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REFORMS OF THE EDUCATION SYSTEM OF KAZAKHSTAN WITHIN THE LIMITS OF THE INTERNATIONAL PROGRAMS AND PROJECTS: PROBLEMS AND PROSPECTS

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Abstract

Universal processes and intensive inclusion of Kazakhstan in world system should render considerable influence on formation of social institutes in the country. At the same time, historical and cultural traditions keep the influence on formation of new generations that directly influences upon transformation of norms and rules of social interaction of social institutes of a society as a whole. What place the education system of Kazakhstan will occupy in the new globalized world in connection with the official introduction into Bolonsky process - it is a question of time. At the given stage creation of condition for export of educational services and free migration of students, undergraduates and intellectual elite of Kazakhstan is supported for example under the program "Bolashak" initiated by the president of Kazakhstan, it stipulates the preparation and training of especially gifted youth in prestigious foreign high schools. For years of the sovereignty of hundred thousand young men were trained in prestigious foreign high schools. Today it is necessary for Kazakhstan to enter into the international educational space, to coordinate the purposes and strategy in the educational policy with the countries of the Eurasians community. In this connection there was a necessity of working out of the state educational standards of the second generation.

Key words: social institutions, global system, the Institute of Education, the Bologna Process, International Scholarship "Bolashak", educational priorities, educational system, the international educational space.

INTRODUCTION

Global processes and an intensive integration of Kazakhstan into the global system can not have a significant impact on the formation of social institutions in our country. However, historical and cultural traditions retain their influence on the formation of new generations, which directly affects the transformation of norms and rules of social interaction between social institutions of society as a whole.

1. The place of the education system of Kazakhstan in the new globalized world, in communication with connection it into the Bologna process.

Social institutions are not remained unchanged being formed over the centuries. They are developed and improved together with the progress of society. For example, religious institutions of society- science, education, upbringing, moral norms are also undergoing global changes. How and to what extent, these global linkages will directly influence the formation of
Kazakhstan social institutions, in particular the Institute of Education - is the future. In terms of closer interaction of national economies, or even their combinations (for example, the customs union of Kazakhstan-Russia-Byelorussia), governments are forced to work together to pursue a policy in education. Key term in this case is now going mobility, meaning right in dynamic changes in the direction of quality.

In the near future, willingness to learn continuously will be the main condition for mobility. At the European level, for example, more than a decade activities of intergovernmental organizations as the Council of Europe, UNESCO and the Organization for Economic Cooperation and Development (OECD) are noticeable. These organizations have different views on concrete ways to develop education. However, it is obvious coincidence of conceptual approaches, which have found expression in the concept of continuous education:

- taking into account the needs of a single market in the qualifying labor force in terms of migration
- achieving social harmony and integrity by the conscious participation of citizens in public life;
- investing in human capital and development of the individual [1]. A special place among the international educational project takes the Bologna Process, which was launched in June 1999 and initiated by several European states.

Tasks of the Bologna Process

- increase the ability of graduates of higher institutions to employment on the territory of EU
- improve horizontal mobility of citizens;
- raise the prestige of European education in the conditions of enhancing competition, especially with corporate universities the Bologna Process provides:
  - establishing a system of comparative degrees of higher education;
  - introduction of a two-stage system of higher education at which the first phase will be recognized on the European labor market as a sufficient qualification level (bachelor's level);

Adoption of a system of educational credits and encouraging mobility of students, teachers, researchers, managers of education within the European educational space [2]. What place can take the education system of Kazakhstan in the new globalized world, in connection with an official entry into the Bologna process is a matter of time. At this stage, this process has contributed to creating conditions for export of education services and the free migration of students, undergraduates and the intellectual elite of Kazakhstan. For example, on Bolashak program ("The Future"), initiated by President of RK Nursultan Nazarbayev, the task was set to exchange of scientific personnel, training of intellectually gifted young people in prestigious universities abroad. During the years of sovereignty, hundreds of thousands of young people educated in prestigious universities abroad [3].

International Scholarship of the President of the Republic of Kazakhstan "Bolashak” exists since 1993. In the course of its time, higher education in universities in Europe, North America, Russia, Australia and Asia received about three thousand young Kazakhs. Analogues of such a program in the CIS does not exist. This educational initiative of the state was primarily aimed at training specialists in various areas in the social and engineering sciences for the state government. That is the strategic goal of the project was to increase human resource capacity of the young state, improve education and competence of the new Kazakh elite. Today, 18 years after the start of the program, the concept of Bolashak program looks different. According to the 2004 changes, program rules of admission and
selection requirements declined, and simultaneously increased the number of awarded scholarships. According to the 2004 changes, the rules and requirements of admission and selection to participants of the program leveled down, and simultaneously increased the number of awarded scholarships. For example, last year it was decided to annually allocate up to 3000 students for higher professional and postgraduate education (bachelor degree, master degree, and PhD in Western classification) in various foreign universities. A separate structure was created to administer the “Bolashak” in 2005 under the Ministry of Education and Science - JSC "Center of International Programs, which has the job of escorting students at all stages, from the time of selection until they receive a diploma from a foreign university.

Of course, such an initiative of the state - to give opportunity to talented young people to gain knowledge in the leading countries in providing educational services, meets with approval among state agencies and among population. Since the best undergraduate and graduate students sponsored by the State and are trained for free at leading universities and institutes in the world, all expenses for travel, accommodation and health insurance also takes over the state. According to statements of the government bodies responsible for implementing the program, after graduation, all returnees of "Bolashak” program successfully apply their knowledge, thereby contributing to the growth of technological capabilities of the country. For example, according to information of the Ministry of Education and Science from 1993 to 2010, applicants of “Bolashak” became 7356 people, of whom 2,788 were graduates, about 4 thousand - continued their studies, at the stage of employment is more than 300 people. At the moment 1,725 people are executed five year practising of the program out of the 2788 graduates. According to the results of the first and second rounds of competitive selection process, held from 8th of November to 10th of December, 2010, 519 personal files of applicants were included for consideration by the Republican Commission for the award of the international scholarship “Bolashak”. Among them, 101 applicants participated in the competition as they themselves independently entered to the foreign higher educational institutions and 418 candidates - by common competition. Most applicants have applied for training in the U.S. (174 persons) United Kingdom (122 persons), Russia (49 persons), Canada (44 persons), the rest chose countries such as Malaysia, Switzerland, Germany, France, Italy, Australia, China, Netherlands, Norway, Czech Republic, Sweden. The Government provided for a phased reduction of undergraduate programs and emphasis on training of masters and doctors of Education PhD it will be based on a thorough analysis of personnel satisfaction of priority sectors and targeted quotas to ensure to cover these needs. Priority attention will be paid to key areas: industrial and innovative development, education and science, public administration, will also be a mechanism in place of direct coaching graduates with prospective employers and their distribution at the end of training. The model of the Center for International Programs will be updating. However, the integration of systems of higher professional education within the Bologna process generates a lot of questions. First of all, the "brain drain" to the more prestigious economic regions of Europe and other countries that can not fully get the highly qualified specialists for the development of the domestic economy. This circumstance forced the government to reconsider the position of Bolashak program. Today, the task of Kazakhstan is to join the international education space, align their goals and strategies in educational policy with the countries of the Eurasian community. In this connection there arose the need for state educational standards of the second generation. The original document here is a classifier (list) of specialties, which should take into account the coexistence of traditional (single level) and a three-level (bachelor-master specialist) training subsystems. This takes into account experience in the development of state standards in different countries (mainly in CIS countries, as they are in similar economic and educational conditions). In essence, the state educational standards of a new generation is to become international.
The republic has finally settled the question of transition to a 12 year old training and development concept of education by 2015. In Kazakhstan the normative document "National Standard of Higher Education " is valid. Graduate School becomes an object and an active participant in the modernization of its activities (the transition to self-government, financial independence, participation in international projects, contests, stock grants, etc.). Development Strategy of Higher Education is a part of the Republican Doctrine of educational policy and includes four items:

- revision of views on the mission of higher education (the role and place in society, the strategic goals and objectives);
- development and adoption of legislative acts of the national policy in the sphere of higher education;
- Work out a new generation of regulations that implement the goals and objectives of the state general educational policy;
- development and adoption of the concept of structural reform of higher education in the coming years [4]. In the field of higher education is extremely actual task to improve the quality of specialists training. In this regard, "New model of the enrollment at public higher education institutions in the Republic of Kazakhstan" developed and approved by the Government. This model, implementation of which began in 1999, has increased the objectivity of knowledge evaluation of applicants to select the most talented young people among those who enter state higher institutions (colleges) to counter protectionism and exclude many negative phenomena that accompanied the selection committee. Now only 20% of university students receive state grants and loans, the rest study on a commercial basis (although most of them are students of economic and legal specialties). Private colleges, as well as in all CIS countries, almost there are not any specialists majoring in natural sciences and technical professions, because it requires substantial investment. After completing undergraduate level, those who interested can continue their studies within two years of master's degree, whether free or on a commercial basis. Naturally, in the ever-changing modern world, the gain of importance of education as a socioeconomic and spiritual institutions of society has resulted in a change of educational paradigm.

Priority guide for institutions of education is awareness of the need for educational space, which is responsible for the conditions of a developing personality, which transfers the focus from knowledge-centric as the new competencies on the results of education [5]. As noted by Russian sociologists, new generation of radically transforming societies plays an important role in the reform of society and social transformation. They then came to power as an economic, political and cultural elite, realize prevailing in their teenage years a system of values and further upgrade social institutions. Likewise, they state that the younger generation are mostly supporters of the reforms. Among the young there is a split between traditionalists and pro-Western, which can survive in the coming decades [6]. As for Kazakhstan youth, under the paternalistic government and a general modernization of the country's economy and rapid development of market relations, society oriented to receive a prestigious education abroad, while not losing their identity as individuals and as citizens. Reform is happening in the international practice of Outcome Based Education «Education is result-oriented" in every way and is being implemented in practice of institutions of education in Kazakhstan.

The principal directions of the reform are:

- new insights into the quality of education: from knowledge transfer to the formation of competence, the new students can learn, understand, learn to do as a result of their education.
clear understanding of national goals of education and the expected results at all levels of lifelong learning, expressed in developing training programs in the content of textbooks, hand-outs and teaching materials, projects and further training of teachers in creating a flexible system of measuring results of educational achievement of students.

- the principle of decentralization, distributing of responsibilities of state educational authorities, leaving the Ministry of Education and Science the three main areas as:
  - the quality system of education as a mechanism of reporting (subordinate);
  - providing professional support to the Institute of Education and its professionals, as school, colleges and universities recognized professional organization, which carries full responsibility for the quality of service and reported both to state local authorities and society as a whole. Naturally, in a constantly changing complex modern world, the gain of the importance of education as a socioeconomic and cultural institutions resulted in a replacement of pedagogical civilization. In its priority targets include awareness of the need for educational space, which is responsible for the conditions of person development, carries with knowledge-centric emphasis on competence as new results of education. Formation of basic social and educational skills in a period of functioning of education, based on the result, announced at the state level as a fundamentally important priority of the educational sphere in Kazakhstan, has required the definition of a new logic of organizing educational space as a specific environment for development of certain skills. The need for such an organization of education due to several factors:
    - integration into the global educational environment, taking into account the rising trend in terms of training, the need to synchronize the values of world educational process, as set forth Bologna process, ideas, life-long education;
    - changes in the training of technical and professional profile, post-secondary and higher education on demand profiled trained graduate without passing economically advantageous adaptation period for learning in subsequent stages of education;
    - the need for a health-keeping, educational space in school education, providing a more comfortable managing the distribution of subjects by grade, profilization taking into account interests and opportunities of children and reduce exorbitant, excessive theoretically saturated training loads;
    - establishing a national system of quality assurance and control of education to allow a build and optimize the provision of educational services and their evaluation. The educational system as a sensitive seismograph shows the need for innovative development of the country, relying on the potential of their own educational space. Kazakhstan's educational priorities at the present stage are defined as follows:
      - continuity at all levels of education;
      - Save the fundamental nature of education in the context of its practical orientation;
      - profilization of high school;
      - morally, spiritually and physically healthy young generation;
      - interactivity in the learning process;
tools and techniques assessing competency outcomes of education and the education system as a whole;
- the adequacy of the results of SES at all levels of education;
- scientific and methodological support of educational process;
- personnel (selection, training, retraining) [7,8].

Today no one country can claim economy and political leadership in the new millennium without reform of its system of professional education. Higher professional education accounts for civilization development and identifies level of social, economy and technology development and has a powerful potential for self-organization and self-adjustment. It defines requirements for the rest education levels, establishes their standards and provides society with high quality human resources. Higher education system should accumulate potential for its revision from this standpoint. That regards revision of conceptual and methodology basics of higher professional education taking into account best national and foreign achievements of higher education system world-wide. Main directions and the strategy of higher education system development are stated in the Kazakhstan Strategy Development Plan up to 2010, endorsed by Presidential Decree №735 dated 4 December 2001. The government is currently pursuing a program to adopt a credit-system which would allow students to study more easily internationally, and to add the possibility of a curriculum with electives and student-chosen courses. There are four levels of tertiary education in Kazakhstan: Bachelors degree—typically a four-year degree Specialist degree—typically a five-year degree and more intensive than the bachelors Masters degree—typically a two year degree, roughly corresponding to the Western masters. Doctoral degree—typically a five year program. Universities are usually headed by a rector, appointed by the President of Kazakhstan, who wields considerable authority over the institution, approving all decisions including those regarding curriculum, personnel, and admission. Thus Kazakhstany universities are more centralized than their Western counterparts. The most important directions of higher professional education system development are: - Strengthening of universities leading positions in education of Kazakhstan; support to and integration of Kazakhstan HEIs into the world education system; coordination of approaches to state education standards; activity enhancement of students, academic staff, scientists and other specialists within of one education system; expansion of interstate information exchange in education area; development of coordinated criterion and technologies of education quality monitoring, trends of education development in member-countries.

Solution of specialists training quality at all stages of pre-diploma and post-diploma training through regular revision of education and professional programs based on new scientific and pedagogy foundation ensuring high level of education. Education process should contain methodology training in each discipline. Commonality of fundamental training should create equal possibilities for life-long education; enable creative development and personality fulfillment. That can be possible if HEI provides its graduate with interdisciplinary methodology of professional activity, train him as a methodologist who can use each discipline in interdisciplinary connection with other subjects as a mean to solve problems faced in cognitive and occupational activity.

- Design of new, flexible and adequate to time technology of education process management —credit-system, that means an integrated process based on credit-hour as a unit to measure education professional programs and establishment of interdisciplinary equivalents of education content for independent and mobile education process planning with optimal classroom/independent ratio.

- Further development and upgrade of student enrolment formation new model directed at assurance of access to higher education for all including education to choice principle.
- Development of distance and virtual education as a system ensuring access to life-long education, training/retraining, meeting education needs of individual oriented to continuous development.

- Design of new concept of fundamental university science development and enhancement of HEIs role as of scientific-research institutes through amalgamation of academic universities, scientific-research institute, industrial-military complexes and attraction of well-known scientists to education process; support to priority themes and directions, scientific breakthroughs aimed at new technologies development; further development of humanities.

- Provision of more efficient management of economy and finance activity of HEIs to ensure social security of employee and student.

- Bringing university management system to conformity with increasing and fast changing demands of the time. The higher education reform is aimed at prosperous development of Kazakhstan, well-being of Kazakh nation and each citizen of the country. The new model provided for evaluation of all admission exams results by one independent body and a competition for each academic specialty. The National Center of State Education Standards under the Ministry of Education was established according to the Governmental Resolution № 1850 dated 3 December 1999 to ensure implementation of the model. The main goal of the new model introduction is to provide entrant with the right to select academic specialty and HEI as well. Establishment of regional commissions enabled to do that at oblasts of entrants’ residence. Much attention is paid to improvement of higher education content aimed at enhancement of training quality. Thus in 2001 the new Classificator of Higher Education Training Directions and Academic Specialties in accordance with the International Classificator was introduced. The new Classificator included 283 academic specialties of special education, 70 master and 46 bachelor degrees training programs. That was required by the multilevel structure of higher professional education secured by the Law on Education, a necessity to establish a common education system on the territory of the CIS, implementation of the Lisbon Convention on Recognition of Qualifications Concerning Higher Education in the European Region and compliance with the International Standard of Education Classification approved by UNESCO General Conference at its 29th Session in 1997. In line with the new Classificator new generation state education standards are designed. The main difference of the new standards is that 70% of academic load is the state component and the rest 30% of academic hours are implemented by HEIs in accordance with their profile and scientific school. That enhances academic freedom and mobility of HEIs and takes into account peculiarities of labor market demand in specialists. The State Obligatory Higher Professional Education Standards are compulsory for all HEIs regardless their ownership forms and types. The Unified Standard has been designed and issued for cycles of social disciplines, natural sciences and humanities included in general education professional programs of higher professional education. That has been introduced with the aim to implement one ideology and humanization of higher education. Such unification enables academic mobility of students and technologic character of education process. The State Education Standard defines general requirements to higher education content. The following cycles of invariant disciplines obligatory for study have been identified for each academic direction and specialty:

- cycle of general social disciplines and humanities;
- cycle of general natural sciences;
- cycle of general professional disciplines (for each academic direction or specialty);
- cycle of special disciplines. It is necessary to underline that professional training programs include obligatory disciplines and training courses to students’ choice, optional courses and possibility of
individual programs design what is in common practice of oversea HEIs. The main distinction of modern approach to education standard is requirements to HEIs graduates’ qualification. International cooperation in education area is regulated by the Legislation of Kazakhstan and implemented on basis of international agreements, contracts and conventions. Presently agreements on cooperation in education area have been signed with Germany, Spain, China, Turkey, Bulgaria, the British Council of the United Kingdom and Northern Ireland, the American Council for Cooperation in Education Sector and Languages Study, the German Service for Academic Exchange, the National Center of France University Programs, the Soros-Kazakhstan Fund, the Svetoch Society, Russia, Egypt, Uzbekistan, Kyrgyzstan, Ukraine, Mongolia, Azerbaijan and Georgia. The activity directed at mutual recognition of qualifications regarding higher education in Kazakhstan and foreign countries, academic awards are of primary importance. Signing, ratification and endorsement of the Lisbon Convention on Recognition of Qualifications Concerning Higher Education by Presidential Decree № 202-13 dated 13 December 1997 facilitated the process. The work is going on signing of bilateral agreements on acknowledge of academic awards with countries that did not join the Lisbon Convention. Besides the governments of Belarus, Kyrgyzstan, Russia and Kazakhstan signed the Agreement on Mutual Recognition and Equivalency of Qualifications, Academic Degrees and Ranks dated 24 November 1998. This Agreement was deposited in Kazakhstan Ministry of Foreign Affairs and came into force on 1 October 1998. Such joint education institutions as the Khodja Ahmed Yassawi International Kazakhstan-Turkish University and the Kazakhstan-British Technical University have been established and operate in the republic. Kazakh affiliation of the Lomonosov Moscow University was established according to the Protocol signed between the Ministry of Education and Science and the Lomonosov Moscow University. The Kazakhstan- Russian Modern Humanitarian University was founded in Karaganda. Today about 5,5 thousand citizens of Kazakhstan study in over 35 countries of the world. Boarders of cooperation geography in the area of education and science expand every year. Analysis of the education sector reforms shows positive and negative results. Retaining of social unity is the main achievement of Kazakhstan during the decade of the independence. That is an obvious outcome of instrumental cooperation between sectors of the national economy and contribution of the education sector is enormous. Presently higher education of Kazakhstan differs by its continuous education structure providing for life-long learning, modernization based on national and the world education traditions, equal access to all stages of education, unity of all its components and requirements, succession of all training stages. In the higher education sector enhancement of training quality, development of scientific research and technologies, formation of additional higher professional education are considered top priorities. Access of Kazakhstan citizens to higher education is provided due to pay education services sales. The state projected order for students placed in public HEIs amounts only to 1/3 of the total enrolment. Experience of developed countries shows that state education policy should be directed at satisfaction of an individual’s personal and social needs as well as at production of specialists for economy sectors. That’s why state projection should exceed needs of national economy. To increase access of young people, including ones from low income families, oralmans and orphans, to higher education according with international requirements it is necessary to provide access to public education at least of half of the general education school annual graduation. State projection heeding prospective needs of economy is still a problem. So far the state projection for production of specialists with higher professional education has been estimated based on requests from economy sectors that are not always scientifically grounded. Therefore the MOES has developed methodologies for medium- and long-term forecast of demand in specialists with higher professional education at the labor market and programs for HEIs graduates’ employment. Today the MOES, the Ministry of Labor and Social Security and the Ministry of Economy take measures to test this program in 4 oblasts of the country. Today, on the basis of the new Nazarbayev University an innovative model
of higher education institution oriented at market demands is being formed. It aims to become a model for all universities in Kazakhstan. 20 intellectual schools founded on my instructions throughout the country will become the main base for training gifted children for best universities[ ]. The top two universities in Kazakhstan are al-Farabi Kazakh National University in Almaty and Eurasian National University located in Astana. Karaganda State University is also well-regarded. In addition, there are a few international universities such as KIMEP, which is a joint program, 40% owned by the government of Kazakhstan, but education is based on the Western system. The Kazakh-British Technical University and the Kazakh-American University represent joint projects between Kazakhstan and the UK and the USA, respectively. In all three institutions, the language of instruction is English. The University of Central Asia, founded jointly by the Governments of Kazakhstan, Kyrgyzstan and Tajikistan and by the Aga Khan, is affiliated with the Aga Khan Development Network. Its Kazakhstan campus is located in Tekel [9].

CONCLUSION

Education is the most important element of human capital development for every country in the world. As for higher education, it has become an integral part of the certified characteristics of the society, which produced direct and indirect effects on the economic position of the individual his or her promotion and movement along the social ladder. The growing social significance of education gives to the person the opportunity to be either of great benefit to the society – if properly managed or otherwise, of great harm. In this respect it should be noted that the future socio-economic wellbeing of the country, the moral and spiritual development of the people, improvements to legal institutions, the capabilities of the population, the exercise of rights and opportunities for both sexes to a great extent depend on the development of the system of education. According to the Address of the President of the Republic of Kazakhstan, Nursultan Nazarbayev, to the People of Kazakhstan( January 28, 2011) «Building the Future Together» the training and technical education should be based on professional standards and tightly interconnected with the needs of the economy and the quality of higher education will meet the highest international standards. The Universities of the countries should seek to enter in the ratings of the leading universities in the world. The National innovation system will fully operate by 2010 and by 2020 it should already yield the results in the form of development, patents, and prepared technologies, introduced in the country. A special priority in education sphere will have projects such as a unique institution — «New International University», «Special Fund» and «Intellectual Schools», which is already working successfully[10].

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Abstract

The Message of N.A. Nazarbayev, the President of Republic of Kazakhstan to the people of Kazakhstan from January, 30th, 2010 «New decade – new economic lifting – new possibilities of Kazakhstan» is noticed that «success of realization of modernization of the country depends, first of all from knowledge: social and physical state of health of Kazakhstan people». It rises the responsibility of education, especially of higher educational institutions. Nowadays, high schools play the central role in development of a society, economy and culture in all levels – global, regional, national. Higher education takes a special place in the system of continuous formation. Higher education is the effective method that the state makes the formation of its citizens. The given form of education is an important making part of strategy of the general national development. Consequently, the system of continuous education in a context of national idea demands scientific judgement of these problems, carrying out of large-scale sociological research working out of new conceptual model of functioning of institutes of education.

Key words: Higher education, knowledge, continuous education, modernization, a social and economic situation, national development.

1. INTRODUCTION

In XXI a century the innovative economy and new knowledge acting become as a key to success of the different states, to their leadership in the world community. The actual problem of modern Kazakhstan society is preparation of highly educated experts. The Message of N.A. Nazarbayev, the President of Republic of Kazakhstan to the people of Kazakhstan from January, 30th, 2010 «New decade – new economic lifting – new possibilities of Kazakhstan» is noticed that «success of realization of modernization of the country depends, first of all from knowledge: social and physical state of health of Kazakhstan people». It rises the responsibility of education, especially of higher educational institutions. Nowadays, high schools play the central role in development of a society, economy and culture in all levels – global, regional, national. Higher education takes a special place in the system of continuous formation.
2. IMPORTANCE OF THE MESSAGE OF N.A.NAZARBAYEV, THE PRESIDENT OF REPUBLIC OF KAZAKHSTAN IN THE CONTEMPORARY TIME AND ITS INFLUENCE IN UPRISING RESPONSIBILITY OF EDUCATION.

Higher education is the effective method that the state makes the formation of its citizens. The given form of education is an important making part of strategy of the general national development. The position of the individual in a society, the possibility for his successful advancement on his career will be defined by quality of the education which in many respects connected with prestige of an educational institution. But at the same time, as channels of vertical circulation, acts such of them, as social and economic status, membership in political, public organisations, personal contacts. Deep changes occurring in last years in a social and economic situation in Kazakhstan demand a new organised system of personnel maintenance. The major role is given to professional training of staff and, primarily, to the higher education. At the beginning of 60s, the leading countries of the world already have been realised that only with effectively functioning system of higher education and the advanced scientific researches of any country will be manage to hold the positions and to keep a worthy place in world economic system. In this respect the Message of N. A.Nazarbayev, of the President of Republic of Kazakhstan puts the following problems in educational sphere:

- all children in cities and countrysides, will be drawn by preschool education and training by 2020;
- by 2020 to pass to functioning of 12 year-model of education;
- professional and technical education should be based on professional standards and strict measures interconnected with requirements of economy;
- quality of higher education should have the highest international requirements. High schools of country should have aspiration to enter to the ratings of leading universities of the world. The importance of the higher professional education in reforming of a society proves to be true of world experience. Thus shows that all countries which have successfully overcome transition to modern market relations (for example, post-war Germany and Japan, the USA of 60s), during this period considered an education sphere as priority and proceeded from it in their investment policy. The competitive education is provided first of all from the quality of education. Now on the foreground in the system of education of Kazakhstan comes the quality indexes but not a quantitative growth which we have been reached. In modern Kazakhstan are growing requirements for receiving professional education. Nowadays it is not enough to have sound knowledge within the limits of highly specialized profession. It is necessary for specialist to have the higher education, allowing to find common language with representatives of adjacent directions of scientific and professional work, to carry out organising and administrative functions, to estimate economic efficiency of the activity, to contact to the various professional, public and political organisations. The integration of education, manufacture and science, creation of educational, research-and-production complexes will provide strengthening of their mutual interest and responsibility. The most effective policy in an educational sphere is connected with granting of real possibilities for reception of education and the qualification, allowing the person to occupy one of free seats in economy sectors. The special secondary education provides possibility to use more widely education for the further social and professional mobility. At the same time intensity of transition numbers of experts with higher education is insignificant, considering that number of experts of an average education is slightly more, rather than the top of high education. Growth of number of transitions of specialists with secondary education through the higher
schoolsto the numbers of specialists of high education allows to develop more continuous career for specialists. While secondary special educational institutions are less focused on professional continuation of study in a direction for their graduates in high schools. Much more widely use education for the further social mobility leavers of secondary schools. Exactly the level of development of higher education in the country defines a mental potential of a society and connecting with it the scientific, technological, economic and common cultural progress. Process of preparation of specialists with higher education, as well as any other process, needs to be managed. For realisation of such major functions of management as planning, the organisation, control and regulation, first of all, is necessary to have the appropriate methods, allowing to estimate the reached level of efficiency of the given process. In this connection rises the special urgent questions of working out scientifically well-founded mechanism and system of indicators of estimating of social and economic efficiency of functioning sphere of the higher professional training. It will give the opportunity to carry out necessary transformations at the high school according to changing conditions and requirements. Proceeding from the formulation of a category "efficiency", there are arises the objective necessity of it’s value not only in industrial field, but also for other branches of human activity, including education. For the first, the process of preparing of specialists has similar features with industrial process (for preparation of specialists are spent certain material, financial and labor resources, and the prepared professional staff (their labour sources) as the final useful result of functioning of system of their training, act in market conditions as the goods), and secondly, the mechanism of estimating of economic efficiency of industry is developed mostly full and scientifically proved, and the requirement for "efficiency" research is arising as economic category (from the point of view of efficiency and profitability of realised process). The efficiency of science, education is decisively defined by quality, scales and by structure of professional training of specialists at high school, and also by rational use of specialists. Z.Tujmebaev, the previous Minister of Education and Science of Republic of Kazakhstan selects the following markers characterising the innovative activity of high schools:

- mental potential of high school;
- modern educational programs and technologies;
- qualitative structure of students, their successes;
- presence of strategic programs of high school;
- level of an involvement of high school in world scientifically-educational space;
- innovative activity;
- support of innovative activity by material and information base [1].

However in modern Kazakhstan all of these problems mostly depends on a conjuncture on a labour market which is extremely chaotic and outside of short-term prospect is unpredictable. High schools strive to increase in every possible way number of students, being guided by the maximum satisfaction of a market demand basically at the expense of reception expansion on a commercial basis. At the same time, already the abundance of lawyers, economists, psychologists continuing to arise, at increasing deficiency of specialists of technical profile. However, technical high schools have most suffered as a result of destruction of industrial-technological base of national economy, for which development and service they, basically, were created. For deep understanding of new tendencies on a labour market and developments of adequate administrative decisions at the level of concrete high schools and consumers of their production, it is necessary, without studying of
particularities, to reveal the general laws of interrelation of preparation of specialists at the higher school and dynamics of labour market, to define the basic, most perspective directions to overcome the crisis ways. Thus, high schools are compelled to build the relations with consumers of production on a labour market by method of test and mistakes and without problems of transition of the country on a sustainable development way. Such approach is connected with considerable economic, social and moral costs for each of interested subjects and for all society as a whole. Scientifically well-founded decisions are possible only on the basis of the sociological research considering high schools and consumers of their production as co-operating subjects of a labour market. The contradiction between potential possibilities of system of higher education to prepare the personnel, capable to provide transition of Kazakhstan to a sustainable development, and a labour market, focused on adaptation to degrading economic-economic system - represents a practical problem. Russian scientists - D.V.Tatjanchenko's, S.G.Vorovshchikov offer the following system for defining the efficiency of educational system:

INTERNAL COMPONENTS OF QUALITY OF EDUCATION

1. Quality of the basic conditions of educational process:
   1.1. Quality of results of school education.
   1.2. Quality of management of educational process.
   1.3. Quality of scientifically-methodical work.
   1.4. Quality of personnel maintenance.
   1.5. Quality of material-financial maintenance and etc.

2. Quality of realisation of educational process:
   2.1. Quality of the maintenance of educational process.
   2.2. Quality of education
   2.3. Quality of teaching etc.

3. Quality of results of educational process:
   3.1. Quality of knowledge.
   3.2. Quality of abilities.
   3.3. Quality of possession of procedures of creative activity.
   3.4. Quality of good breeding.
   3.5. Quality of development of the person and others.

EXTERNAL COMPONENTS OF QUALITY OF EDUCATION

1. Correspondence of education to educational inquiry of consumers.
2. Correspondence of education to the state education standards.
3. The image of high school guaranteeing stable high quality of education. [2]

The concept of continuous education in a certain measure, is developed in the world scientific literature. The conceptual positions of continuous education in Republic of Kazakhstan have been developed in the 90s years of XX century. But times changes, the society moves, develops and
changes concepts of continuous education. In modern society the following directions of reforming of higher education in Kazakhstan are singling out: continuity; diversification; increasing of fundamental nature; integration; humanitarization; democratisation; humanisation; integration with a science and industry; computerisation. [3]. Creation of the most effective educational system capable as much as possible to develop the intellectual and spiritual potential of Kazakhstan is the guarantee of formation of one of the leading nation in the world. Nowadays also there are existing higher stages of education opening new possibilities for rewarding, and additional movings. The education as was already marked, stoppes to be a necessary step for higher social status but continues to remain one of channels of professional mobility of intelligence of Kazakhstan. Consequently, the system of continuous education in a context of national idea demands scientific judgement of these problems, carrying out of large-scale sociological research working out of new conceptual model of functioning of institutes of education. And nevertheless, there are very few concrete sociological researches in an educational field, the well-founded recommendations, new projects of researches, dissertational works, and not is to mention about the large monographies. The problem, probably, is connected with new reform of education which have been accepted more recently and only from 2005 it have been started to be carried out practically. There are much problems to think out and find new approaches for researchers, completely to estimate reform, to observe of a course of its realisation, to conduct new sociological researches and only then to begin publications. In future there is a big research work in this area.

3. THE EXPECTED OUTCOMES

At the beginning of XXI century successful economic reforms allow to pass from «preservation strategy» to «launch strategy». The educational sphere ceases to play a supporting role and becomes one of priority from the point of view of the state interests. However, except global strategic targets, it is not less important to define that tooling with which help this problem will be almost solved. For achievement stage-by-stage modernization of system of average and the higher school through improvement of quality of given educational services, formation of system of retraining of personnel for maintenance of realization of industrially-innovative development; integration into the international educational space are supposed[4].

