therefore, science and innovation from Moldova operates today under dry enough, from the previous period. R&D activity in 2013 was conducted in 64 units, including 40 institutes and research centres, 15 higher education institutions and 9 - other units. Of the total activity of CD units, 53 units or 82.8% are in state ownership. The 2013 total expenses for research and development in the public sector accounted for about 0.35% of GDP, which is less than half the average indicator for EU countries (0.75%).

Unfortunately, but in 2013 and 2014 funding situation of science and innovation has degraded from the previous period, and the most favourable value of the indicator can be seen in the statistics of 2009, which were recorded R&D expenditure of around 0, 7% of GDP. The
increasing importance of innovation policy for the economy is reflected in the structure and tasks of the ministry. It has a department for technological development and competitiveness, and several subordinated institutions:

- National Institute for Standardization and Metrology,
- The Organization for the Development of the SME Sector of the Republic of Moldova,
- The Moldovan Investment and Export Promotion Organization.

Overall, the Moldovan innovation governance is highly centralized. Policy formulation and priority setting, as well as policy implementation and evaluation are concentrated in the academy. The centralized system ensures continuity of the funding stream and provides stable priorities for pursuing long-term research. There is an obvious risk that such an innovation system is not very efficient and slow to respond to emerging topics. Furthermore, cooperation between public and private research institutions depends fully on the academy’s actions. The low level of participation of the private sector in the governance of the academy, and in innovation activity in general, means that the academy has only limited feedback from companies on the effectiveness and relevance of its activities and policies [4].

**Figure 2: Research indicators of National Innovation system in RM.**


**Weaknesses of R&D sphere**

However, the practice of entrepreneurial activities in Moldova during the past two decades has not given any real grounds for conclusions of this kind. Moreover, the absence of a mature competitive environment, the significant level of monopolization of a number of sectors, ineffective anti-monopoly activity of the State have provided an open playing field for excessively profitable entrepreneurial activity, without the need to make additional risky investments of capital in innovation development.
Thus, the developing of the innovation sphere was influenced by a lot of factors and preconditions that almost of the time stalled the modernization and promotion the role of innovative ideas in Moldova.

- **Weak link of relationship between science and business**

  When Moldova received its independence the link between scientific research and real sector of economy have not existed. In one hand scientific discoveries were not responsible to the laws governing the economic sector. In another - enterprises have been focused on receiving the wanted results without involving some innovation ideas. The practice of conducting joint research and development began to develop only in recent years.

- **Absence of a clear understanding of development priorities research and innovation policy at both the national and regional level**

  Incompleteness of the legal framework, particularly normative legal acts regulating the innovation cycle as a completed process. In reality, in all these normative acts, the terms related to the innovation field were defined confused and the priorities were not put in the right way so, all these factors formed a nonfunctional system.

- **Lack of business innovation funding mechanism, including the procedure for the allocation and distribution of budgetary and extra-budgetary funds, borrowed and borrowed**

  Wasn’t developed an effective state program for supporting the innovational initiatives, more than this, wasn’t named a responsible institution for developing this sphere. In this case, were not clear what to do if you have an innovational idea, which public institution can help and how it can do it.

- **Low developed National innovation market**

  In absence of foreign or national support, companies aren’t ready to invest its profit in developing the research activities in interested fields in order to obtain some innovations that can be used in future.

- **Low receptivity of the real sector of the economy to innovate, mainly due to lack of their own financial resources and skill gaps.**

  Another big problem that affected the developing of the innovational sphere in Moldova is the fact that companies are not ready to accept the importance of innovations in growing and modernization of economy.

  All these factors have stalled the development of innovational sphere in Moldova. Modernization of the system was initiated in 2004, when was adopted the Code of the Republic of Moldova on Science and Innovation. This Normative act changed the construction of the system and initiated a new way of developing the innovative system in our country. The most important things that were changed when the code enter in to the force were that Academy of Science was named as the responsible institution for developing the research and innovational system, also were created some new institutions, like Agency for Innovation and Technology Transfer Agency on Intellectual Property and National Council for Accreditation and Attestation, that were directly involved in innovation developing the system.

**Technology transfer projects**

These data include all expenditure of research organisations accredited with the Moldovan National Council for Accreditation and Attestation, and which receive funding from the state budget. Data do not include R&D expenditure from general university funds and cover only a rather limited share of private R&D funding (only co-funding of private business in innovation and technology transfer projects supported by the Agency for Innovation and Technology Transfer (AITT)).

Gross Domestic Expenditure on R&D (GERD) does therefore not give the whole picture of R&D funding and is underestimated. Most of R&D (70.0% in 2011) is performed in the governmental sector (institutes of ASM and branch institutes of ministries), while the business enterprise and higher education sectors perform significantly less (19.0% and 11.0% in 2011).
Recent trends show a strengthening of the role of R&D in higher education institutions, improvements of the innovation infrastructure (e.g. via recently established techno parks and innovation incubators) and measures to enhance business R&D. AITT monitor’s projects aimed at the development of collaboration and cooperation between business and science and implementing a program of grants for the development of innovative SMEs. Modern business characterized by lack of long-standing tradition of innovation activity funding and disconnecting between accomplishments that are achieved in the laboratory and successful innovations emerging in the product and consumer marketplace.

Figure 3: Innovation and technology projects funding and co-financing, MDL. 

Source: [5]

Projects are selected competitively and supported for a two-year period. Public and not for profit research organizations as well as companies are funded in this measure, whereby 50% of the project cost must be co-funded either in cash or in-kind. Innovation and Technology Transfer Projects should facilitate the implementation and transfer to business of research results, inventions, new technologies, equipment, agricultural varieties, pharmaceuticals, and other intellectual property.

Figure 4: Evolution of innovation and technology transfer projects by strategic directions. 

Source: [5]
Following the adoption by the Parliament of Moldova “Law on Scientific technological parks and innovation incubators” were established Science and Technology Park “Academica” and innovative incubator “Inovatorul”. Now in the Republic of Moldova there are 3 science and technology parks and 6 innovative incubators. AITT through a network of incubators implement:

- the state policy in the sphere of innovation and technology transfer;
- elaboration of suggestions on the improvement of legal framework in the sphere of Innovation and Technology Transfer (ITT);
- determining the volume of financial resources for implementing programs and projects in the sphere of ITT;
- coordinating the process of creating infrastructure in the sphere of ITT.

Shefer and Frenkel [5] have shown that the proximity of an incubator to a university research centre is great importance especially in the life science fields. Therefore, this program helps to commercialize the discoveries of scientists and at the same time to introduce innovative products and processes in the enterprises. The entrepreneur’s share plays a big role by the successful realization. This keeps the entrepreneur motivated and strongly involved in the company the entrepreneur has the technological know-how needed for developing the company.

Specializing in a small number of activities has no positive impact on an incubator’s ability to obtain additional private funding, compared with diversified incubators. Projects within the incubators located in the peripheral regions (Belti, Comrat) require more funding, compared with projects located in the central region - capital Chisinau. The average budget of a project located in peripheral incubator is smaller than that of projects located in the capital. Public funding for projects in the periphery is very less, compared with the projects located in central region.

Usually, the state takes the initiative to establish a regional network of economic development. Unification business, educational institutions and civil society (business service providers) results support the development of research institutions (actors of innovation development) research institutes and centres at universities, innovation incubators, technology parks, research laboratories, etc. If the research structures are the result of a symbiotic (partner) relation of business, government and educational institutions, in this model they will take the dominant position.

Model of innovative infrastructure Gagauzia with the inclusion of its basic elements – “Innovation and Education Cluster”. In Comrat State University has set up structures to support scientific innovation activities: Innovation Incubator, Centre for Information Technology, Centre for Continuing Education, Business Centre. Centre, the core of IEC - Innovation Incubator will be the as an advisory body to create between the various actors and stakeholders the necessary connections. They may include the organization of seminars, conferences, group discussions, lectures while ensuring participation of the University, the relevant stakeholders both local and national industry, research institutions, civil society and the government. Since 2012 Innovation incubator InnoCenter KDU implements 3 project residents, as well as developing the infrastructure both inside the university and outside its borders - in close cooperation with the main actors of the regional innovation space.

In the framework of IEC can be tested new disciplines and technology training with stakeholders, as well as students and teachers. These innovative schools can combine not only the members of the cluster, but also regional lyceums libraries, community centres, and research. They will provide ability to quickly develop, test, and collect data of new approaches and products to promote fundamental and application research. Close connection with partners, employers will provide the market demand of programs, teaching methods and trained specialists.
Conclusions and recommendations

Education in general and its innovativeness particularly are the driving force in the country development. Organizations benefits of joining of in the cluster due to synergetic effect are obvious. Symbiosis entrepreneurs, government agencies, educational institutions and business service providers in the region with the Centre - Comrat State University allows to establish exchange flows of innovative information, inventions and finished products and technologies between all the structures of the cluster and further distribute them to the whole region and beyond. Should be allocated following main challenges facing the InnoClaster [10]:

1. Creating a unified informational and educational environment between members the IOC: harmonization of curricula, the creation of resource centres, the development of scientific and innovation (the development of doctoral studies), assistance in obtaining patents and registration of innovative technologies, the growth of the number of publications in reviewed journals.

2. Forming a IEC partnership strategy with commercial, non-profit and governmental structures: prediction of demand for professional staff in order to execute the order for specialists, the signing of agreements on joint research with business representatives, the organization of work on the grant support of research priorities and shortening their commercialization, modernization of laboratories and the discovery of small innovative enterprises in the departments of and the training of innovative professionals, the introduction of R & D in the region enterprises;

3. Integration into the world educational space: the organization of the practice in foreign universities and enterprises, conducting and participating in conferences, competitions, contests, projects, etc., implementation of programs, “double degrees”.

4. Creating a single centre of research and ecosystem development in the region, implementation and active use of science in business operations.

At the national level is required: the creation of an independent Science and Innovation Department as part of government, which take over the functions of public policy development in the area of science, the development of science, public order and control over the compliance the actual scientific achievements the government order, the formation of the state program for cooperation between business and science institutions including extensive information on business developments, the priority needs of the state in development of scientific activity, the development of incentives to implement of science in business, and the creation of high-tech industries in the priority areas.

Moldova’s economics demonstrate highly polarized development with large regional disparities. In Chisinau, in capital we see the main “pole of growth” of regional concentration of population, GDP, industrial production and services, volume of investments, quantity of innovation structures [7]. However, it needs to create peripherals centres of growth on the North and South of RM through development of objects of innovation infrastructure.

The capacity of the business enterprise sector to implement innovations is another important challenge. In order to these, it is necessary to stimulate knowledge absorption capacity of industry with its focus on technology-based products for increasing of the export potential. It can be done through the quality assurance and standardization of the legislation of RM in the field of technology transfer.

The necessary attention to this matter and to practical implementation of scientific results will make possible to create the connection between research and innovation with real economy. Time and funds available to enterprises are limited when ideas need to developed further to products. There is necessary to bridging the gap between fundamental research and product development. This could be done by implementing tools that can foster joint research by enterprises and research institutions or universities.
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UNIVERSITIES AS A SOCIAL CATALYZER OF COLLABORATIVE INNOVATION AND REGIONAL DEVELOPMENT

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Present paper is trying to argue the idea that the university can effectively contribute to regional development and to expansion of knowledge economy. Thus, in the first part of the paper we argue the role of university as social catalyster by taking account of several theories and concepts from the literature, starting with innovation, technology transfer, receptivity and learning, to the institutional framework (as a system of rules, norms and values) and social capital. In the second part of the paper there are analysed some examples of European and American universities who have developed advanced knowledge and innovation clusters in order to contribute to regional development.

The main conclusion of the paper is that the university could contribute to the creation of a new institutional framework (formal and informal rules) that shall allow increasing significantly its knowledge and innovation potential, and, at the same time, it could become more adapted to meet the needs of its social and economic environments.

Key words: university, innovation, social capital, regional development,
**Introduction**

The idea that the University can contribute to regional development is not new in specialized literature. Traces of the origins of regional and community engagement of the universities in the US - is Morrill Act from 1862. The land grant universities used public money to bring the benefits of education and applied science to society and facilitate development (Gleeson, 2011). A body of literature has appeared on this topic since 2000. The World Bank recommended to poor countries that they should use higher education for getting out of poverty (Wright, 2007) more than two decades ago, OECD recommends to countries that they should use more intensely universities for regional development (OECD Report, 2007), while the EU confers to universities a central role in global competition in view of becoming a knowledge-based economy and bringing its contribution to smart, sustainable and inclusive economic growth (Connecting University to Regional Growth, 2011).

How could we prove the fact that the relation between the university and regional development policies is beneficial in free market economy still remains an issue highly debated in today’s literature (Boden et al., 2012). In this paper, we have tried to provide an answer taking into account several theories and concepts found in the literature, from innovation, technological transfer, receptivity and learning to institutional framework (as a system of rules, norms and values) and social capital.

On the other hand, *innovation* can be defined as an interactive process between companies, produces and users; a continuous feedback and mutual learning process is established among them. At the same time, innovation occurs in a specific *institutional context*, in which both formal and especially informal (behavioural routines, values, history and culture) rules play a key role in creating a favourable context for its appearance. (Morgan, 1997). Considering only the concept of trust (Arrow, 1974) as a method of reducing risk and increasing operations safety, we could understand the role of behavioural routines in creating a social climate that facilitates coordination and cooperation on the market and also the innovation. The innovative company cannot exist in a cultural void. On the other hand, both producers and potential clients are found in a complex set of relations that contribute to constant adjustment of prices, quality of products, delivery methods, design, in one word to solving problems by learning, innovation and technological progress. In this context of relations, the university may stimulate companies to work together and cooperate in order to identify solutions, products, new ideas as to benefit from market opportunities.

*Receptivity*, desire to evolve, is another key issue in understanding the relation between the already mentioned concepts (Morgan, 1997) as who is receptive has more chances to learn more. For instance, in a company accumulating *technological, entrepreneurial competencies* and *receptivity*, chances to learn from the relationship with partners, adapt to new demands and innovate are higher than in the other ones.

It has been considered for a long time that that the success of Japanese companies is based on traditions and values of Japanese people deeply imprinted in the organizational culture, such as discipline, loyalty to company, mutual respect and sociability. The Japanese company recognized as an innovative organization, is characterized by an atmosphere of cooperation, experimenting and direct learning in the laboratory. Close link between Japanese companies and learning institutions is well-known. The company develops the workforce it needs together with educational institutions within communities of practice. This mechanism of knowledge transfer, practical skills development and of innovation development is not necessarily a traditionally impregnated feature so as to be impossible to imitate (Morgan, 1997) and, therefore, what Japanese companies do well, can be imitated by companies that wish to increase their innovative potential or by the universities interested in knowledge transfer by developing partnerships with businesses. Knowledge transfer partnerships and communities of practice have appeared in Canada, USA and Great Britain (Gertner et al., 2011).
Also, social actors are affected, influenced or even led (Boettke et al., 2001) by joint social structures and shared values. Like a web, the network of relations, norms and common traditions that are at the core of society and facilitate cooperation, decision-making, risk and uncertainty lowering was called social capital (Putnam, 1993). Trust and social involvement are its two dimensions. This concept is more relevant at the regional level as relations are closer, more tangible, people get to know each other more easily, look at each other with more trust, share more symbols, stories getting more easily involved in joint projects. People tend to trust more local companies, government agencies than regional ones, and accordingly, moral behaviour and trust maintain a circle inside which members prosper, generating the increase of wealth of all its members. All these can be cultivated on a social scale, the potential animating agent, promoter of such a philosophy being obviously the university that benefits from a great capital of trust and that it could use for the benefit of community in which it operates.

Shared values, culture, history, stories and behaviour, unwritten rules and customs make up the informal institutional framework. The universities in the vocational role circumscribed in their mission the goal to keep, promote and cultivate fundamental human values, culture and civilization in the spirit of recognition of fundamental rights and freedoms and the rule of law. If we add to these agreements, contracts and partnerships developed by it with local partners in order to actively take part in regional development, then we can state that the university will able to contribute to the creation of a new formal and informal institutional framework aimed to increase the welfare of society viewed as a whole.

**Beyond Traditional Functions of the University**

Higher education institutions and universities in general display a big social influence due to their role in the production and transmission of knowledge and their relations with businesses and their role in the development of skills for the labour market. Universities and research institutions contribute to transmission of well-known scientific knowledge, on the one hand, and, on the other, produce new scientific knowledge. These develop the potential for developing high-tech industries and services based on sophisticated knowledge. At the same time, they contribute to the development of high-quality human capital, communities of practice by their partnerships with the employees. So, the university contributes to workforce development– by teaching knowledge and practical skills, to local community development – by transmitting cultural values - to innovation and technological transfer – through relations with businesses. But, the university was also compared with a sleeping giant that is not aware of its full potential as it does not benefit from its third, less known role, that of governance, through which it contributes to the institutional potential of the region – through the relations it establishes with regional development stakeholders. Therefore, the university’s role at the local and regional level is more complex, being often underestimated as it actually contributes to developing the economic efficiency of the region (Sedlacek, 2010).

**Education function.** Universities, as collector and creators of knowledge and ideas, provide the infrastructure which facilitates the flow of knowledge, ideas and learning. By postgraduate education and training programs, universities can become a pole of attraction for professionals and companies in various fields and contribute to regional dynamism.

**Research function.** Starting from the idea that innovation is an interactive process between the firm and scientific infrastructure of society, the role of the university for potentiating these relationships appears as an important resource for regional development. Knowledge became strategic issues of production process of firms. Knowledge transfer can happen in different forms. The university can search the ways for business to “reach in” to the university, and drivers within university “reach out” to business, and made a major contribution to regional development (Geuna & Muscio, 2009). This mutual openness is not only beneficial for getting involved into joint research projects but also for developing curricula, classes and educational programs to meet the needs of employers.
Governance function. University is integrated simultaneously in knowledge and research networks at regional, national and international level, thus she has the potential to contribute to regional development through her ability to activate social connections and develop social capital. Social and moral responsibility of higher education institutions is supported by their ability to develop relationships with regional stakeholders (development agencies, companies, NGOs, research institutions, local and central administration etc.) and the civil society and create networks that can facilitate the flow of knowledge, ideas and new ways of doing things.

Starting from the recognition of these roles, the mission and goals of the university in some countries have been redefined by including the university commitment to community life and regional development. There are countries in which these roles have been included into legislation, for instance, universities in Sweden have been given the responsibility to work with industries and local businesses; while, in other countries, such as, the UK and the USA, governments funded cooperation projects between research institutions and local development stakeholders. Therefore, we can even talk about a paradigm shift in defining the university, from a citadel of knowledge to a region intensive university (John Tibbitt, 2014) shifting the focus from knowledge development and dissemination to its capacity in contributing to the development of social capital and development.

Practical Recommendations to the University Involvement in Regional Development

US Competitiveness Council, in the 2008 Report for the US Department of Labour, Employment and Training Administration, was making the following suggestions for higher education institutions that wish to extend their involvement in regional development (A practitioner’s Guide, 2008).

1. Make regional development an institutional priority, since traditionally, the core mission of university is teaching and research, regional development can be embraced as increase priority. Regional development, or in general, the involvement in regional policies historically has not been a part of university’s charter or mission. This is the reason why there is no qualified personnel in its organizational structure that would ensure the implementation of such policies. Starting from the assumption that the involvement into the project of regional development may increase the prestige, attractiveness and financing of the university, one of the roles of university management should be regional development.

2. Facilitate access to university resources for companies, by providing facilities (labs, conference rooms), by direct knowledge transfer within joint projects (from fundamental research to production and marketing of technology and new ideas), by business incubators and support of start-ups. Even though the university as an institution is well-structured into departments, schools, centres of excellence/research, being a recognized provider of knowledge, information and superior competencies, it rarely disseminates it to the outside world. Potential collaborators/partners often are not aware of what the university could offer or how to get in touch with its resources. That is why a solution in increasing its visibility is to improve its portals and websites in order to put together the initiatives, information, projects and regional development agencies.

3. Build long-term partnerships between regional stakeholders, through a set of „search conferences“ that shall involve the university in the social needs of the „surrounding society“. Through these conferences, regional stakeholders will be able to identify problems and imagine a better future that they can seek together, ways through which these needs could be linked to knowledge and technologic potential of partners involved in joint project. Once established, the partnerships provide a solid institutional structure for joint projects. As a rule, higher education institutions in a region have different strengths and areas of competence. Joint projects could provide new opportunities and resources and higher public recognition than if universities worked separately. Regional university consortia may attract more
companies, production and sale operations of technology, top research funding, increasing the trust regional stakeholders give to the university in general in order to start long-term projects.

4. Support regional engagement, increase regional attractiveness for graduates, stop brain drain (through reform of curricula, internships and other programs that would place graduates into local businesses and ease their transition to job market) and for companies (by engaging companies into a direct relationship with the needed highly skilled labour force). Facilitating the transition to labour market, employment in the area of specialization could equally contribute to increasing university ranking. Long-term relations between the university and businesses through research partnerships, cooperation for direct technical assistance, ideas and information dissemination may actually contribute to the employment of graduates and prevent brain drain. Thus, the whole society could have long-term benefits as growth of competitiveness of companies; quality and competence of workforce, satisfaction of finding a job matching one’s aspirations are mutually interdependent, having at their core the active, catalysing role of the university. Cluster centres developed on these principles contribute efficiently to knowledge dissemination, innovation and technological transfer and also to social capital development and developing a new institutional model as their members develop a common language, joint interpretative contexts and shared knowledge basis, in local communities of practice and learning (Bathelt et al., 2012).

For example, CORTEX- was created 2000, by the efforts of Washington University, Saint Louis University, Barnes Hospital, University of Missouri and Missouri Botanical Garden. It raised 60 million $ by 2006, and make a major contribution to improve the region, in both public and private sectors, with intellectual, physical and financial resources.

CPI (Centre for Progress and Innovation) and NAREC were established as private not for profit companies with innovation and regional growth as main objectives, in the North East of England. They have included universities as members in the company boards. Over the period 2002-2007 there was invested tens of millions of pounds – for technologic transfer, installation of specialist equipment, production and commercialization of whole spectrum of universities research, basically on chemistry, bio-technology and catalysis, renewable energy and low carbon generation technologies (Connecting Universities to Regional Growth, 2011).

Malapolska Cluster for IT, was created in 2006 by the IT regional players, with main objective of “raising competitiveness of IT companies, effective support of new investments, boost research and innovation in IT business, secure the inflow of highly qualified manpower in the region”. At the present CIT draws together 25 public and private partners as AGH University of Science and Technology or the Marshal of the Malapolska Region (idem).

Conclusions
This paper underlines the benefits of university’s involvement in regional development. Cluster development helps in overcoming state-market false dichotomy and as we have mentioned earlier could be viewed as a shift of paradigm. Actions and outcomes regarding welfare are not expected from the states and big companies and are proportional to joint effort in which different regional organizations get involved in projects of joint interest for the benefit of communities to which they belong. In other words, beneficial results at the social level may be obtained by overcoming the behavioural model of a lone rider (why should I do it, since someone else could do it) by getting involved and taking responsibility for the standard of living. Moreover, the university may contribute to the creation of a climate of trust on which social capital could be built.

The ability to be a catalyster of relationships of higher education institutions is reflected in the regional competitiveness growth. Many companies recognize that highly focused expertise leads to significant growth of production. Therefore, the university could contribute to the creation of a new institutional framework (formal and informal rules) that shall allow increasing significantly its knowledge and innovation potential, and, at the same time, it could become more adapted to meet the needs of the social and economic environments.
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OTHER CONTRIBUTIONS

ADVANTAGES OF APPLICATIONS UV DETECTORS BASED ON STRATIFIED CRYSTALS IN MEDICINE

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The results of elaboration, construction and implementation of ultraviolet radiation detector (UV) with high sensibility are presented, which is used as portative device for measuring of intensity and dose. Photo-receivers possess high stability at the irradiation and in connection with it have multiple practical applications, inclusively for the construction of Roentgen ray detector and of transducer for the registering of electrons fluxes density. The optimal parameters give the possibility to use the detectors in medicine, biology, ecology and agriculture.

Key words: ultraviolet radiation detector, characteristics and parameters, mono-crystals, photosensitivity, photo-resistors, radiation receptors, photo-receiver, semiconductor material

Introduction

The ultraviolet UV radiation acts effectively upon the vital activity of living organisms and plants. This fact leads to their wide application in biology, medicine, agriculture. According to the opinion [1] the radiation UV is divided in three regions: UV A, UV B and UV C. Ultraviolet A (λ=320 ÷ 400 nm) belongs to the solar light which reaches the Earth surface produces a weak erythematic effect; UV B (λ=280 ÷ 320 nm) has the action on the skin, causing a more pronounced erythematic effect followed by pigmentation; UV C (λ=220 ÷ 280 nm) has more dangerous action on the living matter.

A great majority of biological vegetable and animal media absorb the UV radiation with the wavelength shorter than 230 nm. The proteins absorb radiations with the wavelength of λ=275 nm; nucleic acids and fatties are also absorbing of UV. It is sufficient to mention, that the human eye is exposed during its life to the radiation of UV that belongs to the solar radiation spectrum. The main function of ocular anterior pole (cornea and crystalline) is that of focusing this radiation on the retina, being in the same time as an efficient filter for the UV A and UV B and protecting the retina of their dangerous action. The radiation of the wavelength λ=295 nm is absorbed completely by cornea. The crystalline absorbs radiations UV A and UV B (295 ÷ 400 nm) which crosses the cornea and can have photo traumatic effects on the structural crystalline proteins. The prolonged exposition (big dose of UV radiation on the crystalline) leads to the cumulative photochemical deterioration and leads to the actinic ophtalmia, cataract, destroys the retina and leading to the blinding. The mechanism, by which the UV A and UV B radiation produces cataract, is not so clear; the processes of biochemical nature and biological one can take place in the photochemical moment and the formation of cataract [2]. There are numerous epidemiological and laboratory studies, which demonstrate that the photons of UV radiation that touches the eye (especially UV B) are strong cataract dangerous for the human crystalline. This fact generated a great interest for the mechanism of the action of UV B radiation on the crystalline proteins, and also on the ADN of the epithelial...
cells from the crystalline. There are studies in the specialization literature, which shows that the UV radiation determines the changes in the structure of crystalline proteins and can modify the interactions of them, responsible for the maintenance of transparency of the crystalline in vivo [3].

The UV radiation in the optimal doses stimulates the development of young organisms and stops the apparition of the rachitic and the anemia, but the radiation that has a maximum of about $\lambda=300$ nm at certain dose provokes the cancer. The effect of this type of radiation on the plants also depends on the dose.

With the context of that mentioned, the necessity of exact appreciation of UV radiation dose by the UVimeter is evidently, the element of registration of radiation is the radiation UV photo-receiver. The great interest to the UV radiation receptors was increased considerably last years. This interest is thoroughly justified on the fact that the above mentioned spectral range in comparison with other spectral subranges, especially those of visible light, is insufficiently provided with the detectors of small dimensions.

**Explanation and comparison of characteristics and parameters**

Some models of detectors are proposed recently for the UV domain. The elaboration of portable apparatus is necessary for the extended application of UVimeter in the above mentioned ranges. For this elaboration, the application of semiconductor structures as the photo-receivers is necessary, because they posses all necessary qualities: are of small dimensions, resistant, and self supplying, posses the guaranteed protections [4]. For example, the authors of the paper [5] propose detectors with barrier on the surface of the epitaxial films $n-n^+-GaP$. The measurement device of UV radiation UVR-21 is made on their base. The simplicity of production is mentioned in the paper as the quality of advantage and their exploitation. The researchers from the Ukraine SPhI of AS suggest photodiodes made on the base of halogenides of Cd for the commercialization, which can be applied for the registration of UV in different subranges of wavelengths [6]. We suggest different detectors for this spectral range on the base of layered multisulphides [7,8]. The technology of preparation of layered monocrystals is simply, but the method of appreciation of characteristics is already elaborated, being described in the papers [9-11]. For the bacterial subrange the photoresistors of the oxide and of cadmium aluminum sulfide are elaborated $(CdAl_2S(O_2))$ [12].

An analogical UVimeter with those mentioned was elaborated, built and implemented by the coworkers of State University of Medicine and Pharmacy “Nicolae Testemitanu” at the Otorhinolaryngology and the department of Human Physiology and biophysics, in collaboration with the Applied Physics Institute of Moldavian AS [7, 13-15].

One of the basic properties of semiconductor material used for the elaboration of UV radiation detectors is the large band gap ($E_g \geq 3.0$ eV) necessary for the exclusion or reducing to the minimum the sensitivity at visible and infrared radiation. This request is satisfied successfully by the compounds $Zn_3In_2S_6 (a)$, $Zn_3GaIn_5S_6 (b)$, and $Zn_3AlIn_2S_6 (c)$ that belong to the group of halogenides with the crystalline structure as the form of layers and have the energy bang gap equal to 3.05, 3.25 and 3.37 eV respectively [10, 14]. The photoreceivers are elaborated and built with the spectral characteristic as the rectangle shape ($\Pi$), on the base of layered monocrystals, which have the high sensitivity in the limits of photons with the energy higher than the energy band gap $h \nu > E_g$. This property is characteristic for the named transition due to the small speed of recombination on the surface of these semiconductors. The process of elaboration and building of photoreceivers is described in the papers [13-16]. The above mentioned monocrystals were used in order to build the photoreceivers. The monocrystals present the mounts with the surface area $S \geq 100$ mm$^2$, which are cleaved easily up to the thicknesses of 10÷500 $\mu$m.

The photodiodes with the surface barrier (SBS) – Shottky diodes were elaborated as the photosensitive structures which have the following principle advantages:

- high photosensitivity into a high spectral range of wavelengths;
- electrical current supply device is not necessary, because the photocurrent is generated on the base of radiation that is received;
- Lux – amperical characteristic is linear into a large interval of received flux;
- simple technology of fabrication.

The detailed study of SBS was performed with different contacts on the base of layered monocrystals ZnIn$_2$S$_4$ [9, 10]. The analysis of obtained results allowed the formulation of their performed characteristics.

The film of Pt with the thickness of 10-15 nm was used as the rectification contact with the uniform transparence in whole range of near UV. The layer of ITO serves as ohm contact (mixture of SnO$_2$ and In$_2$O$_3$). Both contacts were deposited on the crystallographic planes by the method of thermal vaporization into a vacuum (0001) situated on both surfaces with the thickness of 10-20 nm. The coplanar contacts were deposited in the case of the detector on the base of the compound CdAl$_2$S(O$_2$).

Figure 1. The spectral dependence of photosignal of Shottky diodes on the base of the compounds Zn3InAlS6 (a), Zn3InGaS6 (b) and Zn3In2S6 (c) with the rectifying contact

The normalized spectral distribution of the photosignal of SBS made on the basis of multisulfides $a$, $b$ and $c$ is presented in Fig.1 (T = 300 K), which has large distribution and more pronounced removing in the range of short wavelengths in comparison with the photoconduction spectra. This is explained by the leakage of charge carriers in the contact region of the respective structure.

The value of forbidden band gap $E_g$ of the compounds $a$, $b$ and $c$ increases in the named order, but the maximum of spectral distribution of the signal is removed in the direction of short waves of spectrum. In this case the SBS can be built, whose photosensitivity spectrum covers the entire near UV region, but with decreased relative sensitivity in the visible spectral range ($\lambda = 380$ – 400 nm).

The maximum of the open circuit voltage ($V_{OC}$) of the structure makes 400 – 600 meV and the rectification coefficient is $10^2$ - $10^4$. The maximum of $V_{OC}$ spectrum is at 3.5, 3.7 and 3.2 eV for the SBS made of the compounds $a$, $b$ and $c$, respectively.

The filters УФС – 2 and ЖС – 3 with the thickness of 0.1 cm are used in the real receivers for the limitation of spectral sensitivity and exclusion of non-desired band. The
typical spectral characteristics are presented in the figure 2, but the main parameters of detectors are presented in the table 1.

![Figure 2. Spectral characteristics of photo signals of diodes:](image)

(1) Pt-Zn$_3$In$_2$S$_6$ without filter;
(2) with filter;
(3) Pt-Zn$_3$Ga(Al)InS$_6$ with ЖС-3 filter

The research of the process of endurance of photodiodes exposed by UV radiation with high intensity ($\sim$10$^2$W/m$^2$) and long (3.6·10$^5$ s and more) proved that the structures with the contacts of gold or platinum do not indicate any omens of endurance. The application of these metals is preferable, because they influence little the cost of photoreceiver and for one device only 2 mg of Au or Pt are consummated, the duration of functioning of photoreceiver is enough long. The photoreceivers are applied for the measurement of absolute values of the UV fluxes radiation and work 4-5 years. The UVimeters and dosimeters are elaborated for UV radiation on their base. Both high stability and the simple system of registration of the signal provides for these devices the considerable advantages with respect to those built on the base of other compounds [15].

<table>
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<th>Main parameters of detectors</th>
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<td>Current sensitivity, A·cm$^2$/W</td>
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<td>Upper L – $I_{pc}$ line limit, W/cm$^2$</td>
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<td>Base resistance, $\Omega$</td>
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<td>Photosignal duration, s</td>
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The LAC of SBS diodes on the base of layered crystals is linear in the large limits of the intensities of UV radiation (up to 10$^{-2}$ W/cm$^2$). It is evident that the UVimeters used for the measurement of smaller intensities will work long term. In order to increase the functioning term, the neutral homogenous filter for the near UV was used, which attenuate the intensity of about $\times$10, $\times$100 times. The filter represents a layer of Ni with the respectively thickness deposited on the support of quartz by the method of vaporization into a vacuum.

The elaborated photoreceivers on the base of Shottky diodes Me-Zn$_3$In$_2$S$_6$ have sensitivity in the fields of wavelengths 220÷400 nm. In order to reach some high performance of sensitivity in the field of spectral bands with the erythematic effect A, B and A+B, the cheap optical filters were used on the base of vitreous compounds. In order to register the radiation from the range A+B, the more
convenient is the filter UFS - 2 with the thickness d=1 mm, but for the registration of the field A the system composed of filters UFS - 1 (d=1 mm) and SS-13 (d=2 mm) was used or the system composed by filters UFS – 1 (d=1 mm) and FS - 1 (d=2 mm). For the registration of the field B the filter UFS - 1 was chosen (d=1 mm) in the combination with GS - 3 (d=2 mm). Thus, for all three domains of erythematic radiation the filter UFS-2 must be used, it was installed in the interior of the transducer, but for the filter SS - 13 (FS - 1) and GS - 3 the possibility of dynamical installation was foreseen. For the commodities of the users the special construction [14] was elaborated that in front of transducer the obturator disc with three windows is installed (without filter and with filter GS-3 or SS-13 (FS-1)). Rotating the obturator disc, the fixing of one from those three windows in front of transducer takes place for the registration of radiation dose or the intensity in one of the above mentioned domains. It is evidently, that the standardization of electronic block was performed separately for each of those spectral domains (A, B, and C). The used crystals as is stated in the paper [17] have the high stability and, so that the elaborated photo receivers on their base will resist to the action of physical factors.

The spectra of elaborated photo resistors on the base of ceramic $CdAl_2O_4$ and mono crystals $CdAl_2S_4$ are presented in the figure 3 [12]. They cover the spectral range 220÷320 nm with high sensitivity at the wavelength of about 250 nm. The diodes have the high stability of functioning into a medium with a high degree of humidity, maintaining the absolute sensitivity of $\sim 10^{-5}$ A·cm²/W.

The compounds with the stoechiometrical vacancies, from which belong also those studied, have the high level of stability. Thus, we can look forward, that the devices will resist to considerable fluxes of ionized radiation. In order to study the stability of photodiodes at the action of radiation of radioactive nature, the structures $Pt-Zn_3In_2S_6-In$ were studied at the action of electronic flux with the energy about 40 keV. As the dept of penetrating of electrons by semitransparent electrode of $Pt$.

![](image)

**Figure 3. The typical spectra of the photoconduction of ceramic $CdAl_2O_4(1)$ and $CdAl_2S_4$**

in the monocrystals does not exceed some μm, the influence of ionization belongs to the lacked portion of the diode, but the space of the semiconductor with the thickness of about 10-20 μm is not affected practically to the influence of radiation. So that, in order to lead the influence, those parameters were chosen that determine the region of barrier: the spectral distribution of Voc, sensitivity, direct portion of volt-amperic characteristic at small voltages.
and indirect current. These parameters were measured for a set of diodes, before and after irradiation with the doses $6 \cdot 10^{16}$, $10^{17}$, $6 \cdot 10^{17}$, $10^{18}$ el/cm$^2$. For first two doses the characteristics of diodes coincide with those initial. The change of the parameters of diodes are observed beginning with the dose $6 \cdot 10^{17}$ el/cm$^2$ and is manifested by the changing of photosensitivity and maximum of Voc, the direct and indirect approximated increasing four times, the removing of the maximum position of photosignal to small energies of about 0.6 at the dose $10^{18}$ el/cm$^2$.

The combination of high values of photosensitivity and of stability creates the perspective that the multicomponent halogenides compounds can be used as the detectors for Roentgen radiation. The detectors of Roentgen radiation were built experimentally on the base of the compounds $a$, $b$, and $c$ with the resistance at darkness $10^9$ Ohm and high sensitivity in the range of quanta 1-10 keV. The factors of amplification, measured in the range of energies 2-7 keV exceed the value of $10^4$ el/quantum. The time resolution does not exceed $10^{-9}$ s. These parameters allow the recommendation of named detectors for the diagnosis of laser plasma. We mention that on the base of above described detectors, using the experimental possibilities of the Institute of Applied Physics of AS of RM, the portative UVimeters were built and elaborated for the Republican Hospital of Children “Emilian Cotaga” where they were approved successfully. In conclusion we mention, that using the layered crystals of $Zn_3In_2S_6$, $Zn_3GaInS_6$, and $Zn_3AlInS_6$, the detectors of UV radiation with high sensitivity were built and implemented in medicine at the portative devices for the measurement of intensity and radiation dose (practically all near UV). For example, we show the photographs of two devices built on the base of our elaborated diodes. (figures 4 and 5).

**Figure 4.** The device with logarithmical scale for the measurement of intensity values in the limits of $10^{-4}$÷10 mW/cm$^2$ from the range of wavelengths 280÷400 nm. The supplying is 4.5 V

**Figure 5.** The measurement device with the digit display of UV radiation with the intensity in limits of values $10^{-4}$÷2·10 mW/m$^2$ the spectral domains, nm: 280÷400, 320÷400, 320÷360; the dose - 0÷1.6·10$^5$ J/m$^2$. The current supplying – 220 V
These photo receivers with high stability at the irradiation and in accordance with it, they can found multiple practical applications, also for the creation of Roentgen radiation detectors on the base of the named semiconductor compounds and for the registration of density of electron fluxes.

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PHOTOELECTRICAL PROPERTIES AND THE STABILITY AT RADIATION FOR MONOCRYSALS ZNIN$_2$S$_4$

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This study presents the results of investigations on the conductivity and irradiation stability of single crystals ZnIn$_2$S$_4$ in a wide range of incident electron energies ($30 \div 75$ keV ) and the respective doses ($10^{14} \div 10^{20}$ cm$^{-2}$). It considers the possibilities to manufacture accelerated electron detectors and assesses their parameters. Considering that the energy values of the order $10^2$ keV are near the threshold of structural defects of intensive formation, the influence of this phenomenon on the detector parameters is subject to the analysis.

Key words: photoelectric properties, ternary combinations, Irradiation conductivity, electron beam, irradiation stability, crystals' surface, binary semiconductors

Introduction

The materials having semiconductor properties are quite sensitive and change their essential physical properties under the action of external radiation and elementary particles bombarding them with high energy. Usually, under the action of external radiation or different high energy particles in crystals, following the ionization, additional scattering centers of charge carriers appear.

Experimental and theoretical study of these processes is up-to-date in terms of characteristics stability of microelectronic devices and prevention of degradation processes on different devices made of different materials with semiconductor properties. Therefore, it is quite important to perform researches related to the influence of electron beams with energies up to 100 keV on physical properties of semiconductors. To highlight the changes that occur in optical, photoelectric and irradiation properties, investigations were carried out on optical absorption spectra, photoconductibility for non-irradiated samples and for those irradiated with different doses of electrons at certain energies. Depending on the doping element, the impurity concentration is in the range of $(1,2 \cdot 10^{19} \div 2 \cdot 10^{20})$ cm$^{-3}$. Growth technology of ZnIn$_2$S$_4$ is described in detail in [1-2].

Experimental results on irradiation conductivity

This paper describes the experimental results regarding the change of photoelectric properties and irradiation under the influence of electron beam accelerated in ternary combinations of the type $A^{II}B_{III}^{III}C_{IV}^{IV}$, based on the example of typical ternary compound ZnIn$_2$S$_4$. For research we chose perfect slabs in terms of defect density, with an outer surface that had quality optical thickness from 0,20 to 1,0 mm, obtained from gas phase using iodine as a carrier agent.

Irradiation conductivity was measured in vacuum at the temperature of 296 K, both in the stationary as well as modulated conditions according to the method described in [3]. Current density of the electron beam was provided by the flow of $10^6$ cm$^2$ s$^{-1}$ particles and the bombardment energy was 30; 40; 75 keV.

Based on the dependence of the relative resistance change $\frac{R}{R_0}$ and the current density of the electron beam, the three samples of ZnIn$_2$S$_4$ at 40 keV (figure 1), one may observe that this dependence for all samples is basically a linear function throughout the study period. The dependence between relative resistance ($\frac{R}{R_0}$) and irradiation dose at different levels of excitation of electron
beam energy was also investigated. According to this dependence, it is observed that at 75 keV (curve 1, figure 2), the resistance decreases slightly, in a narrow range of variation of the irradiation dose. At the electron beam energy 40 keV (curve 2) this passage is observed to be very slow, which is approximately linear, and at the energy of 30 keV the dependence on the dose is a linear function in the studied range.

For all measurements described above, a constant conductivity of the samples in the dark was observed, that of \( (10^7 \div 10^9) \, \Omega \). At high doses of radiation \( (10^{18} \div 10^{20}) \, \text{cm}^{-2} \), irreversible changes of the resistance in the dark were observed, which indicates a sudden increase in the concentration of balanced charge carriers, in the volume of monocrystal (at least to the depth of penetration of the electrons \( \approx 5 \, \mu m \)).

![Figure 1](image1)

**Figure 1.** Dependence of relative resistance \( R / R_0 \) upon the size of the electron beam current for the samples of \( \text{ZnIn}_2\text{S}_4 \), sample thickness: 1 - 0, 20 mm, 2 - 0, 5 mm, 3 - 1, 0 mm.

![Figure 2](image2)

**Figure 2.** Dependence of relative resistance \( R / R_0 \) and radiation dose at different values of the electron beam energy: 1-75, 2-40, 3-30 keV.
Figure 3. The dependence $\Delta R / R_0$ of single crystals $ZnIn_2S_4$ according to the dose of irradiation, $T = 296K$, 1 - 50 keV, 2 - 100 keV

In figure 3, it is shown the dependence $\Delta R / R_0$ according to the dose of irradiation, wherein $\Delta R = R_0 - R$, $R$ is dark resistance of the sample after irradiation dose of $(10^{18} \div 10^{20}) cm^{-2}$. According to this dependency one may conclude that, at a radiation dose of $10^{20} cm^{-2}$, the resistance in the dark becomes very small, it is approximately $10^2 \Omega$.

Figure 4. The temperature dependence of the parameter $\phi$ for accelerated electrons:

1. $\phi$ - 50 keV; 2. $\phi$ - 100 keV; $5 \cdot 10^{18} cm^{-2}$

Figure 4 represents the temperature dependence of the parameter $\phi$ for accelerated electrons with energy: 1 - 50 keV, and 2 - 100 keV at the radiation dose $5 \cdot 10^{18} cm^{-2}$.
wherein \( \varphi = \Delta R/R_0 \Phi = cm^{\cdot^2} \). Following the above it can be mentioned that the activation energy of the conductivity decreases along with the decrease of sample resistance.

Based on the experimental results concerning the cathode conductivity of single crystals \( ZnIn_2S_4 \), it can be concluded that the conductivity type of the single crystals in this case does not change. We assume that the concentration excess of balanced carriers occurs due to the activation of small donors, which are probably formed at an intensive irradiation. It was experimentally established that the increase in dose leads to reduction of activation energy. For example, for the dose \( 5 \cdot 10^{18} \text{ cm}^{-2} \), the activation energy was 0,006 \( eV \), that is comparable to the ionization energy of Zn atoms between nodes \( Zn \) for the network \( ZnO \) according to the data [4]. So we could say that following the interaction of medium-energy electrons in \( ZnIn_2S_4 \), the zinc occurs between the nodes of crystalline network.