4. DISCUSSION AND COMMENTS

Performance of this program is impossible through purely bureaucratic actions. First of all, according to N.Nazarbayev, Kazakhstan requires “the elite universities” which are powerful educational, research and research-and-production complexes, closely connected with the industry. It is a question of creation in Astana and Almaty new universities of the international level which will make use of experience of leading foreign educational institutions, including the Russian high schools. New educational institutions should become the centers of development of innovative educational technologies, "locomotives" in the course of formation of new technical and humanitarian elite of a society. As an example of successful realization of plans of the state already now acts the Britain-Kazakhstan technical university. For rather small term it is educational institution has deserved the appreciation of experts, from the points of view as the organization of educational process, and quality of knowledge which are received by graduates. It is not casually than sponsors of this educational project are leading western firms. All this is a fine example of how positive image of high school induces investors to put means in development of educational programs. Actively is developing the
program "Bolashak" in which frameworks the most capable young men and girls can apply for reception of the state grant for training in the best foreign high schools, and many choose the Russian high schools from them. Lifting of the general level of the higher institutions of the country as high school leaders is only the reform card should become a following stage of modernization of educational system. Real changes demand the general advance. According to Michael Porter's concept, country prosperity isn't inherited, and created. However formation in Kazakhstan economy of knowledge should create the strong base to achievement of this purpose as there are the formed and competent people are and there are main "gold reserves" of a society in the XXI-st century. During the lecture before students and teachers of the Euroasian University the President of Kazakhstan N. Nazarbayev has once again confirmed that the state has no time and possibilities for a choice of an extensive way of modernization and, entering a postindustrial epoch, «chooses model of advancing development of priority branches, having economic potential of increase of competitiveness of the country». According to the Kazakhstan leader, this choice reflects a universal tendency. Thus, during an epoch of new technologies formation it isn't so simple social sphere. These are investments into the country future in which the state and a society, the enterprises, the organizations participate, citizens – all are interested in quality education. For this reason the priority problem puts creation of essentially new model of the educational process focused on development of the person, instead of on formal accumulation of the sum of knowledge. It is a question of system in which frameworks process of professional perfection of individual could have continuous character, being directly connected with interests of the state and potential employers. The new stage of development of a civilization is connected with acceleration of rates of development of a society and necessity of preparation of people to life in quickly changing conditions. Considerable expansion of scales of global interaction in the conditions of an information society is available; growth of value of the human capital which in the developed countries makes a considerable share of national wealth that causes an intensive, advancing development of education of youth and adult population. In turn, break on qualitatively new technological level is impossible without creation of adequate scientific base. At last, development high technologies can be created only on the basis of high educational level. From here the direct interrelation of all elements of modernization of a society, but a starting point is reforming the model of formation which should be considered as global innovative process. Starting conditions for carrying out of reform of formation in Kazakhstan experts are estimated ambiguously. On the one hand, bases of old Soviet school from the point of view of techniques of teaching and level of preparation of teacher's shots remain. In it there are unconditional pluses and the minuses. Russia and Kazakhstan have passed through a stage of "leak" of the most talented shots in science and education for country limits, or in other spheres of public work. However «the gold fund» teaching personnel is still not numerous, therefore extremely pressing question of preparation highly skilled teachers of the high school, capable creatively to connect positive sides of the Soviet fundamental formation to the new technologies training fixed in agreements of «Bolonsky process». On the other hand, during the Soviet epoch Kazakhstan wasn't among republics with versatile educational system, the cycle of preparation of experts in many directions is necessary for creating from a zero cycle. Reforms of formation of 90th years were spent in conditions when there was a question on a survival of the whole branches of economy. The state, without having possibility to realize strategic programs, it has been compelled to operate situationally, adapting educational structures of Kazakhstan for market economy conditions [5]. During the last years according to a spirit of the age the leitmotif of the maintenance of formation has been changed. Even more often we speak about necessity of maintenance of competitiveness on the international educational space. Probably, exaggeration won't tell that is rare in what country the Head of the state pays so steadfast attention to a development of education, increase in its financing, as in sovereign Kazakhstan. Cardinal modernization of domestic educational system is
defined as a main objective of the state program of development of education of Kazakhstan for the forthcoming decade which project is widely discussed in the academic, scientific and public environment. In the modern world going by the way of globalization, ability quickly to adapt for conditions of the international competition begins a major factor successful and a sustainable development. The introduction of Kazakhstan to the Bolonsky process in March of this year inherently was the first step on a way of integration to the international educational space. Cardinal qualitative changes in education system of RK promote integration of educational system into the international educational space, expressed in signing by the state of the Bolonsky declaration, and high schools – the Great Charter of the universities which once have laid down in its basis. Without any exaggeration it is possible to assert that the new educational reality is formed before our eyes. Already nobody challenges the fact that the main competitive advantage of the advanced country is connected with possibility of development of its human potential which is in many respects defined by an education system condition. Competitiveness is directly connected with development of personal potential and teachers. With an ulterior motive for years of independence in the country programs of purposeful increase of professional competence has been trained, and teachers began to be realized successfully: the Presidential grant "Bolashak", competitions «Best teacher», «the Best teacher», grants of Fund of the First President and others. Introduction in an education system of the new organizational-economic mechanisms providing an effective utilization of available resources and promoting attraction of additional means, allows to raise quality of formation on the basis of updating of its structure, the maintenance and technologies of training, to involve in an education sphere of the qualified experts, to provide quality of educational services. Transition to three-level system of preparation in sphere of the higher education, acceptance of the new qualifier of specialities have created conditions for the academic mobility. The openness of educational space creates conditions for acquisition by our students and teachers of new experience, forms representation about teaching level at foreign universities. Enriched with experience of training in other high schools and the countries students and teachers are conductors of the international experience and make demands to the organization of educational process in our high schools at the international level. In the state program project the new algorithm of development of an education sphere is put: increase of the status of the teacher, substantial increase of its salary, all-round attention to development of small completed schools, introduction of electronic training «e-learning», perfection of a control system by formation, reduction of the maintenance and higher education structure in conformity with parameters of Bolonsky process [6]. Maintenance of quality, availability and efficiency of formation assumes development of new mechanisms of its public estimation according to principles of Bolonsky process. One of the first steps in this direction it is the passage by high schools of independent national institutional accreditation under the international standards. The comparative analysis of structures of educational systems of Europe and Kazakhstan shows a various trajectory of movement in the uniform educational space, caused by distinction of initial conditions: unification of educational programs is necessary for the countries of Europe, we should solve a problem of their diversification, variability and creation of the independent public monitoring system and quality maintenance. In world practice accreditation is one of base components of system of a quality assurance of higher education, and only we can provide with joint purposeful efforts a recognition of the Kazakhstan formation at the international level. Accreditative processes assume an openness and availability of the objective, adequate information on the organization of educational process in the high schools, located in the Internet. Creation of information-educational portals of universities, working out and introduction of an e-portfolio trained both teachers and other innovations are important steps to this direction. Preparation of the modern expert of any profile demands deep judgment of the purposes of formation, its mission from the point of view of interests, both each separate person, and a society as a whole. The new image of the person
should be based on a combination of deep professional knowledge to ability continuously to study, be ready to activity change, to have spiritually-ethical orientation, independently to form "JA-concept". Orientation of process of modernization of system of the higher vocational training to the person is dictated not only by social – cultural features of our time, specificity of promptly developing society of knowledge, but the fundamental bases of psychology-pedagogical knowledge of features of training at different steps of a continuous education system. The image of a person of a new formed epoch will distinguish the social activity, aspiration to a spiritual unification with other people, new understanding of the world and sense of existence in it the individual, participation in events occurring around and comprehension of responsibility for them. For development of the person by means of humanitarian technologies in higher education authors also have tried to staticize the decision of problems of creation of conditions in this edition. The social order of a society at the present stage assumes development not only the independent, initiative person, but also formation of the expert as the person of culture [7]. That is in the course of training in high school the problem “rewindings of culture dares from the impersonal form of generality in the personal form of culture of the individual”. Today the Kazakhstan model already has quite found its own face [8]. However eclecticism and discrepancy remain in it. The main contradiction is, in my opinion, the contradiction between liberalism of the model, expressed in the big share of a private sector, in declaring of the wide rights of educational institutions, principles of a university autonomy and excessively rigid state centralization in the field of structure and the formation maintenance. It is necessary to remember that in the American model which has served for Kazakhstan by the basic sample, there are no even hints on any standardization of the maintenance of formation. Activity of the Ministry of Education is limited here by exclusively financially-distributive functions. In the majority of the European countries there is exclusively a strong reason for rigid state intervention in ability to live of educational institutions. It is an accessory to the state of the overwhelming majority of high schools. However here again the formation maintenance if it is regulated by the state is rather soft and unostentatious.

5. CONCLUSION

Certainly, Kazakhstan is compelled to consider till now the totalitarian past, improving the market present. The majority of high schools still isn't ready to a wide autonomy, including the questions of the maintenance of formation. In this sense of an expert of the state educational standards it is certainly justified. Moreover, state standards in certain degree promote interuniversity and international mobility of students. However practice of working out of standards and typical programs poorly considers features of specialties and disciplines, degree of formalization of training courses. To the greatest degree it concerns such specialties and disciplines as sociology, political science, marketing, management, PR. The categorial device here hasn't settled, the set of theories applies for the status of the classical and base. In these conditions the state standard inevitably monopolizes separate, not indisputable approaches. Thus, we have entered a principle of standardization of the maintenance of formation, not up to the end understanding character and frameworks of object of standardization. Adequacy of estimations. Today in Kazakhstan in estimations of development of an education system, efficiency and quality of training the excessive hobby for quantitative approaches, aspiration to measure all and all is observed. Such tendency is characteristic for other spheres of public life. The fashion on forming of ratings hasn't avoided also the state strategy. Certainly, historically unprecedented rates of development of the modern world generate natural desire to fix change, results, positions. However, thus it is impossible to forget two things. First, a social reality – too difficult object for purely mathematical approaches. Those who studied sociology history, well know that all attempts to learn public relations, using exclusively methods of exact and natural sciences, were at a
deadlock. Social studies yet haven't opened the atom and the gene, that is that elementary particle, having made a start from which it is possible to build laws of development with mathematical accuracy, to materialize non-material and to measure the intangible. The sociological modernist style and a postmodern have meanwhile refused «the social physics». Secondly, there are no ideal, universal and world-wide recognized ratings. The technique of any rating, a set of the variables lying in its basis, is always vulnerable. It is well-known one more paradox which has arisen in our high schools. The slogan of a priority of independent work becomes the basis for increase in a share of line lectures to the detriment of a practical training. It becomes at all for the sake of innovative pedagogics, and for decrease in expenses for training. The second example of realization of the superficial approach to formation reforms is hipertrophical tests as control forms. This certainly is effective, but the auxiliary form of control in many high schools, and, meaning intermediate– everywhere, it is transformed into the main tool of an estimation and students, and teachers. As a result training turns in “the excessive help” The strategic direction of reforms of the Kazakhstan higher school is verified and true. It is important only that the form didn't advance in reforms and didn't subordinate the maintenance to itself [9].

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STUDY PROCESS AT EARLY SCHOOL AGE AND CROSSCULTURAL EDUCATION.
PROBLEMS AND SOLUTIONS

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Abstract

The social tendencies in today's educational system could be characterized as a gorgeous bouquet of magnificent flowers where each flower itself is very beautiful, but all together subdue the beauty of the bouquet.

Each person as an individuality in our society is different both outwardly and in thoughts and opinions. How to hear each other? How not to subdue the other's thoughts, views, unwillingly imposing one's opinion, conviction, wisdom? All these questions have to be answered by both a pupil and a teacher in primary school. How ready are we to tolerate something that is different? Very often when discussing what is tolerance and who can be considered to be tolerant, we come across the issue of person's inner culture. The aim of the article is to reveal pedagogical conditions and the most essential possibilities for a teacher's educational work in multicultural environment in the classroom, to compare and analyse Latvian and US Lincoln teachers' experience and possibilities to implement crosscultural education at early school age.

Key words: Crosscultural education, emotional experience, the qualities of a teacher's personality, the attitude towards the diverse.

1. INTRODUCTION

Globalization process in society affects also school environment, study content and a teacher's competence to work and implement pedagogical process in multicultural environment. In order to make a teacher's pedagogical activity a part of cultural and social activity, it must manifest itself as a social interaction between a teacher and a pupil and among pupils' parents as well. It is necessary to speak about multicultural education.

As it is emphasized in the glossary of pedagogical terms, multicultural education facilitates awareness of values in several cultures in order to widen the horizon and develop tolerance and understanding of the common and the different in the world outlook, values, convictions, ideals and attitudes of various cultures, and also to improve verbal and non-verbal communication skill between people of different ethnic groups and nationalities.

In Latvian schools there has been a tendency lately that alongside with Latvian children the number of ethnic minority pupils rises in classrooms.

R. Mall depicts the social tendencies of the 21st century focusing on openness for mutual understanding: desire to understand and be understood stressing crosscultural approach as attitude, phylosophical conviction that there does not exist...
one culture for all mankind, as respect, tolerance towards the values of different cultures (Mall, 1997)

Consequently, the issue of problem awareness is topical in the education of Latvia which refers to understanding about crosscultural education, teachers' readiness to understand and implement the study process which would help to accept and get to know the different, cultural values of other nationalities.

The multicultural education should be implemented so that teachers can learn to apply the unique cultural assets of their students in creating a learning environment that will be beneficial to all students, regardless of diverse backgrounds. Developing a sense of oneself as a cultural being is the first step towards developing the competencies of a culturally responsible educator.

The results of research work carried out by RTTEMA researchers and obtained surveying teachers, interviewing the teachers from 13 schools in different regions of Latvia. The main task of research - to analyse the results of structured interviews of teachers, pupils, students in Latvia and Nebraska state, USA and University of Nebraska about readiness and necessity to implement crosscultural educational process for children at early school age.

2. AWARENESS OF MENTAL VALUES IN MULTICULTURAL ENVIRONMENT

Getting acquainted with the diverse, evaluating cultures and traditions of his and other nations, a child at early school age starts to understand and be aware of mental values.

A child is a social being already since birth. However, there exist relationships among children themselves (cooperation relationships), and between a child and an adult which J. Piaget calls socialization. As a social being from the very beginning, a child socializes gradually (Piaget, 1974).

A human being in his life is oriented on certain values, which are expressed in his action and aspirations, which determine strategic aims in personal life and world outlook. Research was already done on general humane values in Latvia in 1920s-30s in works by P. Birkerts, J.A. Students, P. Dāle, E. Brastiņš and others. (Lasmane, Tunne, Krūmiņa, 2003)

According to E.H. Erikson a child develops in a cultural development. This development takes place in the process of obtaining experience. In interaction with environment, under appropriate pedagogical guidance, a child obtains personal experience (Erikson, 1963). Analyzing the importance of values in the process of personal identity development, E.H. Erikson emphasizes the significance of social environment on an individual.

S.H. Schwartz reveals values as definite aims, which are arranged according to their significance and serve as leading principles in human life. Values have influence on cognitive, affective and behavioral reactions of an individual. It is pointed out that values are passed from generation to generation during the process of socialization (Schwartz, 1995). Because of that individual’s values system is acquired already during socialization in childhood, however, there can be reevaluation when changing the life experience of an individual and origination of new social roles and responsibilities.

In his turn, M. Rokeach (M. Rokeach, 1973) stresses the importance of terminal and instrumental values:

- **terminal values** – objectives which give a deeper understanding of life, these are more stable;
instrumental values – which are necessary in order to achieve other values.

Analyses of values and integration in the value system of an individual point to the individual aspect and the presence of attitudes.

Awareness of mental values, various social skills in multicultural environment is connected with non-differential world perception of junior pupils and certain egocentric manifestations.

Reposing on researches by I.Krūmiņa, A.Lasmane, D.Medne, I.Tunne (Lasmane, Tunne, Krūmiņa, Ābele, 2003) it can be concluded that a child is not yet aware that things might be different from what they seem to him. Egocentrism expresses itself as the lack of awareness of one’s subjectivity as well as the lack of an objective evaluation of reality.

A pupil’s knowledge about oneself, ability to get to know and have a concept about mental cultural values increase within social relationships as well as a result of interrelations, which appear in a successfully organized teaching and upbringing process that is based on the holistic approach. Reposing on uniformity of upbringing and teaching process one can refer to certain interrelations in multicultural environment, as a result of which in the pupil’s system of values in the new quality is reflected the ability to accept the peculiarities both in his own and other cultures.

Characteristic features of expressing interrelations are emotional experience and attitudes in the teaching and upbringing process. Emotional experience might be considered as a motivator and promoter of comprehension for obtaining new cognitions about the cultural values of both – one’s own and other nations. Within both teaching and upbringing process in the lesson and in out-of-school activities that thoughtfully perfects the experience gained at lessons attitudes are emphasized to be the uniformity component, which enables to enrich judgments and provides with the opportunity and readiness to act according to the comprehension of a newly gained value about oneself as a unique personality and acceptance of peculiarities of other cultures. As a result of interchange, which is based on the uniformity of study and upbringing process, mutual enrichment, one can refer to a pupil’s value expressions in activity in a new quality. It is to admit that the statements can refer only to such teaching and upbringing process where the teacher both within the teaching process at the lesson and in out-of-school activities knowingly offers the opportunity to get acquainted, compare, and endure emotionally the cultural values of his nation and other nations.

One more problem has to be emphasized, namely, presence of emotional experience can only be ensured by such teaching process where the teacher in teaching activities is based not on acquisition of certain knowledge and skills but a child’s self-alteration as a subject. A pupil’s as a study subject self-alteration is not conceivable without emotional interaction with a teacher, without communication. For the dialogue to have interactive character it is necessary to rouse each participant’s interest to be involved into this interaction successfully. The teacher participates in the pupils’ dialogue. It demands a lot of the teacher himself, mainly communicative skills.

3. EMOTIONAL EXPERIENCE IN A PUPIL’S VALUE SYSTEM

A pupil’s value system can develop only in uniformity of study and upbringing process. Emotional experience as an integral component of value creation system must be analyzed as a common element of study and upbringing process.
M. Vidnere emphasizes that emotional experience is not only self-reflection and self-esteem, not only passive guess, but also a creative act affecting consciousness and can be as a generator of child’s will and mental energy (Vidnere, 1999).

The knowledge acquired in study process (also about national peculiarities of different peoples) can be transformed into comprehension level only in case if the child experiences them as an important fact to himself. According to I. Žogla by showing personal significance and sense of cognition, cognitive emotions and feelings are expressed in excitement, joy, inspiration, persistence and delight (Zogla, 2001).
A very important factor is emotional context of the process. The brain evaluates emotions and emotional associations higher than the ability to think on the highest level. It is clear why events, knowledge connected with serious positive or negative experience stay in memory up to the last detail (Smits, 2006).

All actions are followed by certain emotional mood. It can be either positive or negative. Positive emotional experience is a precondition for value developing process.

The presence of emotional experience which promotes the expression of interconnections of learning and upbringing in multicultural environment becomes a precondition for the development of attitudes.

From the above mentioned it can be concluded that the component of attitudes is directly connected with the acceptance or not acceptance of new values.

It can be concluded that it is not possible to speak about attitude as a quality of personality without the existence of emotional experience. The problem of attitude has been investigated by many authors (P. Dāle, E. Pētersons, J. Students, A. Špona and others). A pupil’s attitudes are expressed in values, principles and ideals. It is a quality of personality which is formed in the uniformity of life experience, acquisition of knowledge, emotional experience and will.

It has been observed in practice that pupils who are proud of belonging to their nation not only more successfully accept and acknowledge cultural values of other nations, but also see common and different aspects in Latvian national mental values and cultural values of their nations. However, solution of the listed questions yet requires serious research and changes in common stereotypes.

According to the previously said it can be concluded that only if a teacher deliberately includes questions about the values of our and other nations and gives a pupil the opportunity to experience the obtained information as significant for himself, we can speak about the presence of a positive attitude which determines the pupil’s further action. In order to speak about the expression of interconnections, it must be taken into account that the qualitative changes of values can take place only if the obtained comprehension formed as a result of emotional experience and attitudes, is converted into active practical activity. This uniformity has not been studied enough as a potential for the above mentioned problems.

If the above mentioned approach is implemented one can speak about new values that have enriched a pupil’s system of values.

A teacher’s proficiency and readiness to change the study and upbringing content according to the peculiarities of multicultural environment in his class determine the fact that this environment becomes a facilitator of pupils’ values or, on the contrary, it creates serious problems in acquisitions of regular study content.

The initial research shows that time and serious pedagogical work is needed for society to comprehend the significance of this issue.

4. THE RESULTS OF RESEARCH WORK

4.1. Teachers’ readiness for implementation of crosscultural competence

Out of 129 teachers only 7 teachers consider that purposefully organised pedagogical comprising crosscultural educational aspects for acquainting pupils with the different and organisation of common
events would be necessary for the basic nation and ethnic minority pupils. Basically, teachers think that the main problem causing difficulties is the poor knowledge of Latvian.

Surprisingly, some teachers had a negative attitude that a pupil could use his native language during the breaks.

- I do not allow and tell them that they can speak Russian at home. The other children might not like that they speak Russian at school.
- I explain to children that they have to improve their language skills, thus, it would be good if they practised speaking Latvian among themselves.

When asking questions about teachers' readiness and professional competence to implement crosscultural educational model at their school, out of 129 teachers only 13 confirmed that they would be ready to accept assistance from school administration. At the same time 23 teachers emphasized that if they had a possibility to attend courses and if there were an assistant from school environment, they could try to implement crosscultural educational model, however as mentioned before, only 7 teachers acknowledged that it would be beneficial for all children including Latvian.

The most essential answers confirming the real problems for teachers:

- We have had gipsy children. We have come to conclusion that it is a totally different nation which we cannot understand completely. We are not able to work with them. We suffer and so do the children.
- In our classes there are children from mixed families where they speak Russian at home and the children speak Latvian very badly. At school these children are very quiet and shy.
- I do not know how to work. We feel that we have to look for a different approach to organisation of events and work with parents but we lack experience and knowledge how to do it.

From the obtained results we must conclude that attitude, the component of attitudes viewed from the aspect of professional competences is the most essential determining the teacher's action. It can be explained that attitude as a potential of psychic reaction in connection with the defined process mainly manifested itself as an emotional component. Just the emotional experience is the uniting component in the system of attitudes of both teachers and pupils which further ensures a definite action.

When interviewing teachers from 5 schools in Lincoln, I could see that the experience and understanding about crosscultural education, problems and solutions are quite different from cultural competences of Latvian teachers.

Applying the idea of human pedagogy about the potential of values in pedagogical process and focus on attitudes and the idea of constructivism on constructing knowledge and skills in action, a teacher acts as a facilitator of pedagogical process (page 60, chapter 3, I. Maslo). The emphasized conclusions were obtained from talks with 16 teachers from primary schools and when observing pedagogical process in both lessons and out-of-school activities. A teacher himself represents a current cultural content, consciously or unconsciously including his cultural experience together with cultural potential from study standard.

A teacher promotes pupils' independence, responsibility based on equality.
It is important for pupils to understand their own and other emotions, be selfconfident, take responsibility, form relations, be empathetic, think creatively, make a decision – emotional experience and situative attitude play a great role so that pupils could accept and understand the diverse.

In picture 1 you see the most essential common and diverse tendencies of opinions, pedagogical work in crosscultural context of teachers from Latvian and Lincoln schools.

As it is seen in the picture, after the interviews we can conclude that certain crosscultural competencies are characteristic to both Latvian teachers and the teachers from Lincoln schools. As it was mentioned in the research, it is very hard to draw common conclusions on Latvian teachers' opinions and their implementation in pedagogical work because the opinions were often completely diverse, however, common and different tendencies can be seen.

The teachers of both countries are convinced that there exist diversity of cultural values and it can be felt in pedagogical work both in lessons and out-of-class activities. Both Latvian and Lincoln school teachers pointed out that ethnic, religious differences affect people's social positions, mutual relations. As a connecting element was teachers' understanding about mutual perception, assessment and influence which can only occur when a pupil accepts the teacher's tasks and suggested means.

At the same time we have to speak about essential differences, experience of both countries' teachers in manifestation of crosscultural competencies in pedagogical work with pupils. The results of
research in USA testified about social interaction in class, learning and interaction cultural content which is expressed by the teacher through his experience, the subject content which in future turns into a significant educational, learning and interaction cultural symbol. The teachers' action promoted pupils' tolerance to cultural diversity, understanding and sensitivity.

However, Lincoln school teachers regularly include such events into pedagogical process which provide the possibility for pupils to get to know the traditions of different cultures actively cooperating with their parents.

Inquiring teachers about the necessity to arrange such events at schools which partly would allow to get acquainted with the peculiarities of those cultures which are represented by the pupils in the classroom, the teachers' thoughts differed. Out of 129 answers there was a complete denial from 53 teachers who stressed that it must be done by family at home, however, 37 teachers answered that they were already doing that. It must be added that they were the schools where the study process is bilingual.

39 teachers took a neutral position by answering that they had never thought about such a possibility to supplement the study process with the cultural elements and traditions of those ethnic minority children who are in the class. The most characteristic explanations were:

- **It is not revealed at school. Traditions must be saved in family.**
- **If they want to keep their national identity, they must send their child to a Russian school.**
- **Every year the school organises language days. Latvian children were surprised that gipsy songs and language are so interesting.**
- **Such events are really necessary, but we cannot blame colleagues because they are not knowledgeable.**

In the mentioned answers the attitude component is basically formed on situational emotional experience which determined the teacher's further action.

Do we want to see a pupil who is indifferent to his ethnic identity and cultural traditions, choosing the education acquired abroad? Do we want to move towards such society?

The way out of such a situation can be found in the implementation of crosscultural education at school which would promote the awareness of national cultural values even if the environment where a pupil lives differs greatly.

However, Lincoln school teachers regularly include such events into pedagogical process which provide the possibility for pupils to get to know the traditions of different cultures actively cooperating with their parents.

4.2. The formation of cultural competence in study process.

Every culture has enough morally ethical basic values which are similar to the basic values of other cultures and it makes the mutual understanding possible (Mall. 1997. Dirba, 2006)

Interacting with environment, having received a corresponding pedagogical guidance, a child acquires personal experience. It must be stressed that the value system of an individual is acquired already in childhood during socialization. The analysis of values and integration into the individual's value system indicates about the individual aspect, the presence of attitude process. As crosscultural
education is a dialogue, we have to conclude that it also refers to a teacher as a partner of the dialogue. L.Ose (Ose, 2004.) emphasizes M.Massoudi conclusions about 4 features characteristic to a teacher who is prepared for crosscultural education:

The 1st feature envisages that a teacher possesses such qualities which he wants to see in his pupils. It means that others have acknowledged his abilities or potential to become a teacher. A teacher has to prove with his way of thinking and lifestyle that he has an ideal pupil's qualities. He has to show gratitude to his teachers.

However, as pointed out by A.Parteri (Portera, 2008) a teacher must possess strong craving for knowledge (3rd feature of an ideal pupil), a teacher must have a strong desire to pass his knowledge to others.

2nd feature is that a teacher must be able (or must have a belief) to see a potential in his pupil and be able to develop it or help a pupil to implement his potential. A teacher believes that his pupil is able to learn. A real teacher is not the one who says he can change a pupil. M.Pandi (Prandi, 2007) points out that a person is not appropriate to become a teacher and teach unless he perceives a pupil as a whole, with his rights and his own personality and he does not consider him as a whole – a valuable person and a citizen. Respect to a personality is the beginning of wisdom to solve any social issue and firstly in education. It means that a teacher must be able to teach according to pupils' abilities. Some methods or techniques are more effective for some pupils than for the others. Therefore for someone who looks at a teacher's and pupil's relations as a detached observer it can seem that a teacher treats some pupils discriminatedly and shows his favour to other pupils. However, a real teacher knows (or he must know) the level of his pupil's comprehension and in accordance with that applies the best techniques to make the pupil understand the essence of the subject.

3rd feature states that a teacher must encourage a pupil to develop the ability to think independently and become independent. Independent in such a meaning that a pupil learns to study, observe, doubt and ask questions, act and live grounding on what the teacher has taught him. Thanks to a teacher's presence, a pupil learns to be sensitive to others. According to Massoudi a good teacher promotes pupils' responsibility for their life of thinking and feelings.

4th feature points out that if a teacher accepts a pupil then it is a lifelong trust. It means that from a teacher's side there must exist unconditional love towards pupils. This careful attitude mainly manifests itself in action, not in words. A teacher not only cares about his pupils' education, but also about their life on the whole. When analysing the statements expressed in features about the teacher prepared for crosscultural education, we must conclude that teachers need a professional assistance, a possibility to educate themselves which would facilitate the acquisition of cultural competence. The mentioned statements prove that pedagogical work in class multicultural environment requires a special readiness which includes not only pedagogical means, but also the manifestation of personal qualities.

In order to find out the future teachers' opinions, conviction, proficiency with regard to cultural competence there were observations and interviews of USA Nebraska University and Latvia University students from teacher training programmes. Picture shows the common and diverse tendencies of cultural competences.

As it is seen in the picture, the future teachers' opinions on multicultural society are very similar. It is understanding about the common and the different in world outlooks, values, convictions, ideals and attitudes of various cultures. Of course, experience, environment, pedagogical means for practical implementation of understanding in pedagogical work are different. Multicultural environment in
class, teachers' sincerity, tolerance could be seen in every Lincoln school where about 10-15 nationality pupils are learning at the same time. Of course, when being in practice, implementing practical tasks, the future teachers acquire cultural competence and the possibilities of its implementation more than in Latvian schools.

The picture shows that theoretical and practical readiness of Nebraska University future teachers is much higher. In all teacher training programmes there are study courses about cultural competence and its implementation essence. It must be added that also in Latvian Universities there are theoretical study courses, however, real observations often contradict with theoretical conclusions.

If we want our young people to be tolerant to the different, they must have experience with the otherness. It is stressed by American classic J. Bank (Bank, 1995, 2002) and also in integrative civil education standards Democracy and Diversity worked out by a group of international specialists in education. Diversity in democratic society today is topical because certain ethnic, religious, language, sexual orientation and disability groups are structurally or culturally privileged or restricted.

Restricted groups push towards cultural or structural changes in order to ensure equal rights – both in a certain country and also internationally (Bank, 2004). However, if we look at intolerance, discrimination, it is important to explain to pupils not only about the psychological conditions of their formation, but also about their institutional or systemic forms. L. Ose (Ose, 2006) emphasizes that a teacher in his pedagogical work involves his own social cultural experience, previously evaluating them reflexively and systemically constructing the fragments which should be included in the process.
and passed to pupils, as well as encourage pupils to express the facts of their experience – share their experience.

According to the acquired results we must conclude that the majority of teachers are not ready psychologically and professionally to change their stereotypic thinking and use the existing multicultural environment in class for promotion of his pupils' life skills.

Concluding about the results of structured interviews, it is seen that the problem is not in children but in adults – teachers and children's parents. Unfortunately, the majority of pupils aged 12-17 are not aware of Latvian traditional cultural heritage as something significant for them. One reason can be that pupils have not had enough possibility to learn and evaluate their culture through the diverse cultural context. From the observations of the future teachers' practical work we can conclude that very often in the classrooms where folksongs are sung and fairy tales are read, the teacher mainly focuses on the task to learn folksongs by heart but there is no search for the real meaning or content which would provide understanding about the real national values of our culture. At the same time, as confirmed by the students' research, during the lesson of social science about "Preparing for guests", children are ready to evaluate, compare, enjoy and conclude that traditional culture is so diverse.

The students during the practical work in 19 Latvian schools conducted a social science lesson to the pupils of forms 3 and 4 where the pupils themselves had to select the most appropriate folksongs, games, folkdances in order to use them at a party with other nationality children.

- Let's sing "Sorrow, my great sorrow", we can sing the refrain together with the guests, they can learn it quickly.
- Look for some other song with an easy refrain.
- We could sing about Riga, it is our capital
- Remember, we once learned "Riga resounds". There we could show a lot with our hands.

After these classes the most essential pupils' conclusions proved that they had not thought before that we have so many different games and songs.

When observing pedagogical process in Lincoln schools and participating in out-of-class activities, I could acknowledge that pupils' activity, excitement, emotions to a great extent are the same of both Latvian and Lincoln pupils.

The picture shows that it does not matter where pupils live and learn, emotions, emotional experience, practical activity accompanied by positive emotions attract and interest pupils. There are no problems connected with different national opinions, values, beliefs among the pupils. Problems exist among adults, often among pupils' parents. It was especially evident during the research in different Latvian schools. Sometimes there were parents' objections that they were not satisfied that there were other nationality children in the class, it bothered Latvian children. Of course, parents' attitude often affects further pupils' action and hinders them to accept the diverse and look for a possibility to enrich from it, concurrently be aware of their own cultural heritage.

We have to add that during the research work we found out that the situation in Latvian schools is very different. It was surprising in some schools where Latvian pupils were happy to participate in activities where they could learn about, for example, gipsy culture. Comparisons, positive emotions among pupils must be considered as a beneficial factor for further development of a pupil's value system.
Unfortunately, there are not many such activities in Latvian schools yet.

The content of the new culture is based on linking experience with new personally significant study contents and values, it creates completely new forms of mutual relations, cooperation and communication.

CONCLUSIONS

The analysis of the situation in Latvian school shows that for pupils who represent dominant culture in this case, Latvian culture, crosscultural education is as necessary as for the others because they are most often wrongly educated about diversity in our society.

Too little attention is paid for a pupil to understand, evaluate, be proud of our culture. During social interaction in class a value potential is formed and the result of it depends on the expression of cultural competence between a teacher and a pupil.

US Lincoln teachers’ experience proves that crosscultural relations in class, out of school activities develop as mutual respect, understanding, interest.

Summarizing the most essential statements we can conclude that at schools it is necessary to create such conditions for pupils to understand that there are differences between various groups of people and also inside these groups and the awareness of these differences will help us to understand each other better.
Crosscultural competence for a teacher is as necessary for current life as the skill to apply various study methods.

The study programme must comprise different visions and experience and must be based on social constructivism, emotional experience and theory of action.

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PECULIARITIES OF INNOVATIVE ACTIVITIES TYPICAL OF AN ACADEMIC SECTOR OF THE SCIENTIFIC-RESEARCH COMPLEX IN RUSSIA'S FAR EAST

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Abstract

The basic way of development in the countries oriented at creation and use of high technologies, is directly related to formation of an innovative society. The infrastructure that provides innovation processes can differ in different regions, even within a single state. The most pronounced differences are observed in the areas with severe environmental extremes and a poorly developed social-economic structure of life support. In Russian Federation the most extreme areas for vital activity are Magadan region and Chukotka situated in the Extreme North in a maximal remoteness from the administrative center of the country. Despite this, the series of scientific-research institutions RAS work in the above mentioned territories and provide more than 50 % of all the innovation developments of the territory. In addition, there are several objective factors being obstacles to formation of the innovation society infrastructure. Those factors have been system and local problems.

Key words: innovations, financing research, investment, intellectual property, Russia’s Fareast

1. INTRODUCTION

The problem of innovation development in a region should be solved to the sufficient degree by introducing the scientific findings of universities, academic and branch institutes into economic circulation. But such activity is still facing the series of local and system obstacles. The system obstacles lie in imperfectness of normative and legislative grounds typical of either all the country or Magadan region, particularly.

2. MATERIALS AND METHODS OF RESEARCH

A draft law entitled “About innovative activity and state innovation policy” was placed for consideration into the State Duma. It contains the certain defects related to the terms of “innovation” and “innovation activity”. In particular, the draft law means “innovation” as “an ultimate result of creative activity realized as a new or improved product, technological process used in economic circulation.

Pursuing from earlier recommendations and modern requirements of the innovation process development, we tried to analyze the most important, to our opinion, aspects of the current situation with the regard to the law’s terms and conceptions. As “innovation” meant in the draft law is associated with only an ultimate result of creative activity, it is unclear what lies in the terms of “ultimate result” and “creative activity”.

Accounting for the note that the terms which are placed into legislative documents ought not to be equivocal or not concrete, we believe the term of innovation should include the series of the following compulsory signs:

- points to the presence of material object, process, technology etc;
- contains information on a patent (or know how) level of newness and establish relation to intellectual property;
- reflects competitiveness and possibility of using it as a product in the market circulation.

Of note that, the above mentioned draft law and its conceptions of innovation and innovation activity do not contain all the signs necessary for all-round description of the terms. In the document, it is only roughly pointed to the object’s necessity to be new or improved. That makes unclear the precincts of the sign of newness and does non point to its purpose of being intellectual property as an important attribute of an innovation object. The terms do not point to competitiveness which apparently is only implied to be a part of economic circulation.

We have analyzed the above notes, the references available in this field, and our experience acquired at creating new objects of intellectual property as well as our attempts to introduce them into the economic circulation (1, 2). Having done this we propose the following definition of the term of innovation: **innovation is the objects, methods or technologies being new for a concrete field of human activity and reflecting intellectual solutions on the level of patented inventions or “know how” being performable, useful, commercially real, and serving as a commodity in the economic circulation.**

Based on the given definition of the term of innovation, the term of innovation activity can easily be determined. It should be referred to the system of measurements aimed at creation of principally new objects, methods or technologies designed to serve as a commodity in the economic circulation and based on scientific-research or experimental-design elaboration.

3. RESULTS AND DISCUSSION

Of note that, the negative factors influencing the innovation process in Russia are the reduced number of researchers and financial support of the scientific activity that is also being reduced while in developed countries the expenses are being covered sufficiently (Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Total number of researchers (thousand people)</th>
<th>Expenses on 1 researcher per year (thousand dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>41,5 / 42,3</td>
<td>185,5 / 197,1</td>
</tr>
<tr>
<td>Luxemburg</td>
<td>2,3 / 2,3</td>
<td>434,8 / 449,2</td>
</tr>
<tr>
<td>Germany</td>
<td>267,7 / 271,8</td>
<td>312,7 / 394,1</td>
</tr>
<tr>
<td>Korea</td>
<td>157,7 / 168,2</td>
<td>149,6 / 166,3</td>
</tr>
</tbody>
</table>
The expenses on scientific-research and experimental-design elaborations in different administrative areas of Russia’s Fareast are presented in Figure 1.

It should be noted that the salary quota in many institutions of Fareastern Division of RAS carrying fundamental and applied studies is rising while the amount of financing that can be directed to scientific purposes (devices, scientific references, communication, scientific trips, and expeditions), is being reduced (3). Such distribution made by Financial Ministry RF has been a system state imperfection that significantly influences the development of innovative research.

Fig. 1. Expenses on scientific-research and experimental-design elaborations in 2008 through Fareastern District, m rubles (without data on Yakutia)

As it can be seen in figure 2, the financial support of scientific activity in our organization is being constantly reduced. The similar situation can be observed in other Scientific-Research Institutes of the Fareastern Branch of RAS.
Fig. 2. The ratio of the enlarged articles of the financing within the total budget of SRC “Arktika” for 2004-2009 period, %

Note: Red is fund of salary; Blue is scientific activity expenses including the following articles: basic means, materials, communication, business trips, other expenses; Green is communal payments; Yellow is major and current repairs.

It also should be noted that financing covering innovative activities of Magadan region academic institutions from the Federal Budget has been significantly reduced since 2006 (4). Besides, the regional support before 2009 was insignificant (Fig. 3).

Fig. 3. The dynamics of investment directed onto innovation activities of the academic sector in Magadan region economy

Million Russian rubles
This situation can be explained by the extremely low level of the patents applied in economic activities compared to their total number obtained (Fig.4).

Fig.4. The ratio of the obtained and applied patents on intellectual property objects in the regions of the Russian Far East in 2008 in % of the total amount (inventions, useful models, industrial samples)

Of note that the significant reduction occurred in the number of Russia’s scientific workers for the last decade has resulted in the lowered part of the Russian scientists’ publications within the whole pool from the developed countries actively involved in fundamental and applied research. At the same time the latter countries demonstrate the growth in this index. The most pronounced increase can be observed in China where the number of publications per 1 million residents has 3 times increased for the last 10 years (Table 2).

Table 2. The number of the scientific articles published in reviewed journals, per 1 million residents (by data of the Institute of Technical Information RAS)

<table>
<thead>
<tr>
<th>Country</th>
<th>The year of 2000</th>
<th>The year of 2003</th>
<th>The year of 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>942</td>
<td>998</td>
<td>1057</td>
</tr>
<tr>
<td>Canada</td>
<td>745</td>
<td>783</td>
<td>813</td>
</tr>
<tr>
<td>Germany</td>
<td>529</td>
<td>537</td>
<td>543</td>
</tr>
<tr>
<td>France</td>
<td>510</td>
<td>517</td>
<td>523</td>
</tr>
<tr>
<td>Japan</td>
<td>437</td>
<td>471</td>
<td>515</td>
</tr>
</tbody>
</table>
The presented figures can be considered to testify to the reduction of the scientific effectiveness and, moreover, of its innovation component, but actually that is not so if we operate not only absolute figures. So we compared the effectiveness of the use of the budget means calculated per 1 published reviewed article taken from those institutions of the USA and Russia that are comparable by the character of their scientific activities (Table 3).

Table 3. Comparison of the indices used at the assessment of the scientific effectiveness in SRC “Arktika” (Magadan, Russia) and ICPH (Anchorage, the USA) in 2009

<table>
<thead>
<tr>
<th>Analyzed indices</th>
<th>SRC “Arktika” Magadan, Russia</th>
<th>ICPH, UAA, Anchorage, USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total personnel, persons</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>2. Total scientific workers, persons</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>3. Number of the scientific articles published in reviewed journals</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>4. Number of the articles per 1 researcher</td>
<td>0,9</td>
<td>1,15</td>
</tr>
<tr>
<td>5. State Budget financing, thousand dollars</td>
<td>119,7</td>
<td>1057,5</td>
</tr>
<tr>
<td>6. Expenses on 1 article publication, thousand dollars</td>
<td>6,3</td>
<td>7,05</td>
</tr>
</tbody>
</table>

It turned out that, having practically equal number of publications per 1 researcher financial expenses differ: in the Institute of the Circumpolar Health more than 10 times as much is spent on 1 article. However the method of assessment of the Russian scientific institutions’ effectiveness developed by the Russian Ministry of Education and Science is based on the number of publications and the index of citation in western information bases and does not account for the amount of financial support. Pursuing from the above, the method cannot be considered eligible.

4. CONCLUSION

It should be underlined that the following points can be referred to the state system imperfections of the innovation policy:

1. imperfection of legislative and normative documents that often contradict one another;
2. high tech outputs of the scientific activities are unclaimed with business;
3. the orientation towards the profits of raw industries has been prevailed;
4. extremely low actual stimuli and economic preferences in creation of the innovation infrastructure;
5. a lot of bureaucratic obstacles faced when introducing an innovation product into economic circulation, besides, having no definite confidence in the further profits from applying the objects of intellectual property.

The following points can be referred to the local difficulties that limit the innovation process development in the region:
1. lack of qualified personnel in innovation infrastructures;
2. high costs related to the remoteness of the region from the technically developed and administrative centers of the country as well as high extremes of the vital activity conditions and low competitiveness typical of the region;
3. low population density and absolute domination of raw economy;
4. lack of development of the technological bases and small productions oriented to high tech innovative product outputs that is typical of the academic sector of science and education.

Accounting for all the above mentioned it can be stated that innovation potential in the Northeast of Russian Federation is nowadays presented as “quasimarket” of knowledge, technologies and information with lack of development of the base of innovation economy generation and maintenance. At a state level the government structures try to entrust the fundamental science (and particularly RAS) with ineligible role of a substitute of innovation system as well as to make it responsible for realizing the innovation policy of the whole country.

REFERENCES
NON-FORMAL EDUCATION INFLUENCE ON YOUNG ADOLESCENTS’ HEALTH RELATED PHYSICAL FITNESS TRAINING IN SCHOOLS

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Abstract

The aim was to estimate the influence of non-formal education on young adolescents’ health related physical fitness (self)training in schools. Methods: the analysis of scientific and methodological literature, testing, and statistical analysis: the arithmetic mean (x), standard deviation (Sx), student (t) test. The study continued for two years. At the beginning, middle and end of the experiment the focus groups conducted 5 health-related tests. It was found at the end of the experiment that the indicators of the results of three tests performed by the E1 girls’ group (sit and reach, sit ups, 1 mile walk / run) and of four tests performed by the boys’ group (sit and reach, sit ups, flexed-arm hang, 1 mile walk / run) were statistically significantly (P <0.05) better than that of the K1 group of junior adolescents. The results showed that the effect of non-formal physical education in schools is significant for the development of junior adolescents’ health related physical fitness.

Key words: non-formal physical education, young adolescents, health related physical fitness.

INTRODUCTION

Theoretical and empirical research results reveal that yearly adolescence period is particularly favorable for health related physical fitness increase (Karbolis, 1999; Матыцин, 2002; Скурыдас, 2006; Курамшин, 2007; Сальников, 2008; Фролов, 2009). According to the theory of critical periods, at the age 11-13 young adolescents’ indices of flexibility (Барабаш, 2007; Винокурова, Сахарова, 2007; Фролов, Фролов, 2009), aerobic fitness (Karoblis, 2005; Gallahue, Ozmun, 2006; Курамшин, 2007), muscular strength and power of the lower body (Volbekienė, Kavaliauskas, 2002; Матыцин, 2002; Malina, Bouchard, Bar-Or, 2004; Кущёв, Шинкаренко, Перфильева, 2008), and muscle strength and endurance (Матыцин, 2002; Malina, Bouchard, Bar-Or, 2004; Гаврилов, Малинин, Савенко, 2007; Blauzdys, Bagdonienė, 2007) fluctuate positively. However, in consideration of empiric researches (Volbekienė, Kavaliauskas, 2002; Мирошниченко, Астраханцев, 2005; Синявский, Власов, Сергеев, 2009), it was established that young adolescents’ health related physical fitness was insufficient and had a tendency to decrease.

Scientists offer various methods on development of young adolescents’ physical fitness, but it has to be accepted, that, according to historical traditions, higher attention is given to formal education. Influence of non-formal physical education in school on changes of young adolescents’ physical fitness has been analyzed a little.

The aim was to estimate the influence of non-formal education on young adolescents’ health related physical fitness (self)training in school.
**Methods**: the analysis of scientific and methodological literature, testing, and statistical analysis: the arithmetic mean (x), standard deviation (Sx), Student (t) test.

**THE ORGANIZATION OF THE STUDY**

The providers of non-formal education in Lithuania are:

- secondary schools;
- schools providing non-formal education for children;
- institutions that also provide non-formal education for children along with their other main activities.

We investigated the influence of secondary schools, which provide non-formal education, on the change of physical fitness of young adolescents.

The study continued for two years in four Klaipeda secondary schools which were selected using the criterion method. The target sample consisted of primary and preparatory physical capacity of groups from 5 to 6 classes (junior adolescents of 11 – 13 years old). Students of two schools were assigned to the experimental group E (n = 135) (Fig. 1); the students of the other two schools were assigned to the control group C (n = 135). In both group, NFFE classes were twice a week.

![Fig.1. Distribution of schools](image)

Taking into account the students' participation in the non-formal physical education in school location and frequency, the subjects of the experimental and control groups were assigned to E1 and K1, E2 and K2, E3 and K3 groups:

1. Students participating in NFFE in their secondary school (E1, C1).
2. Students involved in NFFE outside school (in the NFFE at schools they are only indirectly involved in organized sport and fitness activities) (E2, C2).
3. Students who do not participate on permanent basis in NFFE in secondary school (in the NFFE at school they are only indirectly involved in organized sport and fitness activities) (E3, C3).
Today we will present E1 (n=29) and C1 (n=22) groups, i.e. the results and changes of physical capacity of students who participated in NFFE at their secondary schools.

**Experimental group (E)** had been working under program developed by us. The content of the program was various sportive games and funny relay races (Table 1). The principles that were followed: voluntarism, accessibility, relevance, and individualization; different person activating methods (discussion, case study, „Brain hedgehog“, arguments „For and against“, „Brainstorm“, learning in groups, etc.) were applied as well. Education content was implemented during sport activities and in various sport and wellness events (sport and wellness festivals, competitions, quizzes, trips). 80% of the content of classes was sessions and 20% - various sports and fitness events.

**Control group (C)** worked according to NFFE programs prepared by teachers and approved by school directors, which followed the Lithuanian Olympic festival regulations.

**Priorities of the Experimental group**

1. Integral development of natural physical abilities, such as physical development, physical activity, physical fitness and health.
2. Development of natural physical abilities in unity with spirit powers.
3. Content that is responsive to the needs and preferences of young adolescents'.
4. Integration of students with poorer health and lower physical capacity.
5. Application of the newest educational technologies.

**Priorities of the Control group**

1. Training and development of actions of movement.
2. Development of physical characteristics.
3. Nurture of students that are better physically fit.
4. Curriculum content focused on upcoming sports events.

At the beginning, middle and end of the experiment the focus groups conducted 5 health – related tests: sit and reach (lower back flexibility), sit ups (abdominal muscle strength and endurance), standing long jump (muscular strength and power of the lower body), flexed-arm hang (upper body strength and endurance) and the 1 mile walk/run (aerobic fitness) (Fig. 2-6).

![Fig. 2. Sit and Reach Test](image-url)
Fig. 3. Sit Ups Test

Fig. 4. Flexed-Arm Hang Test

Fig. 5. Standing Long Jump Test
RESULTS

After the study I it was identified that the average results of physical fitness of the male and female groups E1 and C1 in physical fitness did not have statistically significant differences, i.e. both groups were homogeneous and it met the essential condition of the reliability of the experiment.

Female results and change in physical capacity

The results showed that during the research period, the E1 girls statistically significantly (p<0.05) improved their indicators in flexibility (sit and reach), muscular strength and power of the lower body (standing long jump), muscle strength and endurance (sit ups; flexed-arm hang), and aerobic fitness (1 mile walk / run) (Table 1).

Table 1. The change of physical fitness indicators of the female group E1 during the educational experiment (the arithmetic mean (x), standard deviation (Sx), Student (t) test)

<table>
<thead>
<tr>
<th>Research</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
<td>22.45</td>
<td>149.45</td>
<td>24.55</td>
<td>60.91</td>
<td>685.09</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>4.34</td>
<td>19.61</td>
<td>3.42</td>
<td>47.84</td>
<td>60.26</td>
</tr>
<tr>
<td>II</td>
<td>X</td>
<td>24.27</td>
<td>155.27</td>
<td>26.45</td>
<td>98.55</td>
<td>638.09</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>6.31</td>
<td>16.93</td>
<td>3.70</td>
<td>105.73</td>
<td>46.34</td>
</tr>
<tr>
<td>III</td>
<td>X</td>
<td>27.00</td>
<td>166.55</td>
<td>28.64</td>
<td>104.36</td>
<td>582.36</td>
</tr>
</tbody>
</table>
Control group did not show statistically significant improvements in results within two academic years (Table 2).

Table 2. **The change of physical fitness indicators of the female group C1 during the teaching experiment** (the arithmetic mean (x), standard deviation (Sx), Student (t) test)

<table>
<thead>
<tr>
<th>Research</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
<td>20.18</td>
<td>155.45</td>
<td>23.00</td>
<td>74.36</td>
<td>694.55</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>4.49</td>
<td>21.45</td>
<td>3.72</td>
<td>62.14</td>
<td>74.55</td>
</tr>
<tr>
<td>II</td>
<td>X</td>
<td>18.91</td>
<td>159.91</td>
<td>21.82</td>
<td>166.00</td>
<td>695.36</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>6.16</td>
<td>22.50</td>
<td>5.27</td>
<td>171.77</td>
<td>109.77</td>
</tr>
<tr>
<td>III</td>
<td>X</td>
<td>17.82</td>
<td>162.09</td>
<td>23.55</td>
<td>127.27</td>
<td>694.82</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>5.10</td>
<td>20.47</td>
<td>3.75</td>
<td>157.49</td>
<td>153.82</td>
</tr>
<tr>
<td>I–II</td>
<td>t</td>
<td>0.730</td>
<td>-0.789</td>
<td>0.975</td>
<td>-2.236</td>
<td>-0.060</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.482</td>
<td>0.448</td>
<td>0.353</td>
<td>0.049*</td>
<td>0.953</td>
</tr>
<tr>
<td>II–III</td>
<td>t</td>
<td>0.444</td>
<td>-1.227</td>
<td>-1.440</td>
<td>2.460</td>
<td>-0.035</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.667</td>
<td>0.248</td>
<td>0.180</td>
<td>0.034*</td>
<td>0.973</td>
</tr>
<tr>
<td>I–III</td>
<td>t</td>
<td>1.248</td>
<td>-1.385</td>
<td>-0.554</td>
<td>-1.529</td>
<td>-0.011</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.240</td>
<td>0.196</td>
<td>0.592</td>
<td>0.157</td>
<td>0.992</td>
</tr>
</tbody>
</table>

Remark.* - p<0.05; ** - p<0.01; ***p<0.001
After two years of the experiment (study III) comparing the outcomes of E1 and C1 groups, the results showed statistically significant (p <0.05) differences indicating flexibility (sit and reach), abdominal muscle strength and endurance (sit ups), and aerobic fitness (1 mile walk / run) (Table 3).

### Table 3. Indicators of physical capacity of female groups E1 and C1

<table>
<thead>
<tr>
<th>Research</th>
<th>Groups</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>E1:C1</td>
<td>t</td>
<td>1.206</td>
<td>-0.676</td>
<td>1.016</td>
<td>-0.569</td>
<td>-0.327</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p</td>
<td>0.242</td>
<td>0.507</td>
<td>0.322</td>
<td>0.576</td>
<td>0.747</td>
</tr>
<tr>
<td>II</td>
<td>E1:C1</td>
<td>t</td>
<td>2.018</td>
<td>-0.546</td>
<td>2.389</td>
<td>-1.109</td>
<td>-1.594</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p</td>
<td>0.057</td>
<td>0.591</td>
<td>0.028*</td>
<td>0.281</td>
<td>0.134</td>
</tr>
<tr>
<td>III</td>
<td>E1:C1</td>
<td>t</td>
<td>4.200</td>
<td>0.487</td>
<td>3.709</td>
<td>-0.422</td>
<td>-2.150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p</td>
<td>0.000***</td>
<td>0.631</td>
<td>0.002**</td>
<td>0.677</td>
<td>0.044*</td>
</tr>
</tbody>
</table>

Remark. * - p<0.05; ** - p<0.01; ***p<0.001

### Male results and change in physical capacity

Analyzing the change in boys' physical abilities, it was found that over two school years, the following performance indicators improved significantly (p <0.05) in young adolescents: flexibility (sit and reach), muscular strength and power of the lower body (standing long jump), abdominal muscle strength and endurance (sit ups) and aerobic fitness (1 mile walk / run) (Table 4).

### Table 4. The change in physical fitness indicators of the E1 male group during the teaching experiment (the arithmetic mean (x), standard deviation (Sx), Student (t) test)

<table>
<thead>
<tr>
<th>Research</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>x</td>
<td>15.94</td>
<td>156.17</td>
<td>26.11</td>
<td>161.11</td>
<td>591.94</td>
</tr>
<tr>
<td></td>
<td>sx</td>
<td>5.91</td>
<td>21.90</td>
<td>4.48</td>
<td>124.04</td>
<td>68.48</td>
</tr>
<tr>
<td>II</td>
<td>x</td>
<td>16.83</td>
<td>163.17</td>
<td>26.28</td>
<td>144.61</td>
<td>564.17</td>
</tr>
<tr>
<td></td>
<td>sx</td>
<td>6.82</td>
<td>19.99</td>
<td>5.37</td>
<td>119.78</td>
<td>66.70</td>
</tr>
<tr>
<td>III</td>
<td>x</td>
<td>19.94</td>
<td>177.22</td>
<td>28.3</td>
<td>183.83</td>
<td>532.39</td>
</tr>
<tr>
<td></td>
<td>sx</td>
<td>4.71</td>
<td>21.66</td>
<td>3.94</td>
<td>140.13</td>
<td>76.49</td>
</tr>
</tbody>
</table>
Meanwhile, no statistically significant improvements have been observed in the control group. The physical performance of boys who attended the NFFE at school (C1) slightly went down in four indicators and brought statistically significant negative results in flexibility (p <0.05) (Table 5).

Table 5. The change in physical fitness indicators of the C1 male group during the teaching experiment (the arithmetic mean (x), standard deviation (Sx), Student (t) test)

<table>
<thead>
<tr>
<th>Research</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
<td>17.00</td>
<td>170.45</td>
<td>28.00</td>
<td>145.45</td>
<td>598.64</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>4.49</td>
<td>10.36</td>
<td>2.61</td>
<td>90.48</td>
<td>38.09</td>
</tr>
<tr>
<td>II</td>
<td>X</td>
<td>15.36</td>
<td>171.36</td>
<td>25.00</td>
<td>183.09</td>
<td>625.73</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>3.64</td>
<td>8.97</td>
<td>3.26</td>
<td>168.72</td>
<td>74.11</td>
</tr>
<tr>
<td>III</td>
<td>X</td>
<td>13.82</td>
<td>161.82</td>
<td>24.09</td>
<td>84.09</td>
<td>657.05</td>
</tr>
<tr>
<td></td>
<td>Sx</td>
<td>5.23</td>
<td>24.52</td>
<td>5.05</td>
<td>38.65</td>
<td>137.05</td>
</tr>
<tr>
<td>I-II</td>
<td>t</td>
<td>1.063</td>
<td>-0.256</td>
<td>2.331</td>
<td>-0.734</td>
<td>-1.752</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.313</td>
<td>0.803</td>
<td>0.042*</td>
<td>0.480</td>
<td>0.110</td>
</tr>
<tr>
<td>II-III</td>
<td>t</td>
<td>1.132</td>
<td>1.101</td>
<td>0.470</td>
<td>1.921</td>
<td>-1.202</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.284</td>
<td>0.297</td>
<td>0.648</td>
<td>0.084</td>
<td>0.257</td>
</tr>
<tr>
<td>I-III</td>
<td>t</td>
<td>2.232</td>
<td>1.082</td>
<td>2.068</td>
<td>2.090</td>
<td>-1.877</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>0.050*</td>
<td>0.305</td>
<td>0.065</td>
<td>0.063</td>
<td>0.090</td>
</tr>
</tbody>
</table>

Remark.* - p<0.05; ** - p<0.01; ***p<0.001
The results of the 3rd study of E1 and C1 groups showed to have statistically significant ($p < 0.05$) indicator differences in flexibility (sit and reach), abdominal muscle strength and endurance (sit ups), upper body strength and endurance (flexed-arm hang) and aerobic fitness (1 mile walk / run) (Table 6).

Table 6. Indicators of male physical fitness of the experimental and control groups

<table>
<thead>
<tr>
<th>Research</th>
<th>Groups</th>
<th>Statistical indicators</th>
<th>Sit and reach (cm)</th>
<th>Standing long jump (cm)</th>
<th>Sit ups (N/30 sec)</th>
<th>Flexed-arm hang (ms)</th>
<th>1 mile walk/run (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>E1:C1</td>
<td>$t$</td>
<td>-0.543</td>
<td>-2.368</td>
<td>-1.434</td>
<td>0.392</td>
<td>-0.338</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$p$</td>
<td>0.592</td>
<td>0.026*</td>
<td>0.163</td>
<td>0.699</td>
<td>0.738</td>
</tr>
<tr>
<td>II</td>
<td>E1:C1</td>
<td>$t$</td>
<td>0.755</td>
<td>-1.509</td>
<td>0.798</td>
<td>-0.661</td>
<td>-2.253</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$p$</td>
<td>0.457</td>
<td>0.144</td>
<td>0.432</td>
<td>0.518</td>
<td>0.036*</td>
</tr>
<tr>
<td>III</td>
<td>E1:C1</td>
<td>$t$</td>
<td>3.177</td>
<td>1.714</td>
<td>2.379</td>
<td>2.848</td>
<td>-2.770</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$p$</td>
<td>0.005**</td>
<td>0.103</td>
<td>0.029*</td>
<td>0.010**</td>
<td>0.015*</td>
</tr>
</tbody>
</table>

Remark. * - $p<0.05$; ** - $p<0.01$; *** - $p<0.001$

CONCLUSION

The effect of non-formal physical education in schools is significant for the development of junior adolescents’ health related physical fitness.

The results showed that during the research period, the E1 girls and boys statistically significantly ($p<0.05$) improved their indicators in flexibility, muscular strength and power of the lower body, abdominal muscle strength and endurance and aerobic fitness.

The results of the 3rd study of E1 and C1 groups showed to have statistically significant ($p<0.05$) indicator differences:

- girls: in flexibility, abdominal muscle strength and endurance and aerobic fitness.
- boys: in flexibility, abdominal muscle strength and endurance, upper body strength and endurance and aerobic fitness.

REFERENCES

THE SPREAD OF ECONOMIC IDEAS AMONG ROMANIAN PEOPLE

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Abstract

Nowadays, when everybody is speaking about globalization, European integration and crisis, every people is facing a very sensitive problem: we all need to find the best way to define ourselves, to find our genuine values and to send a clear message to the world. If we search our history we will find that there are some important Romanian economists, who have had significant contributions to the spread of economic ideas in the world. Our paper aims to emphasize the spread of economic ideas regarding the evolution of the markets, the importance of the history of economic thought, the relevance and functionality of economic education among the Romanians. We are also interested in showing the importance of the influences from the neighbour countries to the national economic education.

Key words: education, economy, spread of ideas.

1. INTRODUCTION

Long time ago, Milton Friedman said that “...the role of people is to keep ideas alive until a crisis occurs. It wasn’t my talking that caused people to embrace these ideas, just as the rooster doesn’t make the sun rise.” (Yergin and Stanislaw, 2002) But, for economic ideas to take root and change history, a number of ingredients need to be present, ranging from individual agents to policy implementation. Humans need narratives in order to make sense of the world. Anthropologists, economists, sociologists and philosophers may offer different views of these human stories: to what extent they exist simply to legitimate group interests, and to what extent they are open to rational revision. But changing the narratives and theories we use to interpret and engage with the world is central to making it a more just place.

In the nowadays Romania, deeply linked to the occidental values, if someone would like to know more about the Romanians way of thinking and about the way economic ideas changed the future of our country, he will find about Romanian sausages (mititiei), stuffed cabbage (sarmale) or Romanian brandy (palinca) (Rogojanu et al, 2009). Everything seems to be reduced to the extraordinary joy showed by Romanians at their religious or laic holidays. What is the cultural heritage of Romanians, which are their intellectual traditions, how they interacted with the civilized world? May we see the great Romanian thinkers as „roosters”? Is it enough to speak about them in such a manner?

We all know that the sun would rise in exactly the same way, even if the rooster died in the night. But if theories are enacted, they affect what occurs next. They shape the „sunrise”. Yet theories do not become enacted as a result of a calm, Socratic dialogue, conducted by thinkers seeking only after the truth. To advance good (or bad) theories from ideas to enactment involves strategy and planning. Far from being roosters, we shall argue that free-market economists were more akin to tortoises: patiently
developing a line of thought and cultivating a community in the XIX century, and discerning the right time for practical interventions. This conscious reshaping of the intellectual landscape has had a huge impact on contemporary thought and practice in Romania.

But, with all the history turmoil, those who tried to promote the emancipation of the people were forgotten. The History’s dust felt out covering the ideas which guided the actions of statesman taken in the long way of emancipation. The trade off between a defensive status to an offensive attitude proved to be difficult due to the ignorance of the people, very convenient for the government, but extremely inefficient for the economy. In the nineteenth century, the accelerating globalization started to show demands that the majority of the Romanians could not understand. The delay in the economic development, the political-state establishment, the scarcity of instruction and education, the historical and geographical context marked by hostility, all these formed the gap between the "West" and "East". The renewing economic ideas penetrated hard, often deformed ... The relentless intelligence of some people educated inside and outside the Romanian land, as Ion Ghica (1816-1897), Dionisie Pop Marian (1829-1865), Bogdan Petriceicu Hașdeu (1838-1907), Petre S. Aurelian (1833-1909), A.D. Xenopol (1847-1920) have started the struggle for "the economic emancipation of the nation" by promoting the ideas, the principles and the institutions on which was build the prosperity of the West.

We are convinced that the process through which new ideas are generated and ultimately translated into policies and programs that shape the flow of history may be too complex to be reduced to a simple and unidirectional schema; thus is why, we are going to present shortly the main ideas that changed the future of Romania in the nineteenth century, shaping the present form of it.

2. ECONOMIC EDUCATION - A WAY TOWARDS EMANCIPATION

2.1. The vision of Ion Ghica

Engineer by professional training, academician, politician, diplomat, writer, but economist by vocation, Ion Ghica, certainly, can be considered “the father of political economy of the Romanians” thanks to his restless efforts to fight with ignorance and economic backwardness in the territories which will define later the Romanians state. Fully engaged in the process of economic, social and political emancipation of the Romanians, Ion Ghica’s name and work are related to the actions of harmonization of higher education institutions, which hesitatingly emerged registering a great delay to the West (Rogojanu et al, 2009).

Ghica said that: "Wealth of a nation is measured by the size of what needs meet. The real merit of the politician, the economist or the financial is to know how to meet national needs one after another in the best order and most useful for political and economic development of the nation. Their fulfilment should not be the result of imposition from outside or the outcome of any prejudices and anxieties from inside.” (Ghica, 1937)

He was fully convinced of the power of ideas to change the way people thought and he draw attention to this: "The world is ruled with ideas. Those ideas, some are good, useful, open, generous, others are wrong, false or liar. Blessed those people who is free of preconceived ideas and ruled by the truth!"(Ghica, 1937).

Initiator of some economic publications, author of the famous "Economic conversations", Ion Ghica intuited the active role of the media and the scarcity of publications because they were not approved by the running power. Fully aware that the national dream of emancipation can become reality only if the orientation of economic development in the Romanian territories abandon amateurism and follow
clear rules of economic science, Ion Ghica was searching the unity where politics divides. Indeed, it was needed more, much more! It was needed university economic studies to open the minds of Romanians to civilized world. So is it that on November, 23 1843, Ion Ghica inaugurates the course of political economy at Academia Mihăileană in Iasi, marking the first breach in the inertia of the idyllic "life in the country" economy in favour of the industrial one. Thus, Ion Ghica, before being "prince of Samos", becomes a real "prince of Economy" (Rogojanu et al, 2009). In the opening lesson of the course of political economy at the Academy of Iasi – 'About the importance of political economy' - Ion Ghica with excitement and enthusiasm reveals his scientific beliefs: "When someone looks at the big requirements the civilized world today expects from the political economy and when the other hand, then looks at the sight that paints our country in their passage from numb to the renewing flight to civilisation, he does not like other helm than economic policy, which is the only one able to enlighten us to search our material and moral interests” (Rogojanu et al, 2009).

The historical significance of the initiation of a university political-economics course has been emphasized by the great scholar Costin Murgescu, who, citing G. Zane, affirms: "It is not known exactly the number of people who attend the political economy course initiated by Ion Ghica at Academia Mihăileana in November 23 1843 - the date marking the inauguration of economic higher education in Romania", adding "the beginning was made up of Ion Ghica, and thus the path of a new economic thinking required to replace the feudal one, was opened" (Murgescu, 1987).

Ion Ghica endeavoured in a tireless and inventive effort to initiate the students in the mysteries of the classical economics, to create an economic terminology within the limits of the vocabulary in the language spoken in his time, but continually invoking the need for compliance with economic developments in science in Western world. In the same manner as Dionisie Pop Marțian, when he didn’t find an equivalent term he invented one: for 'raw materials' – 'materii întâietoare'; for 'lasser faire, laisser passer' – 'lasă să treacă slobod'; for 'custom union' – 'unitate de vămi'; for 'navigation company' – 'campanie de plutire'; for 'prejudices and customs' – 'prejudeţe şi vămi'; for 'steam boat' – 'vasul fumegător'; for 'to contract' – 'a contactirisi'; for 'railroad' – 'drum de fer'; etc (Rogojanu et al, 2009).

With a power of abstraction peculiar to a mathematician, Ion Ghica captured the essence of science that he was trying to get acquainted to the Romanian people: "To conclude today's human metaphysical knowledge, we should talk about 'Political Economics'. This science it seems to stand on two principles: 1. that each nation to produce goods which are easy to produce locally, and to change these with those of other countries and 2. to let out an autonomous subject from one place to another. These two principles promise to increase the good of man and lead him to the most perfect happiness" (Ghica, 1937).

Initiator of an economic thinking school with a heteroclite doctrine, but visibly tilting toward liberalism, Ion Ghica, although a long "forgotten" (Slăvescu, 1937) economist, is the author from the second half of-nineteenth century that took courage and inspiration to use science in explaining of burning economic issues, from industry, commerce and agriculture, credit and money, taxes and duties until the general economic policy.

2.2. The case of Dionisie Pop Marțian

Dionisie Pop Marțian, one of the first Romanian economists, was educated at the University of Vienna, where he had been sent by the Greek-Catholic Archdiocese of Blaj, providing him a scholarship. The historiography lacks clarity in explaining the nature and duration of studies of Marțian (Marțian, 1961). Clearly, Dionisie Pop Marțian “breathed the air of the economic ideas of the
List’s protectionism”, which were the dominant ideas in the first half of the nineteenth century. Even today, in many places around the world, no one could say that protectionist ideas are not as strong as they were in the past. The analysts of Marțian’s writings assume that the economic militancy of his work releases the influence of the works of Friedrich List. During his studies, Marțian was a passionate scientist, who apparently, under the guidance of his professor of economics, Lorenz von Stein, had become not only his disciple, but also his opponent in discussing economic ideas. After his studies in Vienna (1854-1857), from personal reasons, Dionisie Pop Marțian decided to live in Bucharest, where were living the other members of his family, refugees from Ardeal. Devoted to his scientific belief in the same way other young people concerned to spread the economic ideas in Romania were (Rogojanu et al, 2010): “Dionisie Pop Marțian was a leading economist, actually the editor of the first university course on political economy, publishing also the Economic Annals, a source of invaluable information at that time” (Stahl, 2002).

The economic interest in the theories regarding to define Romania for the developed countries of that time gives Marțian the opportunity to express his scientific belief. The pathetic tone used by Marțian, however, reveals an attitude full of fear and reserve towards the expansion of the Western capitalism; he puts himself in the same line with the advocates of nationalism, which was typical for the period in which he lived and wrote (Rogojanu and Badea, 2010).

From a doctrinal perspective, indeed, “Marțian meant a special moment in the Romanian history of economic thought. Creator of a school and of an economic way of thinking in our country, Marțian has made public his beliefs and fought for their achievement in a period dominated by the liberal ideology and practice. His protectionist point of view came to confront and combat the liberal ideas, which due to some circumstances were raised to the rank of state policy” (Marțian, 1961).

In terms of the eclectic German historical school, Marțian asked his contemporaries to study the economic science in order to find the key of the emancipation: “sacrificing the present for the future”. The alternation of parables with economic principles, in a nationalist way, quite widespread in many European countries, Marțian emphasised the role of knowledge in economics in order to “train efficient people, able to meditate on natural laws, that man cannot rule, but can use” (Marțianu, 1858, „Studii sistemic în Economia politică. Prima parte. Economia socială”, in Marțian, 1961).

Dionisie Pop Marțian strived for an intellectual emancipation of the Romanians and for the spread of economic ideas; he wrote a course on “Social Economy” (1858), articles and studies on economic issues, and offered support to the publication of “Economic Annals” and to the establishment of some institutions as Statistical Office of Romania.

On the occasion of the establishment of “Annals of Statistics and Economic Research”, Dionisie Pop Marțian drew attention to the need of spreading the ideas coming from a history of national economy in order to decide politically correct: “A request to write the history of political economy and to discuss the main economic issues of a country; without achieving the political issues, it is absurd to ask” (Marțian, 1961). The vocation of institutional promoter places Marțian alongside other iconic figures of the nineteenth century: “In 1859, Dionisie Pop Marțian, a young Transylvanian educated at Vienna, is assigned as chief of the Central Office of Statistics of the Romanian country”; that year, Ion Ionescu de la Brad is assigned as chief of the “Department of Statistics of Moldova”; these two conducted, each in its area, a census in 1859-1860 with the results published in “Annals of statistics in the Wallachian land of Romania”(1860-1864) and in “Moldova's statistical work”. In 1852 as the principalities were now united, the two statistical offices merged under the direction of Pop Marțian in a “Central Office of Administrative Statistics”.


Although he has encountered numerous obstacles in the organization of the Statistical Office, Dionisie Pop Martian continued his courageous work of recruiting and training the rapporteurs in statistics of each county, preparing and carrying out the first census in 1860 and in 1863 the first statistical survey of the industrial establishments in Romania (Marcu and Ornea, in Martian, 1961).

Quoting the French minister of Public Instruction, “let’s educate people and not absolvent” (Martian, 1961), Martian advocate for an appropriate and modern educational system. For this purpose it was necessary to qualify the labour force in order to respect the requirements of the industry; in those times in Romania was a shortage of workers, technicians and engineers. Martian proposes to increase the share of technical and vocational education and to diminish considerably the humanistic education share: “to transform the raw material of this country and to give an industrial aspect, we need economists and industry workers; we must create mechanical workers and trained economists” (Marcu and Ornea inMartian, 1961).

According to Dionisie Pop Martian, the school must not prepare public servants, but economists and workers: "We have to encourage the creation of professional schools organized and distributed according to the necessity of local industries and in the Romanian capital, beside universities we need a polytechnic institute"(Martian, 1961).

Martian is launching a campaign to support applicative education: “There will come a day when a one-hour speech will seem too long, when a journal article, longer than one hundred lines will not be red, when every sentence that will not be the expression of the human intelligence is going to be thought as ridiculous. The best way to hasten the arrival of such days is to multiply technical schools where they learn first of all what is useful for practical life, where they teach geography before mythology, arithmetic before poetry, natural sciences before Latin verses and Modern languages before the Greek language. We would be sorry if you understood that we disregard the letters. On the contrary, we owe them everything and we love them. But as I said before: Bread above all!”(Martian, 1961)

On the other hand, the strong development of education would have an important socio-cultural significance, facilitating the consolidation of an educated middle class, ensuring social stability that is necessary in any society (Rogojanu and Badea, 2010). We only have to agree with the conclusion of Costin Murgescu: “Indeed, as the young Romanian state was consolidated, the reasons for free trade, undeniably respected in the era of Cuza Voda, began to weaken; at the forefront of national interests began to count the defence sector and the industry threatened by foreign competition, coming primarily from Austria-Hungary. Thus, as the years gathered on Dionisie Pop Martian’s unknown tomb - pure figure in our history and unrepeatable cultural destiny - his way of thinking, unique in his lifetime, became the source of a refreshing current of economic thought” (Murgescu, 1987).