Based on previous results, we will examine some exploitation parameters of electron detectors with energies up to \( 50 \text{ keV} \) made on the basis of \( ZnIn_2S_4 \). For electrons with \( 50 \text{ keV} \) energies having the number of excited electrons per second \( \approx 10^{18} \text{ s}^{-1} \), the lifetime of free carriers is approximately \( (\tau \approx 10^{-3} \text{ s}) \) and the interior propagation coefficient of carriers at calculated contact voltage of \( (5 \div 20) V \), reaches the value of \( \approx 10^{-1} \) [5], which is obviously lower in comparison to \( 10^8 \) for the binary compounds. Being experimentally determined, the detector’s power reached the value of \( 4 \text{ W} \cdot \text{cm}^{-2} \), as for the detectors based on \( CdS \) and \( CdSe \), it is \( 10^{-3} \text{ W} \cdot \text{cm}^{-2} \) [6].

To develop detectors of high-energy particle and X-ray irradiation, it is necessary to take into account other advantages: simple manufacturing of detectors and their operation in steady-state and modulated conditions; high stability to the action of high energy electron beams and X-rays. Investigations on the development of new-type detectors or of their new modifications allow obtaining some performances of exploitation parameters compared to the existing ones.

Having high stability at irradiation, the investigated compounds have many practical applications including for the construction of Roentgen radiation detector. In this way, the optimum parameters make it possible to use X-ray detector in medicine, ecology as well as in agriculture.

**Experimental results of irradiation stability**

As a result of experimental investigations, there have been determined photo-conductibility spectra (FC) of layered compounds \( ZnIn_2S_4 \) for the initial sample (figure 5 the curve 1) and irradiated with different doses of accelerated electrons \( 10^{18} \text{ cm}^{-2} \), \( 10^{20} \text{ cm}^{-2} \) with the energy \( 60 \text{ keV} \) (curves 2 and 3, figure 5). From the comparison of these curves, it is observed that after irradiation with the dose \( 10^{18} \text{ cm}^{-2} \), highest spectrum is moving towards the area of low energies located at \( 2,68 eV \) (curve 2, figure 5). On the high-energy wing of the spectrum, it is clearly perceived a platform feature at \( 2,85 eV \). It should be noticed that at the radiation dose \( 10^{18} \text{ cm}^{-2} \), signal intensity FC in the maximum located at \( 2,85 eV \) increases, which corresponds to the fundamental absorption.

In the research it was found that the spectrum FC of mono-crystals \( ZnIn_2S_4 \) undergoes radical changes by increasing the dose of irradiation (curve 3, figure 5). At the irradiation of \( ZnIn_2S_4 \) with accelerated electron of \( 10^{20} \text{ cm}^{-2} \) dose, maximum value of sensitivity is shifted even further to the area of low energies and is set at \( 2,34 eV \). On the high-energy wing of the spectrum, an additional maximum to the energy \( 2,63 eV \) is highlighted, giving way, in terms of intensity, to initial spectrum (curve 1). At high doses of radiation \( 10^{20} \text{ cm}^{-2} \), the samples’ resistance to the dark decreases irreversibly up to \( 10^2 \Omega \text{cm} \) and photosensitivity decreases accordingly. Similar studies have been carried out on the crystals \( CdGa_2S_4 \) that have demonstrated that at their irradiation with \( D \approx 10^{20} \text{ cm}^{-2} \), significant changes occur in optical and radiation properties.
Analysis of results

To summarize, based on these results, we could notice about high stability of optical and radiation properties of semiconductor compounds $CdGa_2S_4$ and $ZnIn_2S_4$, which is also demonstrated by the results of investigations of the optical absorption spectrum of $ZnIn_2S_4$ samples, irradiated with accelerated electrons with energy 50, and respectively 100 keV, at a density of electron beam $1,5 \cdot 10^{-2} A\cdot cm^{-2}$ and at the temperature of 296 K (Figure 6). Exponential sector of the absorption spectrum can be explained by the presence of "tails" of state densities of the conduction band conditioned by the disorder of cationic subnet. This fact is described in detail in the case of $(ZnIn_2S_4)_{[2]}$.

Based on the study of the bibliographic data, it can be noticed that significant changes of the properties of elementary or binary semiconductors$[7]$ at their irradiation with the electrons of energies up to 100 keV occur starting by the doses $(10^{14} \pm 10^{16}) cm^{-2}$ and in the case of compounds $ZnIn_2S_4$ and $CdGa_2S_4$ essential changes in optical properties occur starting by doses higher than $10^{19} cm^{-2}$. In the case of ternary semiconductor compounds, which have a forbidden energy band, higher than $3 eV$, while radiating them with dose $\approx 10^{14} cm^{-2}$, it shows a reduction of optical absorption in the ultraviolet diapason of spectrum, which is called - the effect of low doses.

These results correlate with the data presented in$[8]$. The absorption increase is recorded at doses higher than $10^{15} cm^{-2}$. The results we obtained and presented in this work concerning the nature of clear structure of the spectrum FC of single crystals $ZnIn_2S_4$ irradiated at dose $10^{18} cm^{-2}$ are consequences of state improvement of crystals’ surface at the initial stage of irradiation, which we suppose, influences the recombination of free charge carriers at the sample’s surface.

At the same time, we find that the formation mechanism of the threshold defects in layer compounds $ZnIn_2S_4$ is initiated at doses higher than $10^{18} cm^{-2}$.
Figure 6. Optical absorption for single crystals $ZnIn_2S_4$ irradiated with accelerated electrons: 1-50 keV; 2-100 keV; $j=1.5 \cdot 10^{-2} \, A \cdot cm^{-2}$; $T = 296 \, K$.

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ABOUT SOME TRENDS OF HIGHER EDUCATION SYSTEM IN THE REPUBLIC OF MOLDOVA

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In recent years Moldovan educational system and educational market go through difficult moments - universities face a lack of students, due to the small number of the graduates, many of whom are poorly trained in lyceums; secondary classes are not formed in lyceums, some schools for different reasons become gymnasiums, etc.

This is a current theme in Moldova; it creates the impression of inability to adapt the educational market to social and economic challenges, the isolation of educational services from new trends in the development of educational systems in the world, the inability of revising traditional concepts of education.

Key words: service market, education, development, education services, unemployment, student.

Moldovan education system is in continuous change, both rapid and controversial. Some criticize the Ministry of Education, others support it. There are changes sometimes hard to understand. It is created the impression of inability to adapt the education market to the social and economic challenges, of isolation of education services from new trends in the development of education systems in the world, of inability to rethink traditional concepts regarding education, the essence and the role in the development of states and nations, finally, of the new socio-economic realities established in Moldovan society after the separation from the old system and the transition to a new model of development.

Education is a service that has always accompanied the human society, reflecting transformations and priorities granted by states and governments. The changes now taking place in the world in the modern societies allow education to redefine its roles and the diversification of its functions in the context of the impact of information technology and its effects on knowledge.

At the level of intelligence and reason, in the modern world education is conceived as a decisive element in the development of economy and society, in the context of the growing influence of human capital. The role of educational services of the education market today are determined by the tasks arising from the building of the democratic and legal state, the transition to a market economy (real, not simulated) and connection to international trends of economic and social development.

Contemporary economy of knowledge requires a qualified and employed population, the development of new sciences and their transmission in the processes of education and professional training, dissemination by information and communication technologies and the use of new knowledge in industrial processes or services.

That is why in Republic of Moldova it is important to discuss the problem of economic approach and importance of an educational system, comparable within the meaning of its efficiency / productivity with other EU education systems.

The Republic of Moldova, like other developing countries, is marked by about 24 years of a permanent and comprehensive reform of the education system, which often goes with the exchange of party systems and economic crises which deepen social inequalities, increase budget deficit, amplify unemployment and eventually creates economic difficulties in financing the education system.

For our country in general should be used the term crisis of the educational market, which covers two major issues: the impossibility to cover education costs exclusively from
the state budget and inefficient management of resources allocated to education. Different education financing mechanisms have been tried during the recent years, improving training and recruitment of teachers, establishing national criteria for assessing educational performance, there are some attempts to devolve the funding mechanisms of education etc.

More generally, the decentralization of the education system, of educational market, means the transfer of skills (organization, planning, financing) from the central level to the regional level and even at educational institutions.

In Moldova, after the early 90s, the transition from a Soviet political system and centralized economy to a market-centred economic mechanism led to a rapid service market expansion. What achievements have been obtained for more than 20 years?

Most relevant are:
- Development and promotion of the national curriculum at the levels of preschool, primary and secondary education;
- Application of new generations of textbooks, sometimes developed according to global criteria in the field;
- The formation of a national evaluation system of school results;
- Modern reboot of the teacher training system;
- Reformation of the higher education market etc.

But during the reformation of the educational system were identified also a number of obstacles in the development of educational market:
- Insufficient financing according to the necessities related to the underdevelopment of the economy;
- Vulnerability of the material base, especially in districts;
- Continuous impoverishment of the population, which led to the impoverishment processes of the educational services market;
- Unofficial participation of parents to the financing of the service market in various forms as fluxes, teacher salary supplements etc.;
- Centralized planning of the number of students and financial resources allocation depending on the political circumstances of the ministry and the legislature etc.

So, on the background of these mutations and changes appear premises for new relations in the education market.

We believe that it requires a shift from paternalistic model of social policy to the subsidiary one and the development, new necessary organizational-economic mechanisms. It means giving up the full assurance from budgetary sources, above all in higher education (only in Chisinau are several institutions that call themselves university and train teachers, but Nisporeni district lacks qualified teachers), reducing State Universities through consolidation, transition from investment system in education based on the comparison between expenditures and revenues for education services and human capital produced with its help. In the created conditions, investors become the family, the business environment and the state. It is necessary to be understood that it is not only important the volume of the human capital product, but rather capacity, quality, productivity, flexibility and innovative possibilities of the person, but rather the capacity, quality, productivity, flexibility and innovative possibilities of the person. Labour force created by the educational service market learns during the entire life, demonstrating a continuous capacity for training and accumulation of new skills. We believe that for a better provision of educational services are needed the development of mixed investment from the business community, the state, which is widely used, for example at the “Alecu Russo” State University, the company “Drexilmaer” and other educational institutions. In general, we believe that private investment in education is a good way to raise the prestige of the educational institution, to optimize the demand for educational services and overcoming structural deformations of the education system, demand for labour connecting to the structure of demand for educational services etc.
What is the role of the state on the educational market?

First, the state must regulate the volume and structure of demand and supply on the educational market in accordance with Moldova's development needs, the complex analysis of trends in social and economic development and long-term prognosis. We note, also, that the State participation in education funding must confine itself to examining those issues that cannot be derived from the application of market mechanisms based on private funding. And thirdly, the state must provide a business environment that supports education facility, should develop its own educational centre and finance continuous training of their employees.

Fundamental political decision which should underpin the conception of the new Ministry of Education is the transfer production of educational services from the state sphere in the competitive environment of the market, a thing tried, but failed due to various partisan interests. That will bring to the increasing of the quality level of education, ensuring the conformity of education to the population and economic development needs of society, expanding consumer freedom of choice of ways of obtaining education, more efficient use of public resources as a result of competition among educational institutions. Generally, the existence of classical education market requires focusing on two aspects of market behaviour: possibility to choose, given to the consumer and granted autonomy of the educational institution. Many researchers to define this type of market also used the term “evasipet”. Unfortunately, still is poorly understood that in education field, as in normal market conditions are present key elements that define and characterize the market: supply, demand, conditions and rules interact supply and demand, price competition etc.

And finally an essential element necessary educational services market is cutting red tape, facilitation of the educational services without different plans, programs, projects and other automatically taken from the West to give seriousness to the educational process. It is not a great secret that qualified teachers instead of improving their knowledge and skills are forced to make various reports. It is known, that the European system in general, and particularly from the Bologna is heavily bureaucratized. That does not mean that we should respect it to every detail, or not to try to improve it.

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THE EDUCOLOGY OF PROFESSIONAL EDUCATION
AND LABOUR MARKET

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The paper studies the relationship between professional education and labour market from the perspective of graduates’ insertion on the labour market. This fact determines their economic and social welfare and the social welfare in general. It also analyses the mismatch between society’s needs and professional education offer; it defines the final learning skills as a whole; the professional education educology. It ascertains a functional regularity relying on didactic-organizational conditioning dependency on social experience learning of those who learn. It makes the conclusion that the labour market is not the educational factor that “dictates” the professional education, but it shall be the professional education the decisive factor of the labour market.

Key words: integration/insertion on the labour market, influence factors, collaboration, new development stage, holistic orientation/ integration/completeness, educology

It is known that vocational education is a special segment in the education system, characterized by a more stable and conservative attitude in relation to school education; periodic adjustment, but slow, to new social conditions; conformism, which leaves little room for innovation etc.

In the coming years, the European professional education will contribute significantly to the achievement of a Europe of knowledge that is creative and innovative. Facing many socio-economic problems, Europe can achieve this goal only if they develop fully the capacities of all its citizens and engage them in continuous learning (lifelong), as well as in expanding participation in vocational education.

Today vocational education is in a deep process of transformation and tends to shape its activities in line with economic realities and social issues. One of the priorities of the university educational system, as stipulated in several papers and documents [1, 2, 3, 4], is the formation of competences and necessary skills for socialization and the formation of necessary skills for the integration in the labour market and achievement of their professional career. Based on this objective, the educational system achieves its mission of workforce formation for the national economy. In the recent years more and more is found, in the view of many practitioners, so-called weak correlation between the vocational training system and the world of work.

Educational thinking suffered in fact a marginalization in contemporary academic life, being colonized by a form of cultural potential-bureaucratic agreement, which seeks to destroy old meanings and include new, supposedly progressive or more recent, was colonized by the market, in an attempt to create a free exchange of values and to use that mechanism instead of rationality. As J. Habermas mentions [Apud 5, p.415] it is necessary to introduce the competences of professions and everyday life. Consequently, cannot be realistic the solution of withdrawal of vocational education in a position claimed "depoliticised", sooner it is recommended its shaping as an actor in public debate on the organization of vocational education and research. Or, leaving the pedagogy oriented by universal and publicly discussed values is nothing but a prerequisite for obscurantism. Vocational education can capitalize its autonomy only if it becomes an actor in the space of the public debate.
Currently, in the vocational education the disciplinary production of technically valued knowledge and qualifications is reported more to the economic environment, than to the autonomy standards. Its functional connection as a whole and its components to the economic and administrative environment is so high, that it is taken as definitive fact and placed at the basis of a functionalist vision [Ibid, p.420].

It is also undeniable that education and continuous training are essential for the insertion of graduates into the labour market. We are witnessing today the replacement of direct transition model in which school and work succeeded each other with an indirect transition model in which school and work overlap for certain periods of time.

Therefore, appears the need in (a) determining the extent to which vocational education is involved in educating and training young people, in preparation for filling a job after graduation; b) determining the knowledge and skills acquired during the studies, because the jump into work highlights the obstacles young graduates have when entering the labour market and their opportunities after graduation; (c) determining the ability of the vocational education to form them certain skills and opportunities as the basis to fill a job after graduation.

The insertion of young people into the labour market plays a decisive role in determining their economic and social welfare.

But here appears a fundamental problem of education: a good education, promoting learning based on advanced technologies, must satisfy and something more important - it must help the learner to know through personal experience the full process of life that will "put" competence and technique in their truly place. The highest function of education is to form integral personalities, capable to see life as a whole. Specialist, as the idealistic, does not deal with the totality of life, but only with part of her, the professional one. The human being must be issued inside by the desire to master, to get rich, to have power. Vocational education must, today, help young people find each vocation, to graft their inner nature. To be an integrated human being is to understand the whole process of consciousness, in its most hidden regions, as in the exterior ones.

Indeed, societies today face the consequences of the global financial and economic crisis. In order to sustainable improve and develop the existing economy, European vocational education, dynamic and flexible, must rely on innovation based on integration between education and professionalization at all levels. About this was already written in some scientific studies being made and a number of conclusive ideas, such as that concerning the formation of the integral specialist, able to be found in any area of professional activity and social life and complained of this socioeconomic context. This specialist will meet the expectations and will do exactly what should be done, in agreement with the profession and social needs. This will get from a specialist for any profession to a specialist belonging to certain profession, as an intellectual "product". Science itself is knowledge, and professional education is a citadel of the profession, science has a definite object of knowledge, but vocational education combines cognition combine with metacognition, providing success in the knowledge society.

Vocational education is a public responsibility, so the aim is to provide vocational education institutions with the necessary resources to continue to fulfil the full range of objectives, such as preparation for life as active citizens in a democratic society; preparation for career and personal development; creating and maintaining a broad and advanced knowledge base and stimulating research and innovation. Current reforming of systems and policies in vocational education continues to be incorporated into the European values of institutional autonomy, freedom and social equity and requires the full participation of all actors of vocational education.

Factors influencing vocational education institutions are different:
- globalization, commercialization and impact of economic crisis;
- tension between the needs and objectives of education;
- organization, management and operating costs;
- transformation of vocational education in an equitable education etc.
The problems detected by analysis and proven results configure in the following way:

- mismatch between the needs of society and what offers vocational education system (still in the 1980-90 in the USA with the statement of L. Palerman that the main barrier of the progress in the economy is the way to think of a perfect education), although it is needed a radical change of the vocational education [7];
- national vocational education system must reflect specific needs and traditions as regards education of the society it serves;
- vocational education is forced to challenge the predominance of science that gives way, according to German sociologist Beck Ulrich, to the "risk society" in which environmental risks are growing faster than benefits of social and scientific progress etc.

A revised model of vocational education would mean:

- competition of vocational education with new societal conditions;
- focusing on a learning system (learning production), not of instruction (learning involving the effort of the learner and training – teacher’s effort);
- dividing learning responsibility between the institution and the learner; between every employee of the institution and the learner;
- involvement of learners in knowledge creation;
- not facilitating access to vocational education, but the success of vocational education;
- creating conditions by which to increase the skills of learners;
- increasing efficiency not on increasing resources investment, but focusing on productive learning;
- periodic evaluation of learning, more than teachers teaching evaluation;
- determination of the final learning competencies as a whole must determine parts (programs, contents, forms, etc.);
- focusing on education based on understanding, will be learnt so that they could transfer knowledge to new situations, to new problems;
- organization of a powerful learning environments so as to maximize learning (functional teams, specialists in new learning technologies and specialists in the respective discipline, other specialists);
- learning the reflex to work intensively to be self-taught and autonomous;
- increasing costs in vocational education, which must be expensive, generally being linked to high consumption of workforce;
- providing the necessary balance between the requirements and hedging possibilities with human resources, extended at more advanced technological level and globalized market requirements;
- development and strengthening of vocational education educology, as a science about education that studies the general laws of the organization, functioning and development of vocational education sphere [8.9, 10].

Namely this latter area seems to be reasonable under the new conditions of socio-economic valorisation of vocational education. Its basic principles are to charge the learning process:

- as a centre that integrates knowledge gained from other sciences;
- as an open system, which includes the requirements, conditioning and resources “brought” into it from the outside;
- holistic orientation, which allows to examine both development problems of a theory of vocational education and how to achieve in practice.

Namely holistic orientation allows considering man as a superior value and the purpose of any learning process. Integrity, as a category of the educology, offers the opportunity to examine educational processes on the basis of quality, reflecting the quality of the process in the quality of results: the object-procedural dualism offers the opportunity to determine the quality of the process in
the dyad “Human-System”, analysing the continuity of the dyad “Education – Activity”.

Education, as the object of educology, is examined in the following aspects: a) as an individual and social value; b) as a system of various education institutions; c) as a special process; d) as a multilevel result.

Educology, as a complex theory of educational processes, has been formulated in 1964 by E. Chtainer, as a synthesis of all knowledge which relates to education, and later, by 2002, to return to this concept. The object of the educology includes the regularities of the interdisciplinary links with other sciences, providing possibility to determine the optimal ways and means of obtaining human being of a certain level of education.

Every creative idea, which appears in the context of object-operational activity, is initially approved in a learning situation, in the form of direct cooperation between “teacher” and “learner”. Therefore, collaboration is an educologic invariant. And collaboration as process always is characterized by the appearance of the content. Typically, aspects of content are “brought” in the communication by one side, and for the second - they are external. The perception and the awareness of the content, assimilation occurs under a deep individualization.

From the point of view of educology, the dynamics of the educational process may be gradual if there is continuity between the educational subsystems. Examining continuity as a universal philosophical category, we should pay attention to the fact that its application in educology is often linked to the constructive cancellation of what it was before. In educology learning is oriented to searching combination of various activity levels of knowledge for the formation of a new state of development.

One of the basic invariants of educology is that the educational process, having a close relationship with actual practice, feels the influence of both internal and external factors. Each educational process is "ordered" by a certain Socium. That is why there is a functional regularity that is based on the dependence of organizational-educational conditioning of teaching social experience of learners.

The content of education is elaborated, in fact, outside and the tempo of development of science most of the time exceed the practice - its immediate using sphere. Concrete educational institution is an intermediary between science and production, while such characteristics as structure, form and instructional methods are inert and are like a brake of the system as a whole.

How can the vocational education-employment relationship problem be solved based on educology:

1. Organizing contents into modular blocks will provide the opportunity to develop their personality in accordance with the theory of formation in stages of intellectual actions and with the structure of the professional activity.
2. Problem integration, built on the base of the correlation of the activity blocks of the specialist and the content of concrete sciences, allows the construction of the education content as a series of teaching tasks and ways of resolving them based on the intellectual development of learners.
3. Multi-object combination of knowledge with axiological orientation implies that the learner, included in an educational process, has requirements for such learning content, that is not already a pre-system, but involves choosing appropriate technologies.
4. Improving the learning environment, removing all barriers in the study process and creating the appropriate economic conditions for students to benefit from the study opportunities at all levels.
5. Expanding participation also will be achieved through lifelong learning as an integral part of education systems. Lifelong learning is conditioned by principle of public responsibility and involves obtaining qualifications, extending knowledge and understanding, obtaining new skills or personal growth. Lifelong learning implies that qualifications may be obtained through flexible learning paths, including part-time studies and studies paths based on individual work (practice).
6. There must be in the vocational education a starting point from which to form not only technical skills, not just technological excellence, mathematics, professional, but also his inner
excellence, thus there is a chance creating a big society, in which will not be poverty, in which there is material equality, but to create a good society is needed the formation of an inner order of the learner. The awareness of this will produce a movement in both directions by a single point.