2.3. The belief of Bogdan Petriceicu-Hașdeu

Like other Romanian scientists of the XIXth century, fully aware of the common people hardships, Bogdan Petriceicu-Hasdeu searched, in a critical manner, to detect the historic causes of the Romanian economic underdevelopment. Fully convinced that the assimilation of the western economic ideas will change not only the economic way of thinking of the people but the economic status also, Bogdan Petriceicu-Hasdeu tried all the possible ways to spread the western economic ideas proved to be successful by the extraordinary economic expansion of the West (Rogojanu et al, 2008).

Through articles published in mass-media, essays, translations, controversial discussions, linguistic analysis and parliamentary speeches, Bogdan Petriceicu-Hasdeu tried hard to familiarize the public with the sense of occidental economic thought and, thus, promoting the surpass of economic ignorance. This duty, voluntarily taken upon himself by the Romanian scientist, is revealed when
Hasdeu choose to mention Napoleon III as a motto for his study *Agriculture and manufacture*: „C’est le premier devoir des bon citoyens des propager les sages doctrines de l’Economie Politique“ (Hasdeu, 2002c). His desire to spread economic ideas can be felt in every word he wrote beginning with the language and ending with his extremely relevant and accessible examples.

The language, subordinated to one clear purpose: to familiarize people and to explain those people the economic terms, is very colloquial, alive and straight to the point. The majority of arguments are followed by exclamations which either express the author’s own convictions or ironies regarding some economists or economic theories (Rogojanu et al, 2008). The examples used by the Romanian economist in order to support his affirmations are surprisingly clear, accessible, and suggestive and, sometimes, anecdotic (Hasdeu, 2002a). For example, to make clear his thesis that competition is possible only inside a country and never between countries, Hasdeu states: “When a person moves his wallet from the left pocket to the right pocket he does not lose anything, on the contrary, he can be better off if the left pocket was ragged. But, I wonder, it is the same thing for me moving my wallet from the left to right pocket and moving it in my neighbor’s pocket?” (Hasdeu, 2002a).

His eagerness to spread abroad as many economic thoughts as possible is clearly revealed by the primary documentary sources used and brilliantly interpreted by Hasdeu. The economist quotes contemporary or ancient economic texts written in English, German, Greek, Italian or French belonging to a wide range of authors beginning with the Greek historian Strabo and ending with economists like Mill or List (Rogojanu et al, 2008).

His economic writings, backed up by a substantial theoretical background, even though are written and published in a very short period of time (1867-1870) – which reminds of one of his favourites economists, Frederic Bastiat – tackles, in a positive manner, the way in which Romanian economy should be. Hasdeu proves a deep understanding of economic theories mastering arguments which even today seems to be very complex. For instance, his comments on paper money grasp the very essence of the monetary theory which seems to be nowadays forgotten: “a limited amount of money cannot be dangerous” (Hasdeu, 2002b)

Laying the competition principle as the foundation of economic science (Hasdeu, 2002a) and considering economics as “the little sister of history, philosophy and law” (Hasdeu, 2002a), the Romanian scientist grants economics with the status of science of the future which importance is given by its goals: global welfare and universal happiness. Putting together economics, history and philosophy, Hasdeu considers economics as a social science consisting in general in principles derived from general observations on individual and collective behaviour (Rogojanu et al, 2008).

Hasdeu, a genuine scientist, probably realized the consequences and the faults of the empirical method, and thus, he hesitated in defining economics as a general science considering that economics can be considered as a set of principles which can be applied in order to achieve wealth (Hasdeu, 2002a).

Like other classical economists, Hasdeu defines economics as a science of wealth avoiding the socialist point of view, commonly accepted by the economists of those times, which defines economics as some kind of craft meant to reduce poverty. Even though economics is a science of wealth, its principles should be applied by the poor people who needs economics more than anyone else or, in another way of speaking, using the very language of economics: „It (economics) seeks to be an essential commodity, not a luxury good“ (Rogojanu et al, 2008). Hence, for the Romanian economist, economics represents the best way the nation’s progress and, thus, economics should be treated as the science of the future.
Although he declared himself as a liberal and even promoted liberal principles, for the very reason that some ideas from the works of the greatest western economists of the XVIIIth and XIXth centuries, such as Adam Smith, Friedrich List, Jean Baptiste Say, Frédéric Bastiat, were according to his own beliefs, Bogdan Petriceicu Hasdeu remains a humanist. His attachment to liberalism doctrine does not restrain him to strongly criticize those liberal theses which, from his point of view, do not find their place in the economic realities. These critics are mainly referring to the so-called liberal incapacity to perceive that there can be competition among nations and, thus, a country could be better off applying protectionist policies. Despite his declared sympathy to the liberal economics, Hasdeu goes as far as arguing that the liberal principles are “the scholastic theology of Middle Ages” (Hasdeu, 2002c), blaming liberal economics for fallacies such as: conclusions without a real background, irrelevant distinctions, symmetrical consequences and false premises.

Honestly interested by the country economical and political progress, Bogdan Petriceicu-Hasdeu is deeply attached to the economic emancipation thesis and gives an almost heroic sense to the land, quoting Robert Peel: „We are placed to the Western Europe’s edge like a link which made the connection between the old and the new world” (Hasdeu, 2002a).

Analyzing the Romanian realities, Bogdan Petriceicu-Hasdeu adopts an attitude very similar with the attitude of Lord Acton; he gives away any preconceived nationalist idea opposed to liberty and any kind of politics against national ideals. It is needless to say that his ideal was the economic emancipation of the Romanians (Rogojanu et al, 2008). The union of all Romanian language territories which share the same history, traditions and values is a leitmotiv of his writings. The unfavourable conjuncture and the fear of invaders emphasize the idea of national unity: “Is hard for us to quarrel with three kingdoms spread across the Eastern Europe which are holding Romania so tight that their love almost broke our nation in three pieces” (Hasdeu, 2002a).

2.4. The conception of Petre S. Aurelian

Petre S. Aurelian was an academician, a professor, an economist, an agronomist and a Romanian politician, being in charge with various public dignities such as: Deputy, Senator, Minister of Public Works during 1877-1878 and 1887-1888 and Minister of Education during 1882-1884, Prime Minister of Romania between 1896 and 1897, member of the Romanian Academy and its president between 1901-1904. In the same time, he carried an intense publishing activity - Aurelian was the editor of the magazines "Monitor" and "Agronomia", and also a promoter - through the magazines he founded, "Scientific Review" (1870-1882), "Rural Economy "(1876-1884)," National economy "(1886-1901) - of the modern economic ideas (Stahl, 2002).

The economic science has in the Petre S. Aurelian not only a remarkable promoter of economic ideas, but also a fervent advocate in favor of studying economics in high schools and popularizing the economics to the "simple employee", as a part of the "spirit of the times and the right direction of the education system": "Why does youngsters need to speak about Omer and Cicerone and not understand what a bank or money is and what a tax is? (Aurelian, 1870)

The public appeal made by Aurelian for the cause of political economy, despite its pathetic accents, reveals the figure of the emancipated Romanian, concerned about the spreading of economic ideas, convinced by the unshakable belief that an informed man is more valuable than an ignorant man: "Those whom is in their power to remedy the evil will be willing to remember that the education of 1870 may not be copied by one from 1800 and even 1840. The culture of a people must properly match with its needs and aspirations, needs and aspirations of Romanians, both economic and national, require that their children know how to increase economic development of people. Let's wait for that!"
Aurelian, 1870). Under the influence of Auguste Comte, Aurelian adopts the vision of the great positivism philosopher applying it to economics: "These laws which governs joined societies formed the economic science, science that shows the path which we have to follow in all our businesses as well as the possible losses which may occur if we work against economic laws" (Murgescu, 1967).

Aurelian was aware that the industry requires trained and qualified workforce specialized in two fields: specialists and workers. In front of this requirement, Aurelian directs his speech to public policies which encourage the training of engineers in foreign schools and the training of workers in vocational schools. Aurelian was asking to the government to sustain the "capable youngsters" to explore and study mines from France or Belgium, because "the government cannot handle all that and it is the duty of any citizen to appeal on questions of general interest" (Rogojanu et al, 2010). As for vocational schools, P.S. Aurelian reveals a stunningly realistic picture of the history of Romanian educational system. In fact, the development of education can largely be summed up to the abolition and then, after a while, reestablishment of some kind of school, without any relation with economic development direction. The case of vocational schools illustrates very well the syndrome of growth and identity for the countries that made his way to a place to "the table of wealthy".

With a disarming sincerity, without any intention of moral injury, Petre S. Aurelian thoughts reminds us today of government habits and immoral mentalities: "history of this kind of school indicates us how hastily we act, not to say more, in the most of our actions. Indeed, this school existed in 1883, endowed with all its needed. A ministerial whim abolished without reason the school: seven years passes and the school is reestablished. If the vocational school was useful, why was abolished? Because there are people who want to say that they did something, if not for the better at least for the worse, because people called to lead us have often no idea about what is happening, and they are groping and, then, they are content to say loud we have been organizing the country! Poor country! So often you have been organized, reorganized and disorganized that we wonder how you are still live."(Rogojanu et al, 2010).

2.5. The point of view of A.D. Xenopol

Alexander D. Xenopol, a leading figure (academician, economist, philosopher, historian, educator, sociologist and writer) of the Romanian intellectual tradition, remained in the universal cultural memory as a tireless promoter of economic empowerment of the territories inhabited by Romanians. With an encyclopedic, lucid and visionary mind, he dedicated to search the arguments regarding the Romans compatibility with modernity and globalization in the cultural-educational and economic history of the Romanians. More than other intellectuals of the time, he emphasized a fact which is not paying enough attention to: "the intellectual brilliance of a nation has always been a flowering of its material welfare" (Xenopol, 1882)

Concerned to foster the potential intellectual energies of the Romanians to unleash, Xenopol "scientifically" showed that between "the wealth of a nation and its intellectual wellbeing" there is an indestructible relationship, where "the material base is the mean and the absolutely needed condition for the intellectual development" (Xenopol, 1882). His speech was in concordance with the public perception, focusing on a kind of popular justice that everyone agreed. Instead, Xenopol saw as a cause of the massive ignorance which "hinders the development of our industry" the "evil system of instruction". The evaluation of the situation of education does not differ in its essence, from that it is used today: "Our school system is generally drawn so as to give the country's bureaucrats and officials" and "what our schools produce? aspiring to posts, and nothing more."(Xenopol, 1882)
Like Martian, "the only true economist ever of Romania", Xenopol said that "the greater need felt in our country is that of suited schools to the needs of the country, schools able to do a tiller from the farmer boy, but an intelligent tiller; able to create shoemakers and tailors, glass masters, braziers and blacksmiths from the bakers boys, barbers and locksmiths, and not to grow them up together with those people who learn the Greek and Latin, philosophy, rhetoric and history, knowing that the great talent will always come to light." (Xenopol, 1882) In this context, Xenopol claimed the organization of professional schools and their spread throughout the country in function of the needs of local industry and he also said that the capital of the country had to have a university of industries beside one of science.

Thus, one may observe that the economic education was considered in the nineteenth century as a milestone for the economic development of a country. Thus, the greatest economists believed that one small country with a very turmoil history has all the chances to become a developed country if its citizens are well educated.

3. ECONOMIC DEVELOPMENT AND GLOBALIZATION

The condition of the Romanian states in the mid-nineteenth century needed a rapid connection to the modern world trends. If from the legal and political perspectives the situation seemed clear and allowed the engagement of the Romanian society in the modernization process, from the economic point of view, the situation could be presented in a simplified manner: the sources needed by the industrial capitalist development were blocked in big properties; the aristocrats, even if accidentally used the capitalist exploitation, used to hold for themselves the production factors such as labour and capital; those who wanted to leave villages in order to work in industry needed money, which were not provided through the natural distribution; the empty place left by the Romanian people in the area of industrial and commercial occupations that were supposed to bring progress and civilization was available to foreigners. The secular domination of the natural economy deterred or eliminated any attempt to transform the old conceptions in order to accept the fact that the exchange may be the main tool of selecting the potential value of indigenous goods. The solutions of a potential historical emancipation were injured by the confusion of identifying and defining the political entity, able to ensure not only a new beginning, but a new ideal.

In such a historical context, the above mentioned economists saw that the economic development of a country was very important. Thus some of them believed that it could be achieved by developing different areas of economic activities. Some were convinced that the economic development is to be achieved by developing certain industries; others believed that the agriculture is the key, while some were aware that both were needed. Some of the mentioned above economists were sure that the economic development is indissoluble linked to the freedom of trade; others believed that the state plays the most important role in this area.

3.1. The conception of Ion Ghica

Relentless seeker and a good observer of the Western way of life, Ion Ghica and the others fought with all possible means, some criticized by his contemporaries or amended by posterity, for assimilating the modern economic culture in Romania. A free trade partisan, Ion Ghica, in his work, “Customs Union between Moldavia and Wallachia”, emphasizes from the beginning “that is known and accepted the principle: let pass free of all those who work for human happiness” (Ghica, 1937).
Ion Ghica does not hesitate to praise the benefits of free trade through the abolition of customs between Moldova and Wallachia, using the "living example" of the German States, which under the banner of Prussia have chosen the path of the customs union and reforms. Ghica comments the historic proposal made by Romania to Moldova, to abolish "forever" the border line of the two countries, to create "a common system of measures, weights and the same monetary exchange" which details are contained in the study "Weights and Measures – a clarify" (Ghica, 1937).

A visionary, in his own way, Ion Ghica did not see any problem that in the future there will no longer exists a problem of Customs among the countries of Europe: “if it is a dream let someone think from such a state of things, to a suppression of customs from all neighbouring countries, but at least between the principalities would find our mastery of any obstruction” (Rogojanu et al, 2009).

His message against protectionism, but also the gain generated by the freedom of customs is emphasized in "Prejudices and customs" with slightly polemic arguments: “All economists believe that customs do not bring tax revenue in proportion to what taxpayers pay, they consider that a school of immorality, through smuggling and fraud of all kinds to giving birth, a question of uncontested complaints by damages they bring to travellers and traders. Customs stifle agriculture, obliging to pay a more expensive than the value of all items, tools and machines that are necessary” (Rogojanu et al, 2009).

Thus, Ghica was a visionary with a liberal view, who was convinced that the freedom of the market and trade are very important in achieving the economic development and emancipation of Romania.

3.2. The point of view of Dionisie Pop Martian

Citing the changes in the geopolitics of the second half of the nineteenth century, Martian emphasize the role of the economic development in obtaining the political independence. Correctly, Dionisie Pop Martian reveals the logics of the interdependence existing between political and economic interests: “This is a key to the secrets that go with the interests to fight for us and against us. It cannot be other way, because today we can’t conquer other countries by using assault weapons, but we can see that developed countries use the trade and industry to prepare the way for opportunities. So, if we get rid of the political dependence, we will find another – the economic one” (Martian, 1961).

The fact that the year 1859 brought Romania as a political entity on the world stage was for Martian a good opportunity to put knowledge in the service of the national welfare. The author's comment in the Annual Economic Review of Al. I. Cuza message sent on December 6, 1859 to the Chamber of Deputies shows some concern and support for good governance to strengthen the newly formed state: “A compass should lead both branches of the government in resolving the issue according to the true interests of this nation... But an opinion in that regard in our country does not exist. The government is obliged to present such an opinion by using discussions and instruction.” (Martian, 1961) As a supporter of the protectionist capitalism, Martian seeks in the state of society the minimum arguments regarding a social indigenous class that is similar to the western “knight of industry” that set the tone for economic development (Rogojanu and Badea, 2010).

Very able, Martian passes the arbitrage between xenophobia and nationalism, being preoccupied by a social equilibrium, cancelling the social polarization with a substantial numerically and economically middle class. However, Dionisie Pop Martian, being influenced by the way of thinking of the followers of “social economy”, said that: “The power of a civilizing action of the people is even higher, as it has a larger middle class. In our country this class barely sprout. The elements that constitute this class are foreign or indigenous, but they don’t have the skills, the intelligence and
dexterities needed in arts and crafts, areas that are necessary in order to participate in the economic development of our country (Marțian, 1961).

In fulfilling the goal of “economic emancipation of the nation”, Dionisie Pop Marțian launches in 1861 the targets of a well defined program: “Any nation that is in our state have to pass through three stages of development: the process of an adequate consolidation or unification of all the elements into one single nation; then the process of emancipation of the nation under wills of foreign and hostile interests (freedom), and finally the process of defining the nation from a cultural perspective. The first of these processes is the most important one.” (Marțian, 1961)

All this means an evolution from the primitive state of economic development, dominated by agriculture, to the industrial status and then to the trade stage. As Dionisie Pop Marțian affirmed the industrial progress must be protected of the free trade and of the competition made by foreign industrial products. Marțian uses the education received at Austro-German School against his masters, especially against Lorenz von Stein.

In the context of the liberal enthusiasm of many contemporary authors, “Marțian's protectionist approach, however, seemed so unusual that it was seen by some commentators as an expression of a visionary way of thinking” (Murgescu, 1987). Despite the reaction in that time, the protectionism “would become the official orientation of Romania’s industrial policy”. (Murgescu, 1987)

The main argument to support Marțian’s point of view was related to “the requirement to defend the interests of the Romanian nation against the pan-Germanic current”.(Murgescu, 1987) Analysts of history of economic thought seem to agree that the imminent danger of “Austro-German economic invasion and the need to fight back become the driver of the whole activity of Marțian” (Murgescu, 1987). Moreover, from the beginning of the course of “Social Economy”, Dionisie Pop Marțian emphasizes the potential danger hovering over Romania: “All Europe, and especially the most populous part of it, is interested in Romania; all the communications related to social life in our country are looked for. Travellers from all nations have come to study the sources of our wealth and their greed is causing various kinds of problems”(Marțian, 1961). When he explains the Western capital’s offensive on the Romanian economy, Marțian identifies the one coming from France, Belgium, “Germany seeing us as a fruit garden expecting its exploiter” and continues with “Austria, who have monopolized a long time ago our trade” (Marțian, 1961).

Compared to the many facets of the economic precariousness of the development, Dionisie Pop Marțian supports and promotes the development of the industrial capitalism by an overall protectionist economic policy. Unlike the protectionist system of List, which denied the proportionality of economic sectors, Marțian, “faithful to the protectionist ideals will push for a balanced and normal development of the Romanian economy, where the industry, the agriculture and the trade to be taken into account” (Marcu and Ornea in Marțian, 1961)?

Thus, for Marțian, as for other industrialist authors of the time, the development of the private and state industry was necessary and possible: “in those countries where the private industry has not yet reached the level to set up business models, the Government believes that it is a duty to uphold the honour of the nation, by setting the need establishments” (Marțian, 1961). As analysts of the history of the national economy observed, in Marțian’s work: “state enterprises had only an educational function, because the foundation of the industrial area was related to the private initiative”(Marcu and Ornea in Marțian, 1961).

Overall, the industrial design of Dionisie Pop Marțian is comprehensive; Marțian places the agricultural processing industries along with crafts and home industries. Unlike other industrialists,
such as Ghica or Şuţu, whose doubts concerning the light industry were known, Marţian encourages this type of industry, able to enhance the available raw materials in sufficient quantities. Under these arguments, Marţian promote the establishment of typographies, because “the state of printing houses in the country certifies the degree of culture of a nation” (Marţian, 1961).

It is defining for the industrial design of Dionisie Pop Marţian the underpinning of the gradual and progressive development of some manufacturing industries, such as metallurgical ones, for which there were enough material resources (Rogojanu and Badea, 2010). Marţian publicly urges the owners of capital to invest in these industries. He also asks the government to exempt of duties the import of iron and other raw materials. Moreover, Marţian stated: “In no European country is accepted the principle: that the customs are set up with the clear purpose of taxation, but to protect the indigenous industry, although customs practice brings high benefits. Those states that impose taxes on consumption goods, justify customs revenues with the law, and those without such taxes, use customs revenues to encourage the industry.” (Marţian, 1961) Also, Marţian advocate for the export of salt mining and coal because "their production is the easiest and it is the most visible result of the will of the holder" (Marţian, 1961). The establishment and growth of industries implied a custom policy which should follow a series of actions such as:

"a) to charge luxury products and those goods similar to the national ones;

b) to diminish the taxes in case of the necessary objects to produce in the national industries;
c) to charge the exports by using a sliding scale, but only to charge the goods of those who cannot compete with us and the taxes to be small.” (Marţian, 1961)

Incidentally: one of the great ideas that deserve a moment of reflection is related to Marţian's revolt against a situation occurring in the export of salt: Romanian exported salt was recognized as a good and cheap product; however Serbia, Romania's traditional partner, import salt from France, obviously more expensive! Marţian solves the mystery: Romania does not have good roads! Of course, things are questionable, but the problem remains! (Rogojanu and Badea, 2010)

In conclusion, industry protection measures should be supplemented with measures of custom protection and with an educational policy that requires those professions needed by the industry: “The whole civilized world has respected the requirements of the time; people create institutes of polytechnics in order to spread real knowledge that help them to dominate the matter (nature) and to transform it in wealth and power, from which springs the welfare and the culture” (Marţian, 1961).

The author focusing more on industry did not mean any disregard or denial of agriculture. Marţian acknowledged the difficulties of the agriculture sector: “The rural issue is an old one, protracted and often confused by the persecutors. This damages the public safety. Trying to solve did not emerged because other than injustice can be expected as long as the defendant to pay is himself the judge?”(Marţian, 1961)

In fact, in case of the Romanian society, “the question of distributing the land to the peasants is a fundamental one”(Marţian, 1961). At the same time as the property reform, Marţian requires the progressive transformation of agriculture by the introduction of farming mechanization: agriculture “have to renew his working tools, who are most backward in Europe; to be provided with roads, cars and others; and in order to do that it must earn equity and in this respect it need credits and to take credit, it should be free and safe and the welfare to be more generally widespread. It need, especially the freedom of jokes and a good regime. The best means, in fact the unique ones are: the spread of economics by speaking and writing” (Marţian, 1961).
Thus, Marțian may be seen as an economist that saw the importance of both industrial sector and agricultural one in the development of our country.

3.3. The conception of Bogdan Petriceicu-Hasdeu

Hasdeu firmly rejects the most in fashion thesis of that period – “Romania agricultural country”- arguing against this dangerous and “trivial superstition” (Hasdeu, 2002c) which favours only the agricultural development and leaves behind the economic progress of the country. Using a very scrupulous and well documented analysis of the main economic theories and showing an extraordinary impartiality specific only to a genuine scientist, Hasdeu gathers a series of important arguments in favour of industrialization (Rogojanu et al, 2008).

These arguments belong to schools of economic thought which are usually opposed, such as the liberal and protectionist doctrines. The analysis of manufacture and agriculture offers him the appropriate reason to give an answer to the never ending controversy between the main economic theories. It appears that the common point of interest between all these theories is their clear option for a manufacture based economic growth. Hence, the Romanian scientist can be credited with a very rare success – to reconcile (not for long) the liberal and socialist philosophies. The arguments against “Romania – an agricultural country” thesis are logically synthesized and presented by Hasdeu and all these arguments are long term valid (Rogojanu et al, 2008):

- a development based only on agriculture presents a lot of risks for the national economy
- an agricultural country is disadvantaged in the international exchange
- manufacture uses assets and labour more efficiently because it is simpler to shape people than land (Hasdeu, 2002c);
- the exchange and competition emerge due to the products diversity which cannot be maintain only by agriculture
- manufacture is the key of the agricultural development.

In order to prove that manufacture is, eventually, the main propeller for agriculture, Hasdeu uses as example the case of professors and students which shows that the amount of teachers is the main factor of an increased number of students. He argues, in a manner which reminds us of Thomas Malthus, that: “We can say that the number of teacher increase and decrease in an arithmetical progression while the students number increases or decreases in a geometrical rate.” (Hasdeu, 2002c)

Despite the risk of being perceived as a protectionist, especially for a person with liberal political options, Hasdeu claims that Romania has to follow the path of industrialization which means that the lawmakers should protect and encourage the almost embryonic industries of the country. Nevertheless, Hasdeu finds for himself some attenuated circumstances for this unorthodox point of view arguing that any economist becomes a protectionist when is bound to give practical solutions (Rogojanu et al, 2008).

For Bogdan Petriceicu Hasdeu, competition is a fight between economically equal partners, and also a sign of a nation’s maturity. His attachment to the national competition is influenced by List’s theory and is used more as a very convincing argument for territorial union than a manifestation of human action and liberty. But the hidden message is very clear: the agricultural restoration keeps the country dependency and the lack of investments does not allow economic progress.

Bogdan Petriceicu Hasdeu evokes the advantages of competition for domestic exchanges using the arguments of commutative and distributive justice and the principle of moderation. The competition game and the price variation generate “the balanced competition, the asking (the demand a.n)
matching with supply and the supply with the asking. Then there is neither more nor less, there is no extremity or disproportion: it is justice!” (Hasdeu, 2002 in Rogojanu et al, 2008).

Disregarding the economic realities, Bogdan Petriceicu Hasdeu claims that there cannot be possible nor desirable the international competition among nations. In some way, probably influenced by the writings of Bastiat, Hasdeu only sees the glass half empty. He is not able to perceive that the so called free trade is the result and, in the same time, the beginning of globalization (Rogojanu et al, 2008). Nevertheless, Hasdeu takes notice on a very interesting phenomenon, there is an inequality between liberty grades of each entity and thus the exchanges are not always fair: “Let ask ourselves if it is possible a free trade between a master an a slave, between an athlete and a pigmy, between a philosopher and an idiot, between a man and a child, between a rich man and a poor man, between a man armed with a gun and a man armed with a stick, between a nation and another nation?...” (Hasdeu, 2002a).

Hasdeu also gives a very interesting argument against the Ricardo competitive advantages theory arguing that the original argument – the free trade is better for both countries- with the following argument: if a country is allowed to freely develop it might not need the benefits of international trade (Hasdeu, 2002c in Rogojanu et al, 2008). This is a very interesting point of view which follows the very same path as Ricardo theory: the exchange of wine and cloth between England and Portugal.

3.4. The point of view of Petre S. Aurelian

The famous slogan "We are and will remain a state of peasants" publicly express the interests of those people who gained from a closed economy where barter was the rule, not allowing any breach of the capitalist economy and making a glorious title of "Romania - essentially an agrarian country” in a tone so called patriotic, but degenerated in xenophobia and nationalism (Rogojanu et al, 2010). At the same time, the industry skeptic’s school of thought who opposed to an imported industry an original agriculture was trying to block the emergence of markets (Stahl, 2002).

To all of these, Aurelian opposes the lucidity of the specialist and dedicated politician "Unfortunately, until now we have worked in almost all our businesses against economic laws of which depends the very existence of the society. By ignorance, or by malevolence, sometimes we trampled our most sacred interests; we used all our possibilities to ruin the general interests in favor of personal interest."(Rogojanu et al, 2010). He enriched this idea, placing it in the international conjuncture: "A revolution is about to happen in the world. The economic developments of young countries, the awake of asleep old civilizations, the tendency of agricultural countries to become industrial are all clear circumstances which tend to reverse the current economic policy. The Old Europe, seized with fear of the threatening competition of extra-European countries, seeks now to secure its interests both in industry and agriculture. In turn, young countries are working hard to step out of economic tutelage of the Europeans.” (Aurelian, 1967).

In his study How industry can emerge in Romania, published in 1881, P.S Aurelian draws a clear three-point program concerning the formation and development of the domestic industry "in people and through people: “first of all, the identification of the most suitable industrial system compatible with the status of the Romanian people, secondly, the determination of the order of branches with which to begin the foundation of national industry, third, the choice of the necessary means to ensure the development and growth of industries just established” (Rogojanu et al, 2010).

In this context, the slogan of the early twentieth century "big factories, big industries" seems to Aurelian very unrealistic. Promoting the idea of a government policy focused on encouraging and protecting industries and under the influence of German historical school, Aurelian expresses his
belief in a "natural economic development" in which, at first, "our industrial organization must be based on the establishment of domestic industry and professions and, in time, when economic conditions will change, the big industry will be imposed by itself" (Aurelian, 1967).

The civilizing benefits of industry, promoted by Petre S. Aurelian, cannot be questioned, as can be questioned nor his good faith, but the economic arguments are especially missing from his industrial plan, prevailing social and national arguments. For example, when he argues the development of industry at the countryside, Aurelian identifies six key points, among which only two could be considered somehow economic: "1. The state of farmers will be improved. 2. It will help to transform many materials that are exported into manufactured objects which will be exported to the farmers in Transylvania and elsewhere; 3. It will secure jobs for rural people who loses precious time over year, where there is nothing to work 4. It will step out the country from the need to bring from outside the most insignificant manufactured objects; 5. It will train precious workers for factories that will establish in the future; 6. It will help to create a real national industry in Romania and to emancipate the agriculture" (Aurelian, 1967). Costin Murgescu held that "for Aurelian, the economist, the development of productive forces and strengthens of an independent national economy were the fundamental goals of the struggle for existence and future of the Romanian nation" (Murgescu, 1987).

Indeed, the complex historical context, the emergence of Romanian national state, allows such allegations, but one can notice that, on the one hand, the distrust of Aurelian for private initiative, and laissez-faire, for free market and globalization and, on the other hand, the exaltation for the etatist miracle. Aurelian, who criticized mercantilism in its very heart - the state monopoly - in fact, changes this kind of monopoly with another kind of monopoly, not understanding that, under such circumstances, no one can not be so omniscient and have the capabilities and moral integrity necessary to carry out his industrial plan (Rogojanu et al, 2010).

Using data from the old history of Western countries Aurelian concluded: "So, irrespective of the views of those who are counseling our government not to interfere in the industry, on the contrary we will allow ourselves to say clearly that the ignorance in this regard would be the biggest blow to the national industry. In a country like ours, where we can say that there is almost no industry, the government has the lead role." (Rogojanu et al, 2010). In his vision, Aurelian grants full powers to government, which inevitably could not be exempt from any of the mistakes of the former interventionist and protectionist countries: encouraging some means to discourage others, protecting some means to disadvantage others and so on. For Aurelian, despite some failures, the government represented an undoubted warranty of integrity, but he did not take into account that the government is made from people with power, and a strong government does not necessary mean a strong political class!

The order of development and encouraging industries was following the geographical criteria strengthened sometimes by the social criteria, sometimes by the commercial criteria, and often by the complementarities with agriculture criteria, etc (Rogojanu et al, 2010). The idea was that the national industry will substitute the imports of the most necessary products such as wheat flour, sugar, spirits, food and industrial oil, soap, paper, fabrics, etc. In addition to domestic industries that used the potential of rural industry, among the industries which claim encouragement and protection were agricultural and industrial machinery factories, but especially those which provide the raw materials necessary to the latter: mining of iron, copper, coal fuels and other mineral substances, salt and oil extraction.

P.S. Aurelian directs attention to the civilized countries of the time, like England or Belgium, countries that have discovered earlier than others that "what means wealth of a state is not gold and
silver, but the development of all productive forces, the development of industry, agriculture and commerce” (Aurelian, 1967). A volunteer advocate of metallurgy, P. S. Aurelian proves a great force of understanding facts when he identifies the mercantilist system as an entire arsenal used by the state and the groups of interests to suffocate private initiative. Thus, countries like France, Spain and Portugal which were engaged in "gold and silver rush" had developed an economic system which "put a big drag on industrial development and therefore metallurgy" (Rogojanu et al, 2010). In a broader framework, P. S. Aurelian exhibits a series of economic arguments in favor of a serious policy in the steel industry which still remains valid even today. Among other things, the author evokes the sustainability of an economic development based on industry, for the mere fact that from path opened by the West countries there are only points of no return. Therefore, the main concern of a non-developed country should be geared to identifying the best ways to resist competition and to enter into this game.

Industry indeed brings with it a new civilization, but requires "sacrifices of all sorts" primarily means "to ensure the development and prosperity of established industries". Resuming on the subject of direct and indirect involvement of the state in the creation of industries, Petre S. Aurelian seeks support in the economic history of the West Countries and in the history of economic ideas. Aurelian's orientation to the doctrine of national economy of Friedrich List marks, in fact, the dismissal of classical liberal school and sets a new goal - industrialization - with a moral support to achieve it - nationalism: "While the world is divided into groups called nations, while the nation and a sense of fatherland not only exists but is strengthened in relation to cultural development, as long as people treasure so much their nationality and their homeland, that they draw blood to keep it, the aspiration of some school to make disappear all customs, all laws and protective measures will remain a mere desire" (Rogojanu et al, 2008).

In general, the industrialization program drafted by Petre S. Aurelian had many valuable ideas which are still under the review of historians of economic though, but also had some unclear points which would make it non-viable. Among other things, strengthen nationalism is understandable up to the point in which could have replace the need for bread or clothing or even the industry, but the exacerbation of the national sentiment does nothing else than to preserve the economic closure of young Romanian state.

The economic, social and political order show a variegated picture which represented "vicious circle of backwardness": in a country predominantly agricultural the dominance of closed economy expelled the market, without market the exchange using money was completely by chance, more than that, the lack of money was limiting to the extreme the labor movement simply because there was no money to go, for instance, to the city, then how many Romanians could be merchants and moneylenders? On this place, unintentionally left open by the Romanians, foreigners which were employed in trade with goods and money were the ones who developed these occupations more or less onerous, but which were perceived by the Romanians as part of a part of a global conspiracy of their enslavement by foreigners (Rogojanu et al, 2010). All of these were possible because the noblemen, large landowners, were far from the course of the world and ready to resist to any tendency of emancipation which endangers their privileges. Indeed, facing such realities, the economic outlook of Petre S. Aurelian seems renewing and his direction changing is very inspired: instead of love of the estate and land he placed the love for the industry!

3.5. The point of view of A.D. Xenopol

Xenopol shared the idea of the century claimed by the other authors mentioned in this study, namely, the rapid and real industrialization of Romania. During the century there were a lot of skeptics,
disguised as patriots, which through their number and occupations dominated the public opinion, claiming the status of an eminently agricultural country. Xenopol, who after his father had, also an Anglo-Saxon origin could be accused of anything, but not of xenophobia. Conversely, the illustrious historian rose with great power not only against the transient ideologies, but also against the propagandistic clichés of the interests of landowners, who were dominant in the Romanian economy at that time.

The vulnerability of the "farm fresh" evolution was marked by a series of threats, visible even today in the emerging countries, such as: an agricultural country „will sell low and buy expensive the goods necessary for living"; in an agricultural country the danger comes from the excessive bureaucracy or as Xenopol says(it comes) from the "functionarism, from the fierce fighting between the parties and from the falsification of democracy", while "people will live in poverty and their number will shrink"; in an agricultural country "everybody wins less, while in industrial countries, everyone wins more", an agricultural country "gives all of its inhabitants work in exchange for a small portion of the work of industrial countries" (Xenophon, 1882). However, ideas referring to traders, in particular, to intermediaries, in general, are not equal to the other arguments being marked by the ancient mentality of the ancient and medieval regimes, which pass all the disadvantages of a closed economy to the traders. In any case, the ratio between an industrial country and an agricultural one revealed a world mistakenly perceived as "unfair" but a hope to a future where "the industry was required even for the prosperity of agriculture" (Xenophon, 1882).

The best argument for the development of industry in Romania was the considerable growth of the Western countries. Unlike these countries, whose standard of living does not bring into question the difficulties of the beginning, in this region of Europe, the concern to find the culprits and their guilt was too intense and sometimes even passionate. But, under the influence of List’s ideas and of German historical school, Xenopol has not seen the future of the market economy in which trade, namely the market, were the ones to select the economic activities.

Thus, all the economists named above believed that the economic development of our country could be made starting from a specific area of the economy. Thus, some were concerned about the future of the industry, believing it was the only possible way towards economic growth; others were concerned in agriculture or in both.

4. CONCLUSIONS

Starting only from a short presentation of a few of the „forgotten” great economists of the nineteenth century, one may see that the present principles and realities in the economic science are due to, in an important proportion to them. Moreover, an economist is able to see that the ideas are those who really matter, and not the people who had it. We all know that people die, but ideas remains over centuries, thus the study of the spread of economic ideas is crucial for understanding the evolution of a science and of the real economy.

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REFERENCES


ROMANIAN HIGHER ECONOMIC EDUCATION IN THE CONTEXT OF GLOBALIZATION

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Abstract

Nowadays, knowledge is the driving force in the rapidly changing globalised economy and society. Quantity and quality of highly specialized human resources determine their competence in the global market. Emergence of knowledge as driving factor results in both challenges and opportunities. It is now well recognised that the growth of the global economy has increased opportunities for those countries with good levels of education (especially economic education) and vice versa. The benefits of globalisation can be seen in the countries with highly skilled human capital. That is way it is very important in a very competitive world to develop adequate systems of higher education which are able to adapt to the changing environment. This paper aims to outline the importance of the higher economic education system in our country in the context of globalization, starting from the connection existing between it and other economic variables.

Key words: education, economy, competitiveness, globalization.

1. INTRODUCTION

Nowadays, higher education is facing unprecedented challenges, arising from the convergent impacts of globalization, the increasing importance of knowledge as a main driver of growth, and the information and communication revolution. In this context, the role of education in general – and of higher education in particular – in the construction of knowledge economies and democratic societies is now more influential than ever: “Higher education is fundamental to the social, economic and cultural health of the nation. It will contribute not only through the intellectual development of students and by equipping them for work, but also by adding to the world’s store of knowledge and understanding, fostering culture for its own sake, and promoting the values that characterize higher education: respect for evidence; respect for individuals and their views; and the search for truth. Equally, part of its task will be to accept a duty of care for the wellbeing of our democratic civilization, based on respect for the individual and respect by the individual for the conventions and laws which provide the basis of a civilized society.” (United Kingdom National Committee of Inquiry into Higher Education, 1997)

During time, education acted in society as a function depending on the characteristics of the environment in which man lived and adapted to the social requirements. Education and instruction have been generated among others by the need to administer the individual and public property. In the nowadays context, when everybody is talking about economic crisis and its effect, it becomes more important to see what is the role of higher education in shaping the present and the future of our
society, as the fact is that education itself is a major factor when talking about the past of the society, but especially when we think about its future.

Currently, however, academicians believe that educational market begins to face a very difficult situation. Globally, they are speaking about the economic crisis and the causes, respectively its effects. What usually is not emphasized is that we cannot address the economic crisis without being concerned about the progress and quality of education (Badea, 2011).

The academian Mircea Maliţa said that unlike the economic crises that periodically erupts in acute or moderate forms, the global education system seems to be in a continuous crisis, chronic, slow and persistent, which has not yet found its cure. Universities, which are the crown of their educational systems, at the end of cycles, totalling up to two decades of life, are always a subject of critical observations resulting from the economy and made by the representatives of the public administration, by politicians, by the ones coming from the industry and are always confronted by the growing demands of the old professionals, and especially of those that currently appear (Maliţa and Georgescu 2010).

Contemporary economists are beginning to wonder when talking about the causes of the crisis whether we must search for them to the others or inside of us. Is there the economic science the guilty one for our brief and incomplete knowledge? Do we face an unprecedented crisis, with a far future, “infecting” our economic way of thinking? Is there the economic thinking in crisis or are we running out of ideas? On such type of questions should answer those concerned with the development of our present society in order to be able to go further.

Increasingly more often at the academic level, there are discussions about the indissoluble link that exists between the education in general, and higher education, in particular and prosperity or economic development or quality of life etc (Badea 2011). The experts stress the importance that education had and continues to have in achieving a higher level of living. Currently, in our country the analysis of the educational system and of its implications on the economy shows that the travelled road was long and difficult and, unfortunately, it still requires overcoming some significant obstacles.

2. HIGHER EDUCATION IN ROMANIA

People around the world today have much higher levels of education than ever before - a result that holds across many different measures of education. Take years of schooling: an average person age 15 or older in 1960 had fewer than 4 years of schooling - by 2010 this number had doubled globally and more than tripled in developing countries (from 1.9 years to 6.4) (UNDP 2010). In this context, students attend mainly public schools, especially at the primary (92 percent) and secondary (85 percent) levels.

In what concerns, the higher education level, one may observe that at the global level, the number of students has increased during the years. At the level of the EU, the progress is more than visible. The pressures in higher education systems have been caused by the growth in numbers of institutions due to the inexorable increase in participation rates (and the demand for this is to continue in the context of the knowledge economy).

In this context, the global trend may be observed in our country too, but while the number of students enrolled in higher education system grew rapidly, enrolments in neighbouring countries have been even more impressive (see the graphic below). Romania expanded its student numbers in higher education at a time when almost all EU countries did the same.
Gross enrolment ratios by level of schooling around the World for 1970 – 2007

Source: United Nations Development Programme (UNDP), 2010

Education in Romania compared to education in EU in 2009

Source: European Commission 2011

Romania is one of the former socialist countries that are still experiencing serious problems in its efforts to complete economic and social reconstruction. Despite many difficulties, important changes
have taken place and progress has occurred in the building of democratic institutions and the setting up of a market economy.

In what concerns the education system, Romania has inherited from the communist regime a system with high standards (stringent entrance examinations to the most coveted high schools and universities), a massive participation (albeit decreasing) and a considerable stress on science and technology, but also characterized by a lack of flexibility (SAR 2007).

At present, the Romanian higher education system is very homogeneous. Higher education in Romania is offered in both public and private higher education institutions. All higher education institutions are coordinated/report to the Ministry of Education and Research. Under the authority of the ministry there are agencies that play a very important role in fields such as financing and scientific research or partnerships with social and economic environment.

Private universities occupy a special niche in Romanian higher education. Before 1990, there were no private higher education institutions. The first one emerged in 1990. Some of them were created as foundations, i.e., non-profit organizations. But others were created as for-profit companies, owing to expected changes in legislation and taking advantage of the fact that, at that very moment, there was no law stating what the necessary conditions were for any institution to declare itself a university. When the new Constitution of Romania appeared in 1991, it recognized the possibility of the creation and the functioning of private education institutions at any level. It is not to be neglected the fact that in Romania, starting with 1990 the higher education has experienced an intense process of massification (Badea 2011).

Thus, over time the number of students and graduates of higher education has seen a significant increase compared with the characteristic level of the years before 1990. The chart below shows that the trend of higher education graduates was preserved.

![Graph showing the evolution of student/population ratio and graduates/population ratio](Evolution of student/population ratio and of graduates/population ratio)

Source: author’s work using data from National Statistical Institute of Romania (2010)
Today, we see that the order to align the Romanian education system to those existing in the EU, Romania started to implement the Bologna process; in this regard the tertiary education system of Romania is enjoying positive reviews and a good image. According to the Bologna Process Stocktaking Report (prepared for the Ministerial Conference in Leuven, 2009), our country has received the rate „excellent performance” for 8 of the 12 indicators that measure the degree of the implementation of the Bologna Process (ARACIS, 2009). But, the economic problems of recent years led to the under-funding of the education sector; hence, the insufficient resources directed at teacher training (Badea 2011). As has been the case with all the other sectors, education has been and still is subject to important and diverse changes.

The public-private partnership in education still remains an exception. The investment in the research and development area remains inadequate, as show the majority of the reports drawn up at European or at global level.

In what concerns the access to education, it ranks around the international average in Romania. Enrolment rates at primary and secondary level placed our country 51st and 53rd in the Index, respectively, and there is gender equality in primary and secondary education. In classrooms, there is a high ratio of 17 primary pupils per teacher (Legatum Institute 2010).

Access to tertiary education is somewhat better, placing the country 31st overall. Still, Romanians are relatively dissatisfied with the education available to them, placing 69th on this variable. Moreover, the proportion of Romanians who feel that children have the opportunity to learn and grow every day is below the international average, placing the country 74th, overall. The Romanian workforce has solid basic education, with an average of 3.3 years of secondary schooling each, but little specialised knowledge, with just 0.8 years of tertiary education on average (Legatum Institute, 2010).

Nowadays, in Romania one may easily see that the structure of the higher education specialisation has changed during the years. Thus, in the last period of time, the law and economic area are more attractive to individuals than the technical specialisations.

3. HIGHER ECONOMIC EDUCATION IN ROMANIA

The higher economic education in our country has its beginnings in the nineteen century. Thus on November, 23 1843, Ion Ghica inaugurates the course of political economy at Academia Mihăileană in Iasi, marking the first breach in the inertia of the idyllic "life in the country" economy in favour of the industrial one. History shows that the economic education has played a very important role in the emancipation of our people. During time, great economists who have studied abroad and in our country made some changes in the higher education system, showing how important is the study of economics for the economic emancipation of the country. During the years, in the most important cities of Romania were founded economic universities.

According to data presented by the National Statistical Institute of Romania, one may see that in time, after the communist era, the interest has slightly shifted from technical specializations toward social sciences and humanities mainly after 1990. In the period 2000 – 2010, it represented one of the most important sectors of the higher education system.
Students in higher education institutes, by specialization groups

Source: National Statistical Institute of Romania (2010)

After the revolution in 1989, the economic education in Romania has undergone radical changes related to the transition from a planned economic system to the market economy and also related to the European educational changes. These changes were focused on important formal elements such as: the university curricula, syllabus, university subjects’ timetable and, more general, the legislation in education.

The number of students who were interested to study economics grew (see the following graph) as the educational market tried to keep up with the labour market. The transition from planned economic system to the market economy was characterised by the need of entrepreneurs. Thus, the socialist system was left behind and the teachers and professors, who were teaching in the communist era about capitalism, were mainly the one who tried to adjust the university curricula in order to create a correspondence between the output of universities and the need of the labour market.

Source: National Statistical Institute of Romania (2010)
The study of economics was considered to be very attractive especially because the market needed economists. Thus, the public universities adapted their curricula and founded more faculties in order to deliver to the market specialists in finance, economics, public administration, marketing, trade etc. The private universities that were founded after 1990 were interested too in delivering the same thing. Thus, in our country, the university centres were multiplied. If before 1990, the economics were studied only in big cities with university tradition, such as: Bucharest, Iași, Cluj, Timișoara, Craiova, after 1990, one could find a faculty in smaller cities such as: Suceava, Alexandria, Brașov, Galați, Sibiu, Pitești etc.

The growing number of the students interested in economics, the new characteristics of the economic environment, the new trends in the global education area conducted to the need of redefining the relationships between students and teachers, changing the teachers’ vision, particularly the young teachers’ view on their own career, and modification of the way university reports itself to the business, political and social environment where it functions. The adjustment to the new way of economic organization and adhesion to EU led to a process of institutional reconstruction and university reform with no historical antecedent. On the other hand, in the universities in EU 15, USA or Australia, since late last century we have witnessed an enhancement of debates and polemics on what a quality university education should mean. University is seen more and more as a corporation with specific education and research activity. In such a context, the economic higher education system was due to make some changes in order to adapt and to respond adequately to the challenges it is confronted with.

4. CHALLENGES IN HIGHER ECONOMIC EDUCATION AND IN HIGHER ROMANIAN EDUCATION

The current financial and economic crisis has led to an unusually sharp and rapid decline in economic activity and to a global recession. Employment is being severely hit by the current downturn, unemployment rates are rapidly increasing and the EU faces the risk of a decrease in its potential growth, already put at risk by population ageing.

Thus, one of the challenges the educational system is facing concerns the effects of the demographic trends. Ageing societies bring new opportunities to innovative firms through the demand for new or adapted goods and services. However, the combination of ageing and low birth rates also poses major economic, budgetary and social challenges.

The demographic projections confirm that low birth rates, rising life expectancy and continuing inflow of migrants can be expected to result in an almost unchanged, but much older, total EU population by 2060, meaning that the EU would move from having four working-age people (aged 15-64) for every person aged over 65 to a ratio of only two to one (European Commission 2011).

The largest decrease is expected to occur during the period 2015-35 when the baby-boom cohorts will be entering retirement. This trend may be observed in our country too and it has major implications in what concerns the educational system. The total population of Romania is expected to decline significantly by almost 16 % until 2050 as a result of low birth rates and a high level of net emigration. Fertility rates are expected to recover from the current low level while net emigration should come to a halt (European Commission 2011). In this context, it is expected to see a reduction in the total number of Romanian students.
Beside the low birth rate, like Lithuania, Bulgaria and Latvia, Romania has experienced a decade of large population losses also due to the emigration of young adults. It is also to be seen the phenomenon of brain drain, which brings another issue into discussion: the costs generated by the education of the young people who leave the country are supported by the Romanian state, but the benefits are going to be taken by other states.

Another problem is concerning the reduced funding, compared with the EU Member States. According to EUROSTAT data, although the expenditure slightly increased between 2001 and 2007, overall Romania is investing less than 1% of GDP on tertiary education positioning itself below EU average.

The public expenditure in the educational sector, in general, is below the EU27 average, as one may observe in the following table. With student cohorts expected to decline, maintaining or expanding current enrolments will involve tapping into a pool of students who will have fewer financial resources available. This would require a review of the financial support system.
Another important problem and challenge in the same time for the educational system is represented by corruption. Almost half of the 180 countries assessed in 2008 by Transparency International are rated fewer than three (on a scale of 10) points. No country can ignore this. Though the challenges are linked to most areas of society in which power is exercised and resources distributed, corruption in the education sector is exceptional in many ways because it contributes to the oppression of the poor by threatening the quality of education and hindering equal rights to education. It is well known that corruption in education has severe consequences, such as:

- A high drop-out rate, which increases at high levels of poverty.
- Low quality teaching, leading to poor achievement.
- A system susceptible to adverse political, religious and ethnic influence.
- Deepened inequality between rich and poor, preventing entire generations from pursuing a meaningful future.
- Creates an unhealthy mentality according to which it is a normal thing to bribe and not to respect the law.
In every educational institution, in every country and generation, there is a struggle between corrupt practices and the continuing quest for high ethical standards. Corruption is very likely to occur where teachers receive little or no pay (like in Romania), where officials exercise financial discretion and power over the public, and where the risk of detection and severe punishment is low (Rogojanu and Badea 2011).

Beside corruption and demographic trend, the system is facing a lot of other problems such as:

- a low rate of participation in training programs and professional development of employees, Romania being next to Bulgaria in the European rankings (1.3% versus 29.2% - Denmark, the highest recorded in Europe).

  This is hardly encouraging, given that for Romania, the degree of professional employability of the population between 15-64 years was 59% in 2008 compared to the EU27 average of 65.9% (ARACIS 2009)

- underdeveloped systems for advice and career guidance and employment of students
- poor, inaccurate, incomplete and changing law in the field of education
- widening the imbalance between the public and the private higher education system, manifested even by differences in the quality
- plagiarism in academia
- ability to meet the criteria considered by the international bodies to highlight the quality and quantity of scientific research
- transparency and fairness of academia administration
- a gap between the external national system of quality assurance, positively evaluated at the European level and the ability of universities to implement the mechanisms of providing and improving the quality in education. According ARACIS many of the Romanian universities do not have active committees for internal quality assurance and face difficulties in providing data and information for the quality certification (ARACIS 2009).

Thus, it is very important to prioritize educational quality over quantity at the higher levels of education. In the past few years, a paradigm shift occurred: while the old approaches (such as utilitarianism) were concerned with the availability and “the quantity” of education, the modern ones (such as capabilities approach) are more oriented towards the nature and quality of education.

There are at least four reasons for prioritizing educational quality over quantity at the higher levels of education (The World Bank 2009):

- First, it substantially increases the effect of education spending on economic outcomes—quality is more closely correlated with growth.
- Second, there can be little doubt that workers with higher quality cognitive, as well as technical, communication, and team skills, are better able to assimilate technology, to push the knowledge frontier, to work in groups, and to make efficient decisions.
- Third, tertiary institutions that are equipped to impart quality education and conduct relevant applied research are also more likely to cultivate multiple linkages with industry and to stimulate knowledge-based development through a variety of proven channels.
- Fourth, simply expanding tertiary education is no panacea.

Where the quality of education is low and there is a mismatch between skills and demand, many graduates have difficulty finding employment. Higher education institutions need to be better attuned to market demands for both near term needs, as well as to provide students with the solid grounding in basic disciplines that will enable them to acquire new skills in the future if market demands shift, as
they are likely to do (The World Bank 2009). This will not eliminate frictional unemployment of graduates, but under conditions of macroeconomic stability, they could reduce the waste of public resources and human capital that it entails.

A related and intuitively appealing finding is that the quality of education has a stronger bearing on growth outcomes than just the volume of skills produced, after countries have passed a certain threshold level of literacy and an average per-capita level of education. Hanushek and Woessmann (2007) estimate that “the quality of education independently affects economic outcomes even after allowing for other factors...quality may come from formal schools, from parents, or from other influences on students. But a more skilled population - almost certainly including both a broadly educated population and a cadre of top performers - results in stronger economic performance for nations.”

Currently, new internal functional quality assurance institutions and the creation of a genuine culture of academic quality are needed to a greater extent than state control and paternalism towards education providers and customers. When taking into account the existing tensions between the perceptions of students and academics or the recent changes in students’ lifestyle and ethos, it becomes clear that we are dealing with a new academic reality which requires the application of another philosophy of quality assurance (RAQAHE, 2010).

There are gaps resulting from the ways in which incentives are allocated: universities and teachers are evaluated according to their scientific production (easier to quantify and account for) and not according to their achievements in the teaching processes, measured either subjectively – by the students’ degree of satisfaction, or objectively – by students’ performance (RAQAHE, 2010).

If students’ academic performance is less important in the formal evaluation and university accreditation processes, non-formal education and students’ personal and social development are completely ignored. Although non-formal and informal education are in themselves strategies of personal development that are complementary to the academic one, students seem to be atomized and alienated from the university, as well as from their own colleagues, trying to find other types of yardsticks, mainly outside the university. Universities should be encouraged to stimulate students’ participation in the academic community (RAQAHE, 2010).

At the same time, the data show that we are dealing with a new learning culture, a culture of pragmatism and personal comfort: students invest only in order to obtain a certification; leisure time is valuable, as are life and learning experiences outside the university. During time it appeared the conception of student-centred university, which cannot ignore such realities and is called on to innovate in terms of curriculum and methods in order to demand a greater share of students’ time, especially since students’ current involvement in the academic world is rather low. Therefore, we need a new teaching culture, centred on training and knowledge facilitation. What are especially needed are institutional mechanisms encouraging universities to assume such a culture.

5. CONCLUSIONS

Today, as in the past, we need to be forward looking to adapt our educational system to the evolving needs of the economy and our changing society. We must work to provide graduates with the education needed to meet the realities of today's and tomorrow's marketplace (Plosser, 2008).

In what concerns our national higher educational system, one may observe that we still must improve it. The framework of our academic system is not conceived so as to stimulate institutional diversity, to
reward innovation and encourage social entrepreneurship, but rather supports a classic model of academic development, generalising standard quality conditions for an increasingly greater number of beneficiaries of educational services. Universities attract students by an inflation of specialisations included in the reputable subject areas, but the educational offer is not really diversified and designed according to students’ needs and interests (RAQAHE, 2010). In this context, education of the highest quality is crucial for building strong, innovative scientific communities and for providing high-level expertise in all areas of society.

Moreover, EU 2020 proposes a benchmark for social inclusion in education and training, establishing that less than 10 % of students should fail to complete their education and that at least 40 % of the younger generation should obtain a degree or diploma, our country as a member state must adopt the same objectives (ELLI, 2010). Thus, in this context, in order to raise participation rates in higher education, there is need to:

(1) Redirecting funds based on financial need, and introducing a student loan scheme. As a guiding principle, the bulk of fiscal resources would go to the financially neediest students. The main eligibility criteria would be financial need and not past academic performance. Limited amounts could still provide an incentive to the very best-performing students regardless of means. Such an approach will be more effective in encouraging desired outcomes. Introducing a student loan scheme could serve two main purposes: first, more students can be supported with a loan scheme compared to a grant scheme because the loan can be recovered; and second, a student loan scheme is a more flexible instrument. In addition to helping needy students, it would encourage students and parents to contribute a larger share to the high (and rising) cost of higher education. Such contributions are likely to be vital in the coming years as Romanian universities seek to narrow the quality gap with other EU members.

(2) Relying on financing provided by families and on provision of services by private institutions to support further expansion in higher education. Private financing and provision have played a crucial role in Romania’s booming higher education sector, with almost a third of all student being enrolled in a private university and half of all students paying a fee (in either public or private universities). The use of public delivery of higher education with private financing, and the use of public financing (for the poor) with private delivery has been models widely explored around the world to expand participation in tertiary education.

Those efforts will require the collaboration of policymakers and educators. But if such efforts are successful, we can ensure a more productive, highly skilled, technically trained workforce that will support a vibrant and robust economy in our region and the nation. The responsibility does not rest solely with government and policymakers, who clearly must do their part. It rests mostly on individuals taking the responsibility to engage in life-long learning, making investments that will reward them handsomely.

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REFERENCES


SET OF TOOLS FOR INVESTIGATION OF PROCESSES OF GENERATION LASER WITH PUMP OF ACTIVE ELEMENTS BY LASER DIODE

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Abstract

These tools can be assign for organize laboratory work in technical university and also it will help to make investigation of processes of generation in laser with pump of active elements by diode laser bars. These tools consist of multi-channel system of pumping and temperature control of diode laser bars, acquisition board for registration light field, shaper of high voltage pulse for control Q–switch and main module which control all of these part via Internet or via PC by USB. Advantages of these devices are in amplitude of current pumping is up to 200 A, control temperature with accuracy much better than 0.1 °C in a temperature range 15...45 °C. Duration pulse for control Q–switch is less than 6 ns. Notice, in these tools were realized 5 mechanisms for proof of diode laser bars. These set of tools were successful tested as instrument for distance education in Technical University of Berlin and N.E. Bauman Moscow State Technical University.

Key words: Diode laser bars, Laboratory work, Quantum electronic, Lasers pumping

INTRODUCTION

The growing use of semiconductor laser diodes for pumping of solid-state lasers' active elements have determined the growth of number of experimental works, which main objective was to study the characteristics of the pumping process and to search for optimal laser quantrons implementation. Carrying out such complicated research usually requires the creation of an integrated hardware complex, which provides centralized control of individual functional elements and the synchronization of their operation.

Using a set of universal devices with built-in standard interface (IEEE488, RS232, etc.), the problem of setting the mode of their work and communication can be solved by the control computer. It is worth noting that these interfaces' features often do not allow organizing of high-precision synchronization of events. The use of additional hardware for synchronization purposes complicates and limits the range of control capabilities.

Another known way is to implement a complex on the basis of such control systems as CAMAC, VME, etc. This approach requires designing special communication adapters with the object of
research and the development of specialized software. Changes of the measurement conditions often cause the need of a new communication adapter implementation and performing complicated correction of software.

Another problem is the creation of laboratory installations for carrying out the laboratory works of students who are learning the fundamentals of quantum electronics and laser technology. In this case, the main problem is to avoid breakdown of expensive laser diode bars (LDB) (the price of one laser pumping module with the LDB may exceed 2000 euros) due to the improper actions of researchers. It is known that operation of LDB in wet environment, where the formation of dew drops on the mirrors is possible, leads to irreversible destruction of LDB even at low levels of the pumping current. Exceeding the permissible level of pumping pulse power and pumping pulse energy also leads to irreversible degradation of the LDB.

High cost of necessary equipment which is used to carry out laboratory works with lasers, where active elements are pumped by LDBs, leads to a series of problems in small universities. It is in these cases good prospects are shown for using the Internet - laboratories with remote access to the expensive equipment.

**STRUCTURE OF THE COMPLEX**

This complex is assigned for students' study in laboratories of physics and quantum electronics. It also can be used for investigation of generation processes in a laser with laser diodes pumping of active elements.

It consists of system of pumping and thermal stabilization of LDB modules based on multichannel power supplies MCPS-120, Light Fields Registration System (LFRS), module of high-voltage pulse generation for Q-Switch modulator control (HVQSM) and control module which can work via internet. Also, Micromechanical Mirrors Position System (MMPS) opto-mechanical module can be added to the complex for automation of mirrors adjustment in optical system of laser resonator.

All modules of the complex are coupled via noise-resistant information net CAN (CAN – «Control Area Network», ISO 11898 [1, 2]). Significant feature of CAN is providing of feed circuit in a communication line. This feature allows connecting devices with total power consumption up to 200 W.

Special procedures and hardware which support direct and remote access to CAN have been developed to implement centralized control of all modules of the complex [3]. CAN-USB module is used for direct access via personal computer (PC). CAN-Ethernet module provides an external access to CAN net via local area network or Internet.

Accident-free operation of the complex during switching communication lines was achieved due to the current-limiting secondary power supplies in each module.
Multichannel pumping system MCPS-120 (fig. 1) provides a high-stability pumping current pulses with duration of 20 ... 250 µs and amplitude of 10 ... 200 A for every LDB. This system also provides automatic control of LDB temperature with error of ±0.1 °C in range of 15 ... 45 °C.

Operational control of the LDB state and 5 mechanisms of LDB protection have been implemented in the system:

- Short circuit protection of output pumping circuit;
- Protection against the formation of pumping current pulses, the duration of which exceeds the safe value;
- Protection against excessive heating or the possibility of condensation forming;
- Soft start of the internal power supplies;
- Protection against the current flowing through LDB due to the fail of any element of pumping current source.

Centralized control of operation and also the possibilities of system MCPS-120 allow creating of pulsed solid-state laser with output power more than 10 W. The main features of the complex are:

- Synchronous operation of up to 32 LDBs;
• Forming of pumping current pulses with controlled amplitude (10…120 A) and duration (50…250 μs);
• Measurement of the absolute value of temperature for each LDB with an error of ±0,1 °C;
• Centralized management of the operation mode and control of the state of each LDB are individual;
• Forming of synchronization pulses for an external controllers of Q-switch and other devices;
• Multistage protection of LDBs against breakdown during the operation;
• Possibility of building an automatic system for measurement of laser radiation parameters.

Pumping current pulse shape is determined by a set of parameters $T_s$, $I_s$, $T_m$ and $I_m$ (fig. 2).

![Diagram of current pulse](image)

Figure 2. Amplitude-time parameters of current pulse which is generated by PSCM-120; current pulse of LDB (a); synchro pulse (b)

The change of these parameters allows providing maximum of the rate of current rise at the rising edge of current pulse flowing through LDB. It also allows minimizing the influence of a transient in supply line with an expressed running inductance.

Light field registration system LFRS is used with TV-camera which can have S-video or composite output (fig. 3). LFRS provides registration of: rapidly changing radiation light field of LDB, spatial distribution of spontaneous radiation intensity in a cross-section of active element, intensity distribution in a cross section of beam of solid-state laser.

This system also provides a synchronization of the light field registration and pumping current pulse generation with error ± 0,1 μs.
Figure 3. System configuration for LFRS application where VCM is a module which provides synchronization of system processes and TV-signal registration

Registered radiation field intensity distribution is visualized at separate LCD-display and can be transmitted via USB-CAN to PC for visualization and further processing (fig. 4).

Figure 4. Image on a LCD monitor of LFRS (a) and 3D reconstruction of laser radiation field intensity (b) obtained by LFRS

The main functions of LFRS are:

- Light field registration with 20 ms period;
Light field registration is synchronized with external events (pumping current pulse, Q-switch operation, etc.) providing small timing error (±100 ns);

Registered light field visualization happens momentarily at monitor with VGA input;

Registered light field data is transmitted to a control PC via USB-CAN communication module for storing and further processing;

The main laser radiation field parameters are evaluated with sampling rate of 25 Hz.

VCM module provides the registration of an image and transmits a synchronization command for PSCM-120. When TV-camera operates in a mode of short-time exposure (10 μs) it is possible to register timing dependency of parameter of spatial intensity distribution of spontaneous radiation.

The HVQSM module of high-voltage pulses formation for Q-switch control provides investigation of the laser operation in Q-switched mode of its resonator. Small switching time (minimum of 6 ... 7 ns – Fig. 5) allows to study the generation of radiation in lasers with a "short" resonator, which length is 80 ... 100 mm or less. Q-switch control pulses with adjustable in the range of 1,0 ... 4,0 kV blocking voltage and magnitude $U_0$ are synchronized with the LDB module pumping current pulses. Synchronization error is ±100 ns. The duration of the pulse is 200 ns, which ensures effective management of Q-switched laser resonator. An important feature of the module is to form a pulse with adjustable peak amplitude, which can vary between $-30 ... -400$ V. This allows compensating the ferroelectric effect [5] when electro-optical modulator based on DKDP is switched on (Fig. 5). The time constant of each high voltage pulse trailing edge provides repetition frequency up to 1 kHz.

![Timing diagram of high-voltage pulse at the output of the module HVQS for Q-switch control](image)

Developed software provides system modules control with the simultaneous recording of all events, including LDB temperature changes. It also displays and saves the results of work. The software
provides the function of safe mode limits formation. All actions of the experimenter are limited by the pre-programmed parameters’ limits. These limitations may be modified or completely removed after researchers have studied the properties of researched object or their qualification has grown up.

The software allows:

- To merge sources of pumping current pulses into the groups, for each of which it can be provided simultaneous change of the generated current pulses parameters;
- To change pumping current pulse amplitude for each LDB module in increments of 1 A as well as its duration and the delay time of forming the leading edge in increments of 1 μs;
- To change the shape of the pumping current pulses to ensure matching of the output stage of the pumping current pulse source in PSCM-120 and the electrical line connecting it with the LDB module;
- To change the operating temperature of each LDB module;
- To set repetition rate of the pumping current pulses;
- To ensure that Q-switch have been switched on at a given time with an accuracy better than ±100 ns;
- To ensure synchronization of pumping current pulses with the time points when TV-camera of LFRS starts photocounts accumulation;
- To provide remote control of all parameters of the MCPS-120, LFRS and MMPS via the Internet.

Optoelectronic module (Fig. 6) contains the active element from solid-state AYG laser, LDB module with TEC and two wideband photodetectors with time constant about 10 ns. Each photodetector has wide aperture. One of the photodetectors registers the intensity of LDB radiation passed through the active element and the other photodetector registers the intensity of spontaneous radiation in the cross section of the active element.

The module allows investigating:

- Temperature dependence of LDB radiation absorption in active element (Fig. 7);
- Dynamics of change in the radiation absorption in the active element, which characterizes the features of LDB structure and the quality of the thermal stabilization system;
- Efficiency of pumping the active element expressed by the magnitude of the spontaneous radiation detected in the direction of the optical axis of active element, depending on the parameters of LDB and the pumping current (Fig. 8);
- Spatial distribution of spontaneous radiation registered by TV-camera to evaluate the inverse of population distribution in the active element cross section;
- Dynamics of changing the distribution of the population inversion after the end of the active element irradiation (Fig. 9).
Figure 6. Optoelectronic module

Figure 7. The shape of LDB radiation pulses, passed through the active element at different temperatures of the LDB module (a) and calculated dependence of the active element transmittance coefficient at the same LDB temperatures (b)
Figure 8. The intensity of spontaneous radiation $I_s$ change as a result of LLD temperature $T$ change

The complex was successfully tested as a tool for laboratory workshops [6] while studying the course "Quantum Electronics" at BMSTU and Berlin Technical University (with the support of DAAD). The complex may be equipped with MMPS opto-mechanical device for mirrors adjustment in the optical system of the laser resonator. This allows using it as a mean of remote education at the Laboratory of laser information systems of BMSTU. The remote control of the complex is performed via the CAN - Ethernet communication module to demonstrate the main physical effects which can be implemented in a solid-state laser with LDB pumping of the active element.

**CONCLUSION**

The design of educational and scientific equipment using CAN technology allows controlling a complex system effectively. Expensive opto-electronic components' safety modes were implemented on a qualitatively new level. Procedure of multi-parameter optimization of the system with target function sampling during the experiment would be implemented in the long term.

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INTERCONNECTION BETWEEN EDUCATION, INNOVATION AND LABOUR MARKET REQUIREMENTS IN THE CONTEXT OF EUROPE STRATEGY 2020*

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Abstract

Given the three priorities of the Europe Strategy 2020 - smart, sustainable and inclusive growth - efforts should be focused on education accountability, encouraging innovation and improving employment and training policies to meet labor market demands. Also, a greater capacity for research, development and innovation in all sectors of the economy, combined with a good use of resources will improve competitiveness and boost new job creation. This article analyses the areas in which action must be taken, pointing out some differences and performances recorded in the European Union (with special reference to Romania and Denmark, regarded as the European reference in this respect), and also compared with the U.S. Providing labor market flexicurity requires major changes in the Romanian educational system, including strategies for lifelong learning, determined by the implementation of new IT and communication technologies in all sectors. Furthermore, attention turns to increasing quality workforce, a major cause of labor productivity, without ignoring the costs of research and development.

Key words: education, continuous training, innovation, labor market requirements, flexicurity, employment

1. INTRODUCTION

Education consists of the fundamental social process of transmitting life experience and culture of adult generations to younger generations, in order to prepare them for life, to integrate them into society. Education is achieved in the family, but especially in institutionalized facilities (school, church, military, professional associations, sports). The educational process follows the formation of human personality and professional skills necessary for social integration and its contribution to the complex development, being carried at different levels and areas, depending on the intended objectives.

Instructional and educational training is particularly important because a modern society is based on knowledge and continuous innovation and imposes increasingly higher levels of education.

The role of educational institutions is changing; education became an integral part of the process of globalization and an economic source that can sustain a relatively long-term competitive advantage, as long as they always provide an "update" of the information already processed by an individual.
Because society is constantly changing and its dynamics are very fast and fluctuating, the dynamics of knowledge must follow the same intensive pace and, especially, a very high degree of adaptability to the actual conditions existing in the global economy.

There may be more general social benefits for a better educated population, because there has been an increase in productivity and the more time is allocated for the education of a person, the more that person becomes more adaptable in the face of new challenges.

Investing in human capital can bring people not only the best technological knowledge, but by educating potential innovators, it leads to an advance of knowledge and thus contributes to economic growth.

Another motive, in support of increasing the level of education, is to gain a greater stability on the labor market, which reduces the risk of unemployment. Educated people have labor market participation rates higher and the duration of their employment is, generally, superior to those with lower education. Large scale implementation of the well known concept of flexicurity labor market - as an output method from the recession and subsequently, of a lasting and sustainable economic development - is strictly conditioned by the increasing level of education of human resources and by equipping them with skills suitable for our present technological and informational age and, especially, to the following one.

Precisely for these reasons, education is a key component of human capital development.

2. WHY A KNOWLEDGE-BASED SOCIETY?

Discussions at a European level aimed at policies of economic and social cohesion (Lisbon strategy, 2000) provide universities an increasingly important role in achieving the link between the professional training of people and the requirements of the labor market.

2.1. What is the Lisbon Strategy?

30 years ago, in the educational and training system, came the first European cooperation program (February 1976), which was followed by the programs Comett, Erasmus, Petra, Lingua, Force and Tempus. The Maastricht Treaty acknowledged the role education played in strengthening the integration, a role which was to be confirmed by the Lisbon Strategy.

The Lisbon Declaration is an agreement of European governments, reunited by the European Council in March 2000 (held in Lisbon), designed to align economic and social policies at a European level, in response to the challenges of globalization and informational society. At this meeting it was established that "in the years 2010-2020, Europe will become the region with the most competitive economy in the world" (currently there are important differences between the EU and US-Japan).

In other words, the EU has set itself the strategic goal of becoming the most competitive and dynamic economy in the world, based on knowledge, capable of sustainable economic growth that generates new and better jobs and characterized by a greater social cohesion.

In 2002 the European Council pointed out the fact that education is the European social model and that educational systems in Europe must become a "world quality reference" by 2010.


2.2. What is the connection between education and economic growth?

In 1973, Daniel Bell said that the role of change towards a "new techno-economic order" will be played by information and knowledge, thus supporting the modern neo-classical model of economies as adaptive and dynamic systems.