Any attempt to stop or stagnate the process of modernization of vocational education, as we could press a button, is an action in vain. The secret is here in adapting to the dynamics of modernity that offers resources that can solve the problems it generates and with which can be limited the damage they cause. It is necessary to find the easiest ways of transition from traditional professional institution to the modern one, in which particular institutions it coordinates their actions and establish an order based on universal principles. And it is clear that in this approach appears the risk that the formation of profession’s values can turn into a indoctrination for a docile modernization, which would lead to difficulties, if it reaches the triumph.

The above mentioned led us to the formulation of some conclusions, as meditation and action projects:

- The opportunity of determining which type of society we want: a big society, a good society, a big and a good society.
- It is necessary to see the context of vocational education-labour market relationship wider, in formula: Labour market exists to receive us, but the society as a whole guides us in the personal and professional life.
- Not the labour market is the educational factor which “dictates” the vocational education, but vocational education should be the determining factor of the labour market.
- We will talk not about the vocational education system adapted to the labour market but about the labour market as a result of vocational education.
- Focusing on the triad: professional studies - society - labour market, not on the dyad vocational education –labour market.

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This article analyses the current language situation, the problems of formation of uniform educational space in Russia and other countries, defines the role of the Russian language in the formation of a tolerant linguistic identity. In situations of joint graduate programs of Russian and foreign students Russian language is the most important means of intercultural communication and promotes a tolerant behaviour of students.

Key words: unified educational space, communicative competence, relationship, friend or foe relations, tolerant personality, Russian language in graduate studies, linguistic identity.

Since the mid-2000s, the focus on Russian language in Russia intensified. After the year 2007 had been declared the Year of Russian language, educational resources of the Russian language as an academic discipline at all levels of education were significantly updated. There appeared online tutorials, websites, forums and portals, devoted to the problems of Russian language and its teaching. The most important achievement is the creation of electronic National corpus of the Russian language, which gathered texts of all genres and styles, oral and written, common-literary, dialectal, limited in use, and which is constantly updated.

Special attention to the problems of the Russian language has affected the mass media, which initiate discussions about the Russian language, participate in the formation of interest in the problems of speech among the population, and consult experts-linguists. For CIS countries, these problems appear to be particularly relevant. Russian language as a means of international communication maintains its position where we preserve and develop the unified educational space that promotes the exchange of experience, new technologies of training and education. Strengthens ties with Belarus, Kazakhstan, Kyrgyzstan. Unfortunately, due to recent political events, ties with educational institutions of Ukraine, that used to be very strong, is being destroyed and will be difficult to restore.

Language in the educational space is not only a means of communication but also an instrument with which we explore the world around, digest national and international culture, and master the profession. Changed at the end of the 20th century geopolitical and domestic political, economic and social situation in Russia affected the functioning of the Russian language in the country and abroad.

Numerous publications of linguists reflect the concern of specialists associated with the dominance of English words, the extension of the area of common parlance, other types of stylistically coloured vocabulary, finally, the penetration of the words that were always considered “non-printable”, on the pages of print media. A significant problem is the sharp decline in written literacy of modern man. Today's students are not always prepared to
express their thoughts clearly in written form. With the help of the scientific community and the media, the attention of the government and the Ministry of education and science of the Russian Federation were drawn to these issues. As a result, essay was returned to school as a way for intermediate and final assessment of students. Of course, this will not only promote literacy, but also development of communicative competence of students in the field of writing. It all confirms the need to draw public attention to the Russian language, to use its capabilities in the process of education and upbringing of tolerant personality [1, 2, 4, 5, 9]. The idea is that the dismissive attitude towards the language, its laws, impact on the intellectual and cultural development of the personality. And this is a danger to society as a whole. That is why the attention of the society should be steadily drawn to the challenges of learning the native language at all levels of the educational system of the country.

Most important functions of language - cognitive and communicative play a crucial role in forming the personality. Through the language a person learns that part of the world, which is not given in sensation. The history and culture of a society are studied through language. Language is a means of conveying and receiving information necessary for the development of personality. In the field of international communication Russian language contributes to the knowledge of the Russian culture, and other pedagogical Sciences, the exchange of experiences and the integration into the common educational space. In the dictionary entry, the following is proposed interpretation of the term tolerant: TOLERANT, [lat. tolerantia]. 2. Tolerant of others’ opinions, behaviour, etc. the T-behaviour of atheists to believers. Tolerant, adverb. T. reacting-L. T. to treat someone, smth. Tolerance; [3: 1326]. The relevance of tolerant behaviour in today's multicultural environment, multiplying among national development cannot be overstated. Brought up tolerance from early childhood and throughout the life of an individual requires constant attention, nurturing. Therefore, the formation of a tolerant personality is the task of educators, psychologists, subject teachers and the whole society.

One of the fundamental concepts in learning Russian language is the notion of linguistic identity. At the heart of modern understanding of the language personality is the concept developed by Yu. Karaulov [6]. He characterizes the linguistic identity as “a person, expressed in the language”, “reconstructed in its main features on the basis of the language means” [7]. Linguistic personality in this concept is represented as a three-level structure, comprising: zero level (verbal-semantic), the first (linguistic and cognitive) and second (motivation) levels.

At zero level man masters lexical and grammatical means of language and ways of organizing them. This level provides ordinary communication. Linguistic personality appears on the first, linguistic-cognitive level, which is the development of the conceptual sphere of language, of its hierarchy, cultural components; individual’s linguistic picture of the world is born. At this level there begins the development of the concepts, friend or foe relations, views about the importance and designation of the individual in the world, the major conceptual concepts, which then form the basis for tolerant behaviour of linguistic identity. Second, motivational, level, is there to line up value orientations of the personality, receiving linguistic embodiment. “Linguistic personality begins on the other side of the ordinary language, when there come into play intellectual forces, and the first level (after the zero) of the study - identification, establishing the hierarchy of meanings and values in its picture of the world, in its thesaurus” [7: 36].

As the most important extra-linguistic factors that affect one's linguistic identity, and Y.N. Karaulov has allocated its national identity. Linguistic personality embodies the two sides - the constant (stable, timeless) and variable (relevant). Constant component of the language personality reflects national identity: “what we call timeless and invariant part in the structure of linguistic personality bears the unmistakable imprint of national colouring” [7: 39]. National is present at all levels of linguistic identity. At zero level of Russian linguistic identity of national specificity is expressed in a single language, which forms the particular
national way of thinking. At the first level of the national component of the language personality is manifested in an overall conceptual sphere of the Russian language, the overall picture of the world. At the second level of pragmatic on national is reflected in peculiarities of speech behaviour of Russian people (the rituals of greetings, farewells, requests, etc.). Differences in national-cultural component of a language personality complicate the understanding of undergraduates, and overcome this understanding in a joint study of linguistic disciplines (cultural studies, grammar, text, etc.). The studying of culturally significant Russian texts in small groups, including foreign and Russian students, allows the foreign students to overcome the language barrier, to achieve deeper penetration in Russian language and Russian culture, and allows Russian students to master the basics of tolerant behaviour and to prove themselves as a tolerant linguistic identities, assisting in the development of a new educational environment.

Y. N. Karaulov identified the following areas forming linguistic personality: social, historical, psychological and linguistic [7, 22]. In each of these areas laid the foundations of tolerance and goodwill towards the people of the other culture, other worldview. In the social sphere linguistic personality learns the rules of speech behaviour accepted in a given society in relation to other individuals, the limits of contact with another individual field of personality. Here takes place some levelling of individual speech features of the language of the person under the influence of society (soften or intensify dialectal, regional, small social group features). Linguistic personality assimilates adopted in a given society speech behaviour in General, and in relation to tolerance, in particular. At the boundaries between regions, dialects usually there are many words and expressions that reflect the intolerant attitude to the neighbours. However, these expressions are usually inoffensive, humorous: *in Ryazan mushrooms with eyes; Permyak salty ears* and similar. Often they imitate the pronunciation (ya-ing in the Ryazan region).

The historical formation of linguistic personality is connected with the historical development of all the people, reflects the memory of the important events in their life, wars, epidemics, hunger, etc.: *Here's to you, grandma, St. George's day; Moscow does not believe in tears*. Negative events are mostly remembered, because the memory of them preserves the people of their repetition. Russian folk traditions require a friendly treatment to a guest, while the guest is always alien, not yours, not belonging to your home: *the hut is not rich with rooms, but with pies; Happy with what we have; All from the oven, goes on the table*. The rules of relations to foreign culture, in fact, tolerant rules of conduct are also fixed in the folk ethics: *Don't bring your samovar to Tula; Don’t come to strangers monastery with your own Chart*. In the historical field, there is formed an image not only of foreign, but also of an enemy.

Psychological sphere of a linguistic identity reflects individual, profound perception of reality, the relationship of linguistic identity with the person at all. In Russian Proverbs individuality, originality, personality is also reflected: *the taste and colour have no comrades to share; As many heads, so many minds; Everyone is in their own way freaking*. Such psychological characteristics as socio-centrism and egocentrism are also important for linguistic personality. They are reflected in the manifestation of linguistic personality - its lyrics (text here refers to any completed statement both written and oral). For an egocentric linguistic identity it’s important to present yourself, to advertise. Therefore, in a relationship, friend or foe egocentric linguistic personality uses figurative means of the Russian language for the decoration of his speech, separation from the environment. This type of linguistic identity is useful to remember that in a friend or foe relationship, it is important to see the border, which should not jump so as not to offend the feelings of the other. Creative kind of speech activity, for example, the proposal to conduct an interview with a representative of another nationality, encourages linguistic personality to tolerant verbal behaviour. This type of work requires serious preparation, studying the characteristics of life, the nature, the history of the interviewee. However, business game here brings excellent results.
Socio-centric linguistic personality uses linguistic means in order to display their status, position in society, to emphasize its importance or to indicate their belonging to a particular social group. For this type of linguistic identity, it’s more important in a friend or foe relationship to be belonging to a particular socio-cultural group (Goths, rappers, emo, etc.). In this case, tolerance implies a tolerant, non-aggressive attitude to the external manifestations of another subculture: appearance makes the first impression; the mind makes all the others. Non-aggressiveness is the main feature in a tolerant language personality. Therefore, it is necessary to develop tolerance and non-aggressiveness of undergraduates in communication. Contribute to scientific discussions about the problems of speech, for example, which are held in the classroom on the discipline of "Philology in the system of modern humanitarian knowledge". In preparation for the discussion, the students study science literature, articles in print media and online publications, as well as specific texts for analysis. The analysis of written or oral language informants, chosen by the student (this may be politicians, journalists, media personalities, the texts of which are available for analysis through publications, public appearances and participate in radio and television) takes into account extra-linguistic information about the informant. Any conclusions about linguistic identity require delicacy, kindness, attention to human and, of course, a tolerant attitude. During the discussion, the rules of the relationship to linguistic identity are defined; fulfilled tolerant verbal behaviour is practised, which is very important in preparing undergraduates to engage in independent professional activities.

Modernization of higher professional education, conducted in the Russian Federation, is designed to make a Russian professional be competitive in the rapidly changing new economy, to improve the training of professional in compliance with international standards. And not last role in this training - the formation and improvement of tolerant linguistic identity. Russian language plays a crucial role in this process.

The system of teaching Russian language in school involves learning the basics of the Russian language, developing skills to build oral and written language in accordance with the rules of the language, the skills of correct pronunciation and spelling. In modern school curricula lot of attention is paid to language development and speech students. This is right and important for personal development. But this is not enough for a specialist in a particular field of professional activity and, as experience shows, even for ordinary regular life in modern society.

Everything aforesaid determines the importance of the Russian language in the process of formation of tolerant language personality in the system of higher professional education and the need for further improvement of curricula, textbooks, training manuals in the Russian language to meet the professional needs of students and undergraduates of universities.

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In the article hereby we analyse the accounting profession and its future in terms of how it is perceived and whether the implementation of systematic and organized educational activities developed and carried out within the framework of specialized educational institutions will have a positive impact on the entire profession. We have underlined that the top skill accounting professionals lack today is the ability to communicate with other groups in the firm. The goal of this article is to mention the key factors that will improve accounting students’ communication skills.

**Key words:** accounting professionals, accountant, communication skills, leadership skills, management, formal education, universities.

**JEL Classification:** A23, I25, M41

**Introduction**

Have you ever thought *What does a good accountant mean?* and *What should an accountant do to become the best one?*

We decided to make a presentation to you on these questions, let us discuss about the profession of accounting and its future in terms of how it is perceived and whether the implementation of systematic and organized educational activities developed and carried out within the specialized educational institutions will have a positive impact on the entire profession.

In the last thirty years, the globalization of businesses coupled with technological advancement has brought about many changes in the way that accounting professionals carry out their work. The International Federation of Accountants, IFAC (2002) believes that the
role of the Finance Manager is shifting dramatically from one of transaction manager to that of communicator and strategist, and that finance managers will increasingly become guardians of the corporate conscience.

The same is the conclusion of the ACCA (The Association of Chartered Certified Accountants) survey from September 2012. Their opinion is that “Currently, the profession of the accountant is going to lose its credibility, if it does not manage to educate its public and groups of interest regarding its value and the steps to follow in order to get the trust back into the industry.”

The results of this survey show that this is partially due to lack of understanding of the accountants’ role in the success of business of different sizes, which are important for the economic growth and recovery; also, due to the fact that the profession needs work over its own image against other professions.

So, we consider that, as accountants, it is important to come out of this cone of shade as a profession. Even there will be certain challenging discussions, it is important to become better in explaining what we do, how we do it and how we generate value. “The way the people are seen determine the others’ attitude towards them”. Consequently, the perceptions about accountants derive from the tasks, which are thought they perform.

Analysis based on some global studies

We think it should be done more to increase the awareness for the value this profession is bringing in. The public value should be in the centre of what this profession is offering.

Students, interns and accounting professionals usually ask the question, “What skills do I need to be a successful accountant?”

In order to answer this question, let’s make one step in front!

So, what are the most important skills, abilities and qualifications of an accountant?

There is not a straight or perfect answer. However, in table 1, we tried to systematize some of these features, which have been identified because of some global studies. Therefore, what makes an accountant to be good are the qualities and characteristics that notice him among his peers.

Table 1

<table>
<thead>
<tr>
<th>What are the most important skills, abilities and qualifications of an accountant?</th>
</tr>
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<tbody>
<tr>
<td>ACCA Global professional organism</td>
</tr>
<tr>
<td>The technical path</td>
</tr>
<tr>
<td>Industry awareness</td>
</tr>
<tr>
<td>The all-round package</td>
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<tr>
<td>Audit and compliance skills</td>
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<tr>
<td>Product and valuation control</td>
</tr>
<tr>
<td>International work experience</td>
</tr>
<tr>
<td>Commerciality</td>
</tr>
</tbody>
</table>

153
Usually, the accountants already possess the required functional skills and maybe one or more industry-recognized certifications. The ability to advance and achieve lasting career success will be hampered, though, if they lack these other vitally important attributes.

The results show that today’s accounting staffs have more than enough data skills. But they often lack the ability to wade through the numbers successfully to communicate with senior management.

That is why, we decided to examine this aspect more detailed.

What skill is most lacking in today’s accounting professionals?

"Communicating with other groups” tied for first place among the respondents with “thinking about the company’s goals and focus as a whole”. Each answer drew a 29 percent response rate, followed by 25 percent who said “displaying abilities to take charge of situations,” 9 percent who chose applying IT skills, and 8 percent who said “traditional finance understanding.”

Table 2

<table>
<thead>
<tr>
<th>Skills</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional finance understanding</td>
<td>8 %</td>
</tr>
<tr>
<td>Applying IT skills</td>
<td>9 %</td>
</tr>
<tr>
<td>Communicating with other groups</td>
<td>29%</td>
</tr>
<tr>
<td>Thinking about the company’s goals and focus as a whole</td>
<td>29%</td>
</tr>
<tr>
<td>Displaying abilities to take charge of situations</td>
<td>25%</td>
</tr>
</tbody>
</table>

Source: CFO.com survey

The accounting formal education is focusing on basic bookkeeping, as well as tax and rule-based accounting, while the demand in industry is actually quite different.

The industry does not need someone who can just read more accounting rules and regulations and interpret them. It certainly does not need more people who can enter transactions into the general ledger or calculate ratios, as many business intelligence systems are managing these automatically. We need professionals that can identify a potential problem, understand why it exists and provide a solution. That is what makes someone a valuable asset to his or her company, and that is exactly what is missing in the average accountant.

So, how does someone acquire these skills? There are several ways:

First, to be able to identify problems in a company, one must understand the company, the product, the marketplace and the overall business. That means the accountant must branch out of his accounting cubicle and really dig deep into the company business. Students and young professionals are struggling to see the overall big picture of the company. Without this ability, it will be very hard to ever lead a company properly.

The accountant must be able to identify risks and take advantage of opportunities in all areas of the company, not just the accounting function. You can’t provide solutions to problems that you don’t know exist, and you can’t know they exist unless you understand the entire business, your company’s strategy and other economic factors that turn the wheels of your company.

Second, another top skill accounting professionals lack today is the ability to communicate with other groups in the firm. The need for accountants to possess communication skills and the current deficiency in this area has been identified from within the profession and by external stakeholders. Lately, students come out of universities with sufficient accounting knowledge, but they lack the ability to communicate this knowledge to others. This is one of the major skill gaps.
A serious underlying criticism is that accounting students’ knowledge was in the form of “knowing that” and insufficiently in the form of “knowing how”. Students had knowledge of accounting and its processes, but were unprepared to put that knowledge into practical use.

Being able to receive and provide feedback is critical.

The ultimate question is, “How do we, the universities, correct this?” We can begin to close the skills gap by providing more education in these areas to students in universities. We tend to focus on rules-based accounting principles, which are needed, but we forget about critical strategic leadership and development skills such as business strategy, cross-functional communication and business analytics.

The truth is, a majority of accounting students will end up working in industry for most of their career, yet most of their accounting education will have a public accounting focus. We need a stronger focus on organizational structures and the entire operation for accountants to see the big picture. The universities have to realize this and offer management accounting degree tracks that provide more focus on these internal decision-support and problem-solving skills.

We, the universities from Republic of Moldova, also need to provide more internal training within our organizations. This can be done through more soft-skills training and a structured mentoring program, in which young mentees can be matched with industry professionals to learn valuable problem-solving skills, both analytical and soft-skill based. As for training, we should require our interns to participate in webinars to build abilities like dealing with conflict and working in cross-functional teams.

Graduate professional education is not just training, skill development, or preparation to pass a licensing exam. It is far more than all of these combined. While focusing on the integration of technical expertise and ethical judgment, a graduate education in accounting must develop the student's analytical skills, which will be tested by difficult and often unanticipated economic arrangements. This education must also develop the written and oral skills proficient communication demands.

Effective communication is important in business dealing with employees and outsiders, such as vendors and clients. Because accounting is an intrinsic part of any business, good communication skills are vital in this area. Important financial tasks such as budget preparation and reporting, bill paying, payroll and recording income need to be presented properly to management and others to be useful and meaningful.

In response to this perceived educational need and the increased focus on communication skills an increasing number of accounting programmes in our university have included communication skills as educational objectives or learning outcomes, and have integrated activities into the curriculum in order to support the development of these skills.

In a parallel process to employers, professional and academic accounting associations have, through published reports and statements, made public their views of the desired profile of a professional accountant. Views such as these have created pressure for change in accounting education. There is a common framework throughout these reports – both specific vocational skills and knowledge were considered necessary in accountancy education and training and, among the skills identified in the reports, communication skills were specifically highlighted. The published research on this topic supports the views and opinions expressed in reports and statements issued by the Accounting Education Change Commission (AECC), American Accounting Association (AAA) and International Federation Accountants (IFAC). In fact, from the first calls of the American Institute of Certified Public Accountants (1969), to the issue of the IES 3 (IFAC 2003) almost every professional accounting body and academic organisation has pointed out the importance of communication skills.

Conclusions

There is clear evidence that both employers and accounting bodies are concerned that the communication skills of accounting students are insufficiently developed. There have
been responses from educational institutions but there is still continuing concern. The key factors that will improve accounting students’ communication skills are:

• Integration into accounting units to establish relevance
• A structured approach
• Competent academic support
• Feedback.

You can’t expect people to follow your strategy and vision if you can’t communicate it effectively. These soft skills are what develop accountants into leaders, which our profession desperately needs.

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EUROCULTURE IN EDUCATION. LANDMARKS FOR A NEW AXILOGICAL EDUCATION WITHIN GLOBALIZATION

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The fundamental ideas we take into account in our argumentative approach envisage two aspects that we consider essential for our current research work: Europe’s axiological profile has always been given by culture, not by politics, which we define through the concept of EUROCULTURE; we also argue that there is a relationship of isomorphism (congruence)
between the pedagogical matrix of the European education and Europe’s cultural achievements.

That is why we consider it imperative that rethinking education in Europe in the context of globalization aim especially at developing the axiological intelligence as the differences between people and cultures are due to differences between the systems of values they operate with. The new “homo valens” is encouraged to build his own axiological system in accordance with his individuality, school serving to provide values and guide the setting up of axiological systems, in consonance with the primary values of mankind, namely those which are specific to each and every collectivity.

**Key words**: culture, education, axiological intelligence, value, globalization, Europe, cultural diversity, universally accepted values, educational guidelines, potential wealth

**Can Europe be defined through culture?**

**Europe** represents a reality is to which is hard to give a precise definition. Neither geography, nor history, nor ethnography, nor culture or religion allow us to give a simple and clear answer to the question: “What is Europe?” Could Europe be defined through its culture?

It is true that Europe has experienced periods of asserting its cultural unity. One such moment was, in the 13th century, the setting up of the great universities, the success of the Romanesque architecture, and then of the Gothic one. Europe’s unity was rediscovered during the Baroque and the Enlightenment period. Therefore, the aspirations towards were felt in this area. But none of these moments included the entire Europe. Cultural unity cannot claim to serve as a righteous definition of Europe, and even less to establish its boundaries.¹ In our analysis, we assume that, for the definition of Europe, culture is a better guideline than politics. This is also the meaning of the concept that we propose for EUROCULTURE. Europe is not a simple notion. There was in history a Spanish Europe, a French Europe, a German Europe, and none of them led to the unification of the continent. There was always a dominant influence which later gave place to another. Likewise, geography distinguishes between a Danubian Europe, a Baltic one, a Mediterranean one, a Scandinavian one. On the other hand, the geographical Europe is different from the historical one. A group of three countries represents Europe politically and culturally Europe without coagulating the entire geographical Europe. The power of Europe as an expression of unity in diversity lies especially in its culture. Not coincidentally did Dimitrie Cantemir or Leibniz argue for the idea of a united Europe, for its cultural and spiritual unity.²

The resizing of the life horizon, the moral regeneration remains structurally related to truth and to the horizon of the values conscience³. As Hegel said “man has to honor himself and consider himself worthy of what is loftiest. He will never be able to have lofty enough thoughts about the greatness and power of the spirit”⁴.