In the growth process we find two indicators: quantity and quality of work. Thus, in the 80s, a new theory of economic growth appeared, by Paul Romer and Robert Luca, which assumes that capital accumulation often involves an accumulation of knowledge.

So, economic growth in contemporary societies is conditioned by the education of population. Thus, the "human capital" becomes as important to the development of society as natural resources or physical capital. Moreover, it is, theoretically, unlimited and man can progress beyond its limits, therefore becoming a major factor in achieving sustainable economic and social development.

Economic theories concerning "human capital", submitted by Theodore W. Schultz (1961) or Gary S. Becker (1962), claimed that the improvement of human productivity components can be generated by increasing financial resources for education.

For example, in 1989, 80% of the wealth of developed countries "ensured itself, based on the contribution of human capital, meaning that 80% of real income is due to investments made in people (...), it has been found that an uneven distribution (of education in society) tends to have a negative impact, in most countries, per capital income."

One of the functions of education is, thus, a contribution to human capital development. In the '60s there was a high maladjustment of school to the real life and the problems of society, known as the "global crisis of education". Philip Coombs noted, in this regard, that there is a set of functional differences between education and other subsystems of society:

• in relation to quality education, it is found that the offer is too low and the demand is too high;
• the social needs for quality human resources are not satisfied with the educational product;
• educational methods and programs are not adapted to the needs of society;
• current social dynamism vs. inertia of organizational structures of educational systems.

Globalization and increasing competitiveness, structural labor market disorder or social transition processes in different states, have amplified the functional differences between education and other social sectors, creating new challenges for contemporary education. This, however, maintains the traditional limits and contradictions, leading to poor patterns of repressed, conformist and non-autonomous human resources.

2.3. What is the connection between education and "sustainable development"?

Another aspect that must be taken into account, when talking about education and its relation to society, is "sustainable development", defined in the report of the Bruntland Commission in 1987 as a process designed "to meet the needs of the present, without compromising the ability of future generations to meet their own needs". In other words it involves "ensuring a better quality of life, for both present and future generations" (Sustainable Development Strategy for the UK Government, July 1999).

In modern societies appeared a phenomenon called "human gap" that means a significant increase of the complexity of problems mankind is facing, in relation to our ability to meet them. The solution
identified by researchers is "societal learning", according to which, in the process of learning are included not only individuals, but also groups, companies, thus developing new methodologies, skills, attitudes and values, in order to face the new dynamic world.

In conclusion, the future depends, especially, on increasing the capacity of understanding and human actions, which are also dependent on the educational system, that must adopt a new attitude towards knowledge, development, life and focus on participating and taking the initiative in solving real, concrete problems of society.

"Education must be recognized as the process by which humans and human societies can reach their full potential. Education is essential in promoting sustainable development and in improving people's ability to solve environmental and development problems [...]. Education is the path to equal opportunities, a healthy and fair democracy, a productive economy and sustainable development" (Agenda 21, Earth Summit, 1992).

Let's not forget that the defeat in World War II led Japan to start all over again, becoming in less than two decades a modern country with a functioning economy, leading technology research and a stable democracy. It should also be noted that Japan became the first country to have realized "lifelong learning".

2.4. What is knowledge-based economy?

The new economy, based on knowledge, changed the rules of sustainable economic development to the extent that "companies or regions can shift from agrarian societies to an economy of knowledge, without being absolutely necessary to go through the same steps as the ones in the old industrialization era.

In other words, it is now possible for countries of Eastern Europe to achieve integration on the go, a reduction of disparities compared to the average level of development in EU countries. Romania has always registered such a gap, but failed to overcome it until now, therefore it requires a connection to the principles and mechanisms of the knowledge-based economy.

"The society of knowledge is the purpose and context of modern development, because knowledge is the only resource that grows with use, competitiveness is dependent on the quantity and quality of knowledge and the profitability of any particular company may increase depending on the investment in the production of knowledge (intellectual capital) than in acquiring as many physical assets as possible."


The main conclusions of the European Union Conference on March 26, 2010, concerning the programs established under the Lisbon Agenda 2000-2010 and the prospects of the next period, were as follows:

- In 2008-2010, the EU has faced the most serious global economic crisis since 1930 to the present. Because of this crisis, much of the progress made since 2000 has been annulled. At this point, the Union is facing excessive debt levels, with slow structural growth and a high unemployment rate. The economic situation is improving but the recovery is fragile.
• Restoring macroeconomic stability and redirecting public finances to a sustainable path are essential for economic growth and employment. In this respect, giving up, in time, the exceptional support measures adopted to combat the crisis, will be important, once the recovery will be fully insured.

• Structural reforms are essential for a strong and sustainable recovery and to maintain European social models. Jobs and social welfare are at stake. If a quick and effective action will not be taken, Europe will lose serious ground in global competition and, especially, it will lose credibility and viability of the idea of international and functional unity.

• In 2010-2020 the EU needs a new strategy, based on extensive coordination of economic policies, to generate economic growth and increase employment. This strategy will focus on key areas where action is needed: knowledge, innovation, a viable economy, a higher level of workforce and social inclusion.

The new European strategy, supported mainly by the western EU countries, aims to promote "knowledge-based economic growth" and create long term employment with subsidies "green technologies" from the state.

More in detail, the draft agenda for "Europe 2020" takes into account three major forms of economic growth in next decade:

• Smart economic growth (strengthening knowledge, innovation, education, digital society);
• Sustainable economic growth (increasing efficiency in production and competitiveness);
• Inclusive economic growth (increased participation in the labor market, acquiring new professional skills and reducing poverty).

The specific objectives in the field of employment, social inclusion, education, research, development and continuous professional training for the period 2010-2020, were clearly defined:

a. The employment rate is 75% for employed population between 20 and 64 years, especially due to a greater participation of young people, older and less skilled workers and a better integration of legal migrants. In structural terms, low participation in the labor market has been one of Europe's long term weaknesses. Before the crisis, employment rates in Europe were a few percentage points lower than those in the U.S. and Japan. The crisis has dramatically increased unemployment and demographic change may further reduce available labor force. Greater participation in the labor market would have a significant impact on future growth in Europe.

b. In order to improve conditions for research and development, so that combined levels of public and private investment in this sector would reach 3% of GDP, the Commission will develop an index designed to reflect the intensity of research, development and innovation. Both in terms of invested resources, especially those in the private sector, and in terms of cost effectiveness, Europe is far behind the United States and other advanced economies. Such a difference would affect growth prospects, particularly for sectors with high growth potential.

c. Improving levels of education, especially by setting the objective of reducing the school dropout rate and increasing the number of people with higher or equivalent education. Europe 2020 establishes a dual main objective in terms of education, namely that by 2020, the percentage of young people aged between 18 and 24 who drop out of school to be less than 10%, and young European
people between 30 and 34 years who have completed a higher or an equivalent level of education to be at least 40%. Promoting innovation and growth requires qualified and trained workforce. It is essential to have a population with a high level of qualification in order to face the challenges of demographic change and social inclusion in Europe. Investing in quality education, training and life-long learning therefore represents a key dimension to smart, sustainable and inclusive growth.

d. Promoting social inclusion, especially by reducing poverty. The main objective of the EU is to reduce the number of European citizens living below the poverty line by 25%, which would mean the removal of over 20 million people from poverty. The objective is defined on the basis of three indicators that reflect the many faces of poverty and exclusion in Europe.

Thus, the initial concept of relative monetary poverty is expanded, in order to incorporate non-monetary dimensions of poverty and exclusion situations on the labor market. This also reflects the diversity of situations and priorities existing among State Members. Growth can not be considered sustainable only when its benefits have an impact on all segments of society. However, in the last decade, inequality has expanded in Europe and an increasing number of people living in poverty are victims of social exclusion.

The economic crisis led to a dramatic increase in the number of people who live or risk living below the poverty line. Reversing this tendency and ensuring the coexistence of growth and social cohesion are key objectives of Europe 2020.

4. EU PROGRAM OF "EDUCATION AND TRAINING 2010 "

A key role in education and continuous training in the European Union is the common activity report for 2010 of the Council and the Commission on the implementation of the program "Education and Training 2010 ". The main lines of action and justification of the importance of this program results from the following arguments:

Education and training are the center of the objectives of the Lisbon agenda for economic growth and job creation and are essential elements for further application in 2020. Creating a "knowledge triangle", formed by education, research and innovation, that would function properly and help all citizens to improve their skills, is essential in terms of growth and employment, as well as in equity and social inclusion. The economic recession has further highlighted the importance of equity and social inclusion as long term challenges. Public and private budgets are subjected to significant, long-term constraints, existing jobs are annulled, and the newly created ones often need different skills and a higher level of training. Therefore, education and training should become more open and relevant to the needs of citizens, the demands on the labor market and the needs of society, in general.

This fourth report focuses on the progress made during 2007-2009 regarding agreed objectives in education and training. It is based on a thorough assessment of achievements and national reports, the evaluation was conducted using a set of indicators and reference levels of the European average performance ("landmarks"). The main emphasis is on implementing the 2006 recommendation, regarding key competences. The report also provides an overview on the development of national strategies for lifelong learning and reforms in order to make education and training (VET) more attractive and relevant to labor market demands and to modernize higher education.

The report also takes into account the new challenges, particularly in the context of the "New skills for new jobs". Although reports of State Members have not explicitly focused on how education and training should respond to the economic recession, the problems addressed in these reports - especially
the progress made in implementing an approach based on competent and modern VET and higher education - are key issues that contribute to Europe overcoming the crisis.

The following tendencies and challenges were identified:

- A general improvement in education and training has been noticed within the EU. However, most of the targets set for 2010 were not achieved and, in the case of the essential objective regarding literacy, regress has been noticed. Achieving these objectives will require the implementation of effective national initiatives. The economic recession, along with the demographic challenge, exacerbates the urgency of reforms, while also continuing to invest in education and training to face the main economic and social challenges.

- Many countries are introducing reforms that explicitly use as a reference point the key skills. Remarkable progress has been registered in adapting the curriculum. However, more needs to be done in order to support the development of teaching skills, updating methods for assessing and introducing new ways of organizing the learning process in an innovative school environment. Ensuring that innovative methodologies benefit all learners, (including disadvantaged categories and people attending educational forms and disadvantaged groups and individuals who attend educational institutions for adults and VET) is a major challenge.

- Implementing the program of lifelong learning through formal, informal and non-formal education and increasing mobility remain a challenge. Educational and training systems, including universities, should become more open and more responsive to labor market demands and to the needs of society, in general. Special attention should be given to concluding partnerships between education, training and work sectors.

5. WAYS OF IMPLEMENTING THE PROGRAM OF WORK “EDUCATION AND TRAINING 2010” - IN ROMANIA

In the spirit of this report of activity from the Council and the European Commission, regarding the implementation of the Program “Education and Training 2010” - in Romania - a series of transformations are required in dealing with education at all levels:

The changes that need to be made in the Romanian educational system are required by the development of informational and communication technologies, by the need to face competition on the European and even global market, and by the need to change society to the trend of a knowledge-based economy.

Informational and communication technologies, being based on advanced electronics, have allowed new services and multimedia applications that combine sound, image and text and use all means of communication.

The development of the media is an important factor to increase competitiveness of businesses, opening new perspectives for a better organization of work and creating new jobs. New perspectives on modernizing public services, healthcare, environmental management and new ways of communication between public administrations and citizens have appeared. Also, these technologies allow wider access to education and culture for all social categories, regardless of age or geographic location.

Globally, educational systems are under social pressure caused by the implementation of new informational and communication technologies in all sectors.
Informational and communication technologies allow, on one hand, access to more resources (databases, data banks, encyclopedias, textbooks, workbooks), to various informational programs, and on the other hand, they allow participation to new types of activities that are more stimulating, more productive, such as: the ability to communicate, cooperate, participate in projects, emphasizing the value of creativity in everyone.

In 1998, a UNESCO report demonstrates the effectiveness of teaching with ICT (informational and communication technologies,) in comparison with traditional education, especially regarding the use of knowledge in active life, outside school.

Some of the advantages of using informational and communication technologies in the educational process can be found below:

- ensuring students a better control over resources, which enables the development of creativity
- establishing more realistic and authentic learning situations
- interactive learning
- increasing student interest and motivation
- another form of computer-aided assessment
- combining or integrating ICT in an appropriate pedagogical strategy
- the interaction between different schools
- extended use of ICT in teacher training

The media and new technologies allow a high degree of flexibility in the teaching-learning process.

Computerizing education in Romania is a work in progress, using various programs, such as CES (Computerized Educational System), which is a complementary system to education, not an alternative that involves both teaching professors, and educational software. The basic objective is to support the teaching and learning process with the latest generation technologies. The program supports the objectives of reform in education and is in line with the Europe 2005 action plan launched by the EU.

The CES program aims to ensure access to informational technology (computers and internet access) for all participants in the educational system, by providing all schools in Romania with complete IT solutions for the learning / teaching process.

The CES program offers new beneficiaries IT-based tools for school use, increasing the quality of education.

It provides a substitute for expensive or dangerous tools or lab experiments.

It is important to note that the main challenge of the CES program is not only the distribution of computers, educational software or internet connectivity, but also the investment in people, in their training. The greatest risk of the project is not the insufficient number of computers but the inadequate use of them or, worse, not using them.

Romania has made progress, in terms of fulfilling some educational conditions, necessary to become an EU member, such as Romania's participation in training programs like Socrates, Leonardo and Youth, compatibility of the Romanian legislation on education with the decisions, resolutions and statements of the community, such as those on equal opportunities for all, ensuring mobility in higher
education, education in foreign languages, non-discrimination, use of educational technologies, distance learning, continuous training.

However, the current quality of the educational system needs to improve, educational institutions must be responsive to economic and social realities, European affairs, and also to be responsive to labor market needs.

The EU has launched numerous programs and initiatives that have made important contributions to the field of education:
- Socrates II Program (2000-2006) mainly aims at building a Europe of knowledge
- Youth II Program (2000-2006)
- Communication “Making a European area of education and lifelong training”
- eLearning action Plan
- Empowering universities to take decisions
- Employability on the European labor market
- Mobility at Higher Education Level
- Compatibility: a common but flexible qualifications frame
- Quality Assurance and Quality Certification
- Competitiveness in the country and the world

Romania must implement strategies for lifelong learning, including through improving quality and efficiency of education and training. Developing a policy of lifelong learning requires constant qualification and retraining the workforce by upgrading skills and adopt competencies to cope with competition from an enlarged Union and a global economy, by keeping pace with technological changes and the increasing importance of knowledge share in production value. In terms of EU integration, it is necessary to pursue the improvement of qualifications, career development and reducing disparities of professional qualification. The EU has set the 2010 target to achieve an average level of participation in the lifelong learning of at least 12.5% for working-age adult population, aged 25-64 years, also, at least 85% of the population aged 22 years in the EU should have completed upper secondary education.

For Romania is very important to achieve these targets because it allows it to cope with labor market competitiveness and to grow the labor productivity. Pursued policies will aim to increase investment in human resources, investments in training of adults at the enterprise level, providing access to adults to relevant information regarding education and training opportunities using information and communication technologies.

Important programs, supported by loans (WB, EIB) or grants (EU), have contributed to improving the quality of the system. In future we expect an increase in school participation rates, but also growing financial needs as a result of extending compulsory education. A significant demographic decline in school-age population, which will follow in future years, with expected growth of the budgetary allocation for education will allow Romania to meet all requirements related to equity and quality education.
Most policies that affect performance specific to labour market also affect initiatives related to training and education. Thus, progressive taxes may reduce the rate of return on investment in education, the last increases young people's interest to invest in education.

Public financial support of education, in the form of grants and contributions, may increase the injection of investment in education by reducing the cost of the investment. On the other hand, loans and grants given to student can support investment in education and study duration may influence the flows of revenues and earnings expected to be obtained through the accumulation of human capital stock due to investment in education.

Since the early 90’s OECD argued for application of active labor market policies that distinguish passive interventions that take the form of unemployment benefits payments.

Active policies aimed at rapid development of new skills and employment opportunities for labor through assistance in job search, training and continuing education programs, creation of new direct jobs, allowing the accumulation of experience. To actively contribute to improving the adaptability of the workforce in the long run, an important step is to improve access to education.

Strengthening university autonomy along with competition from private education, opened the way to entrepreneurship and management of public higher education institution. Sooner or later, the academic programs of different universities will operate in a competitive environment, in which in order to grow, universities are encouraged to attract various and numerous resources.

Considering that it is necessary for the economic activity to support both financing education, and training activities, and to absorb new labor force also created through these programs, people need to draw in Romania a strategy by which to align better educational development and economic activities.

It is also very important to have a legal framework for participation of social partners in education and training programs. In Romania, a problem in the development of effective education is the law, the existence of rather rigid rules that constrain institutions, leaving little room for maneuver for a newly introduced flexible adaptation to change.

6. DANISH-ECONOMIC MODEL LESSON ON THE IMPORTANCE OF TRAINING AND CONTINUING PROFESSIONAL TRAINING DURING THE LIFETIME

For a more convincing illustration of the road to follow for Romania and other EU states or relatively recently EU states, as Bulgaria I will debate the case of Denmark.

Denmark’s development strategy of specialization in low technology sectors, is an example of a country's development strategy essentially agrarian, which after a century of layoffs around the agricultural sector has managed to position themselves, beginning with the late '90s among the ten countries in the world in terms of gross national product per capita. This achievement is all the more remarkable as it belongs to a country with the highest degree of income equality in the world.

In the first part of the nineteenth century, Denmark was the supplier of the UK market oatmeal. The emergence of Russia and the United States of America in 1870 as the main exporters of maize in Europe has led to the need to convert the Danish agricultural production and export crop from vegetal to animal production. The restructuring was based on the creation and rapid spread of "people's colleges", aimed at education and empowerment of farmers in parallel with the establishment of farmers cooperatives. Thus, after a transition period, agriculture has been transformed into a major exporter of butter and bacon for the UK market. Industrialization that followed was centered around
the agricultural sector by transforming domestic-oriented firms into export companies specialized in niche products. Immediately after the Second World War, the economy was still dependent on agriculture and food industry.

The 50’s were a transition period with massive transfer of labor from agriculture to industry and services. Between the ’60s and ’80s, the public sector has already taken a strong momentum. The provider of many Danish competencies such as wind power, sewerage and water recycling, medical devices, pharmaceutical industry is the public sector.

Currently, a large part of added value, of employed population comes from the food sector. Although food is classified as a low-tech sector, the Danish food sector uses extensive and ongoing innovation, creating high added value products. Through rapid absorption capacity and continuous innovation based on learning, foreign experience and technology, Denmark has set up knowledge economy.

The labor market, with its peculiarities ingrained early on, is the central pillar of knowledge economy. Starting early last century, labor movement and unions have become a major social and political force and remained so until today. In the ’30s there has been established a pact between labor movement and farmers’ parties, under which workers accept change, private property and right of the employer, and employers accept the right of workers to organize and strike, and government regulations for ensuring the security of working life. Establishing the most important rules of functioning of the labor market by consensus of social partners, which are operating in force today, has resulted over the years in a high rate of activity, in a high mobility of labor and a generous social insurance system. Labor mobility ensures rapid spread of innovation in the village economy – such as it is called – of Denmark. And the lack of motivation of firms, mostly small to help prepare their employees, because of their mobility, is compensated by the existing public system of continuous education.

Active life safety and education are the pillars which ensure dynamic performance of the Danish economy. The main feature of the Danish education and unique (first law of compulsory primary education dates back to 1814) is a combination of state responsibility in terms of financing and provision of quality education with freedom of organization of education in accordance with different cultural values and teaching methods. Local and state authorities are primary and secondary education suppliers, focusing on communication skills training, cooperative and social competence. The result of this type of education has created over the years a homogeneous society, which operates on trust. Welfare state, taking over a part of traditional family responsibilities such as childcare and old people care, helped create a highly individualistic social system in which individual success is possible due to the homogeneity of society and equal opportunities given to its members.

The lesson arising from the Danish economic model is that, by providing continuous training and workforce training, creating a flexible labor market and a safe working life based on decisions taken by consensus by the social partners, it is possible to build a state of welfare centered around agriculture, if comparative advantage is turned into competitive advantage dictated by the circumstances of each moment.
7. PRESENTING THE U.S. MODEL OF EDUCATION – WORLDWIDE REFERENCE SYSTEM. STRENGTHS AND DISFUNCTIONAL SYMPTOMS

Interesting to go through a number of features of an education system that is world-wide reference - the US- even though, paradoxically, the current global economic and financial crisis has its origin in this overdeveloped state:

○ Improving the quality of workforce

One of the main causes of increased labor productivity, which is more important than capital growth per worker, is the quality of workforce. The latter requires allocation of funds for education that is investments, such as those in cars and buildings. The amounts spent on education generate human capital, one of the main sources of economic growth.

Strengths of the U.S. educational system. In recent years there has been seen a significant increase in "quantity" of education acquired in the U.S.

A strength of the U.S. educational system was given by egalitarianism promoted so that students benefit from repeated opportunities for access to a college.

Another strong point is the U.S. is the system of community colleges and state universities, many of which offer a high level of education to those who are unable to attend private schools. Most European countries do not charge fees for those admitted to university, and some even finance part of the cost of the students.

Another advantage is given by universities in the U.S., which rank among the top worldwide, so that students from almost all over the world come to study in the U.S.

Symptoms of problems in the U.S. regarding human capital. Although quantitatively the educational system is well positioned with a high level of expenditure and high degree of education, quality education system is weak.

The actual data shows that the share of engineers and scientists in the workforce is an important factor for rapid economic growth and also refers to U.S fewer students choose science and engineering colleges.

Finally, an important part of the U.S. population is deprived of the opportunity to achieve professionally speaking. With the withdrawal in the suburbs and in conditions of increasing violence and drug use in high schools located in cities, those who remain in the cities receive a poorer education. Moreover, education at college level has become increasingly difficult to finance for children coming from poor families.

○ Reallocate resources from low productivity sectors to those with high productivity

U.S. has evolved from an agriculture-based economy to an industrial-type economy and now to an economy based on services.

Shifting interest from agriculture to industry productivity explains the growth of productivity in the first part of the twentieth century. In addition, productivity in the telecommunications industry, from other sectors of high technology and export sector is much higher than in other sectors of the economy. We must also mention that the rapid innovation in personal computer technology has an effect on all sectors of the economy.

○ Technological changes and the role of ideas
The cornerstone of the process of economic growth is technological progress, ideas play an essential role in explaining economic growth (more than two thirds of the increase in productivity was due to technological progress).

Investment growth increases the physical capital stock of the economy and thus the educational system of human capital increases.

An idea is not exhausted when a person will use it, it will remain available to others.

Most large companies spend about 3% of their gross revenues on research and development (R&D).

Improved technologies enable the economy to achieve a higher per capita production at each level of capital per capita.

*Producing ideas.* Regarding the incentives that a potential inventor encounters, they would be higher if the inventor of the idea could charge a certain fee to each user, excluding the use of those who do not pay (but some ideas are not exclusive). In this case the inventors should receive copyright for their inventions.

From the viewpoint of society, there is another factor. Production of an idea can be expensive, but an idea must be produced only once. Repeated use of the idea is not accompanied by additional costs. Thus, the idea should be available free to all those who wish to use it. In fact, the cost of using the idea of another person is zero.

It results a contradiction between providing incentives to produce new ideas and ensuring its widespread use, the inventors need secure property rights.

Through patent law, the inventor receives an exclusive right to the idea, so those who want to use it must pay. In the U.S., the validity of patents expire after 17 years, the idea becomes then available for free.

*Research and development expenses.* A key determinant of technological progress is the level of expenditure on research and development, which is a form of investment.

The high rates of earnings in research and development expenditure show that the investments in this are too little (private sector earnings up to 25%). Increased risks, and the ability to borrow in order to finance these expenditures, provide a part of the explanation for low investment in this area.

### 8. INCREASING THE QUALITY OF WORKFORCE TOGETHER WITH STRENGTHENING THE INVESTMENT EFFORT IN RESEARCH AND DEVELOPMENT DOMAIN AND REDUCING SOCIAL INCLUSION PRELIMINARY OBJECTIVES OF U.E.27 IN 2010-2020

Below are the preliminary commitments of the 27 EU Member States on implementing the necessary measures to fulfill the objectives set by the New Development Strategy "EUROPE 2020".

**Specification:** Final national targets will be established in the national reform programs in April 2011.

Note that preliminary data from early 2011 indicate that probably the main objectives agreed at EU level will be met. However differences are not so big and they can be overcome if in the coming years, firm action will be taken. In the first years, it is important to create a dynamic that would lead to the goals and to mobilize all state members, regardless of the starting point of each one.
In the coming months, the state should give priority to progress registered in structural reforms by taking measures at national level and by giving priority to measures to stimulate growth in the flagship initiatives in line with the main messages of this annual review of growth.

Table 1: Interim targets of Europe 2020 strategy - Appendix to the report regarding progresses made by Europe 2020 strategy

<table>
<thead>
<tr>
<th>Member State</th>
<th>Employment Rate (in %)</th>
<th>R&amp;D as % from PIB</th>
<th>Early school leaving in %</th>
<th>Higher Education in %</th>
<th>Reducing poverty in no of pers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT-Austria</td>
<td>77-78 %</td>
<td>3,76 %</td>
<td>9,5 %</td>
<td>38 %</td>
<td>235 000</td>
</tr>
<tr>
<td>BE-Belgium</td>
<td>71-74 %</td>
<td>2,60-3,00 %</td>
<td>9,5-10 %</td>
<td>46-48 %</td>
<td>330 000-380 000</td>
</tr>
<tr>
<td>BG-Bulgaria</td>
<td>76 %</td>
<td>1,50 %</td>
<td>11 %</td>
<td>36 %</td>
<td>260 000-500 000</td>
</tr>
<tr>
<td>CY-Cyprus</td>
<td>75-77 %</td>
<td>0,50 %</td>
<td>10 %</td>
<td>46 %</td>
<td>18 000</td>
</tr>
<tr>
<td>CZ-Czech Republic</td>
<td>75 %</td>
<td>2,70%</td>
<td>5,5%</td>
<td>32%</td>
<td>30 000</td>
</tr>
<tr>
<td>DE-Germany</td>
<td>75 %</td>
<td>3.00 %</td>
<td>&lt; 10 %</td>
<td>42 %</td>
<td>330 000-600 000</td>
</tr>
<tr>
<td>DK-Denmark</td>
<td>78,5 %</td>
<td>3.00 %</td>
<td>&lt; 10 %</td>
<td>40 %</td>
<td>22 000</td>
</tr>
<tr>
<td>EE-Estonia</td>
<td>76 %</td>
<td>3.00 %</td>
<td>9,5%</td>
<td>40%</td>
<td>49 500</td>
</tr>
<tr>
<td>EL-GR-Greece</td>
<td>70 %</td>
<td>2.00 %</td>
<td>10 %</td>
<td>32 %</td>
<td>450 000</td>
</tr>
<tr>
<td>ES-Spain</td>
<td>74 %</td>
<td>3.00 %</td>
<td>15%</td>
<td>44%</td>
<td>Lack of PNR objectives</td>
</tr>
<tr>
<td>FI-Finland</td>
<td>78 %</td>
<td>4.00 %</td>
<td>8%</td>
<td>42%</td>
<td>150 000</td>
</tr>
<tr>
<td>FR-France</td>
<td>75 %</td>
<td>3.00 %</td>
<td>9,5 %</td>
<td>50%</td>
<td>1 600 000 in 2015</td>
</tr>
<tr>
<td>HU-Hungary</td>
<td>75 %</td>
<td>1,80 %</td>
<td>10%</td>
<td>30,3%</td>
<td>450 000-500 000</td>
</tr>
<tr>
<td>IE-Ireland</td>
<td>Lack of PNR objective</td>
<td>Lack of PNR objective</td>
<td>8 %</td>
<td>60 %</td>
<td>186 000</td>
</tr>
<tr>
<td>IT-Italy</td>
<td>67-69 %</td>
<td>1,53 %</td>
<td>15-16 %</td>
<td>26-27 %</td>
<td>2 200 000</td>
</tr>
<tr>
<td>LT-Lithuania</td>
<td>72,8 %</td>
<td>1,90 %</td>
<td>9 %</td>
<td>40 %</td>
<td>170 000</td>
</tr>
<tr>
<td>LU-Luxembourg</td>
<td>73 %</td>
<td>2,60 %</td>
<td>&lt; 10 %</td>
<td>40 %</td>
<td>3 000</td>
</tr>
<tr>
<td>LV-Latvia</td>
<td>73 %</td>
<td>1,50 %</td>
<td>13,4%</td>
<td>34-36 %</td>
<td>121 000</td>
</tr>
<tr>
<td>MT-Malta</td>
<td>62,9 %</td>
<td>0,67 %</td>
<td>29 %</td>
<td>33 %</td>
<td>6 560</td>
</tr>
<tr>
<td>NL-Holland</td>
<td>Lack of PNR objectives</td>
<td>Lack of PNR objectives</td>
<td>&lt; 9 %</td>
<td>Lack of PNR objectives</td>
<td>Lack of PNR objectives</td>
</tr>
<tr>
<td>PL-Poland</td>
<td>71 %</td>
<td>1,70 %</td>
<td>4,5 %</td>
<td>45 %</td>
<td>1 500 000-2 000 000</td>
</tr>
<tr>
<td>PT-Portugal</td>
<td>75 %</td>
<td>2,70-3,30 %</td>
<td>10 %</td>
<td>40 %</td>
<td>200 000</td>
</tr>
<tr>
<td>RO-Romania</td>
<td>70 %</td>
<td>2,00 %</td>
<td>11,3%</td>
<td>26,7%</td>
<td>580 000</td>
</tr>
<tr>
<td>SE-Sweden</td>
<td>80 %</td>
<td>4,00 %</td>
<td>10 %</td>
<td>40-45 %</td>
<td>Lack of PNR objectives</td>
</tr>
</tbody>
</table>
9. ESSENTIAL COLLATERAL MEASURES TO ACHIEVE THE OBJECTIVES OF "Europe 2020" STRATEGY

One of the most important dysfunctional element - perhaps even the decisive one - targeting the complex interplay between economic-financial mechanism on the one hand and political-administrative system, on the other hand, that has generated the recent global economic crisis - was represented by the application of the concept of capitalist society, namely financial markets and economic freedom, especially on financial-banking market.

As pointed out very clearly in the explanatory memorandum on the lamentable failure of the Lisbon Strategy in 2000 - amplified by the harmful influence failure of the global crisis spread to Europe - years of efforts at all levels within the European Union were annihilated by an interrelated phenomenon apparently unpredictably between the mechanisms mentioned above.

A phenomenon difficult to guess and especially hard to accept in the conditions under which human society as a whole is on a peak that has not been reached before of technological, informational and interrelated progress.

Basically, in a time when capitalism undisputedly controlled the global economy, when high and powerful computer technology along with overdeveloped intelligence services seemed to be easily keep under control any tendency towards disruption of world markets, when the only major potential hazards considered were those related to global warming or planetary or extra-planetary disasters, the capitalist society snapped both embarrassingly and also serious and damaging.

Specialized literature insinuates the idea that the degree of economic freedom correlates directly and / or indirect to indicators of development and real index of perception of corruption, as reflected in statistical data and reports of various organizations.

Fraud produced at the expense of public budgets amid corruption is a reality whose consequences on the economy should not be neglected. Beyond the difficulties of quantifying them, we can not deny the link between the degree of economic freedom and extent of corruption.

There is the widely shared belief that governments need to fight corruption. Amid the majority perception that governments are inefficient in this process, we can expect increasing government intervention in the economy and society. Additional regulations, expanding the bureaucracy and, consequently, increased resources from the public budget for the fight against corruption can be the source of the extension of this phenomenon.
Therefore, limiting corruption is not the result of increasing regulatory level. It occurs on the background of deregulation, reduction of excess legislative, reducing red tape and taxation. In this vision, reducing corruption is compatible with economic freedom.

It should be noted that this analysis is based on the approach that economic freedom is closely linked to the degree of government intervention in the economy. The less resources it controls, – and regulate less - the fewer opportunities to benefit from political privilege and rent-seeking type behaviors.

From the brief analysis presented follows the concept of great importance and relevance of generalized and applied at the macro level of "economic freedom" - concept that makes the difference between net and any other form of direct democracy or dictatorship or quasi dictatorship masked by massive state interventionism.

Although economic freedom, in its purest form and extended-plan shows the indisputable advantages both in economic and democratic level, it must be dosed by wise legislators of the state of law. Dosage should be done according to the degree of discipline, civilization and democratic society, such as intelligence and circumstantial evidence based on various political, economical or social developments so that it can enhance or minimize the need for state intervention in the various fields Just as a massive state intervention, in terms of regulation, is obviously harmful, for the purposes detailed above, neglectful minimizing can also be harmful.

Surely the best example of excessive regulation or absolute - with all the tragic consequences derived from this arrangement - is the old communism or quasi communism under the guise of socialism. That does not mean, however, accusations or suspicions of any kind on the current European social democratic political power, which may even be a particularly powerful one.

Likewise, probably the most relevant example of the damage from a massive deregulation, which is no longer under the control of the democratic society, is just the economic and financial crisis, the crisis originated in the U.S. This excessive and prolonged deregulation of the banking system led to very serious and dangerous malfunctions - not only for economic superpowers but also for the economy of almost the entire world with immense social repercussions.

10. FINAL CONCLUSIONS

10.1. Starting from the undeniable importance of improving and expanding professional knowledge of labor - in the current context of "Europe 2020" strategy for radical change of trend in the ratio of skilled labor force and employment environment or poorly qualified - The European Council presents a series of precise and pragmatic initiatives recommended to the member countries. These initiatives include two major goals:

- raising the level of professional labor training so that the European high-tech economy of the decade 2010-2020 to be able to absorb massive highly trained human resources - simultaneously generating both prerequisites for sustainable economic development by increasing innovation and by a higher net occupancy status quo

- broadening the theoretical knowledge and practical skills essential for successfully addressing the current technological revolution and computerization technique – essential elements, which together with the possession of international languages - generates the corresponding solid technical implementation of the much widely advertised flexicurity concept of labor market for the use of human resources with maximum efficiency available.
10.2. The mission of dosing correctly the economic and financial regulations goes to the European Union in the period 2010-2020. Depending on the wise equilibrium at central level and especially at local level depending on the specifics of institutional, economic, social, political, demographic particularities of each state member - the successful sustainable economic recovery program will have more or less success. Probably the lack of discernment on the form and degree of adoption of general measures for each EU member state level - besides the undeniable negative effect of the crisis and the recession that followed in 2008-2010/2011 - was the technical element of quasi-total failure of the strategies in Lisbon 2010. To avoid repeating that failure that would practically undermine the viability of this European Community in its current form, will be necessary for EU decision makers at central and local level respectively of each state member, to consider with high responsibility the measures imposed or recommended.

*Acknowledgement

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STUDENTS’ REFLECTIVE PRACTICE AT VYTAUTAS MAGNUS UNIVERSITY
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Abstract
The aim of the article is to reveal students’ reflective practice in university studies – bachelor study programme at Vytautas Magnus University. In order to achieve the aim, the principles of practice organisation at VMU are reviewed, practice types are highlighted, and stages of practice participants’ activities are discussed. The research emphasises four stages of reflective practice.

Key words: reflective practice, reflective learning, problem-based learning, cyclic learning process.

1. INTRODUCTION
Scientists who have analysed the concept of student teaching and learning at higher education institutions emphasise the importance of independent student learning and reflective learning (Baranauskienė, 2002, Bjerknes et al., 2002, Jovaiša, 1998, Jučevičienė, 1997). The importance of reflection in learning process is emphasised. According to Laužackas (2005), reflection is a process which helps to convert professional experience into personal development, which is then converted into high-quality performance of activities. The outcome of reflection is new knowledge and new skills.