The crisis of today’s world gives rise, righteously, to insecurity and anxiety, to frustration, but also to phenomena of superficiality and marginality. The rediscovery of what's authentic (of human and social world) is possible through genuine communication with oneself and with the others, by rediscovering man on the path of culture, on the path of education for real values. Let us remember the urge of a great philosopher, who once studied (in the 40s of the 20th century) “the crisis of the European human existence”, stating that: “the European mankind” has “only two ways out: either the decline of Europe in its alienation from its own rational sense of life, its fall into enmity against the spirit and into barbarism, or

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the rebirth of Europe from the spirit of philosophy, through a heroism of reason”. 5

The same author adds: “the great danger threatening Europe is fatigue. In order to combat this danger of dangers as 'good Europeans’, animated by the courage that no fight, even without end, can scare it”. Perhaps the greatest ‘danger’ (Hussell was speaking about) is not fatigue, but blocking communication, dialogue as openness towards new horizons to achieve and redefine human values. Perhaps “best of all possible worlds” 6 would be that where those who talk (and talk to each other) should achieve communication and understanding.

The current culture of Europe reflects the system of interdependencies established between the peoples’ cultures, it expresses the unity in diversity of the cultural phenomena, but also the originality and uniqueness of communities, groups and individuals. It requires respect and tolerance for all peoples’ cultures, as an expression of their existence and creation, a reason to promote the principles of peace and reciprocal trust, of a system of values based on humanism, as the opposition between human groups is, ultimately, an opposition between systems of values. Incidentally, a culture and a civilization should make use of the full human potential, which has not been valorised so far in human history, and, by stimulating changes in human nature, it should unlock new horizons.

We would equally like to point out that the size of globalization, the universality of culture is neither a fad nor the result of a few individuals’ will, but an objective and necessary process due, primarily, to the fact that the current human species (Homo sapiens), being a unique one, is also the great constant of universal history. Nowadays science and culture are increasingly becoming a universal message, the progress of the scientific and technical revolution requiring a deep restructuring concerning not only the world of technology, but especially man’s position in the work process and in society, in general, with extensive repercussions on the conception of its self, its identity, place and purpose in the universe. Wealth regarding the cultural and behavioural-civilizing dimension differs tremendously from economic wealth. In culture, the one who makes presents does not become poor, on the contrary, he gets rich, the cultural goods benefiting from alchemy than the material ones, where the accumulation of goods, money and possessions singularize the individual, isolate him from the others, and often makes him rapacious, even capable to resort to illegal and immoral means. Conversely, through culture, by making gifts, man enriches his soul and intellect, becomes solidary to the others and sympathetic to their problems, more open to their life, language and customs. Through culture, people build up stronger, nicer and more sincere relationships which improve their human side and develop a flow of mutual values. Culture is now understood as a factor expressing the degree of development of a society, the quality of life, social integration of groups etc. EU accession process requires a balance between common cultural values and national, specific targets; thus, cultural diversity is understood as a wealth of the European heritage and not a source of division and conflict. In this context, an important function of cultural policies is to preserve the identity and maintain diversity, but also to stimulate the citizens’ creativity, protect minorities etc.

**Education and culture in Europe in the context of globalization**

The relationship between education and culture can be considered according to three plans of action, different in terms of the content they refer to, but convergent in terms of the objectives pursued: the plan of man’s transformation into an eminently cultural being through education, the plan of education as transmission and culture generation action and the plan concerning the role of education in the context of the culture-civilization rapport. Therefore, righteously, Werner Jaeger

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6 G.W. Leibniz, *Theodicy*, Iaşi, Polirom Publishing House (the Leibnizian meaning of this phrase is ontological, not moral), 1997.
said that: “The stability of the regulations in force also means the resistance of a people’s educational principles”. And the sounder the educational principles and pedagogical matrix of a people are, the stronger its creative capacity is. And, conversely, the weaker and less present in its consciousness the educational principles and the pedagogical matrix of a community or people are, the more fragile and perishable its cultural achievements will be, and the more insignificant its historical presence. Man’s proximity to the existing space of culture is achieved only through education. Education is that which transforms the human subject, trains and shapes him in order to adapt to the conditions and to the specific of cultural existence. Just as Gilles Deleuze argued, invoked by Liviu Antonesei, that the “traces” left by culture on the human being are indelible, man is sentenced to culture and his permanent “mark” is education.

Today’s Europe is caught and taken aback, on the one hand, by a culture of indifference, which has a direct influence on the young generation in the general trend of human society globalization, in terms of its uniformization. In this context, a kind of culture sleep is being attempted, an amnesia of it, while everyone has the right to their dignity and identity, be it ethnic, social, cultural or religious. “How could we open the doors of culture today, when we have lost the key of reading?” and closely related to it: “What will schools and universities become in the future?” We risk turning everything around us and inside us into a desert, intending to build dozens of Towers of Babel in the name of an idea or ideology. The search of today’s man has grown apart from what God is, from the mystery of life. Culture is a way of looking upon life, of organizing it on four fundamental truths: justice, charity, love and freedom. Living in a society that wants an “eclipse of God”, a laicism, the effects are seen immediately. The degradation of cultural and social life having family as its first victim, terrorism raised to the level of political instrument, behavioral equalization due to an uncontrolled economic explosion that pushes the individual to consumerism and the desire to live only to satisfy his instincts. The human individual has come, in recent years, to be a victim of ideology in Eastern Europe and, in the West, a victim of structuralism. The cultural phenomenon is today both dramatic and fascinating.

Fascinating, thanks to the scientific progress, communications, openness to all peoples of the world, causing intercultural dialogue initiated and carried out mainly in universities. And the drama of the clash between encysted cultures, closed in themselves, has led to those tragic results, fratricidal wars and fights in Africa, Afghanistan, culminating with the terrorist attack of 11 September 2001 in America. “A European culture can only exist within a set of cultures, built upon an ancient Christian concept of 2,000 years, in order to find its own identity, its own breath, its own mission”. On the other hand, the involvement of education in the rapport culture-civilization does not limit to its the structural adequacy to the specific of the game with complete information, but also requires taking into consideration the fact that we are currently witnessing a process of progressive multiplication, through the information technology and mass media, of the images of the world, a process that can lead to the loss of the sense of reality. At the level of most contemporary educational systems, we can find out, in this respect, an increase in discrepancies between books and the reality they refer to, with a certain metaphorical reductionism regarding the transposition and conversion of reality into ideas, concepts or theories, which induces major difficulties in the understanding of the real, objective world by those who are being educated. The often reduced degree of significance of

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the information which is being conveyed, the inconsistencies between the written text and the actual reality, along with the theorizing doubled by excessive conceptualizations, all these are elements that require the reconsideration in the educational phenomenon of the relationship between theory and practice, between symbols and reality, in order to facilitate a more consistent approach of school to real-life school. That is why, the education leaders from different countries are placed in two different positions. From the position of the sceptics, school is seen in decline, the educational systems no longer being able to prepare tomorrow's world. From the position of optimistic specialists, school has the necessary resources to build up the future, but the educational services need to adapt to the demands of the contemporary world development.

For a long time inert, traditional and conservative, education today takes on the responsibility of mapping out a world in continuous movement and to provide people with the orientation tools which can help them find their own way.

Following this commitment, educational theories and practices have emerged in the education area reflecting the changes of the post-modern human being’s existential and societal paradigmatic changes.

School has the role to reflect the character of postmodernism and globalization in the curriculum, to educate the trainers and trainees in order to discover and understand the existential uniqueness of mankind on this planet.

Without being a miracle that works wonders, education is an indispensable tool for improving the individual development, for building up relationships among people, for attaining the ideal of peace, freedom and social justice.

An essential role in envisaging the future dominated by globalization is played by the International Commission for Education in the 21th century, whose president, Jacques Delors, in his Report to UNESCO\textsuperscript{13} systematizes the perspectives in three main ways:

- From local community towards a global society
- From social cohesion to democratic participation
- From economic growth to human development

“How can we learn to live together in the \textit{global village}? We also find a possible answer to this question in the quoted source. The four pillars that support the continuous educational process are: “learning to know, learning to do, learning to live together with the others and learning to be”\textsuperscript{14}.

The need for a common set of universally accepted values (tolerance, democracy, solidarity, respect, social equity and justice, etc.) cultivated through education and mutual training with a view to a global morale and culture does not exclude, but emphasizes the preservation and renewal of the traditions of each and every culture. Along with promoting a real civic culture, the sense of difference will no longer cause animosities, but will encourage respect for each other’s culture through:

- awareness of human rights and social responsibilities;
- acceptance and respect for the national specific character;
- empathic openness to the universal cultural values through intercultural education;
- increasing the sense of obligation as to the natural environment protection;
- depoliticizing the cultural and educational values;
- developing creativity, education for change;

It is not by mere chance that the specialized literature speaks about “multicultural curriculum”, “education for cultural diversity”, “and education in pluralistic situations”\textsuperscript{15}.

The contribution of the Professor Mircea Maliţa, who pleads for the same idea of cultural

\textsuperscript{14} Ibidem, p.78.
\textsuperscript{15} J. Banks, Allyn & Bacon, \textit{An Introduction to Multicultural Education}, Boston, 1991
diversity, is also of reference in this respect.16

There are outstanding concerns in the Romanian pedagogy from the beginning of this millennium 17, which warn that the transition from a mono-cultural education to an intercultural one involves changes in attitudes towards acceptance of otherness, of diversity as a privilege, not prejudice, without avoiding answering questions like:

- Can we find a balance between individual rights and collective ways of expression so as the ones do not exclude the others?
- How can we distinguish theoretically, practically or politically the differences resulted from the right to specificity and equality?
- Are particular identities (cultural, ethnic, racial, religious) relevant for public institutions?
- Should the educational institutions whose neutrality ensures equal opportunities in education give priority in relation to the universal dimension, violating the democratic values?

Education for cultural diversity asserts itself as an open attitude towards programs focused on contents (of curricular change) that are centred socially (for equal opportunities for success) and on the student (as relationships and group behaviour).

The above mentioned problems are admirably summarized in the 1st chapter “The Impact of cultural knowledge on the procedural development of education” in the volume Alternative and complementary training systems 18. The author finds out “revolutionary knowledge and education approach to its advanced limits”. This is because it is “another philosophy of knowledge – another type of education” and “redefining the cultural model and continuously rethinking the educational model”.

The variety of models offered by the 21st century requires a wide opening to creative teaching, starting even with the choice of either ways: “Modern didactics does not oppose the alternative, complementary or compensatory systems, but is in favour of pluralistic approaches, of differentiating between various solutions which can bring more dynamism and flexibility, which can form an antidote to a possible slide towards a pedagogical conservatism, uniformity and routine in the teaching activity.”19 The perspectives of intercultural education involve, first of all, modernity, globalization and the dialogue of cultures. It is therefore necessary to highlight that intercultural education and education for globalization have gone beyond the stage of pedagogizing the human rights being considered:

a) preventive therapies for the effects of the future socio-cultural shocks.

b) spiritual, ideological and behavioural exercises for adapting to the current and future condition of “homo mundi”.

c) catalysts and facilitators of globalization.

Education through and for cultural diversity

The idea of globalization has been supported since Marcus Aurelius who used to declare himself “citizen of the world, not only of Rome” and up to the representatives of the progressive education, who believe that “it’s high time we built an unprecedented civilization that should go beyond the bases of nationalism”.

The academic internationalization (increasing interdependences, communication, exchanges between students at planetary level) is not new, either. This is proved by a dialogue between Erasmus and Novolius Olahus, which dream about Collegium Pansoficum of Comenius, the studies of Romanian scholars at Lvov, Padua, Paris, Vienna, etc. The aspiration towards a

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17 Cozma, T., Intercultural Education, Iaşi, Polirom, 1999, where a professor from Iasi speaks about the transition from a mono type logic to an intetype logic; from the same perspective, the same contributions are also notable: Cucos, C., Cultural Dimensions of Cultural and Intercultural Education Iaşi, Polirom, 2000,
Universal Academic Community is being built upon transnational academic research programs such as “Tempus”, “Erasmus-Socrates” but also by attempts of establishing some academic spaces which should produce universal values (e.g. the Central-European University). In this case, international cooperation does not exclude limiting the autonomy, both at individual and institutional level. The Mega-project CODREE (Cooperation for Reinforcing the Development of Education in Europe) founded on UNESCO’s initiative has the following priorities: education for all, education for the 21st century, developing capacity for reform and evolution in education.

The cultural perspective on globalization argues that it is a force that generates fragmentation and unification alike, supporting both the development of local and global communities. In fact, the education policy consists in the “states” care for triggering the spiritual forces of peoples and increasing unlimitedly the cultural heritage”. The “planarization” trend, by shaping some cross-cultural and cross-border entities is opposed by the “atomization” one, of separation into groups, regions, communities. The dynamization of the contemporary educational systems is achieved through diversity not homogeneity, which would be impossible for the over two thousand existing peoples, five thousand ethnicities, each with specific or resembling traditions. Therefore, we need an education through and for cultural diversity.

The philosophy of diversity in action advocates for openness, empathy and communication of each culture’s values through programs focused on contents (intercultural curriculum) that are centred socially (on equal opportunities for success) and on the student who needs be educated in the spirit of perceiving his/her own future situation. In this respect, the basic pillars of education: learning to know, learning to do, learning the rules of living together and learning to be get new formative content and new strategies for teaching, learning and assessing. Putting into practice the requirements of the four pillars of education, where human knowledge and understanding in a global society become basic landmarks of the new education, will endow the young people with what they need to be able to live together in tomorrow’s world, to everybody’s welfare.

The increase in educational exchanges, curriculum internalization, the changes due to the information and communication technology are undeniable realities of the contemporary world, which we provide as arguments to support the statement that the phenomenon of globalization is a worldwide reality. New educational tools are being developed, new educational products emerge, from new technologies to programs meant to shape behaviours, by broadening the knowledge horizons of the participants in the program, following the model of activities performed with big companies’ employees. In schools a number of programs are being developed, such as the natural and social environment protection, leadership training, development of entrepreneurial skills, involving primarily new attitudes: combating discrimination, accepting multiculturalism, intercultural exchanges, respecting everybody’s rights to existence and professional fulfilment. The students will learn how to learn, to find out the necessary information, to use the modern means to search for their information, to design their own career path ever since they are in school. The teacher will no longer be an encyclopaedic mind, because the way in which the knowledge is transmitted is more important than its volume, the way in which the teacher guides his students to understand their own investigation methodologies, to reach the goal which meets their individual needs and aspirations. The teacher’s role will be decisive as to the formation of the students’ critical, lateral, complex, analytical thinking which they will be able to use throughout their lives. As a matter of fact, the methods of learning, teaching and assessment for lifelong learning propose a model which is different from the traditional one, in which the roles of the leading actors – teachers and students - have been rethought.

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Conclusions

A lucid radiograph of the paideutic act which is currently performed in our school and everywhere urges us to believe that, for a proper axiological education of our times, the deduction of the educational objectives from the body of the modern values is necessary: At content level:

a) rethinking the place of anthropological and social subjects for educational levels, meant to provide graduates with knowledge on issues related to the values of modernity, to the citizens’ rights and freedoms, to the functions of the state, to the operation of the European and global institutions;

b) studying foreign languages in close relation to the civilization and culture they belong to, because the language is both a practical useful tool in various relationships and a vector defining a culture’ specificity;

c) promoting comparative studies in fields like philosophy, history, literature in order to understand the relationship between the universal and the particular, on the one hand, and the prospective change and discouragement of the ethnocentric approach, on the other hand.

d) at the trainers’ level, the teaching staff need to be retrained in the spirit of the European values, less through actions dominated by formalism, and more through improvement in collaboration with academic institutions outside the Romanian (academic scholarships, master’s and doctor’s degrees, research projects, etc.).

The academic elites, in their capacity as trainers of the trainers and as a result of cultural irradiation function fulfilled by the university, can become competent agents of spreading the European modern values, of modernity in general.

The socio-cultural referential system determines our behaviour and, by admitting the relativity of this system, the individual becomes capable of improving it and thus adapting easier.

The ability to acquire larger identities (of European and world citizen) develops a new type of loyalty, which can integrate the national, regional, professional and social identities.

Cultivating values such as respect for the other, tolerance towards diversity, complementarity among values, the school is able to turn to good account the potential wealth of multiculturality without abolishing the identity of any of the cultures.

Globalization requires a new philosophy of education, an inter- and trans-disciplinary approach of contents and primordiality of humanistic values which should confer man a higher value, elevation and moral eminence. The imperious need for achieving the cultural, spiritual values is perceived nowadays as a “longing to explore a certain domain”. In his work “Transdisciplinarity” Basarab Nicolescu proposes a new model of knowledge, a new paradigm of social and spiritual evolution”. Beyond the various interpretations of transdisciplinarity, this new paradigm builds up bridges between the exact sciences and the humanistic ones, between science and tradition, between scientific thinking and symbolical thinking, between cognition/knowledge and being”. Everything can be rethought and re-evaluated if we become aware that education is our chance. This differentiates us as individuals, as peoples. The identity crisis of the current school can be overcome by rethinking education.

In the current context, we need a dynamic, formative education focused on authentic values. Education through and for the human being can be a new type of education which should take into consideration all the human being’s aspects”.

In the current society, characterized by economic, political and cultural mobility, the new educational order can be conceived through the joint effort of the theoretical pedagogical movement and the

23 Ibidem, p. 7.
educational practice. The axiological education in globalization involves a certain understanding and rethinking of the space, of the axiological point of reference in order to acquire autonomy and an axiological conscience adequate to the epoch we live in.

Leaders in education should also take into account tomorrow’s humanity and, according to this, to adapt learning strategies and education of new generations. The educational systems should take into account that a child who is being trained today will be an adult in 20-30 years, when the values he has received can be totally different. The educational guidelines should be orientated primarily towards the basic values of humanity regardless of the age we live in. The new ‘homo valens’ is encouraged to build his own axiological system in accordance with his individuality, school serving to provide values and guide the construction of axiological systems, in consonance with the primary values of mankind, namely, those specific to each collectivity.

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NEED FOR REORGANIZATION OF VOCATIONAL AND EDUCATION TRAINING SYSTEM IN THE REPUBLIC OF MOLDOVA

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Moldovan Ministry of Education recognizes that technical vocational education becomes a priority to balance the labour market in Moldova.

Analysing the existing models of organizing VET system in the world, the Republic of Moldova could test the approach that is most relevant for country reality. The need to develop effective mechanisms for connecting education system with national economy is one of the best opportunities that inevitably will bring visible results in long term perspective. This is an approach that has been adopted by most EU countries.

Key words: vocational education, structural reform, renovation of infrastructure, endowment of institutions, technical vocational, strategy, internships opportunities, image of vocational professions

Introduction

The quality of labour determines the competitiveness of the national economy and depends on how is organized the system of training provision in educational institutions. In this context, the Moldovan Ministry of Education recognizes that technical vocational education becomes a priority to balance the labour market in Moldova. This is supported by recent elaborations of the Ministry of Education approved by the Moldovan Government:

- National Development Strategy “Moldova 2020” 7 solutions for economic growth and poverty reduction, approved by Government Decision no. 187 of 03.04.2012,
- Strategy for the development of technical vocational education system for the years 2013 – 2020, approved by Government Decision no. 97 of 01.02.2013,

According to the National Development Strategy “Moldova 2020”, an educated workforce and connected to the needs of the economy has a positive influence on gross national product¹, and according to the Strategy for the development of technical vocational education system for the years 2013 to 2020, in 2020, VET must become attractive, of high quality, relevant to the requirements of the labour market, affordable, career-oriented, flexible. Graduates of VET system should have increased opportunities for employment due to good skills and specialized professional competence, as well as good general competences (digital, linguistic, entrepreneurial)². Roadmap for actions of the Government for the development of technical vocational education system for the period 2013 – 2020 and the Action Plan of Strategy for the development of technical vocational education system for the years 2013 – 2020 supports concrete actions in order to achieve this major objective³.

Different countries have found their specific way of making the best interconnection between professional education and economic system. Republic of Moldova is trying to develop its own VET system that needs to revise traditional professional education approach and to build new mechanisms for efficient VET education. In this context the experience of other countries is very relevant.

² HG nr. 97 din 01.02.2013 privind Strategia de dezvoltare a învățământului școlar pentru anii 2013 – 2020, p.9.
Models of organizing vet system existing in the world

Since 1990s in Vocational Education and Training system major changes occurred. The World Bank has provided assistance to support the reform process of the VET system and found that most countries recognize the need to share the financial responsibility of the education sector with the business world. Structural reforms are probably the easiest, but curricular reforms require more time and investment. The process is lengthy because many actors are involved. What is decisive is constant fidelity to the cause 4. In the context of the reform measures are needed at government level – changes in legislation, institutions network restructuring, grouping and networking, alliances and strategic partnerships, at government level – changes in legislation, institutions network restructuring, grouping and networking, alliances and strategic partnerships, institutional measures – changing tasks within institutional activity, economic development activities (education fees, small business development, local economic development) management’s institutional strengthening 5. Although market is an important regulatory factor, technical and vocational education should not be developed without using the intelligence of labour market. At the same time the labour market can guide decision-making process, but does not provide miraculous solutions that could solve everything 6.

The analysis based on income level of countries show that the share of students in VET is greater the more developed is the economic system of the country: over 17% - for developed countries, about 9% for developing countries and about 5% for the underdeveloped. This situation is not identical with the advanced countries such as the USA, Japan and the UK, that for long time did not pay attention to this type of education 153.becuase they promote market approach for the development of work force for these professions 7.

There are several ways of adjusting the offer of VET to the needs of labour market. Below are presented several models of organizing vocational education and training system existing in the world.

The traditional organization of technical vocational education
- The State via Ministry of Education is responsible for planning, organizing and controlling all aspects of vocational education;
- The state is producing the list of professions and specialties that are trained in vocation education system, but is not always aware about the interests of the labour market;
- The State ensures control and rigid planning;
- Funding is provided by the state 8.

The market model of development of labour force (Japan and the US, South Korea 9)


- The state plays a limited role;
- Professional education is developed under the influence of economic factors;
- In Japan and the USA in upper secondary education in grades 11, 12 students are offered professional courses, vocational guidance, but they do not get qualification certification. Development of professional skills occurs by introducing in general school a mandatory professional training program;
- The qualification certifications are obtained within enterprises.\(^{10}\)

**The dual education (Germany, Austria, Switzerland, Luxembourg)**
- Market model controlled by the state;
- Funding entities are mainly the enterprises;
- The state provides the control;
- Financial support to the companies is offered by the state through subsidies and special allocations;
- Recently this system became popular in many countries, especially in Bosnia and Herzegovina, Croatia, Serbia, Slovenia, Macedonia, Montenegro and, but also Denmark, Switzerland, the UK, the Netherlands and France, and several years ago in China and other Asian countries, India, Pakistan, Turkey.\(^{11}\)

**The organization of economic activity within the school (Sweden, Denmark, Finland)**
- The state plans, organizes and controls all aspects of vocational education, but consults with businesses about trends and market demands;
- State equips the school workshops for carrying out production / services delivery;
- The state in collaboration with reps of economy regulates the training and production activities / services delivery;
- The institution has a certain degree of independence in deciding economic activity;
- The system is under the control of the state;
- Funding is provided by the state, but this model is often implemented under public-private partnership.

**Mixed Model (UK, Greece):**
- Integration of market model with the school model;
- In England was introduced in 1998 under the new training schemes, "Youth Training Scheme"\(^{12}\).

**The model of institutionalization of interaction mechanisms between education and economic activity**
- The state brings together all relevant structures for ensuring social dialogue for professional training needs formulation;
- Trade unions and employers’ organizations and representatives of the competent state bodies from various sectors of the economy establish the requirements for the professional training;
- State identifies businesses for internships;
- The education system is controlled by the state with the involvement of companies reps;
- Funding is provided by the state;
- This model is popular in the European Union. It overlaps with existing models of traditional school-based professional education, dual system of education and school education.

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enterprise model. This approach began to strengthen starting with 80’ when it was realized that, professional education should have a closer relationship with the national economy. Platform for interaction between education and the economy is made up of several components:

- National Council for coordination at central level the synergy between education and vocational education and training;
- Sector Committees - bi- or tripartite forums, competent in specific sectors of the national economy, consult and participate in development of specific needs for professional education;
- Research institutions that analyse the labour market collect relevant statistics and propose recommendations for development of policies and strategies for professional training;
- Entities responsible for drafting the National Qualifications Framework;
- Centre for development of TVET recommending strategic approaches, develops and monitors the implementation of new approaches, supporting training providers in achievement of targeted goals.

The organizational system for provision of interactions between education and economy is quite complex, but its efficiency is already recognized.

**VET system in the republic of Moldova and its challenges**

*Dynamics of number of students in VET system in Republic of Moldova*

An analysis of the *dynamics of the number of students* (who study in TVET) in recent years indicates that from 2008-2009 this number was reduced from 51,124 to 42,713 students in the school year 2013-2014, that means that during 5 years the number of students decreased by 16.5%. This negative trend is maintained in all institutions and all these years. Thus, in colleges, the number of students decreased from 28,611 students to 25,990, i.e. by 9.1%; in professional schools, the decline was over 5000 students (from 20,353 to 15,284), i.e. 25%; and in craft schools, the decline was 700 students (from 2160 students to 1439 students), i.e. 33.4%. As it could be seen the most dramatic reduction in the number of students happened in craft schools, followed by professional schools (figure 1).

![Figure 1. Evolution of number of students in TVET](image)

*Source: developed by the author based on the data from National Bureau of Statistics*

The situation in recent years does not differ from the general trend recorded for a much longer period. The attractiveness of technical vocational studies decreased. In the last twenty-five years there has been a doubling of the number of students enrolled in higher education at the expense of secondary vocation education and post-secondary vocation education.

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13 CRISTEA, V. Modernizarea învățământului general și a celui profesional la nivelul cerințelor societății. Economie și sociologie. 2003, nr. 2, pp. 117-132
education\textsuperscript{14}. Basic statistical analysis reveals a reversal of situation, namely: in 1990-1991 the professional schools had 59,000 students and colleges had 50,000 students, and then in 2013-2014 in professional schools were about 15,300 students and in colleges - 26,000 students. An opposite situation is recorded in higher education, which offers studies in 1990-1991 to 54,000 students, and in 2009-2010 to 110 thousand students\textsuperscript{15}, in 2013-2014 the number of students being 97,300 students. As a conclusion, since 1990 the number of students in professional schools fell down about 4 times in number of students and in colleges the number of students fell down about 2 times, while the number of students in universities increased about twice for the same period.

In other words, there is a shift toward higher education. Being in a situation of demographic decline, the number of students who preferred other time secondary or post-secondary vocation education decreases even more. Number of students in higher education, compared to the small number of people studying in secondary or post-secondary vocation education demonstrates once again that university education is a priority for Moldovan citizens. The popularity of higher education is increasing, although 71.3\% of students that are enrolled in higher education are paying the tuition fee\textsuperscript{16}.

Statistics highlight the reduction of 7\% in recent years of the number of new-borns. The analysis of 16-19 age segment of population (age of students in technical vocational education system) estimates the number of children for the year 2017 as getting to 141,442 kids versus 192,963 in 2014 (based on mathematical regression), figure 2. This study, based on the date from National Bureau of Statistics, allows concluding the following: the trend of reducing the number of children in technical vocational education institutions will continue further.

![Figure 2. Forecast of population aged 16-19, persons](source: developed by the author based on the data from National Bureau of Statistics)

Applying the same method of regression, it is expect that in the year 2017 will be 39,803 students in the system versus 42,713 students present in the system in the school year 2013-2014 (figure 3). The correlation between decreasing number of population age eligible

\textsuperscript{14}Moldova 2020 strategia națională de dezvoltare: 7 soluții pentru creșterea economică și reducerea sărăciei, file:///C:/Users/Admin/Downloads/1318435_md_moldova_2020_r.pdf, (seen on 03.02.2015)
\textsuperscript{15}http://www.statistica.md/category.php?id=116&l=ro, (seen 03.02.2015)
for technical vocational education and number of beneficiaries in this system is obvious. Although, according to the author, decreasing popularity of technical vocational education is determined not only by demographic decline, but also by the factors related to the way of functioning and organization of TVET system, the perspective of the worker’s or technician wage versus the salary a people with higher education.

**Figure 3. Forecast of the number of students in VET system for the coming years (2015-2017)**

*Source: developed by the author based on the data from National Bureau of Statistics*

Staff from technical vocation education system in Republic of Moldova

A key factor in providing quality professional education is the staff providing educational services. In TVET institutions there are different categories of personnel: those directly related to the education process are teachers of general education subjects, teachers of specialized disciplines and instructors-supervisors; and staff that are not directly involved in teaching process, like management personnel and technical support staff.

**Figure 4. The number of staff by category,%, 2013-2014**

*Source: developed by the author based on the data from Ministry of Education*

What stands out is the share of technical support staff, which is about 43.6%, a very high percentage (figure 4). This could be explained by the existence of a large infrastructure, requiring expenses, regardless of the number of students from the institution. Worldwide trends are related to outsourcing for maintenance, cleaning and supervision, which reduces the cost of employing a large number of staff on a full time job.

170
Analysis of seniority of employees reveals that about 22% of staff is pensioners, and 40% had a history of more than 15 years of work in the institution (figure 5). Although one can say that teaching staff in institutions is aging, however this is not different from the situation of other countries in Europe and even the world.

![Figure 5. Seniority of employees by type of institution, %, 2013-2014](image)

**Source:** developed by the author based on the data from Ministry of Education

Issues concerning teachers are primarily related to the requirements for entry into services that do not require mandatory experience in the real sector of economy. This experience is compulsory in countries of the European Union. European Centre for the Development of VET (CEDEFOP) presents for different types of teachers in technical vocation education system minimum requirements under which vocational subject teachers have a vocational qualification, work experience and a teaching qualification\(^{17}\). In Germany the conditions are stricter, vocational subject teachers and instructors-supervisors are required in some areas of economy to alternate two years of teaching with two years of working in the company. These are measures necessary to ensure a high level quality of training.

Another problem is the lack of professional training system for vocational subject teachers and instructors-supervisors. Continuous training is conducted by the Technical University of Moldova with the support of donors available to support this activity. However it is necessary to institutionalize a system with a well-argued training program for providing continuous professional training for teachers in technical vocational education system. In this context it is worth mentioning that the European Commission has published Common European Principles for Teacher Competences and Qualifications TVET\(^{18}\), which focuses on four areas: (1) well-qualified professionals, (2) practicing lifelong learning, (3) practicing academic mobility, (4) professionals involved in partnership activities\(^{19}\).

Moldova has already approved the concept of lifelong learning, but lacks institutions to provide these opportunities for TVET teachers. Academic mobility is practiced only by students in higher education. Teachers in the system are not much involved in these activities, due to poor knowledge of foreign languages. Academic mobility for technical vocation education has not started yet, although there are opportunities. Partnership activities are promoted within institutions (ex. organizing internships for students). But this kind of partnership has to be supported by the organization and implementation of joint projects in which innovation is part of the process. Approach in terms of the knowledge triangle -

\[^{17}\text{http://www3.cedefop.europa.eu/etv/Information_resources/NationalVet/Thematic/criteria_replycop.asp}\]

\[^{18}\text{Common European Principles for Teacher Competences and Qualifications, 2010, 5 p.}\]

\[^{19}\text{An overview of European VET-teacher qualifications and VET-teacher education,}\]

171
research - innovation\textsuperscript{20} is more specific to higher education, it is important that innovation processes enter efficiently in production processes. Namely it is the role of TVET teachers on supporting and promoting this approach.

**The infrastructure of technical and vocational education system**

The trend of students’ reduction in TVET system that started at the beginning of the 90s, has determined the fact that the infrastructure has not been used to maximum capacity. Most blocks studies and workshops schools were built in the years 60-70, which speaks that majority of them are morally and physically out-dated. Against the backdrop of lack of financial resources for capital investments, some buildings need reparation, renovation and capital changes.

Much of workshops and laboratories need to be repaired and equipped according to current requirements. Equipment for the most part is obsolete, even being functional. It cannot serve as the basis for the formation of professional skills; it could serve only partly for the educational process with the aim of understanding the principles of operation of tools and equipment. A large part of the equipment needs to be settled (tractors, tools, etc.) and equipment purchased under current technical requirements. Some of the workshops were upgraded with donor support.

**The financing of technical and vocational education institutions**

Although the number of students has decreased constantly, the evolution of state budget allocations had an increasing trend. Thus, out of MDL 466.7 mln allocated to TVET institutions in 2008-2009, the budget allocations increased up to MDL 645.2 mln in 2013-2014, but when taking into account extra-budgetary resources, the figure rises to MDL 771.4 mln. It is important to mention that the allocations for professional schools and colleges are approximately equal. Budget allocation for the year 2012-2013, in relation to 2008-2009, increased by 38.25%.

**Collaboration of technical and vocational education institutions with economic agents**

To understand the specific aspects of partnerships between institutions and businesses in Republic of Moldova, it is useful to consider the overall situation of economic operators. Thus, 75.6% of all enterprises consist of micro-enterprises with up to 10 employees, 18.9% of enterprises are small, 2.9% of enterprises are medium size and only 2.6% of companies are large enterprises. In other words, on the market, most enterprises are small and micro enterprises. However in terms of number of employees, , large enterprises covers a substantial part of the workforce (43%). Below there is a table with number and share of enterprises, and the number and share of employees (table 1).

<table>
<thead>
<tr>
<th>Companies</th>
<th>No of companies</th>
<th>% of companies</th>
<th>No of employees</th>
<th>% employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>1356</td>
<td>2,6</td>
<td>226768</td>
<td>43,2</td>
</tr>
<tr>
<td>Medium</td>
<td>1557</td>
<td>2,9</td>
<td>87571</td>
<td>16,7</td>
</tr>
<tr>
<td>Small</td>
<td>9874</td>
<td>18,9</td>
<td>122878</td>
<td>23,4</td>
</tr>
<tr>
<td>Micro</td>
<td>39459</td>
<td>75,6</td>
<td>87981</td>
<td>16,7</td>
</tr>
<tr>
<td>Total</td>
<td>52 246</td>
<td>100</td>
<td>525198</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: developed by the author based on the data from National Bureau of Statistics, 2015*

It is noteworthy that during the last 10 years it was registered an increase of about 58% in the number of businesses. A substantial increase is recorded among large enterprises, but also amongst the micro and small (table 2).

\textsuperscript{20} http://ec.europa.eu/education/policy/higher-education/knowledge-innovation-triangle_ro.htm, (seen 22.03.2015)
### Table 2

<table>
<thead>
<tr>
<th>Companies</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>% of increase in 2013 in relation to 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>697</td>
<td>616</td>
<td>667</td>
<td>1012</td>
<td>975</td>
<td>1073</td>
<td>1204</td>
<td>1237</td>
<td>1356</td>
<td>+ 94.5%</td>
</tr>
<tr>
<td>Medium</td>
<td>1657</td>
<td>1724</td>
<td>1774</td>
<td>1685</td>
<td>1589</td>
<td>1587</td>
<td>1502</td>
<td>1589</td>
<td>1538</td>
<td>-6%</td>
</tr>
<tr>
<td>Small</td>
<td>6440</td>
<td>6544</td>
<td>7194</td>
<td>8329</td>
<td>8264</td>
<td>9132</td>
<td>9194</td>
<td>9570</td>
<td>9874</td>
<td>+ 53.3%</td>
</tr>
<tr>
<td>Micro</td>
<td>24347</td>
<td>27274</td>
<td>30352</td>
<td>31095</td>
<td>33805</td>
<td>34912</td>
<td>36641</td>
<td>38336</td>
<td>39459</td>
<td>+ 62%</td>
</tr>
<tr>
<td>Total</td>
<td>33141</td>
<td>36158</td>
<td>39987</td>
<td>42121</td>
<td>44633</td>
<td>46704</td>
<td>48541</td>
<td>50681</td>
<td>52246</td>
<td>+ 57.6%</td>
</tr>
</tbody>
</table>

Source: developed by the author based on the data from National Bureau of Statistics, 2015

One important thing in this context is the organization of internships for students. Most of the institutions surveyed have collaborations with businesses, but anyway the organization of practical training of students is a difficult issue. Companies, in most cases, are not paying the remuneration of interns. Although the legal framework requires that students practice should be paid, and 50% of the amount should be given to the institution. Institutions face difficulties in persuading economic operators to accept students for practice. The situation is better for businesses in certain areas of the economy, such as food industry and textiles, which are capable of paying since there is a good market demand for these services. For specialties from the agriculture sector, practical training often takes place in the agricultural household of the institution. However this is not a frequent practice in the institutions. Many institutions are sending students for internships in individual households or, at best, at leaders of agricultural community households. This way of organizing the internship cannot be efficiently monitored and cannot ensure effective results.

Issues related to geographic location of economic agents play an important role in ensuring quality internship opportunities. The vast majority of economic agents are concentrated in Chisinau (66%) with a very large gap followed by Balti (5%), Gagauzia (3%), followed by other districts that have a 1-2% of total number of companies, followed by eight districts with less than 1% of businesses form the total share per country (table 3). This is a very serious issue that must be considered in the promotion and support of technical and vocational education institutions. Because in rural areas and in these 8 districts is practically impossible to organize an efficient training due to the lack of economic agents.

### Table 3

<table>
<thead>
<tr>
<th>Districts of RM</th>
<th>% companies</th>
<th>% WF</th>
<th>% turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mun. Chişinău</td>
<td>66</td>
<td>60</td>
<td>73</td>
</tr>
<tr>
<td>Mun. Bălţi</td>
<td>5</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>UTA Găgăuzia</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>R-n Orhei</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>R-n Ialoveni</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>R-n Ungheni</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>R-n Străşeni</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>R-n Cahul</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>R_n Hînceşti</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
These data tell that economic agents are distributed unevenly. Some of them are not directly related to technical and vocational education. The chart below provides information on the number of businesses, employment and turnover in different areas of economy in Republic of Moldova (figure 6). The chart is developed according to the Classificator of Economic Activities of the Republic of Moldova (CAEM, rev.2), official document used for official statistic data by the National Bureau of Statistics.

Source: developed by the author based on the data from National Bureau of Statistics, 2014
From these data it appears that most companies with large numbers of employees are engaged in wholesale and retail trade (activity G, according to CAEM, Rev.2) and in real estate (activity K according to CAEM, Rev.2). These economic activities are not specific to technical and vocational education.

The facts allow to draw the following conclusions:

- Number of students in technical and vocational education since 1990 has fallen dramatically, and demographic forecasts show a possible further decline;
- It outlines an obvious preference of population for higher education;
- Infrastructure is damaged and inefficiently used, the equipment requires modernization and adaptation to market requirements;
- Funding is growing;
- There is a trend of aging of teachers in technical and vocational education system, there are no professional training opportunities;
- Ability to ensure students with internships places, especially for some areas of the country; it is extremely difficult because of the uneven geographical distribution of economic agents. Other important fact is that not all their activities correspond to the interests of technical and vocational education institutions.

In these circumstances it is clear that some of the technical and vocational education institutions will no longer have beneficiaries and the situation will continue deteriorating keeping the negative trend. The data presented support the idea of network of technical and vocational education institutions rationalization.

According to the above conclusions were estimated funds that could be saved on annual maintenance of the network of technical and vocational education institutions. These estimates were based on the fact that the number of students in the system for the years 2015-2016 is reduced by 7% and the number of institutions that could be optimized is about a third (-27%). Based on these estimates, it appears that only the actions of rationalization of...
technical and vocational education institutions network can provide a saving of about 30% (table 4).

Table 4

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Current situation</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of institutions</td>
<td>97</td>
<td>-27%</td>
</tr>
<tr>
<td>No of students</td>
<td>42713</td>
<td>-7%</td>
</tr>
<tr>
<td>Total budget, thsd, MDL</td>
<td>771400</td>
<td>-29%</td>
</tr>
</tbody>
</table>

Recommendations for improving the situation in VET system in the Republic of Moldova

The challenges that VET system in Republic of Moldova is facing nowadays makes the country to revise the way of its organization. Analysing the existing models of organizing VET system in the world, the Republic of Moldova could test the approach that is most relevant for country reality. The need to develop effective mechanisms for connecting education system with national economy is one of the best opportunities that inevitably will bring visible results in long term perspective. This is an approach that is adopted by most EU countries.

Streamlining at least one third of the network of technical and vocational education institutions (currently, there are 98 such institutions) is part of structural reform. This fact will bring savings that could serve for renovation of infrastructure and endowment of institutions with updated equipment. Such structural reforms are also supported by the World Bank, fact mentioned in the reports of projects implemented in technical vocational and education system supported by WB.

Specialization of institutions in the fields required by the regional market is a need that is reported permanently and only way to provided economy with needed labour force.

Creation of an efficient and well organized continuous professional training system for the vocation subject teachers and instructors-supervisors as well as making strict requirement for getting the job of vocation subject teacher is another aspect that needs to be built in VET system.

It is important to development a strategy for promotion of social dialogue to raise awareness amongst economic agents with potential for offering internships opportunities for VET students. At the same time is important to develop strategies and tactics for promoting the image of vocational professions and technical workers and enhance the attractiveness of technical and vocational education system.

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Every society has its own attitude towards the past, present and future. This concept is a natural reaction to the rhythm of the sustainable development, as one of the strongest determinants of economic behavior, social, educational, etc. Competition and education are a particularly important phenomenon for the economic life but also for the social life, being the motor factor which motivates both businesses and human existence ad who reaffirmed its role as a decisive regulating force of the market economy.

Key words: Competition, competitive environment, the market economy, knowledge society, information society, education, long-term investment, professional people.

Every society has its own attitude towards the past, present and future. This concept is a natural reaction to the rhythm of the sustainable development, as one of the strongest determinants of economic behaviour, social, educational, etc. In the conditions of technical systems today - fast, fluid and self-regulating- cars are those that will handle the flow of physical materials, but people the flow of information and thought. The knowledge society is more than just information society. It involves integration and better use of past and present knowledge. New knowledge develops old ones or removes them from use. In both cases forcing those who are interested to learn again today what they thought yesterday that they know.

Learning is proving to be the most cost-effective long-term investment. Sustainable development needs professional people who “have the future in their blood.” As regards education, its fundamental goal must be "to increase the adaptive capacity", to become better and more competitive with each other. Precisely, this dynamic of socio-professional changes provide a functional market economy determined by the fierce competition.

Competitions represent a particularly important phenomenon for the economic life but also for the social life, being the motor factor which motivates both businesses and human existence. Viewed from economic point of view, competition is always linked to market transactions, supply and demand but also to exchange process. In other words competition exists if someone can choose between alternatives and can thus choose the most convenient alternative to his preferences [3].

If to make a synthesis of the notion of competition this can presented as a whole of relationships established between participants at the economic activity and not only, related with the promotion of their own goals and interests, objective relations through certain processes and mechanisms. These relations are based on an economic spirit and behaviour based on rational competition and on an impersonal mechanism of manifestation.

Those relations should be understood in a broad sense, comprising all moments of the economic activity, assuming both relations between equals and relations of power and domination; relations based on ‘neutral’, impersonal relationships, but also personal relationships; relationship of rivalry, competition, combat, conflict, but and cooperation; both relationships and proper business practices as well as relationships and practices of non-economic in nature, but which in one form or another influences and gives a certain picture of the mechanisms of competition.

The complexity of these relationships determines a complex system of competition, but the mechanisms that operate with these relations are economic and social mechanisms linked to the existing relationships in the society at a given moment.

The functioning of competition determines a particular image, a certain configuration of the society in all its aspects: a certain structure of the markets, a certain distribution of income in society, a certain control mechanism of it and a mechanism for the establishment of the balance.

Competition in a functional market economy is designed to give answers to the following statements [5, p. 62-63]:
It is a base of the market economies so that participants could receive great rewards and sanctions from the market through price signals;

If the demand of a specific good increases, the induced increase in the price of that item makes its production more attractive;

A high price for a specific highly required goods its results in increased production and entry into this market of some companies over others who become unattractive relative;

As a result of the desire of each firm to maximize the profit, arises the competition for utilization and search of the best opportunities to win;

Because each economic entity on the market is trying to achieve these possibilities to gain, competition directed by the price signal ensures the production structure to be transformed in the direction preferred by consumers.

Analysing the content of these statements given by the obvious reality, we can afford to structure the main coordinates of competition in all areas:

1. Consumers’ satisfaction. (Benefit brought to the consumers by producing and providing requested goods)
2. Promoting innovation. (Competition is a very favourable environment and simulative for the achievement of the technological progress, as it provides high earning possibilities for individuals and / or legal persons who can and want to take the risk of innovation)
3. Efficient allocation of resources.
4. Limitation of economic and political power (lack of competition will undermine both the political and economic order)
5. A fair income distribution.
6. Directly influences on the psychology of agents involved in this activity.