Scientists discuss reflexive learning, new trends when analysing students’ learning during practice and emphasising development of transferable abilities. Jučevičienė (2000) emphasises the importance of learning how to learn, team work, effective activities, and the use of information in the process of learning. Bearman, Blake – Beard, Hunt, Crosby (2007) conclude that in accordance with the increasing popularity of practical learning and mentoring, specialists who are about to participate in students’ process of learning shall be able to find the most contemporary scientific literature, as well as renew and supplement their knowledge as the use of this knowledge in practice influences others’ (learners’) fate and their learning during practice (The Blackwell Handbook of Mentoring, 2007).

It is relevant to analyse students’ learning/teaching in specific situations when relating the processes of experience reflection and information as application of theoretical knowledge. This would enable all participants of the process of practice to plan, implement and improve learning in practice easier.

The object of this research is student teaching/learning during practice.

The aim of the research is to reveal students’ reflective practice at Vytautas Magnus University.

The tasks of the research are to review bachelor practice programmes at Vytautas Magnus University; to discuss cyclic learning process during reflective practice.

A qualitative phenomenological research was carried out. Four mentors and four tutors participated in the research.
2. REFLECTIVE LEARNING

Learner’s experience is fundamental to learning. However it has to be noted that reaction to one’s experience can vary and even negatively stimulate learning. In this respect, the figure of learning typology (Fig. 1) is an interesting aspect. In this figure non-learning from one’s experience is characterised by presumption (presumption, preconception), as well as unwillingness to think about, discuss and reject certain aspects.

![Typology of experiential learning](image)

**Fig.1.** Typology of experiential learning (P. Jarvis, J. Holford, C. Griffin (1998, p. 51))

*Non-learning* can be observed in everyday situations. They are permanent, seem to be non-changing and we know how to behave in these situations from our previous experience without even thinking and learning from them. Sometimes we reject potential experiential learning situations without even considering them because of lack of time and fear of outcomes. Reluctance to learn can be related to conscious reluctance to change or willingness to retain previously acquired knowledge and values.

*Non-reflective learning* includes pre-conscious development of skills and memorisation. Pre-conscious learning can also be called incidental learning as knowing arises somewhere from the subconscious and is not necessarily related to direct experience acquired during activities.
Learning skills can be seen through practical learning or physical learning. If verbal communication is restricted and short and simple procedures are emphasised through imitation or role modelling, certain skills are learned. However, it does not mean that after their realisation a person will be able to lead work process. A full and conscious completion of a task is impossible unless reason-consequence relations are formed in a broad sense.

Memorisation is the best known learning form for students. However, memorisation is only reproductive and does not help to answer questions and create or change situations. On the contrary, this type of learning forces you to adapt and repeat things that you already know. Reflective learning is characterised by contemplation, learning of reflective skills and experimental learning. Contemplation comprises search of causal relationships, life event contemplations and conclusion formulation. Reflective practice allows not only learning certain actions but also realising the essence of a task, relating theory and practice and realising why that action should be performed in a certain way. Experimental learning is when theory is applied in practice. The outcome of such learning is new knowledge. This kind of learning is used when learners reveal new practical knowledge that can be applied in life. It seems that the value of experience gained through words, work, activities and reflection, experience that can free one’s personality and ensure creative powers priceless, unquestioned and globally accepted. It can also seem that there are no obstacles to implement “education that guarantees freedom” and realisation of experience globally. However, it is not easy to learn how to think about and solve problems while improving one’s learning as certain skills and mood are necessary here.

Shelton (1999) claims that the use of reflection is an effective way to improve reflective practice. He emphasises that reflection is a process that helps to convert professional experience into learning, learning is converted into professional and personal development and, finally, this development is converted into high-quality professional activities. Thus the outcome of reflection can be new skills, new knowledge, new understanding, new meaning and new perception. Adaptation of this new learning to already existing understanding, skills, features and attitudes helps to convert learning into high-quality professional activities. Reflective learning can be found in a learner’s life when new opportunities, new methods and new results are foreseen when thinking about one’s own experience. Problem solution, observation and assessment are used here. However, reflection skills are very important at university studies as with increasing opportunities to choose (from the point of view of consumer society, advertisements) decisions have to be made after sufficient consideration. Sometimes even one’s beliefs have to be reviewed, considered and, if necessary, changed. It is also important to choose wisely and take responsibility for one’s own professional career. Thus the importance of experiential reflective learning is obvious at any age when trying to connect learning to life and vice versa.

Reflective practice: experiential learning cycle

Reflective practice involves individuals (in this case – a learner, mentor and tutor) into the cyclic process. Learning or problem-based researching starts when unclear situation arises (unpredictable event, tension, unexpected situation where a learner cannot use ordinary methods to solve problems). Uncertainty and worries prompt practice participant as a researcher to step back and analyse this experience. The following questions are raised: “what is the nature of a problem?”, “what were my plans, aims?”, “what was I doing?”, “what happened?” The problem becomes clearer after observation and analysis.

A problem is discrepancy between what is expected and what really is, between intention and action or between action and result. This stimulates a learner to analyse the field of practice, to try to achieve
deeper and more objective perception of events, to search ideas that help to act and push forward. “Problem solution is a challenge, intellectual problem that a person faces when s/he does not know how to explain a certain concept, fact or process or when s/he cannot achieve his/her aim with a known method” (Suaugusiųjų mokymasis, 2004, 91 p.).

**Problem-based learning**

Problem-based learning is oriented towards a learner and learning process that ensures active interaction between a teacher and a learner (Suaugusiųjų mokymasis, 2004).

Figure 2 illustrates the stages of cyclic process.

![Fig. 2. Reflective practice: an experiential learning cycle (Osterman, Kottkamp, 2004).](image)

Various problems occur in practice every day. It can only seem that one or another place in practice is rather quiet. And that is only until a student starts learning in practice and gets involved into it. Personal questions that arise during problem-based practice stimulate the process of learning and involve a learner into it. It is not easy to identify a problem clearly. A discussion between a learner and a practice supervisor helps to identify problems that occur at the practice place. A discussion helps to find ways to solve a problem. What has once seemed impossible to cope with now becomes clear, controllable and possible to solve.

Problems at practice can also occur because of a learner’s inexperience. Timely help from a practice supervisor is important to learner. Sometimes problems are created by learners themselves as they are not willing to get involved into the learning process.

Students differ. Some of them are very enthusiastic, optimists, while others are indifferent and pessimists. Sometimes students can’t see problems in themselves that disturb their learning process. If a learner cannot find a solution to the situation, s/he creates “a protective mechanism” and tries not to
see the problem. A practice supervisor analyses the situation at the practice place and can see discrepancies between what s/he would like a student to do and how a student sees all the situation. In such case microclimate at the practice place can be really negative. Both a student and his/her teacher feel bad. Reflection can help in such a situation.

Problems at the practice place can be systematic or incidental. Some problems are clearly seen and can be easily defined while others are hidden and invisible and need to be penetrated. Differences are noted not only in the form of problems but also in their extent. Sometimes only several people are involved while other times all the staff of an organisation gets involved.

Thus these dilemmas lead to problem identification. The role of a practice supervisor at this stage (phase) is important as s/he helps a student to pay attention to the situation that prevails at the practice place and to personal problems that disturb the process of reflective practice.

The stage of observation and analysis is important for the cyclic process of reflective practice. During this stage, information regarding experience of participants of the practice process (practice supervisor, client etc.) is being collected and critically processed. This information helps to fully see the view of the situation. It is important for a learner to collect as much information as possible that can help to reveal the situation at the practice place. Speaking metaphorically, a learner becomes a theatre critic who observes and analyses his/her actions on stage; a learner becomes both a subject and an object.

A reflecting practician has to develop his/her observation skills. Careful observation is the base for further stages of reflective practice: analysis, making decisions and experimentation. Observation is important as situation at a practice place becomes clearer through observation. Interpretation of a situation shows what further actions have to be taken at a practice place; and when making a decision, a learner has to make several steps. Every learner starts learning at practice with his/her own understanding. At a practice place changes occur constantly. A learner observes these changes and interprets what s/he sees, as well as draws conclusions about what and why happened. These conclusions determine learner’s decisions and new actions. When learning at the practice place a learner kind of climbs up: observes, gives meaning to observations and makes decisions. After some time a learner gains experience and can act (“climb scientific ladder”) much faster. Sometimes situations reoccur. Then a learner can use previously gained experience and draw conclusions and make decisions much faster.

Learners differ in their experience and hobbies. Thus they note and memorise different details observed at the practice place.

During observations at the practice place students collect data. These data can be related to the situation at the practice place, problems etc.

Making a decision

At this stage a learner searches new information and new ideas to solve a problem. Reflection at this stage helps to find solutions, new activity directions that help to solve a problem. Personal learner’s reflection shows new activity directions. Thus relationships between a learner and a practice supervisor are of extreme importance. Reflective listening is help for a learner. After getting feedback from a practice supervisor related to his/her activities, a learner can see if his/her actions were right and if the most suitable decision was made. Professionals’ opinion helps a learner in the process of learning; however, theoretical knowledge that a learner gains during theory courses is also important.
Active experimentation

This is a new stage where a learner has to perform a double role – an actor and a drama critic. A learner who has gained experience in previous stages now collects information already knowing what to pay attention to and does everything with higher self-confidence. A sequence of events is being analysed; a hypothesis is either proved or rejected. That is how the process of learning is being continued. New questions are raised.

Then a learner has to go through all the stages of learning again and tries to find an answer to a new problematic question. These four stages are like a signpost in the process of reflective practice. Experienced professionals often act automatically and don’t take sequence into consideration. These stages are important when trying to find the most suitable and effective methods for activities only for a learner who has just started learning in practice.

3. PRACTICE ORGANIZATION AT VYTAUTAS MAGNUS UNIVERSITY

Practice is a constituent part of the process of learning. Practice is studies led by a practice supervisor (tutor who is a university teacher and mentor who works at a practice place where a student’s knowledge, skills and abilities are tested through practical activities. The order for practice implementation is set by the practice regulations.

Information related to bachelor study programmes is provided on the Vytautas Magnus University website http://www.vdu.lt/lt/studies/.

The first annex of the work provides a general review of practice types for social sciences bachelor study programmes (Table 3).

The following practices are found in a bachelor study programme: cognitive practice, qualification practice I, qualification practice II and pre-diploma practice.

Cognitive practice helps to form general understanding about future professional activity. Qualification practice helps to develop practical skills at a real work place and to assess one’s professional opportunities. Pre-diploma practice emphasises analysis of real work situations when preparing one’s dissertation.

More detailed information, an example about practice in the Social work bachelor study programme, studies (hours) and assessment of study results at Vytautas Magnus University are provided in Annex 1 (Table 4).

4. RESULTS OF THE RESEARCH OF REFLECTIVE PRACTICE

4 mentors (practice supervisors at the practice place) and 4 tutors (university teachers, practice supervisors at university) participated in the research. Target sample, criterion sampling method was used to select participants for the research. During the research all mentors participated in the process of practice at different organisations, while tutors worked at Vytautas Magnus University.

Semi-structured interviews helped to find out mentors and tutors’ opinion about the process of practice at Vytautas Magnus University, particularities and stages of the process of teaching and learning.

Results have shown that both tutors and mentors distinguish four stages of learning during practice: start of teaching, supervised teaching, transitional stage from teaching to learning and reflective
learning. Tutors and mentors’ opinion, based on examples, is provided in the research result tables (1, 2).

**Table 1.** Tutors on the stages of teaching/learning

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories</th>
<th>Examples</th>
<th>Opinion of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of teaching</td>
<td>Collection of information; Explaining tasks;</td>
<td>“Coordination at the practice place…”</td>
<td>Tutor T 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“I pay more attention to the aims of learning.”</td>
<td>Tutor T 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“I review situation of the practice place…”</td>
<td>Tutor T 1</td>
</tr>
<tr>
<td>Supervised teaching</td>
<td>Tasks are given to a learner; testing</td>
<td>“It is important to bring things together and systemise them, to look, analyse, compare…”</td>
<td>Tutor T 3</td>
</tr>
<tr>
<td>Stage from teaching to learning</td>
<td>Meaning is given situations at the practice place</td>
<td>“I help to stay within the boundaries of the course”</td>
<td>Tutor T 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“To help, guide through the transitional stage…”</td>
<td>Tutor T 2</td>
</tr>
<tr>
<td>Reflective learning</td>
<td>Perception of what has been learnt, results and new experience gained</td>
<td>“Learning from experience requires much reflection. Reflection is asking all: myself, environment… I raise questions, search for answers, then I learn…”</td>
<td>Tutor T 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Reflection is very important and almost essential…if one wants to develop any activity, to assess one’s activity. I think that this is one of higher individual’s abilities to reflect one’s activity, to see feelings and reaction to feelings in it and to see the event… The problem then, when situation is not reflected, it does not change. If there is no… reflection, practice is impossible…”</td>
<td>Tutor T 1</td>
</tr>
</tbody>
</table>
### Table 2. Mentors on the stages of teaching/learning

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories</th>
<th>Examples</th>
<th>Opinion of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of teaching</td>
<td>Collection of information; Explaining tasks;</td>
<td>“We discuss what a student expects, what aims are given by an education institution, what I expect, what a programme expects. Putting together wishes, expectations and opportunity. We determine frequency, amount of forms and cases”</td>
<td>Mentor M 1</td>
</tr>
<tr>
<td>Supervised teaching</td>
<td>Tasks are given to a learner; testing</td>
<td>“I assess a process, ask my client. Students introduce a case. Two students have distinct attitudes to that case. I (as a leading person) sort of perform distant supervision”</td>
<td>Mentor M 1</td>
</tr>
<tr>
<td>Stage from teaching to learning</td>
<td>Meaning is given situations at the practice place</td>
<td>“Then a practice supervisor observes activities and, if a learner wants, performs expertise”</td>
<td>Mentor M 1</td>
</tr>
<tr>
<td>Reflective learning</td>
<td>Perception of what has been learnt, results and new experience gained</td>
<td>“…After seeing things and phenomena, sometimes a student can see some things in a new light. You are already in it. You’re in the organisation and everything seems normal. And then he comes and asks – what’s that? What’s happening? Why? Well, of course it’s very nice when a young person’s eyes sparkle, when he is happy. I then realise that everything was fine…”</td>
<td>Mentor M 2</td>
</tr>
</tbody>
</table>

At the start of learning tutors help students to sort formal things out at the practice place: provides information about agreements, documents that a student submits to a university or organisation where his/her practice will take place. If problems arise at the practice place, a tutor helps a learner to solve them. Tutors emphasised the supervised learning stage when it is very important to explain to a learner the importance of practical tasks in the process of learning as often problematic questions arise why a certain task is necessary. Analysis and comparison help to understand processes happening at the practice place.
During the transitional stage from teaching to learning tutors direct and support a learner and discuss the process of learning. Student’s independent actions and made decisions are important at this time. Independent decisions and their analysis are a step closer to reflective learning.

Reflective learning starts when a student raises problematic questions and applies already used methods or new methods to find answers to these questions. Tutors named questions and search for answers as one of the main conditions for reflective learning. Experience is gained only when raising problematic questions and trying to solve them.

At the beginning of practice mentors together with students discuss their expectations and aims of the practice programme. Time for meetings, practice schedule and calendar details are settled together with a learner. During the stage of supervised learning, a mentor observes a learner at the practice place and they together discuss situations. At this stage, a learner’s attitude and situation assessment can be rather superficial. So it is important for a mentor to observe this situation. This observation is noted both when interviewing clients, and during the interview with a student. Advice given by a practice supervisor and consultations help a learner at the stage of supervised learning.

At the stage of transition from teaching to learning, a mentor can be an expert who helps a learner to test propriety of his/her actions at the practice place. Mentors can see reflective learning when a learner makes changes and the practice place and notes such things that workers don’t even notice. Student’s activity at the practice place and new things give positive results both to a learner and to an organisation itself.

To summarise, it can be stated that practice supervisors at university (tutors) and supervisors at practice places (mentors) enumerate four basic stages of learning during practice. They also emphasise importance of each stage in the process of learning. Tutors discussed more theoretical aspects while mentors discussed more practical aspects of learning. Tasks performed by a learner and diaries reflect all four stages. All these stages are important for a student when trying to relate theory to practice, as well as trying to find out his/her own model for activity at the practice place.

Being participants of the process of teaching/learning during practice, practice supervisors use their actions (raised questions) to turn learners’ actions to a certain direction. Practice supervisors shall not only to be able to understand learners’ nature and determine an education aim but also to make a learner believe in the significance of activities, i.e. to use transitional aims and get a learner closer to the final target that matches the aim of practical teaching/learning.

Both mentors and tutors use their actions to help a learner to find the right directions for his/her activity; they see personality changes. When they get feedback information, which is an important condition for successful teaching/learning during practice, they take a new solution, new action and make a learner to search solutions while s/he can successfully start learning, i.e. a learner moves from the process of teaching to the process of learning and continues reflective learning.

In conclusion, it can be stated that during reflective practice, a learner is enabled to act independently at the practice place. After the completion of all the stages of cyclic process during practices, a student learns to solve problems that occur at the practice place. According to Pollard (2002), a student goes through the following stages of development when learning during practice: early idealism, survival, acknowledging difficulties, achieved stability and moving forwards. The following stages of teaching/learning are important for a learner and practice supervisor during practice: start of teaching, supervised teaching, a stage from teaching to learning and reflective learning.
ACKNOWLEDGEMENTS:

After the review of practice organisation principles at Vytautas Magnus University, it was noted that the following types of practices are present in bachelor study programmes: cognitive practice, qualification practice I, qualification practice II and pre-diploma practice.

The research has revealed that during practices learners are involved in the cyclic process of learning. During this process learners together with practice supervisors (a tutor and a mentor) go through the four main stages of practice.

The research helped to identify the following stages of reflective practice: start of teaching, supervised teaching, the stage from teaching to learning and reflective learning. The analysis of the research data has revealed certain aspects of information collection, explanation and examination of tasks, giving meaning to practical situations, perception of what has been learnt and received results as well as new experience during different stages of practice.

ANNEX 1

Table 3. Practice in the Social sciences bachelor study programmes at VMU

<table>
<thead>
<tr>
<th>No.</th>
<th>Title of a bachelor study programme</th>
<th>Types of practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social work bachelor study programme</td>
<td>Cognitive&lt;br&gt;Qualification practice I&lt;br&gt;Qualification practice II&lt;br&gt;Pre-diploma practice.</td>
</tr>
<tr>
<td>2</td>
<td>Sociology bachelor study programme</td>
<td>First practice matches a course paper&lt;br&gt;Second practice matches a thesis.</td>
</tr>
<tr>
<td>3</td>
<td>Psychology bachelor study programme</td>
<td>Cognitive practice&lt;br&gt;Qualification practice I&lt;br&gt;Qualification practice II&lt;br&gt;Pre-diploma practice.</td>
</tr>
<tr>
<td>4</td>
<td>Career and vocational counselling study programme</td>
<td>Qualification practice&lt;br&gt;Pedagogical practice</td>
</tr>
</tbody>
</table>
Table 4. Practice in the Social work bachelor study programmes at VMU

<table>
<thead>
<tr>
<th>No.</th>
<th>Title of a study subject</th>
<th>Subject studies (in hours)</th>
<th>Study result evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cognitive practice</td>
<td>Consultations hours</td>
<td>Evaluation of a practice activity diary 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluation of a practice activity report 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent student work</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>77 hours</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Qualification practice 1</td>
<td>Consultations and analysis of a practice activity with a tutor 16 hours</td>
<td>Evaluation of student’s activities at the practice place 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent student’s work at the practice place 144 hours</td>
<td>Evaluation of a practice activity diary 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluation of a practice activity report 60%</td>
</tr>
<tr>
<td>3.</td>
<td>Qualification practice 2</td>
<td>Consultations and analysis of a practice activity with a tutor 16 hours</td>
<td>Evaluation of student’s activities at the practice place 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent student’s work at the practice place 144 hours</td>
<td>Evaluation of a practice activity diary 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluation of a practice activity report 60%</td>
</tr>
<tr>
<td>4.</td>
<td>Pre-diploma practice</td>
<td>Consultations hours</td>
<td>Evaluation of student’s activities at the practice place 10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluation of a practice activity diary 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent student’s work hours</td>
<td>Evaluation of a practice activity report 60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>77 hours</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


APPLICATIONS OF ICTs IN SUBJECTS OF STRUCTURAL MECHANICS

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Abstract

This paper explains the e-learning process adopted by universities, first of all by Civil Engineering Faculty, Technical University of Košice. This paper reflects important requirements for educational media imposed by current learning scenarios. There is depicted a sample of pragmatic and more sophisticated approaches towards E-learning material. This is done on the base of experiences of our research group in adapting E-learning elements to existing lectures, first of all to subject Elasticity and Plasticity.

Key words: E-learning, universities, design of materials, quality of study, study materials, Elasticity and Plasticity

1. INTRODUCTION

The E-learning process is developed by many universities in Europe. The universities have to deal with a rising number of students, urging academic staff to strive for new ways of communication, mainly in introductory courses with hundreds of students, in order to maintain a minimum of personalized learning support. Students are very well aware of the possibilities of the Internet as an information and communication medium.

In universities, E-learning strategies are gaining ground, allowing multiple ways of interaction between students and academic staff. As Web-based learning material is unlikely to completely replace paper print versions, electronic material has to be considered as an additional publication channel to be served. The usage of the Web in learning environments creates a strong demand for cross-media publishing. The development of suitable processes and tools are destined to become important issues with respect to the diffusion of E-learning [1-5, 16-18].

2. REQUIREMENTS FOR THE DESIGN OF MULTI-MEDIA CONTENT

Traditionally, learning materials are provided in a printed form. It is quite common to supply students with a handout of written study material. Learning materials may also be distributed in digital form. This may be done on a physical medium like a CD or through the Web. The provision of electronic documents is quite straightforward since almost all learning materials are created using text processors and graphic editors and are available in digital formats. Any printable electronic material, even presentation slides, may then be used as a source for Web content. This material should be provided in a portable standard format like PDF or HTML. However, only the use of special features such as hyperlinks, animations, audios, and video will provide an incentive to use the learning material online. If there is no added value to the user in employing Web technologies, digital documents are almost certainly destined to be a source for printouts.
The primary goal is not to substitute classroom lessons but to complement our lectures with new means of communication and interaction. We used two different approaches for the design of learning material which were used either in printed form or online in a Web browser [6]:

- The first approach to directly transform the existing base of PowerPoint presentations to HTML has proven to be unsatisfactory for several reasons. The big number of slides in a presentation, typically 150 to 200, can be a problem for students.

- Another approach is to create Web presentations with a complex navigation structure based on HTML documents by using the standard export functions of the tool. We have been able to generate a complete course documentation and to import it into the Web platform within minutes. Another important feature is the export to RTF formatted word processor content which we used, after some fine-tuning of the layout using WinWord, to create PDF documents for printable scripts. One main disadvantage is that text added to the branches of the mind map has a determined layout which is not easy to change afterwards. For use in classroom presentations, we had to write the text in a large format. An automatic adaptation to a different style is not possible, which is in particular problematic in large-scale course projects with several authors. The modularity of course components and adaptability to future learning management systems are particularly important issues.

**Fig. 1. Traditional authoring process vs. XML-based authoring [6]**

### 3. THE KEY CONSTRUCT OF QUALITY COMPETENCE

The concept of quality competence breaks down into four dimensions. Three general considerations are of particular importance for quality competence in e-learning [10]:

- The term quality competence is comprehensive and refers both to technology-based concepts of education, integrated blended learning concepts and conventional face-to-face teaching.

- Quality competence is a matter of learning and experience. It cannot be acquired exclusively from training courses or handbooks, but requires experience and reflection.

- Quality competence is a task of lifelong learning both for learners and teachers, such as teachers and tutors. Since educational concepts and objectives are constantly changing, it is necessary to keep relearning afresh how to put new contexts, goals and prior requirements into practice.
Quality competence is thus a key element in the successful implementation of education and training concepts. A description of the four dimensions into which the term can be divided will give a precise clarification of what it covers and includes [10].

3.1. Knowledge of quality

This means the pure knowledge of the potential for present-day quality development, and of current quality approaches. By quality approaches we mean any policies, procedures, rules, tools, checklists or any other verification instruments or measures that have the purpose of enhancing the quality of e-learning products or services. For the purposes of this study, this dimension was evaluated through variables such as respondents’ assessments of their level of information or of the present and future importance of quality development in e-learning. Respondents were also asked to provide specific data on the quality strategies with which they were familiar.

3.2. Experience of quality

This means the ability to use quality strategies. It is based on the experience of those involved with quality development activities and the use of quality strategies. This study established whether respondents had experience of quality development in e-learning, and if so, what experience.

3.3. Design of quality

This dimension refers to the ability to design quality strategies for own context. This requires both the innovative ability to change and further develop quality strategies by applying the logic of the media system, and a creative ability to design entirely new forms of quality development.

3.4. Analysis of quality and criticism of quality

This dimension refers to the ability to analyse quality development processes critically, comparing and contrasting a range of target systems and perspectives. It means the ability to undertake quality development through a process of flexible negotiation, allowing a variety of individual and societal target systems to be involved in the issues addressed by education and training.

4. STUDY MATERIALS

The main objective of our project is to create the supporting educational material in e-learning form, with on-line way to entrance for the subject Elasticity and Plasticity [7-9]. Final product of the project will be didactic supporting material, which will utilize the new educational trends and technologies, support the mutual communication, study hour, and innovation of skills of students of Civil Engineering Faculty. E-learning tool will serve like the study support for day students, for individual students, for students, that are studying abroad, for external students, for students with handicap and for distance education [15].

The set of supporting e-learning materials has been developed for students of engineering study in the study branch Engineering Structures and Transportation. Study materials of the chosen course – Elasticity and Plasticity are built according to the rules of distance education and are divided into single topics according to the information list of the courses. Source of additional materials and information consists from list of recommended literature and web sites as well as glossary of the basic terms. Archive of the students’ assignments and other works is stored and later serve as valuable information source [14].

The project team constructs the set of the following goals:
• Creation of the set of distance educational texts, animations and videos.
• Creation of the interactive environment and set its to the Website, CD/DVD medium.
• Introduction of flexibility to the subject Elasticity and Plasticity.
• Learning of the ICT skills to students and teachers.
• Testing quality of the E-learning materials.
• Implementation of electronic support to the education of subject Elasticity and Plasticity with new technologies and methods.

The content of the e-learning study materials for a course is divided into topics/lectures. All parts have the same structure, navigation, and graphical design, elements of student support, communication, and evaluation. The study text includes aims, goals, self assessment questions and activities and is divided into chapters and sub-chapters. Video sequences and Power Point presentations, assignments, and final test are also included.

The set of developed supporting E-learning study materials is placed into the virtual learning environment, that has been developed by project team members. Two project team members have had the previous experience as E-learning students. It is the great value for the project team.

In the Figure below there is the view of some solved examples of E-learning supports material.
Fig. 2. The views of some solved examples of e-learning support
The students were meeting their teachers once a week for a lecture and the seminars and according to the instructions they studied the E-learning materials prior to this meeting. This approach enabled us to have an effective, interactive two way discussion about the studied topic instead of the traditional “one-way” lecture. It also created the space for the more detailed discussion on the more complicated and difficult parts of the studied topic.

As the set of e-learning material has been developed and used as the supporting material for the course offered in the face to face mode the students did not study on their own only but they had a chance for the regular contact with their teachers and schoolmates.

The used virtual learning environment offers a possibility to communicate via e-mail and discussion forum. However, students have preferred the personal consultancy and they used e-mail only for the submission of the assignments. The teacher assessed the assignments and published the assessment on the Web [14].

5. CONCLUSION

The main aim of each teacher is to provide her/his students with broadest date information in the relevant field of speciality. This idea has been the main reason why we have to innovate and enhance the study materials for the courses of the subject Elasticity and Plasticity.

Web-based learning environments are increasingly employed to suit the needs of students. The availability of Web-based documentation formats is an important aspect of E-Learning. We think, that the online publication of learning materials over the Web will not in the near future replace traditional forms of course documentation, publishing tools will have to support both traditional and new (Web) publication channels [11-13].

Based on our experience, we can conclude that E-learning might be a very suitable support for the face to face study at our faculty particularly in the courses, which require explanation and description of complicated and very often unrepeatable construction processes.

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AN AESTHETIC EXPERIENCE OF A PERSON

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Abstract

An aesthetic experience consists of bright, emotional, and sensually expressive perceptions accompanied by experiences and their expressions. These expressive forms and sides of subjects and the phenomena of reality are accompanied by bright images, experiences and are shown in appearance, psychophysics and motility of an individual, in his aesthetic consciousness and behavior. A person’s experience undergo processing, changes, generalizations, shift, hypertrophy or reduction of features and details, depending on personal tastes and preferences, age, person’s vital aesthetic experience and a physical condition. The features of an aesthetic experience characteristic are dynamics and its ability to be easily recalled in memory and in a sensual aesthetic and art conscience. Person gains his own aesthetic, cultural and artistic experience, that is received and interpreted individually. It can be realized, classified and analyzed, becoming a base for the further cultural person model cultivation. An aesthetic person’s experience becomes a basis for the man further general development.

Key words: experience characteristic, aesthetic consciousness, components of aesthetic experience.

1. INTRODUCTION

Life experience of a person includes various ways and models of its accumulation, different channels of receipt, the value dominants differentiating not only the sensual character specificity of concrete experience images, but also the factors of personality significant selectivity. Selection on the basis of a semantic personality context (the previous experience and its estimation, condition, person’s culture and motivational orientations) appears to be defining in the aesthetic experience value comprehension.

In a wide sense, all accumulations of a diverse person’s activity are presented in the experience. They fill up memory stocks and are distributed in the memory with the certain marking of the near and remote personality semantic contexts. The most significant, important and valuable information of the person’s subjective world is available only for the person. These relations are expressed in various forms: from the involuntary, or acquired movements and gestures, bright emotions to statements, estimations, judgments and developed thoughts.

Creating the internal creativity environment in the context of a perceived information, an aesthetic person’s experience becomes a basis for the further general development. The aesthetic imagination enriches, defines, organizes and realizes a sensual-emotional life experience and the cultural one in a person’s activity. On the basis of this informative processes and mechanisms develop, favoring the
learning process and development of a personality semantic, intelligent way of knowledge assimilation, effective for a long period of time.

The ontological approach defines the following positions of experience characteristics: a matter of any experience of a subject and subject forms as the objective side of the outer world knowledge. In this context it is possible to single out the following components of experience:

1. External (generic) experience. It is situational-objective, sensory perceived properties, characteristics, original generic and individual, material (physical) properties, features, acoustically fixed at the level of sensations, perceptions, conceptions.

2. Internal (subject) experience. It is sensations, perceptions and conceptions, received earlier through the experience or in imagination, which have both universal and individual (based on psycho physiological connections) features.

An aesthetic experience consists of bright, emotional, and sensually expressive perceptions accompanied by experiences and their expressions. These expressive forms and sides of subjects and the phenomena of reality are accompanied by bright images, experiences and are shown in appearance, psychophysics and motility of an individual, in his aesthetic consciousness and behavior. The basic “mental substance”, circulating in this process, is a complex subject-objective figurativeness - aesthetically accented images of sensations, perceptions, conceptions, experiences and imaginations.

As a matter of fact, an aesthetic experience is everything that occurs in a cultural life of a person and affects his feelings, aesthetic consciousness and predilections. These external impressions, processed in the inner world of a person, keep the live force of experiences and at the same time receive durable existence and the ability to raise new creative interpretations, due to the original semantic character. Being preserved in memory traces of figurative experience are always needed in various vital and cultural situations and make up the rich association chains. Thus, the internal experience of a spiritual life becomes a significant value for a person.

2. EXAMPLE

Philosophical encyclopedias and dictionaries consider the term “experience” as a practice-based, sensual-empirical reality knowledge. Russian Encyclopaedist Dal connects the person’s experience with his proficiency, tests and attempts (Dal, 2008). He singles out such qualities of experience as availability of feelings, materiality, comprehension of new, person’s inquisitiveness to everything around him. In pedagogics there is a specific definition of teaching experience as a set of practical knowledge, abilities and professional skill. Russian psychologists believe, that a person’s experience includes such an important component as an experience of other people comprehension. (Ananev, Teplov, Asmolov et al).

Cognition of a person is an essence of a vital activity. In this aspect the human culture (arts) is regarded as a concentrated expression. People probably learn themselves “from inside”. A man can understand himself as a personality only when he compares himself with the others through the penetration and empathy. In this case an art became a source of supervision and communication for a person. Each piece of art (in a unique figurative style and talented form) speaks about the people’s outer life reflections and their perusal and interpretation experience. The Russian scientists of the XX-th century Kagan, Baber, Sheper, Bakhtin and many others develop the similar ideas.
cultural-aesthetic experience of a developing personality becomes a key not only for the culture and art knowledge, but also to the comprehension of a spiritual life and self-development.

The concept “experience of a person” should be regarded from the point of view of such sciences as philosophy, aesthetics, psychology, physiology, pedagogics, and arts. An aesthetic and cultural model became a fundamental position in researches of the theoretical and empirical problems (for example aesthetic education and formation).

3. POINT

According to the objective content an aesthetic experience of a person is distributed in a subject differentiation: in the impressions of the natural and subject environment, of people, according to their original aesthetic look and manifestation (especially in terms of the psychomotor, expressive character), of their clothes and aesthetic individual habitat, of their aesthetic estimations, tastes, assessments concerning some art events, cultural phenomena and works of art. The subjective matter of an aesthetic experience concerns an introspection, a person’s reflection, an internal spiritual life (from the aesthetic point of view), in the reference to a person himself as well as to the other personalities, individualities, that are aesthetically developed and highly spiritual, or, on the contrary, aesthetically uncivilized and spiritually poor. The objective-subject aspect of an integrated substance of an aesthetic experience clears up the person’s attitude to aesthetic and art objects, i.e. to the variety of transformations from object-subject to subject-object relations (empathy experience, creative animation). The cultural experience is acquired here. Therefore the images of the absolute objects of an aesthetic experience are reconstructed from the external, objective maintenance images into the images of internal psychological, cultural, aesthetic environment. They gain the psychomotor, expressive-semantic features of anthropomorphic, i.e personal figurative series.

The aesthetic consciousness also performs the main comprehension function of information flow. It is an anthropomorphism, i.e. a way of the most important personal selection. It happens when the so-called “strange” images transform into the “well-known” ones. The aesthetic consciousness distinguishes ideal, standard, canonical, abstract models and expressive, clear expressions, that are convincing in their sensual form and easily recognized. The first group of phenomena demands the high level of art and aesthetic consciousness as well as its reflexion. The second group of the aesthetic and art phenomena-images refer to the model of a “big body”, “wide experience” as a universal, mass, corporally-sensual and emotional consciousness (Bakhtin, 2000).

The structure of a person’s aesthetic experience includes some blocks of activity experience and impressions of the events differentiated through the various channels - sense organs:

- neutral or purely informative knowledge and images-schemes (i.e. the schemes facilitated by figurativeness);
- realized, rational, personal-valueable, significant, semantic, “live”, pulsing, emotionally colored;
- imagined bright pictures, complexes, individual images-imaginations, creative situations;
- partly imagined or realized conceptions on the basis of personal, aesthetic impressions, as well as stereotype patterns (ordinary impressions);
- creative thinking with its inspirations and intuition;
-vague images-imaginations of subconsciousness which are inconsistent and contrast.

All these components of a person’s aesthetic experience are accumulated during the people’s life and creates a sensually-emotional, art-aesthetic and creatively productive basis, a figurative-emotional foundation, that defines the material texture of the sensual-estimated aesthetic consciousness development.

4. EXAMPLE

An aesthetic experience of a contact with a subject is quite specific. In the aesthetic experience occurs a phenomenon of a visual contact, rather than an acoustic one, the contact between objects and subjects. It happens when an object “calls for” a person for a communication, sensation and penetration. Russian scientist Toporov connects the notion “to call for” with person’s things (utensils). Not emphasizing aesthetic qualities and shape, he singles out the “genetic” correlations i.e. bonds of household things connecting with the human world. For example, a life of household things coincides with a life of a certain individual: their relations are intimate, colored by self-semantic intonation (personal clothes, footwear, dwelling etc.), where each subject has come to the person not accidentally and has gone through his life not only in general, but also in a specific way. It is shown in a thing through its original image, functions, changes, its ageing and partial revival after repair, etc.