So, the statement that "competition means offer of value and raising living standards" (Ph. Kotler), becomes extremely relevant in a time when there is an economic and social development in most countries in the world.

All these functions listed above highlight the role of competition in the contemporary market economy namely its beneficial influence on the efficiency and the interdependence of competition with the economic progress.

As the famous Viktor Vanberg said “competition allows the solving of the three fundamental problems”:

1. The problem of incitement. What to be done so that agents to think beneficial to other market participants? Although competition promotes the offer of high quality products at a higher price in order to satisfy final customers, however we must orient ourselves towards the meaning of Adam Smith's words "our well-being does not depend on the benevolence of the butcher, or baker, but on their interest ".

2. The problem of the power division. Taking into account the existence of competition, the buyers benefit from greater freedom of choice and they are more independent than producers.

3. The problem of informing. Competition not only allows the use of disseminated information in the society, but also leads to the search of new information and innovations.

All these problematic approaches motivate and drive the business creation based on knowledge capitalization, great entrepreneurs have not grown by themselves, and they are a product of the society and national culture. A product oriented not only to a pragmatic perspective (who, how much and how will produce the added value tomorrow?), not to a perspective of alignment with the economic standards, respectively European and educational, but to a perspective of cultivation of a way of being and living compatible with notions of welfare, sustainability and sustainable development in an economic, social and political environment with a high level.

Bibliography:

COMPETENCE-BASED APPROACH TO THE EDUCATIONAL PROCESS ON PHYSICAL CULTURE IN HIGHER EDUCATION

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*Honorary worker of Higher School, Russian Federation*

The success of the educational process on physical culture in higher education is assessed by students' mastery of the competencies in this area. The article renders the role of competence-based approach in the formation of physical culture of students, the content of the competence of physical culture and the characteristic level of competence in the sphere of physical culture.

**Key words:** competence, physical culture, education, competent readiness for productive activities in the sphere of physical culture, levels of competence.
Competence-based approach aims at the formation of students in the educational process competencies and readiness for their practical implementation, an important development for the profession and life qualities. Competence, according to the researchers, as the main categories of competence-based approach, stands by system entities with its own genesis and objective functions designed to ensure the systematic integration of education, increase in the system of socio-professional quality graduates [2; 4]. Methodological efficiency categories “competence”, according to some scientists, is that it is broader than the concept of “knowledge” and “includes not only cognitive and operational - technological components, but also motivational, ethical, social, and behavioural” [2; 5; 7 and others]. So, A. V. Khutorskoy defines competence as the possession, the possession of the appropriate competency, including personal attitude towards it and the subject of activity, the combination of personal qualities (axiological orientations, knowledge, skills, abilities), determined by experience in a particular socially and personally significant sphere [7]. I. A. Zimnyaya subdivides competence by five components: readiness to its manifestation (i.e. motivational aspect), where the willingness is seen as subjective mobilization of forces; possession of knowledge of its content (i.e. the cognitive aspect); the experience of its manifestations in a variety of standard and non-standard situations (i.e. behavioural aspect); the relation to its content and the application object (axiological aspect, and as a motivational speaker); emotional-volitional regulation of the process and the result of its existence [2, p. 24]. In our opinion, for the educational process on physical culture more productive position is offered by A. I. Subetto, who believes that competence does not cover all of a person's quality, not identical to this quality. Therefore, the inclusion in the system of competence "emotional-volitional regulation", "motivational" and "behavioural" component is a methodological error that blurs the content of the category "competence" and lowers its measurability. The main characteristic of competency and competence (from the standpoint of the category of "conformity") is a “possession” as the basis of “readiness”, the latter specifies the properties of “potentiality” and “ability”. “Capable” means “ready”. The functioning and development of competence and expertise has value and moral (ethical) grounds, “excited” relevant moral, ethical, aesthetic and material incentives, but it does not follow that they are themselves the competency and competence [4].

Competence-based approach does not cover the process of physical education in integrity, in particular, mechanisms for the transfer of its value bases. It reflects the operational readiness of students to work in this field and its effectiveness, but does not affect the motivational value and emotional side of their personal relationship to it. Full attribution of competencies and competence development of students in physical education can provide only formed in her valuable relationship.

The feature of the pedagogical goals for the development of competences, according to A. V. Khutorskoy, is that they are formed not in the form of actions of the teacher, but from the point of view of results of activity of the learner, i.e. its promotion and development in the process of learning certain social experience [6]. N. In. Bordovskaya notes that in the context of the competence approach is "changing the nature of the activity and interaction of subjects of educational process, the shift of priorities from the translation of knowledge to the creation of conditions for the full realization of personal potential and the existence of subjective properties in the educational-cognitive, information retrieval, research, training or assessment activities. “He directs the actors of the educational process on the value approach to knowledge... challenges intellectually-creative, professional and personal, spiritual and moral development” [3, p. 5, 24]. Competence-based approach reflects a priority focus on goal - vectors education: the self-actualization, socialization and the development of personality [1].

Competence approach, according to the definition of the objectives of education for physical education in higher school, means giving students the opportunities that they may purchase as a result of education in this field. It develops a new attitude to physical culture as a unifying many of the activities underlying the harmonious personal development of students, their self-realization. Conscious purposeful development and self-development in the educational process on physical culture professional and social activities, practical qualities
(find, interpret, analyse, develop, make decisions, organize, implement, convert, integrate, control, cooperate, etc.) strategically creates professional "self-concept" of students that will allow them to more fully realize themselves after graduation. This approach guides the organization of educational process on the students' mastery of the operational and creative experience in the use of knowledge, abilities and skills as ways of solving actual problems of varying complexity related to the management of the body, health and performance under changing conditions of life and communication. Competence-based approach helps to assess the success of the educational process in physical education – students' proficiency in its competencies, development of personal and psychophysical qualities, functional training relevant to the requirements of life, future career, health.

In the competence approach, let’s consider these characteristics of effectiveness of the educational process, as educated and competent readiness for productive activities in the sphere of physical culture.

Education reflects the level of competence of students in the sphere of physical culture: knowledge of methods of physical education and health promotion to achieve the proper level of physical fitness necessary for normal social and professional activities (QA-17 in the state educational standard of higher professional education). This competence, in accordance with common cultural and special values of the content of education in physical culture includes universal (interdisciplinary, emerging in the framework of this discipline) and special (determined on the basis of achievement of the main goal of education in this area) competence. Their content reflected in the table.

Table 1

<table>
<thead>
<tr>
<th>Competences</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal</td>
<td></td>
</tr>
<tr>
<td>Axiological</td>
<td>Knowledge of value orientations of PC, its significance to the individual and society; the ability to choose the target and the semantic units for their actions and deeds, to make decisions, consistent with the values of health, healthy lifestyles, holistic self-development</td>
</tr>
<tr>
<td>Cultural</td>
<td>Knowledge about the history of PC, its peculiarities of different peoples, ethnic groups, related phenomena and traditions. Knowledge about the effective organization of free time with the use of different types, shapes, means of PC</td>
</tr>
<tr>
<td>Academic labour</td>
<td>Knowledge and skills of the organization of independent cognitive activity in the field PC (goal setting, planning, analysis, reflection, self-assessment), the creative skills of its productivity (the extraction of knowledge directly from reality, the knowledge of the methods of action in unusual situations, heuristic methods of solving problems); the knowledge and skills of functional literacy in this field (the ability to distinguish facts from fiction, possession of probabilistic, statistical and other methods of knowledge); knowledge and skills to work with information (search, analysis, selection, organization, transformation, preservation and transfer printed and electronic information in the field of PC)</td>
</tr>
<tr>
<td>Communicative</td>
<td>The productive skills of communication and interaction with others, the organization of group activities in the field of PC; the possession of different social roles in the team</td>
</tr>
<tr>
<td>Personal self-government</td>
<td>Knowledge of the methods and tools of knowledge personal qualities, emotional-volitional self-regulation and self-support physical, spiritual and intellectual self-development</td>
</tr>
</tbody>
</table>
Special

| The system of special knowledge, skills and abilities to carry out activities in the field of physical culture; methods and means of self-knowledge and self-management physical improvement, mental and physical condition, functional preparedness. |

Theoretical and practical level of knowledge appropriation can serve as objective measures of proficiency in these competencies. Theoretical knowledge is verified by the control issues of a curriculum or textbook. Practical knowledge is verified in the following skills.

- To apply various tests of self-knowledge for the analysis and evaluation of the level of development of their relations in physical education, psycho-physical qualities and morphophysiological parameters (posture, physique, cardiovascular, respiratory, etc. functional systems).
- To possess vital skills (swimming, help the drowning person, the self-insurance drops, etc.); the technique of the rational movement (technically walk, run, swim, exercise, etc.); techniques of first aid (drowning, trauma, etc.); techniques of massage and self-massage, autogenic training.
- To compile, on the basis of self-knowledge:
  - individual program of physical improvement, exercises for the harmonious development of physical qualities;
  - complexes of charge, introductory gymnastics (reducing the period of work), fistulas, physical activities (including the conditions and nature of work) in a mode of working day to enhance the functions of the organism, prevention of occupational diseases;
  - physical exercises (breathing exercises, stretching, yoga, ideomotor training, etc.) for neuromuscular relaxation, regulation of emotional state;
  - complexes of preventive and corrective gymnastics for the eyes, posture, physique, and other morphological and functional abnormalities;
  - special complexes of physical exercises that develop physical qualities necessary for the exercise of professional activity;
  - individual complexes of tempering procedures, rules of power on the basis of the norms of hygiene), card identification of personal qualities that influence the efficiency of communication.

Arrange Hiking, sports and outdoor games.

Competent readiness for productive activities in the sphere of physical culture may reflect such factors as:

- the required level of psychophysical and functional training (assessed by means of control tests and regularity of physical training and sports activities);
- adequate high self-esteem of subjectivity activities in the sphere of physical culture (productivity, self-development, communication and interaction in the development of its values).

Through adequate students’ self-esteem of the subject position in the development of the values of physical culture (indifferent, mildly interested, active, creative-activities) is determined the level of their competence in this area.

Indifferent (low) level develops spontaneously and is seen in students with poor content and vocational orientation and functional-recreational value orientations of a healthy lifestyle, negative or indifferent attitude to physical culture. The value of health is declared, they do not think of him as the means and goal of personal development. The discipline “Physical culture” is seen as undesirable, unnecessary for personal development, not connected with preparation for professional activity. Cognition and self-knowledge in this area are not interesting for them. Motivations towards a healthy lifestyle, sports activities are weak and unsustainable with the prevalence of external, internally (avoidance of trouble,
punishment, poor health, problems with weight, recovery from injury or illness). It is noted superficial level of knowledge of physical culture (a General idea about the topics studied, can reproduce key aspects of them, but worldly views in this area prevail over scientific). Methodological and practical skills of use of means of physical culture for the management of their health and own personal development at the level of individual skills; self-knowledge is shallow, low levels of self-regulation. Individual objectives: educational and sports activities are available. It is stated irresponsible attitude to their own health, ignored the effect of the negative factors that cause it harm, failure in his strengthen and maintain due to external causes. Experiencing negative emotions and dissatisfaction with oneself, insecurity in their abilities, are non-constructive behaviour in the realization of personal potential: going from the difficulties of maintaining a healthy lifestyle, the scope of extra-curricular sports activities is rejected. Don't know techniques and don’t understand the necessity of self-regulation of emotional state. They don’t have the subjectivity of activity and interaction in the sphere of physical culture. Show the low productivity of communication in the classroom: passive, absent, unwillingness to interact. They don’t possess the competence in the sphere of physical culture, although the level of physical capacity and health status may be different.

*Weakly interested (insufficient) level* is characterized by a focus on vocational orientation and functional-recreational value of a healthy lifestyle. Health is taken for granted by these students, they are passive in the organization of a healthy lifestyle, which has not sustainable motives (and generalizes not expressed in plants). They are spontaneously active, haphazard relation to health: believe it mostly depends on external factors and not on their lifestyle and exercise efforts. The significance of discipline “Physical culture”, its meaning can only be found in physical activity. Cognitive activity is determined by external motives: it is necessary to master this section, as it is included in the content of education. Interest in self-knowledge is unstable, it occurs generally under the impact of external circumstances. Physical-sport activity is used primarily for recreation, games, entertainment, to achieve external success (associated with its outcome and evaluation of others). Knowledge in this area are fragmented, limited and unsystematic (perform training tasks, following prompting the instructions of the teacher, according to the instructions, sample; open the topic with additional questions; giving examples, they often do not differ between facts and subjective opinion). Methods and means of physical culture are partially proficient (show them the necessary level of consultation with the instructor). There is an insufficient level of knowledge about them, they use the standard techniques of self-knowledge from time to time, they don’t think about conscious management of physical culture and sports activities. Tend not to take responsibility for their health, personal development. They can be active in sports or training activities, but its motivation generally is dominated by prestigious and hedonistic motives. Have an idea about the individual techniques of self-regulation of emotional state, but rarely used. They are typical unstable, depending on the situation, a positive attitude to healthy lifestyle and sports activities that they are conducting and occasionally stop when emerging difficulties. As a rule, they consider their level of mental, physical, and functional training quite satisfactory, although this opinion may be contrary to the objective data and be below normal values. Subjective activities in physical education are assessed as low. The productive skills of communication in the classroom are limited: expressing their opinion is not able to draw arguments. Competence is insufficient for productive activities in the sphere of physical culture.

*Active (required) level* is characterized by a focus on self-improvement, strengthening of spiritual and aesthetic value orientations of a healthy lifestyle. Students are aware of the dependence of health from lifestyle and their own efforts, the role of physical education in the social, personal and professional development. The discipline "Physical culture" regarded as "necessary", they see for themselves the benefit of her knowledge, abilities and skills in the profession, family life and everyday life. Strive to master the study and additional literature in
this area. Have a strong interest to study their physical nature, believe that sports activities help to improve their quality of life (internal and external success). Have the reproductive system of knowledge of nature (remember and reproduce the material under study, the information present and reasonably argued based on scientific data and social experience; revealing the theoretical principles that can lead confirming their facts, examples), have demonstrated the necessary proficiency skills of physical culture. Competently, based on self-knowledge, employing a variety of means and forms of physical training and sport activities, independently set goals for physical improvement, but may not always reach for any external reason. Fully aware of the responsibility for their health and personal development they strive for the realization of personal potential. They have a positive emotional background of life. Consciously, of necessity, use methods of self-regulation of emotional state. Overcome the difficulties associated with activity in the sphere of physical culture. Possess the mental, physical and functional preparedness to conform to the requirements of life, future career and health, as confirmed by standard indicators. Have adequate self-esteem of subjectivity activities in the field of physical culture. In the classroom rationally apply the productive skills of communication and collaboration: participate in conversations, discussions, maintain a good relationship with the teacher and in a group, show a sense of empathy. They are competent in the sphere of physical culture, although maintaining a healthy lifestyle, regular physical-sport activity may depend on external circumstances.

**Senior creative (high) level** is characterized by the completeness and consistency of the development of spiritual-aesthetic, professionally-oriented, functional and recreational value orientations of a healthy lifestyle and sustainable internal position, which places health and personal development led life values. For students is paramount to achieve harmony with oneself and the world, the contingency of culture, spiritual and physical, the latter they regard as an essential part of personal improvement and management of their health. Their educational interests beyond the curriculum, they strive to continually increase knowledge about themselves, their features and capabilities. Sports activities, due to internal conscious, demand improvement. Have a deep and flexible knowledge system of physical culture (not only logically consistently describe the theory, examples, and facts supporting, but also to identify and analyse functional and causal relationships of phenomena and to find unconventional solutions to problem situations). Creatively possess abilities and skills in this area (solve problems of varying complexity related to health, formation of corporeality in accordance with the individual characteristics and health resources). Possess well-developed skills of self-knowledge, self-regulation and reflection in order to objectively assess its activity in this area. Set, implement and adjust the near and long-term goals and ways of working in the field of physical culture taking into account the subjective probability of success, time and effort, therefore, almost always achieve the intended results. They proclaimed internal position; consider themselves responsible for health and personal development not only her but also others. Optimistic, we attach great importance to emotional communication and expression in the life, get satisfaction not only from the result but the process of activities in the sphere of physical culture. Use various methods of self-regulation of emotional state to improve the quality of life. Overcome the difficulties associated with activity in this sphere, perceiving them as a stimulus for further self-development. In a healthy lifestyle, daily physical activities improve the mental, physical and functional readiness in accordance with the prospect of personal development shows a high level of standard indicators. Adequately assess its subjectivity activities in the field of physical culture as a creative-search. Have good relationships in the group are open to interaction and cooperation with others. In the learning process actively, arguments and evidence involved in the discussions. Competent in the sphere of physical culture, they are ready not only to excel in it, but share their experience with others. After graduation, they take the initiative in many areas.
The level of competence of students in physical education may change under the influence of purposeful pedagogical influence and self-influence on the personality.

Bibliography:

COMMON SOCIAL STEREOTYPES IN ADVERTISING

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We live in a society surrounded by advertising; it can be found anywhere we look even in most unexpected places and forms. Advertising has become part of our lives and cultures, and it is greatly influenced by a wide range of stereotypes which reflect our social values and mirror the society we are living in. Stereotypes offer a concise and very often imprecise image of the world, but the way they are conveyed by advertising prove that people are still very influenced by them and they have a major impact on society. Sometimes stereotypes give us a wrong image and sometimes they can be harmful by causing inappropriate behaviour and giving rise to discrimination, creating conflicts and unpleasant circumstances.

Key words: advertising, stereotypes, culture, society, social prejudices, discrimination, communication

Introduction. The world we live in is surrounded by advertising. We live in times when we have it everywhere we look even on most unexpected places. We sometimes even wonder where do advertisers get their inspiration when designing or placing an advertisement. Advertising is part of human culture, obeying the laws of logic and its development and our society is a victim of advertising, as it invaded all the spheres of our lives it became so widespread, we literally have it in our pockets and bags and all this is associated with the development of the mass media, technological development and diversification of our activities.
We, as consumers, receive daily huge amounts of information; therefore there is a danger of information overload for our minds, which can lead to neglecting information, distortion of meaning, generalization, etc. Individuals perceive only messages that are based on order, clear meaning and innovation. So, we the need to perceive advertising communication in terms of its ability, on the one hand, to use stereotypes in the public consciousness, and, on the other – to influence their formation in society.

According to Andrew M. Colmann, a stereotype is „a relatively fixed and oversimplified generalization about a group or class of people, usually focusing on the negative, unfavourable characteristics, although some authorities recognize the possibility of positive stereotypes just as well.”

Researchers J. L. Hilton and W. Hippel consider that stereotypes are cognitive schemas used by social perceivers to process information about others. They also believe that stereotypes, which are based on relatively enduring characteristics of the person (such as race, religion, and gender), have enormous potential for error.

However, we will not get into details of giving various definitions of stereotypes, as beyond their wide variety is this idea of simplicity, of a mental scheme, with a simplified structure, ready to be used anytime and found in various spheres of our lives and recognizable in concrete situations.

At first sight the word *stereotype*, has a certain negative connotation, and thus, the products that are promoted following a pattern are slightly devalued. However, we cannot avoid using stereotypes in our everyday activities, whether we do it intentionally or not. We also cannot state whether the stereotypes, that are present around us, are good or bad, or whether we should or should not avoid them, as it is impossible, because stereotypes give us the opportunity to know “the world” through already existing concepts, which are very often accepted as true.

Advertising is a field that offers a lot of social representations; it synthesizes influences and promotes certain images, which are very easily standardized in an advertisement. The role of stereotypes in advertising is to influence human behaviour provided they are accepted beyond experience, being defined as simplified schemes, helping the consumers to filter the information.

The stereotype has always been part of the advertising language, it establishes preconceived images accepted beyond the experience, causing to the consumer spontaneous associations.

As stated by Madalina Moraru, “in the advertising discourse the stereotype is a generalized representation of an idea through which the product or the service is described so as to a universe or a social group. Through advertising is attempted to catch the essence of the consumer’s world, so that the purchase of a product, belonging to a certain brand, becomes a necessity and expresses the idea of loyalty”.

The widest classification of advertising stereotypes is based on the thematic criterion, because it analyses the story of every advertisement, the actors involved and its social and cultural context. The present paper refers to one of the most frequently used type of stereotypes among their multitude, namely, the social ones.

In this context, of great importance is the theory of social roles, which suggests that almost all differences in behaviour between males and females are the result of cultural stereotypes about gender (how males and females are supposed to act). Thus, every individual acts according to his role, mostly determined by the gender. Values that accompany the role are easily depicted: for men – power, security, individuality; for women – refinement, beauty, spirit of sacrifice.

Gender stereotypes are related to the social roles of men and women in society. Therefore, we can talk about the category of social stereotypes within a gender profiling. So, it is usually

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1 Colman, M., Andrew, Oxford – Dictionary of Psychology, Oxford University Press, 2006, p. 726
3 Moraru, M., Mit și Publicitate, Nemira, Bucharest, 2009, p.134
considered that ‘Men are the “backbone”; ‘Men are strong and do all the work’; ‘Women can’t do as good of a job as a man’; ‘Women aren’t as smart as a man’; ‘Girls are not good at sports’; ‘Guys are messy and unclean’; ‘Men who spend too much time on the computer or read are geeks’. Stating all these, and encouraging these stereotypes is not only hurtful, but it is also wrong. Even though in some cases the stereotype is correct, constantly putting someone down based on some preconceived perceptions is not correct.

Women’s social roles are those of a mother, wife, subordinate, or even prostitute. Even in a time when many women work outside the home, they are still depicted as being in charge of all the domestic chores in the household. Advertisements for products like soap, laundry detergent, toilet tissue and child care items depict women as having the ultimate responsibility for making the buying decisions for these products. Women are also shown as being in charge of food selection and meal preparation in the home.

Some advertisements show men as shallow and superficial. Beer commercials, for instance, often show males as engaging in friendly jokes or actions in an effort to impress women. With married couples in the process of making a household decision, the husband may be portrayed as a dim individual who means well but is essentially incompetent. The wife, on the other hand, is depicted as the one who is really in control of the situation and knows how to rectify the problem by using the advertised product. The image of mother depicts her taking care of children and husband, who is also a child. The values promoted in this case are those of responsibility, care, attention.

Men can be also portrayed as being specialists in a certain field. Advertisements usually depict them at their workplace, their profession being indicated by the clothing: hard hats, shirts carrying the title of their job, or business suits, thus, showing him as a professional in the field. He may have the image of a doctor, engineer, worker, farmer, banker, businessman, etc. However, a smaller number of advertisements depict women in successful business contexts, who have achieved something by their own, this being one of the socio-professional images of women in advertisements. Besides the image of a business woman, women can be designers, or professionals in other fields that are suggested by the environment, furniture, clothes, etc. But this type of image is less portrayed in advertisements, compared to that of maternity.

Curious is also the fact that the majority of men products are aimed at the sensitive feminine emotional perception, because, traditionally, they are the major buyers of goods and services.

The social stereotypes also refer to some cultural issues. There are stereotypes about various cultures or, even about countries in general. They show how values and stereotypes are adapted to local peculiarities and they mostly relate to history, ideology, religion, personalities, traditions, origins, races, etc.

Examples of this sort include the premises that: ‘All white Americans are obese, lazy, and dim-witted. Homer Simpson of the TV series. The Simpsons is the personification of this stereotype’; ‘Mexican stereotypes suggest that all Mexicans are lazy and came into America illegally’; ‘All Arabs and Muslims are terrorists’; ‘Italian or French people are the best lovers’; ‘All Irish people are drunks and eat potatoes’; ‘All Asians like to eat rice and drive slow’; ‘All Blacks outside of the United States are poor’; ‘All Jews are greedy’, etc.

Traditional stereotypes are usually inspired by the dominant religion in the country. They are very well depicted in images of celebrating some religious traditions, family reunions, associating them with the idea of prosperity, traditions, sharing special moments, etc. These are specifically describes by the cultural background, clothing, symbols of the event or holiday and the overall atmosphere.

Stereotypes of origin are taken into consideration due to the fact that they influence greatly the way products are perceived by the consumers. A study conducted by Swinder J. and C.P. Rao has defined the idea that “the country of origin is a form of image variable that influences the
customer’s perception of the quality of the product under consideration. These images induce special characteristics to products, so that sometimes the influence of the country of origin is of greater importance than the product itself, its quality or price. The products can refer to cultural specifics of a country, region. Therefore is created a standardized stereotyping of the country’s perception, which is automatically extended over the product, as the importance of the country of origin of the product cannot be ignored. And the world of advertising is full with examples of German or Japanese cars, Swiss watches, French wines, German beer, etc.

From a certain perspective, these stereotypes are sometimes confused with the ethnical ones, which in some societies lead to the formation of prejudices and racial discrimination even. So that, advertising can also perpetuate racial stereotypes that have lasted for generations.

Today, advertisements are much less intensive. But sometimes, culturally obtuse advertisements are still found. Of course, companies eventually realise their mistake and pull racist advertisements and apologise, but the only fact that they were allowed to be printed or broadcasted in the first place, shows that stereotypes and racism are still prevalent in our everyday thinking and the undertones of stereotypical thought exit in many of our everyday assumptions. Although these problems exist to some degree, marketing experts and advertising agencies have made giant strides in recent years to eliminate stereotyping.

The current tendency in advertising is to avoid such stereotypes and encourage the idea of breaking them. Therefore, the relatively new trend in advertising is aimed at breaking the existing stereotypes. So that, there are plenty of examples of advertisements that break them, in which male and female roles are reversed without actually focusing specifically on the issue of gender, but simply used as a way to reflect a more realistic viewpoint for most people.

**Conclusions.** It is obvious that stereotypes and advertising go hand in hand; they play a very important role in our daily lives and, to a certain extent, influence them. The advertising that we have on TV, radio, Internet or found on the pages of newspapers and magazines, in the streets across the world has created memorable taglines and characters, convincing us to buy products and giving us a complete picture of the fact that stereotypes have a tremendous power in our society.

Advertisers manipulate existing stereotypes, create new stereotypes or deconstruct the existing ones using all available tools in their advertising activity. Commercials today promote traditional gender roles. They display assumed gender activities and children watching television learn what they think men and women must do.

Marketers are constantly seeking ways to make their products more easily identifiable to specific groups of final users. Therefore, in some cases, they may intentionally or unintentionally use stereotyping to show a product as appealing to their desired target market or in an attempt to interject humour into the advertisement.

Just to reiterate the idea, we would mention that one of the criticisms of advertising is that it tends to perpetuate negative stereotypes, especially of women, the elderly, and some minorities. Critics argue that in many advertisements women are portrayed as the weaker gender whose primary responsibility is to care for the children and the home, or as sex objects. The elderly are often depicted as dumb and helpless. Some critics suggest that various ethnic minorities are often portrayed as being inferior to whites.

The present paper was an attempt to identify the most common stereotypes found in the media, but far from describing a great part of them, as this turned out to be a topic with a vast area of research. Therefore, this work is a prerequisite for further analysis and a support for practical and empirical research of stereotypes and the phenomenon of stereotyping in modern advertising.

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DEVELOPMENT OF THE REPUBLIC OF MOLDOVA – THE PATH TO INTEGRATION

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To date it was noted that signing trade agreements submitted by the European Union of the Republic of Moldova became a stimulus for Moldovan exports to the EU markets. The trade is facilitating rapid growth of exports which are competitive in foreign markets, in this particular case, the European markets. Insignificant impact of changing trade agreements highlights important shortcomings in “economic development” of Moldova.

Key words: integration, trade, free trade area, EU, economic development, transition, commercial exchanges.

Introduction. Data base approach is justified by the evolution of phenomena occurring at the global and the national level, as well as taking into account the rapid change taking place today.

In the present work we have combined a series of ideas, which are useful in analysing the integration and commercial development of the Republic of Moldova. By applying balanced trade relations in the integration process of Moldova is desired the maximum adjustment of the national economy to the European standards, overcoming stagnation period of economic development, in which we find ourselves.

We are today in a world of interdependence, making the overall development, growth and economic development require an increased bilateral, regional and global cooperation.

Critical analysis of the investigated problem. Lately, the discussions regarding the perspective accession of the Republic of Moldova to the European Union have become more frequent. Many economists, national and foreign, confirm that through this process, Moldova’s trade policy aims at promoting foreign economic relations, notably by boosting exports, foreign competition, protecting the national economy through regulation and import surveillance and maintaining trade balance. Moldova’s relationship with the European Union is often judged by economic reforms.
Moldova’s trade policy is a component of the economic policy within the foreign economic relations and assumes all regulations, commercialism policy instruments and measures aimed at promoting foreign trade and stimulating the national economy sheltered from foreign competition.

Thus, a country like Moldova has the priority of combining institutional reforms, particularly related to pricing modernization (labour markets, capital, goods and services market, etc.). That is, the essential aim of joining the European Union aims at modernizing the society as a whole, which enables sustained economic growth and reducing the gaps between developed countries in Europe.

There are several issues which should guide our objectives when formulating economic policy and development forms of growth, whereas trade policy is an integral part of the economic policy of a state.

Trade policy represents a totality of regulations adopted by a state administrative, legal, fiscal, budgetary, financial, currency, etc. policy, or coercion to promote foreign trade and foreign competition to protect of the national economy. Originally, the trade policy was based on the Treaty of Rome, entitled “Free movement of goods” which considers the following:
- abolition of customs duties between Member States;
- establishment of a common customs tariff;
- elimination of quantitative restrictions between Member States;
- dumping practices.

The current legal framework of the European Union’s common commercial policy is established by the Maastricht Treaty, as amended by the Treaty of Amsterdam.

Moldova’s integration process to the European Union trade policy is imposed with some conditions for import-export transactions with European Union member states that contractors must meet when crossing the border and goods.

**Table 1**

Geographical structure of Moldova’s foreign trade during 2007-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Export mln USD</th>
<th>CSI, in which:</th>
<th>Russia</th>
<th>Ukraine</th>
<th>UE</th>
<th>Romania</th>
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<tr>
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<td>1340</td>
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<td>12%</td>
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<tr>
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<td>19%</td>
<td>9%</td>
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<td>22%</td>
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<td>18%</td>
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<tr>
<td>2010</td>
<td>1541</td>
<td>40%</td>
<td>26%</td>
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<td>47,3%</td>
<td>16%</td>
<td>12,7%</td>
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<td>48,9%</td>
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<tr>
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<td>30%</td>
<td>6%</td>
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<td>16%</td>
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<table>
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<th>Year</th>
<th>Import mln USD</th>
<th>CSI, in which:</th>
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<th>UE</th>
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<tr>
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<td>43,4%</td>
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<tr>
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<td>13%</td>
<td>44,2%</td>
<td>10%</td>
<td>22,8%</td>
</tr>
<tr>
<td>2011</td>
<td>5191</td>
<td>33%</td>
<td>16%</td>
<td>12%</td>
<td>43,5%</td>
<td>11%</td>
<td>23,5%</td>
</tr>
<tr>
<td>2012</td>
<td>5213</td>
<td>31%</td>
<td>15%</td>
<td>11%</td>
<td>44,5%</td>
<td>12%</td>
<td>24,5%</td>
</tr>
</tbody>
</table>

*Source: Data provided by the National Bureau of Statistics of the Republic of Moldova*
During 2010-2012, export growth reached 19-21% annually, while growth in imports that exceeded the exports, constituted 45-47% annually. Nonetheless, there has been a diversification of foreign trade from the geographical point of view.

However, it is necessary to note that the economic statistics and customs policy, and trade is in a constant process of training, therefore, considerable errors in the records pertaining to the trade can be encountered. Moreover, the lack of adequate legal framework forces economic agents to undervalue the value of goods declared to both import and export, so as to reduce fiscal obligations.

From the above data (table 1), we can see that the Moldova’s geographical export remains dependent exclusively on the EU countries market, so, the highest level was recorded in 2009, when on the EU markets were exported about 52.1% of goods. Structural analysis of exports shows that Moldova has managed to diversify its exports considerably.

Starting with 2006-2007, the Republic of Moldova has received greater access to the EU countries market based on the preferential terms with the decision to grant the Generalized System of Preferences Plus (GSP Plus), the structure of foreign trade has changed radically in favour of trade with EU countries and has reached a share of approximately 47% of both export and import. This reorientation of economic relations was emphasized by economic difficulties in relations with the Russian Federation – one of Moldova’s main trading partners at that stage.

Nevertheless, Moldova’s export is concentrated both geographically and structurally. In 2007 the share of the three commodity groups: (a) food; beverages, spirits; vinegar; tobacco; (b) textile materials and articles thereof; (c) vegetable products represented approximately 53% of total exports recorded (table 2).

Therefore, Moldova’s export is dominated by alcohol, food and textiles. Wines are the most important export product. In 2012, wine exports accounted for about 29% of the total alcohol production. The Russian Federation had been Moldova’s main market, but starting with 2006, Russia launched a campaign to limit, restrict and ban imports of agree-food and spirits from Moldova.

### Table 2

**Structure of Moldova’s foreign trade by main commodity groups in the period 2007-2012**

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th></th>
<th>2009</th>
<th></th>
<th>2011</th>
<th></th>
<th>2012</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mn USD</td>
<td>%</td>
<td>Mn USD</td>
<td>%</td>
<td>Mn USD</td>
<td>%</td>
<td>Mn USD</td>
<td>%</td>
</tr>
<tr>
<td><strong>EXPO</strong>RT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable products</td>
<td>1340</td>
<td>100</td>
<td>1282</td>
<td>100</td>
<td>2216</td>
<td>100</td>
<td>2161</td>
<td>100</td>
</tr>
<tr>
<td>Strong drinks</td>
<td>274</td>
<td>12%</td>
<td>281</td>
<td>21%</td>
<td>330</td>
<td>21%</td>
<td>391</td>
<td>17%</td>
</tr>
<tr>
<td>Tobacco and tobacco products</td>
<td>134</td>
<td>10%</td>
<td>159</td>
<td>12%</td>
<td>181</td>
<td>8%</td>
<td>215</td>
<td>10%</td>
</tr>
<tr>
<td>Base metals and articles of base metal</td>
<td>15</td>
<td>1.2%</td>
<td>15</td>
<td>1.2%</td>
<td>29</td>
<td>1.3%</td>
<td>34</td>
<td>1.6%</td>
</tr>
<tr>
<td>Other</td>
<td>807</td>
<td>68.8%</td>
<td>798</td>
<td>63.8%</td>
<td>1563</td>
<td>64.7%</td>
<td>1448</td>
<td>68.4%</td>
</tr>
<tr>
<td><strong>IMPOR</strong>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable products</td>
<td>3689</td>
<td>100</td>
<td>3278</td>
<td>63.8%</td>
<td>5191</td>
<td>64.7%</td>
<td>5213</td>
<td>68.4%</td>
</tr>
<tr>
<td>Strong drinks</td>
<td>150</td>
<td>4%</td>
<td>132</td>
<td>4%</td>
<td>199</td>
<td>3.9%</td>
<td>204</td>
<td>4%</td>
</tr>
<tr>
<td>Tobacco and tobacco products</td>
<td>47</td>
<td>1.3%</td>
<td>47</td>
<td>1.5%</td>
<td>50</td>
<td>1%</td>
<td>68</td>
<td>1.3%</td>
</tr>
<tr>
<td>Base metals and articles of base metal</td>
<td>66</td>
<td>1.8%</td>
<td>88</td>
<td>2.7%</td>
<td>92</td>
<td>1.8%</td>
<td>83</td>
<td>1.6%</td>
</tr>
<tr>
<td>Other</td>
<td>336</td>
<td>9.1%</td>
<td>183</td>
<td>5.6%</td>
<td>312</td>
<td>6.1%</td>
<td>284</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

**Source:** Data provided by the National Bureau of Statistics of the Republic of Moldova
The Republic of Moldova is characterized as a country with a high degree of integration in international trade.

![Figure 1. Evolution of Moldova’s international trade integration](image)

**Source:** Data provided by the National Bureau of Statistics of the Republic of Moldova

Moldova’s trade and economic policy is based on liberal principles, based on the favourable geographical position, but also lack of natural resources, especially fuel, energy, and limited domestic market. Trade liberalization was one of the main areas of market reform of the Moldovan economy, which was implemented in 1992.

With the accession of the Republic of Moldova in 2001 to the World Trade Organization, there have been implemented restructuring measures to address production and reduce structural unemployment. There is a persistent stereotype in the “international community” in general and the EU in particular, according to which Moldova has an economy that is highly dependent on agriculture. Indeed, Moldova is truly relying, more than any other European country, on agriculture and related industries (food, tobacco and winemaking).

The main exported products are vegetable products, which have a share of 17% of total exports.

The highest increases were registered at fruit and nuts over 73 million, 6 times more than exports in the reference period of the previous year; other nuts, fresh or dried, shelled or not even registering a value of USD 50.2 million.

Exports of goods to EU countries (EU-27) amounted to USD 50.8 million (2.9% more than in January-June 2011), holding a 48.8% share in total exports (49 6% in January-June 2011).

In the European area, the main export partner for Moldova in January-June 2012 was Romania, with a share of 16.3% (1.0 pp less than in the same period of 2011). Exports to Romania amounted to 169.6 million, which represented a decrease of 1.7% compared to the same reference period of the previous year, Italy and Poland, holding a share of 11.5% and 3.7%, respectively, holding places 3 and 6.

Moldova’s exports to CIS countries accounted for 41.1 % (January-June 2011 - 39.0 %), which corresponds to 428.3 million. Exports to these countries increased by 10.2 % compared to January-June 2011.
The Russian Federation and Ukraine are Moldova’s main partners on the CIS market. Exports to these countries accounted 28.9% and 5.7% respectively, ranking the 1st and the 4th places. Exports to Russia increased by 14.7% compared to January-June 2011 and amounted to USD 300.9 million, while the Ukraine recorded USD 59.6 million, 7.6% less than in January-June 2011.

Its main imports during January-June 2012 were mineral products, which have a share of 24.2% (1.7 pp more than in January-June 2011). Imports of mineral products recorded 595.8 million, which is 11.3% more than during the same period of the reference year.

A significant increase was recorded for petroleum coke, petroleum bitumen and other residues of petroleum oils or oils obtained from bituminous minerals. During the first six months of this year were imported to 3.6 times more than in the same period of 2011, recording 14.0 million (32.1% - Belarus, 22.6% - Venezuela, 12.1% - the United States of America); pure sodium chloride salt; during the first half of the year seawater import reached 1.6 million, which is 2.1 times more (59.3% from Ukraine); electricity was imported 1.9 times more compared to the reference period of last year stood, reaching 25.3 million (100% from Ukraine).

Imports from EU countries (EU-27) scored 2318.6 million (1.03% more than in 2011), with a weight of 58.4% in total imports.

During 2012-2013, Romania was Moldova’s main European partner for imports, with a share of 12.9%.

The main partners for imports from the CIS were the Russian Federation and the Ukraine, accounting 17.0% and 11.0% respectively, ranking the 1st and the 2nd places.

Therefore, we would like to point out that the crucial benefits for Moldova in the EU integration are the financial and economic policies, which are represented by increasing foreign direct investment, and credibility among investors from third countries.

**Conclusions.** In order to promote export expansion, Moldova should increase the quality of investments, as exports and investment are interrelated factors, which are vital for the economic growth and development of the country. Formally, Moldova has a liberal trade regime, both in exports and imports.

Import tariffs are low and export tariffs are practically missing. VAT and excise duties are generally applied equitably, both for imports and for domestic production.

Moldova has now opened up the market to all foreign partners being ranked among the countries with more open economies of the countries in the world. The country has the most extensive network of trade agreements in the region of Central and Eastern Europe. All this forms a good starting position for the launch of negotiations on a free trade agreement with the EU. Such an agreement is even more important if we consider that Moldova faces more restrictive conditions on the international markets than it offers to its partners. Since Moldova’s economy is highly dependent on both free access to export markets and a free supply of materials imported for production, the country needs to further improve its trade relations, especially with the EU.

Current trade regime in Moldova is liberal; external environment for Moldovan exports is also formally liberal. In practice, trade is vulnerable to unilateral actions of the trade partners of the Republic of Moldova. Therefore, it seems that the main issue in trade policy is to ensure predictability in relationships with key trading partners. This could be achieved by continuous changes in trade agreements with CIS countries.

**Bibliography:**

The first International Conference on “Professional Education and Economic Needs of the Black Sea Region” was held in Chisinau, Republic of Moldova, on 24 April 2015. The Conference was jointly organized by the BSEC PERMIS and the Academy of Economic Studies of Moldova under the auspices of the Moldovan Chairmanship-in-Office of BSEC.

More than 100 participants from relevant government authorities, academia, business circles, BSEC Related Bodies, international organizations, including UNESCO, International Road Transport Union, International Union of Railways and the Danube Commission, as well as the Chamber of Industry and Trade of the Republic of Moldova and other civil society organizations took part in the event. The Conference was inaugurated and co-chaired by the BSEC PERMIS Secretary General Ambassador Dr. Victor TVIRCUN and the Rector of the Academy of Economic Studies of Moldova Dr. Grigore BELOSTECINIC. A message from the UN Secretary General Ban KI-MOON was also delivered at the opening session. Dr. Gheorghe DUCA, President of the Academy of Sciences of the Republic of Moldova, Mr. Octavian CALMIC, Vice-Minister of Economy of the Republic of Moldova as well as Mr. Umberto de PRETTO, Secretary General of the International Road Transport Union (IRU) also addressed the Conference during the opening session.

The main themes of the Conference were discussed in detail within four panels, addressing quality issues in formal education; education and the role of information and communication technologies; linking science and education with market demands; and key values and priorities of education in the 21st Century.

With the presentations and discussions which took place during the panel sessions, the Conference enabled the participants to identify the following main issues:

1. **Quality issues in formal education**
   - The role of higher education as a major engine for economic development is well established, and this role will increase as further changes in technology, globalization and demographics impact the BSEC Region. To remain competitive in light of these changes, the region will need to improve productivity and adopt an innovative approach in all sectors of the economy. Quality in higher education is one of the instruments in achieving these goals.
   - Higher education has historically included economic development as part of its core mission. The colleges and universities serving the region have allocated fiscal, physical, and human resources and created entrepreneurship systems within the institutions to advance economic development.
   - The critical challenge for the BSEC region is how best to strategically provide the workforce needed to strengthen economic development. Also, lack of qualified employees; inadequate level of salaries for the teaching staff; limited professional training opportunities to meet the needs in employment market; lack of long term education strategies focusing on future development; resource mobilization needs; and different definitions and diverse aspects of quality issues in professional and higher education are among the main challenges in the region.

2. **Education and the role of information and communication technologies**
   - Information and Communication Technology (ICT) essentially changed the world and, in particular, education. Thanks to ICT, strong collaboration links among education institutions in different countries were established which brought together leading world scholars for solving important scientific problems.
-It is necessary to unify the efforts of all BSEC Member States in the field of education by making greater use of ICT. BSEC Member States with high standards in the field of education should share best practices with and help other Member States to develop their education strategies. In this context, it would be useful to organize exchange programs among the BSEC Member States in the field of education. The use of ICT and the Internet can improve distance learning where the leading teachers and scholars from renowned universities can deliver lectures for bachelors, masters and PhD students. Joint programs in education with the awarding of diplomas of leading universities can contribute to education development.

-Parallel to state education, today, private high schools and universities play an important role in the development of education, thanks to investments from business circles and increased ICT-based education collaborations with higher education institutions from developed countries. Within this framework, the experiences of leading developed countries in education should be taken into consideration.

-It is necessary to create a good legislative atmosphere in the BSEC region for the realization of important projects and investments in education.

3. Linking science and education with market demands

-There is a strong need for establishing a close cooperation between the decision makers, academic circles and the business community.

-The implications for businesses in preparing professionals to support economic needs is positive.

-The quality of employees should be harmonized in accordance with the European standards.

-Transforming knowledge into skills is what is required by the labour market in the Black Sea region.

-In this framework, BSEC Member States were called upon to initiate concrete projects in the field of the professional education.

4. Key values and priorities of education in the 21st century

- Education is one of the key factors in the model of sustainable development due to the impact it has on the quality of human resources.

-The quality of the workforce trained within the framework of the professional education is largely dependent on the key competencies formed within the framework of the general education.

-The role of the key competencies in the process of workforce training is demonstrated by the growing interest of employers in these skills during the staff selection process.

The Participants underlined the importance of the Conference for developing education in the BSEC region and supported the idea of organizing similar conferences regularly in the future, to continue the discussions and exchange of views and experiences among the public, private and academic stakeholders.

At the conclusion of the Conference, the participants requested the BSEC PERMIS to forward the present Summary and Conclusions to the Council of the Ministers of Foreign Affairs and the relevant sectorial Ministries of the BSEC Member States.
International Conference

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