Really, addressing to things, a person even unconsciously estimates their qualities, correlating with the subjects, available in his former experience. And then a person defines through his sensations and internal “live” sense, that he likes a thing, moreover, this thing is suitable for him, satisfies the purposes and coincides and corresponds to the previous subjects selection in existing context. (Bakhtin, 2000) Here appears an emotionally-aesthetic reaction (from the point of view of beauty, convenience and benefit), the response to the shape and qualities of a thing as anesthetic subject. A design of any thing, an elite or a mass one, has an aesthetical influence on a person. This phenomenon always contains the elements of something already known and traditional and some new features, some creative transformation of a subject as well. In this sense, an aesthetic experience of perception, communication and application of subjects enriches and creates a creative vision and a constructive thinking of a person.

5. POINT

The previous accumulated experience is not only vital, routine and psychological, but it is also corporal, muscular and tactual in particular, that allows to feel space, its borders, the form of objects.

Everything, that is written down in vital annals of a person’s spiritual and physical life is constantly reproduced unconsciously, and very often accompanies the process of estimation of every new object, analyzing of any situation, similar to the one from the previous experience. But it would be a mistaken idea to substitute this aesthetic experience, the arising symptoms of spiritual display for the activity of esthetic and cultural consciousness of a person. These facts show only the degree of the involvement into an aesthetic situation, where a person not only perceives and estimates a developed picture, a subject, a phenomenon, but also acts as co-creator and interpreter in the context of his aesthetic consciousness and everyday, cultural and art experience.
However, it is obvious, that it does not occur automatically and constantly. The dominating motives, requirements, interests of a person play the role of the main (“starting”) mechanism of actualization of some substantial, time and contextually-situational experience. The level of individual’s culture defines the spiritual, material or mixed forms and shades and prevailing components. All the things mentioned above influence the systems of conditioned and unconditioned reflexes on account of an individual experience. Summing up, the complete self-semantic sensual experience is available (though partly) for the internal work of a person, for the forming of a picture of the world, for the forming of a perspective-retrospective course of life, for the analysis of the further development and self-improvement tendency; for the understanding of life and other people, for the personal aesthetic culture enrichment.

Thus a person gains his own aesthetic, cultural and artistic experience, that is received and interpreted individually. It can be realized, classified and analyzed, becoming a base for the further cultural person model cultivation. It becomes possible with the help of intelligent inclusion of a figurative image of every new experience in the person’s aesthetic consciousness. This new experience is classified as a live integral product, produced by a person’s contact with aesthetic objects of a real life, culture and works of art (especially through the aesthetic experiences, perceptions and estimations of a work). An aesthetic experience of a person concentrates and keeps within its content such components as:

1. Images, types, individualities of people, creations of natural and human world through the person’s experience of perception and communication;
2. Socially-psychological models of behavior and people’s relations and self-semantic experience of their estimation;
3. Cultural forms of person’s display in all aspects of life;
4. Historical experience of a person;
5. Natural experience: knowledge of the natural world and features of mutual relations;
6. Experience of a person’s development and growth (biographic and autobiographic);
7. Processes of self-consciousness as a social individual and a personality;
8. Experience of a person’s “occurrence” in culture;
9. Actual aesthetic individual experience;
10. Experience of understanding the value of art through the communication with people;
11. Culture understanding: creations, functions, dialogue;
12. Understanding of an aesthetic experience value in a person’s spiritual life.

Actually every process and form of human displays can be transformed into fixed personal semantic images of memory. The most important component of a person’s sensual aesthetic and art experience is expressive images.

Firstly, it is always a memorizable essence of each object of reality, which is objectively expressed in external shape. It is natural, characteristic, distinguishing each sort and kind, and also individual external features of the given object or phenomenon. Secondly, it is the outwardly
represented state of the given object (its age, activity or passivity, individual condition or mood). Thirdly, it is the perceived impressions. A person’s experience undergo processing, changes, generalizations, shift, hypertrophy or reduction of features and details, depending on personal tastes and preferences, age, person’s vital aesthetic experience and a physical condition.

The features of an aesthetic experience characteristic are dynamism and its ability to be easily recalled in memory and in a sensual aesthetic and art conscience. It is associated with: 1) brightness of impressions which are caused by expressive, sharp, characteristic, aesthetic features of an image of personal experience and a situation of its reception; 2) the personal semantic importance of content and form of the given person’s experience; 3) strong emotional reaction of a person (vital, psychological or aesthetic, i.e. experiences of feeling of beauty, tragedy, despair, melancholy or comicalness of a situation with the further estimations and, finally, feeling of harmony); 4) correlation with the previous bright vital, aesthetic or art experience which is close, similar or contrast; 5) an urgent need to communicate with other people about the received impression (experience) and its estimation. The last phenomenon often occurs in relation to received aesthetic and art impressions and is the steady characteristic of cultural activity of a single person or a group of people, communities in an actual dialogue with contemporaries and descendants.

Considering “an aesthetic experience”, it is necessary to note its connection with “an aesthetic culture” as it arises from an aesthetic experience forming on its basis. The notion of “an aesthetic experience” is more general than «an aesthetic culture» one. An aesthetic experience includes all forms of both object-practical and spiritual human-world interactions. An aesthetic culture is the best, the most significant aesthetic experience for the mankind (mostly the spiritual-practical one). One cannot help accepting the statement of V. Samochvalova the aesthetic individual culture is specific assimilation and accumulation of the experience estimated in the light of the holistic and comprehensive relation, valuable view of the world (Samochvalova, 1996).

Aesthetic culture can be characterized as an ability to feel one’s world connectivity, to factually experience, to express the fullness, profundity and verity of these relations. Indeed, aesthetic culture is the measure of human quality and ability integration creating the character base. It is both the complex of value personality vectors in its relations with the world and the guidelines directing the expressive aspects of person activity. It is the ability to decipher and arrange an aesthetic experience, to foresee the prospects of individual development in the world, to define its interaction type.

When the term “an aesthetic culture” was first introduced by F. Shiller, it meant the experience which is shown in person’s ability to make use of the experience gradually developing from sensory knowledge to the thinking in images. Thereby, an aesthetic culture is the peak level of an aesthetic experience includes the most significant experience achievements in its integrated system, tends the person’s integrity to be supported.

An aesthetic science wasn’t concerned enough with the analysis of aesthetic experience and aesthetic culture correlation both for person and society since neither in aesthetics nor in ethics neither in art theory nor in culturology were considered the aesthetic experience responsibility for culture development and level of its humanization.

Aesthetic culture goes through all human culture, its objective reality. An aesthetic value functioning is impossible out of synthesis of its substantive and attributive aspects (Konikov, 1996). Aesthetic culture component is both an attribute and a substance. Aesthetic culture is a way not only to form and improve the person but also to harmonize the social relations as a relation regulator of person with the
world. It fixes the aesthetic direction of all person’s activity forms, its experience, reflects the aesthetic culture form of society as a whole (Zamyatin, 2007).

Aesthetic education concerns an aesthetic culture as a special transmission channel of aesthetic reality learning from generation to generation, from society to personal aesthetic experience as a way of forming the aesthetic consciousness and the skills of aesthetic activity. Aesthetic education is realized in all spheres of life activity (family, establishments, material and spiritual life) by all available means for the people: the aesthetic arrangement of subject environment, the art surroundings et al. Scientists note the great role of creativity in the aesthetic culture development (Luzan, 2009). There is an interdependence of these phenomena. It reflects in person’s aesthetic ability developments, such as observance, imagination, creativity. The universal aesthetic culture is implemented by, for example, aesthetic work content and its product that is shown by the work and its product quality (Saito, 2007).

CONCLUSION

Considering some aspects of aesthetic experience and its relation with an aesthetic culture we can sum up the following ones: Aesthetic experience is the experience of materially practical and spiritual person’s activity effected by people and object measures (surrounding world phenomena), includes the sense experience, emotional ones, conscience, person’s estimation of the nature, society and individual world.

An aesthetic culture is formed on the basis of an aesthetic experience. It is a deciphering, selection, arrangement of the most value-significant aesthetic experience for the person considering in the light of integral comprehensive relation. An aesthetic culture is defined as a unity of materially practical and spiritual aspects of the personality life affecting the formation, universal value creation, its spiritual ability formation.

An aesthetic culture can be defined by the following constituents:

- Ability of sensual, value world perception, arrangement of subject-object relations with the world;
- Complex of human qualities and abilities in forming the inner world and its integrity;
- Ability to decipher and organize the aesthetic experience, to foresee the perspective of self-development in the world.

An aesthetic culture is the specific way and the result of nature and society transformation oriented to the ideal of beauty as one of the principal criterion, the way and the result of world humanization and the person himself as well. An aesthetic culture means the object-related essence in things and phenomena. Individual activity can be possible when he knows himself, his generic organization. An aesthetic person’s culture is developed due to the ability of social aesthetic experience assimilation. The system of aesthetic person’s relations to the world is defined on the base of obtained experience. The importance of aesthetic culture content is the measure of society spirituality that maintains the emotional humanity experience.

An aesthetic person’s culture can be understood as a self-realization, self-development and self-knowledge forms of the person himself not only as a individual but a representative of human, his creativity and specific characteristic of the being as well. It is a level of subject development, aesthetic person’s experience.
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RESOURCES IF MUSIC THERAPY IN PRACTICAL PEDAGOGICAL ACTIVITY
WITH CHILDREN WITH LIMITED OPPORTUNITIES

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Abstract

Music therapist is a well-established allied health profession. The main source of work consists of using music therapeutically to address behavioral, social, psychological, communicative, physical, sensory-motor, or cognitive function. Because music therapy is a powerful and non-threatening medium, unique outcomes are possible. It is very important for theory and practice to research pedagogical aspects through music therapy interventions. For individuals with wide diagnoses’ spectrum, music therapist provides unique pedagogical variety of music experiences in an intentional and developmentally appropriate manner to effect changes in behavior and facilitate development of skills. Professional musicians working in music therapy sphere use variety of methods. The techniques and principles of creating development through music therapy activity describe possess a universality that carries across educational and rehabilitational divisions.

Key words: music therapist, methods of interventions, client’s development, social adaptation, successful activity

1. INTODUCATION

Russian society experiences today dramatic period of it’s historical development. Cardinal reforms have mentioned all spheres of people life, especially social activity. The increase of diseases of Russian population, the decrease of birth rate, the constant growth of children's physical inability at adverse ecology, heavy social position of many families, low general culture – all of those confirm an important role of the teachers working in different establishments with children with limited opportunities. They try to find new, more effective pedagogical methods of correctional activity. Everywhere teachers, psychologists, musicians mark the increased role of art-therapeutic influence on that category of children. The specialized centers, the educational institutions, engaging in complex rehabilitation for children with a physical or mental pathology, more often address to reserves of aesthetic education and art creativity today. Musical, dancing, theatrical, painting lessons and other studies promote children into an “open” society.

Definition of health contains three components: they are physical, mental and social. Among those components we mark the development of creative abilities of children, their creative attitude to the world. That cognitive activity can be a source of strengthening of health. It gives sick children feeling of an accessory to a society, an opportunity of expression of their feelings, abilities, formations and developments of the person.
Various forms of the musical communication, playing on any musical instrument are also powerful the habilitation degree of children with the limited opportunities. What is the medical effect of musical influence on general condition of children-invalid?

The most ancient form of people socialization has been art. It is the most ancient “tool” which translates subconscious images and imaginations into forms, clear for different people. It is a way to understand the world without words. All children with infringement of mental development have the lack of verbal intelligence and randomness. Those functions are later, than emotions and imagination. The role of music in cure and socialization such children become very significant. Process of creativity assumes transformation, subconscious energy in the certain form. The chaotic world (under influence of music, independent creative children’ actions) gets them the certain structure similar the surrounding world.

The mentality of the child functions as a unit. Development of one of spheres of his experience make more active the other spheres which were deprived an opportunity to develop. First of all, the internal music reserves influence on subconsciousness, which stimulate activity or even forms mental functions a sick child.

2. METHOD

Music therapy (in Russia that trend means the specific methods of correctional work) is rather new direction of activity of professional musicians. The goals of that are achievements of maximum effect through habilitation process with child-invalid. This way is thorny and combined. However professional musicians study to overcome arising difficulties, develop and put into practice their individual methods.

Professional musicians use creatively boundless opportunities of music in the work. They use too various forms and methods of submission and mastering teaching material from hearing music, singing, dancing, ensemble playing and orchestra playing. Experts mark a positive role of musical lessons on improvement of a physical and mental condition of children with the limited opportunities and physical inability.

During long dialogue with the child the musician-teacher becomes simultaneously both the teacher and the psychologist, both the therapist and the friend. Training lessons with children with feature of development can be individual and group. In both cases it is necessary to take into account features of each child, to work, intuitively guessing his positive pulses, being arranged under child character and mood.

The methods which were produced in practice the author has written in the text-book “Playing music with children-invalids”. A core of the pedagogical technique is the variety and complexity of the musical exercises which the teacher and child play together through activation of simple mental functions, psychological and emotional contact, “therapy by pleasure”. All lessons are variants of activity: a piano playing, a synthesizer playing, singing, folk instruments playing, etc. The synthetic technique of music lessons allows to master the account, to learn letters, words, colors and shades, etc. A child carries out set of simple, complex logic, creative exercises. He or she not only plays music, but also composes the pieces, improvises, sings, paints, uses numerous visual aids. All of those format a new emotional experience, purchase knowledge and skills.
Successful work of the musicians with the child-invalid depends on the first music meetings (lessons). Aspiring to come into with the contact, it is not necessary to demand from child the correct actions and acts. A role of the adult at the first meetings is the role of the active musical observer, “representing” all bends of individual behavior of the child.

In that case a musician supports all actions of the child by playing a musical fragment on any instrument to describe his mood, character of activity. Support with a voice helps the teacher to comment all child movements and organize a verbal contact.

The following method to make a contact with the child is the ensemble playing a musical instrument. Here it is not necessary to aspire an achievement of professional musical result. It is important to give the child a chance to express himself in music. It is necessary to understand, that the child likes, frightens, how music influences on a mental condition.

Planning each individual or group lesson, the musical therapist at the same time improvises, remaining the structure of lesson with the repeating actions. They can be acquaintance, farewell, and transitions from one kind of activity to another. For example, offering the child to play any instrument, the teacher can spread out them on a table or chairs. The musician calls the tool, reminds the sounding, and then the child himself chooses any instrument and play. In that case the child’ fear is removed.

Method of alternation kinds of activity allows to carry out two problems. The first, it is building of the dynamic plan of a lesson. It could be methods with change of mood (relaxation and excitation). Presence of the culmination with the gradual increase of game activity and after that with the subsequent relaxation - is expedient sometimes too. Pieces of music, musical fragments, compositions, joint playing music for the offered image, the poetic texts are applied in appropriate way.

Use of music exercises, games, dancing movements (as creative tasks) is very important reception which gives positive therapeutic result. For example, it is possible to apply musical games, riddles that develop acoustical attention and activate playing the musical instruments.

Different musical instruments (a drum, a triangle, a pipe, a xylophone, etc.) are offered for the child. The teacher plays contrast musical fragments. Depending on character of music the pupil chooses this or that tool for joint music playing.

Rhythm feeling develops when pupil plays the percussion instruments, recurrences with the teacher elementary rhythm in singing compositions. To develop a child spatial representations the teacher can use the elementary dancing movements: walking under music, games, etc.

To stimulate, activate a child brain, it is necessary for musician to be engaged in special exercises that develop a fine motility. The child responds to cheerfully the demonstration-display songs “Forty – thief”, “Travel of tell-tales and spiders”, “Duckling krya-krya”, etc. The same occurs, when the teacher sings and represents an interesting game situation which the pupil shows with the help of fingers playing the instrument.

During all lessons, ability of the child to this or that kind of activity, his interest or passivity is traced. The teacher tries to find out what music, what instrument is pleasant to the child, that causes his emotional reactions (positive or negative), how they show it. Here it is necessary to aspire a degree of the pupil activity, changes of his behavior, a psychological, emotional condition. It is important both for the analysis of the current lesson, and for updating the further meeting for that to use special exercises and receptions and to habilitate the concrete problems of each child.
For example, it is possible for blind people to develop ear during music practice using special exercises combining singing, acoustical dictations and quizzes. It is considered, that the blindness has an adverse effect on impellent activity of the child. However the technique of movements can be restored significantly. It is reached by regular, intelligent exercises, learning of the keyboard, internal “hearing” and “vision” of sounds, sound’s complexes. Playing performance, musical game could be the compensation as a factor, because it promotes professional habilitation, integration of the blind child into healthy collective.

The main role in this process is allocated memory. Memory of blind people may has compensation character. The blind child learns all notes by heart. After that he or she exercises piece, achieving correct sounding of all impressive elements.

Memory of any person can be logic, acoustical, emotional, impellent. But a blind pupil percepts and process the new musical information with parallel use of all kinds of memory. The blind musician collects the information from parts into whole. Blind people capable to play rather quickly music pieces from musical phrases. The problem of the teacher - to unit a musical mosaic in a whole composition. In that case it is very important a draft playing music pieces. The central moments in sequences of actions, specification of representations, a musical plan - those criteria allow the blind pupil not only to remember a piece but also to save up rather extensive concert material for a long time.

The author worked with blind people not on system of Luy Brail. The individual technique method based on hear-motive interrelation with application the method of a contact - imposing of hands. It allows to involve all sense organs in creative work that develops their activity greatly. All details are given in the note-methodical text book “How to teach to play the synthesizer blind children”. The child is intently committed to the flexible expressiveness and variety of active musical experiences. The musician can sustain him/her; the child may use his/her own moods and structures in musically inventive interactive play or to express and communicate ideas or feelings.

3. RESULT

Children, whom the musical therapist teaches, can have a different degree of lack brain activity. The habilitation degree depends on many factors. It is age, features of mental development, character, attitudes in family where child lives, contact with a teacher. The important role in this process belongs selection of methods, ability to change or alter flexibly those or these receptions for the greater therapeutic influence (effect).

As a whole, it is possible to speak, that dialogue with music, playing music any musical instrument influences all mental processes of the child purposefully. Functions of movement, a fine motility start to be restored, the hearing, thinking, imagination, rhythm develop, the physiological processes improve.

Musical development for blind children is extremely useful too. It is true because musical lessons can have rehabilitation and integration effect. For example, other functions of child bodies and the centers of nervous system make more active instead of the lost sight. There is a process of indemnification of sight, with the help of music lessons which has complex character. The blind person starts to learn the world more actively, to feel himself more comfortable. Music is directly connected to this world, transfers, and reflects all spectrum of the sound information surrounding the person. The blind child with the help of music reaches adequate representation about the surrounding world.
Sound vibration develops sensitive feeling. Sound effects, imitation elements of music give blind the extensive information which he or she comprehends. Musical lessons influence positively on mentality of the blind pupil, develop emotional sphere, form harmonious feelings.

Compensating value is got with musical-acoustical attention, a tactile motility, memory, the vigorous activity of the central nervous system. Regular musical playing any musical instrument aggravate, raise acoustical attention. The child starts to distinguish adequately a source of a sound, his timbre, dynamics, height, volume and expressiveness. Musical information from world allows the pupil to restore aural-visual landscape. It is very important for professional musicians to be able to use pedagogical methods in music therapy in wide aspects of activity.

Music therapy may include the use of behavioral, biomedical, developmental, educational, humanistic, adaptive music instruction, or other models. Music therapy enhances one’s quality of life, involving relationships between a qualified music therapist and individual; between one individual and another; between the individual and his/her family; and between the music and the participants. These relationships are structured and adapted through the elements of music to create a positive environment and set the occasion for successful growth.

Today’s reality health is no longer a state of not being sick. Rather than strategies of personal health management in response to sickness, we see an assemblage of activities like methods’ practices, exercises practices to promote health and prevent sickness (David Aldridge, 1996).

Thus, art therapy, music therapy with children with the limited opportunities could be considered as a component of social habilitation, to provide them equal opportunities to educational systems, to make more open and civilized norms of interaction of children with physical inability into healthy environment, to promote creation of conditions of their inclusion in the educational environment.

REFERENCES


HOME ECONOMICS AND TECHNOLOGIES AS A STIMULATING FACTOR OF CHILDREN SELF-DEPENDENCE
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Abstract
Independence is one of the most important human qualities for achieving the set aims. Accordingly, in the personality formation process it is essential to develop the qualities which facilitate the consolidation of independence as a characteristic trait. The observation of pupils especially at early school age proves that pupils' independence is weak or it does not exist at all. In the consolidation of independence in primary school a special role has the subject of home economics and technologies the content acquisition of which is connected with the methods of practical work.

Independence is an obligatory component of creative activity; it requires overcoming hardships, thus, in its full meaning it can be assessed as a quality of strong will.

During the research the factors facilitating pupils' independence at home economics and technologies lessons in primary school have been revealed.

Key words: home economics and technologies, primary school, self-dependence, independence.

1. INTRODUCTION
The nature of pedagogical process at school determines that the teacher at a lesson focuses on the provision of new knowledge, insufficiently emphasizing a psychological aspect of education process, associated with the development of students’ personality.

It is to admit that the teacher, to a large extent, denotes not only what knowledge, skills and attitudes will be acquired by our young generation, but also the most important thing – what character traits students acquire and develop during their studies at school. In practice, it is observed that students with good or excellent knowledge, but completely unprepared for life activity (do not have the patience, self-dependence, weakly expressed will activity) and, conversely, pupils who have difficulties in acquiring the material, under certain conditions find satisfaction and joy, if they manage to meet the need of asserting themselves. Self-dependence is one of the most important traits of people in order to achieve the stated goals. Therefore, within personality formation process it is essential to develop qualities that promote the strengthening of self-dependence as traits of character. Observation in working with students, especially of a younger school age, shows that the students' self-dependence is poorly expressed or it does not exist at all. At the age of six to seven, when children start school, lack of self-dependence in a very negative way influences students' general learning process: there is distraction, superficiality, chaotic behaviour, inability to prepare homework without assistance, or perform different duties.
Study of home economics and technologies is constantly exposed to a variety of changes, determined by changeable social conditions.

There are various discrepancies currently observed in teaching home economics and technologies:

1) there is a discrepancy between the new teaching content in grades 1-4 and the lack of diversity in work organization for contributing to students’ self-dependence;

2) there is a discrepancy between the general didactic principle of primary education - the unity of teaching and upbringing and their realization in practice in the aspect of students’ self-dependence;

3) there is a discrepancy between the teaching content and teaching materials of home economics and technologies, and the lack of diversity for contributing to the students’ self-dependence.

These various open questions have defined the choice of the research theme and its topicality.

The objective of the research
To explore and analyze contributing factors of students’ self-dependence at home economics and technologies curricula in primary school.

Materials and methods
Methods used in the present research: a theoretical method - analysis of bibliography; empirical methods - observation and practical experience analysis; mathematical data processing.

1. THEORETICAL JUSTIFICATION OF STUDENTS’ SELF-DEPENDENCE

I. Plotnieks considers that trends of self-dependence in a child have already been programmed. At a definite age these trends express themselves. He emphasizes that self-dependence is undoubtedly laudable, even more – it is possible to prepare in advance for its support (Plotnieks, 1988, 15). When thinking about students' acquisition of skills at the lessons of home economics and technologies, the possibility exists to promote students' self-dependence simultaneously, using appropriate teaching materials, focusing on the forms of work organization. Therefore, the most important task is to elicit the contributing factors of students' self-dependence at lessons of home economics and technologies.

Self-dependence is defined by "The Family Encyclopedia" as the ability to perform any task without having any help from aside, to adopt a decision, as well as personality traits. Self-dependence is the personal attitude toward the activity, its results and performance conditions, characterized by abandonment of other assistance, high level of knowledge and skills. Self-dependence is formed by the action expressed as a wish to operate. It requires a great deal of perseverance and patience, therefore, it is necessary to strengthen the child's belief in one’s force to raise the level of claims, especially in activities that correspond to the child's abilities (Ģimenes enciklopēdija 1989, 230).

I. Plotnieks draws a great attention to the apparent opposite of self-dependence - doubt, which is not a destroyer of self-dependence but rather its consolidator, hardener. He recommends to throw in “a spark of doubt" to make children assess their activities deeper and more critically (Plotnieks, 1988, 15).

In order to believe into oneself, a person has to acquire a skill to evaluate oneself properly. Therefore, organizing students’ work according to the task description or a technical drawing it would be necessary to include questions that would encourage a student to make self-assessment, thus, each would assess one’s strengths and weaknesses. According to Ā. Karpova, this activity simultaneously
provides with the opportunity to get rid of tension caused by the teaching process requirements (Karpova, 1994, 5). Á.Karpova emphasizes that the objectives are to be pursued with a real attainable goal. In the process of promoting students’ self-dependence there is an important V.Kincāns cognition that appraisal is one of the main incentives and one should not pity the strengths to love one’s work, one “has to” convert in into the will (Kincāns, 2010, 134).

The development of self-dependence is not possible without skills to distinguish the main focus, operational orientation in conditions and circumstances, building algorithms of activity, to predict the results. Self-dependence is an essential component of creative activities; it requires overcoming of difficulties, thus, in its full expression it is estimated as a quality of a strong will. I.Plotnieks, like V.Zelmenis considers that in the self-dependence as in an integral personality trait there is a very large proportion of will components (Plotnieks, 1988, 15).

Cardinal V.Pujats emphasizes that we can have the most pleasing and noble objectives, but there is no will to fulfill these objectives, they will still remain unfulfilled. Thus, the implementation of the objectives is dependent on perseverance and endurance of will. The mind on its own is not capable of fulfilling anything; the feelings do not have the main role as well. J. Pujats acknowledges that feelings initiate, mind instructs, will accomplishes (Pujats, 1998, 39). This is particularly useful for home economics and technologies lessons, when thinking about the organization of students' own activities.

G. Rudžiūtis observes that the formation of will begins at a young age with a speech development and develops throughout the human life. Will expressing activities are encouraged by people's material and spiritual needs. Students’ will to learn, according to the author, is promoted by encouraging of cognition interests, with the desire to create some beautiful, applicable products with their own hands (Rudžiūtis, 1999, 7).

A. Ľubļinska, on the other hand, argues that a growing child's independence is expressed by one’s own initiative activities, in designation of the operational objectives, selection of operational techniques, dependence on one or the other motif, sometimes even in disobedience, obstinacy or arbitrariness (Ľubļinska, 1979, 347-352).

J. Azārovs also has a similar opinion to A.Ľubļinska. He believes that a wise pedagogical management activates self-dependence. An adult’s and a growing child's mutual collaboration in the education process always consists as if of two layers. The first layer – adult leadership. It must be tangible, but not excessive, so that the other layer – independence - could freely develop. The author emphasizes that the management teaches plenty of things, but it quells craving for independence, in particular, it does not give a special effect. (Azārovs, 1986, 162). In practice, it is observed that the teacher's control can be of various degrees. If it is not noticeable as a suggestion of activity that corresponds to the interests of students, activates and stimulates their imagination, thinking for the following students’ independent forecasting activities, then the teacher’s control does not suppress, but encourages students’ predisposition to independent activities.

J. Azārovs emphasizes that the blossoms of independent activities often appear quickly, but they are unusually fragile (Azārovs, 169). Therefore, the main requirement for the development of independence is the management skill to support a child's initiative. For example, if at the lessons of home economics and technologies, making their own products according to a technical drawing, a student has an arising interest to continue this activity at home, then it would be desirable to encourage students to choose some other interesting tasks, which could be found in textbooks, teaching materials, workbooks, or the internet.
In strengthening the sense of self-dependence, the primary role is given to those subjects the acquisition content of which is associated with practical working methods. All sorts of practical work, their planning and organization are of particular importance, for example, a classroom care, rearrangement, decorating, cleaning up the school surroundings, as well as the creating of various products according to the description, technical drawing and worksheets.

It has been observed that students learn better and with more interest if they constantly look for a link between the unknown and the known, ask questions and independently seek answers to them. As noted in the State education standard, the process of educating the students is supposed to create a possibility for substantive cognition and self-realization, allowing them to search and see the links and relationships between things. The teacher's task is to help students see the link to the new information with their daily life, family, friends, and society. This approach requires a considerable change of learning organization, dedication of more time and other resources for students' independent research work (State education standard, 1999, 8).

It is to admit that responsibility takes an important place in the process of promoting students’ self-dependence. In fact, a person can be entirely responsible for the tasks, if they are chosen deliberately according to one’s own free will. If the teacher has determined, rather than created the opportunity for students to choose a product to be manufactured by them, a part of the interest in performing this work has been lost, it sometimes even provokes a dislike. It is to say that the students’ self-dependence is affected by the formation of internal and external conditions. For demonstration purposes we offer the following scheme:
It is to admit that external and internal conditions of students’ self-dependence are interrelated. With regard to the selection of the primary school home economics and technologies training content for the promotion of students’ independence, the decisive factor is the consideration of students’ age characteristics.

Summing up the above mentioned analysis, we can distribute the key criteria for students’ self-dependence development:

• progress in the choice of tasks and exercises from simple to more complicated, promoting the child’s belief in one’s abilities, contributing to positive self-esteem;

• opportunity of free choice, creating a sense of security, which promotes the strengthening of self-esteem and sense of responsibility;

• self awareness opportunities that promote self-realization;

• capabilities of independent activity – creative fantasies, emotional experience, the type of expression.

A textbook also plays an important role in the promotion of students’ self-dependence, correspondingly selecting work organization.

It is to say that the textbook is and always will be in the development process. First, it changes with time. Secondly, the textbook stimulates a student for independent activities in various aspects depending on the age of the students and the teacher’s work organization techniques. Thirdly, the context of a textbook can be integrated, stimulating students' self-dependence, linking several subjects together.

2. FORMATION OF STUDENTS’ SELF-DEPENDENCE IN THE ASPECT OF HOME ECONOMICS AND TECHNOLOGIES CONTENT ACQUISITION

The empirical study of the research was accomplished in practice schools of Riga Teacher Training and Educational Management Academy in grades 1 and 3 (291 students) and one Latvian children’s home (15 students).

Because it is indicated in the standard of the subject of home economics and technologies in the basic requirements for subjects acquisition, when accomplishing grade 3, the students know the main daily work processes that ensure cosiness, and participate in doing homework (regulations of national standard in primary education and the primary education syllabus standards, 2007), then we conducted interviews with students of grade 3 regarding the performed responsibilities at home. One part of the students have assessed their responsibilities at home as very important for themselves. Compiling the information provided by the students, we can conclude that a part of students have pets they take care of at home. Students like that they have their own room, and it is their responsibility to maintain their room in order. Karlis says that “my obligation in the family is to keep my room tidy (which rarely stays tidy for a long time) and take care of my brother.” There are students who admit that they do not have responsibilities at home. For example, Cynthia from grade 3 admits that she has no responsibilities at home, although she lives in a private house, has her own room, and there is a puppy in the house. Some students would like to have “a housekeeper, which would greatly simplify life”.

According to J.H.Pestalocjjs’ cognition in this case, living conditions turn a person into a consumer, with unexploited basic life skills activities.
As a result of the survey it was found that 93% of all students help with housework in the kitchen. Major part of them - 62% of students, help to wash dishes and 31% of students help to prepare meals. For clearness the following results were compiled.

![Pie Chart]

3rd grade students’ duties in the kitchen

As a result of the debate it was found that there are students, who help to clean the kitchen sink, sweep the floor, clean the table after breakfast, and are responsible for order in the fridge.

Only a few students in their house would like to make changes themselves with their own hands. A boy writes, “When I grow up a little, I’m going to make repairs in the hallway to make space for furniture, including balls and roller skates.” In her turn, Ieva writes, “If I could, I would renovate the house and build up a new green roof.” It testifies that the beginning of activity is initiated by the clarity of objectives.

The research clarified some other students’ domestic duties.

![Bar Chart]

3rd grade students’ duties in house cleaning
98% of students participate in house cleaning; the remaining 2% of students do not participate. The main task of the house cleaning is to wash the floor. It is carried out by 32% of students; while 22% of students are involved in sweeping the floor. There are students whose duties include carpet cleaning (17%), plant watering (12%), only their own room cleaning (14%). It is to say that the results obtained generate reflections, especially after discussions with the students' parents. It turns out that not always entrusted duties are carried out regularly, which shows that students’ self-discipline has not consolidated yet, i.e., the sense of taking care (for oneself and others) and self-dependence have not yet manifested as a trait of character (Skots Pešk, 2005).

The circumstances in which the learner works, how respected he is, are very essential. Therefore, such learning environment is important, which allows the student to feel and believe that one is capable of doing something, and that what one can do, is not insignificant. At the primary stage, the student builds one’s self-esteem. It can be achieved if the students have advanced reflection capabilities, if a student is taught to evaluate one’s own and others accomplished work, action and predict the consequences in order to plan a perspective operation.

Using the method of incomplete sentences, we found out the students’ joy and sorrow at the lessons of home economics and technologies in primary school, when working independently. By classifying the obtained answers, we gained the results that 5% of students expressed their joy at being in a collective, 33% of students were glad for their success of that work, and 58% of students admitted the interest as the main source of delight.

3rd grade students from one of Riga's schools express a desire to have home economics and technologies lessons more often, some even want that these lessons would last the whole day because, according to the students’ opinion, time passes quickly when they are occupied. A boy from grade 3 wrote: "I like the fact that lessons of home economics and technologies are interesting. Sometimes it is not enough with one lesson. But sometimes I want that it finishes faster, if I have forgotten something at home and cannot get to work, but it is my entire fault ". In his turn, the other boy writes that at the lesson of home economics and technologies it is pleasure to have a task that comes easy to me and I like it. But even more I like it, when lessons do not take place. I don't like that the teacher makes me clean up the classroom. It is to say that the dislike of cleaning the classroom was indicated by 9% of students. It should be noted that generally they are learners who do not have any domestic duties or the ones who have a housekeeper. The research confirmed the above analyzed cognition by J. Azārovs that teacher’s management teaches many things, but it quells craving for independence, in particular, it does not give a particular effect.

The majority of primary school students, working independently at home economics and technologies lessons, are afraid to make mistakes. There were students who expressed fears that if they could not do everything in time, if others shame them for bad work. A part of the students felt anxious, if something breaks, does not meet the requirements, if there are no materials taken from home. One of the girls from grade 3 admits that “home economics requires for great patience, but I don't have the patience.” A boy writes, “I have great pleasure when I understand work and succeed at it, then I am appointed as the teacher’s assistant”.

Observations indicate that a particular students’ interest is not caused by tasks that do not have practical application. Here the teacher's role is essential to help the student build healthy self-esteem and discover their talent, what exactly one is special with. The attitude changes when the teacher offers creative tasks. Those students are happy whose teachers feel, are capable of adopting and implementing specific events of the epoch in home economics, of acquiring new technologies, taking into account the needs of students for the promotion of self-dependence process.
In compiling the information, it is clear that it is important for teachers to love their subject, to inspire and captivate students with their attitude. The teacher has to reconsider and select the content according to students' interests, needs and abilities to acquire life activity skills. In the research carried out in one of Riga's schools, answers of all students from grade 3 are permeating with dissatisfaction with the teacher, her negative attitude towards the students and their works in home economics and technologies. Students feel that the teacher teaches them *homogeneous and uninteresting things* that students do not enjoy. The data supports M.Fulan's cognition that it is not possible to implement the moral goal of learning—to achieve changes in students' lives—if a similar development does not occur in teachers (Fulans, 1999).

Interesting results were obtained in the children’s home, using AHA test that characterizes the level of students' attention, the ability to take the challenge (risk), harmonization of goals and results. The results obtained showed that the orphanage children have high impulsiveness. They quickly take a decision based on emotions and take risks, they have vigour for work, fighting spirit, are capable of orienting themselves to results of their work in independent activity. Consequently, these children have an opportunity to get into trouble as quickly as possible. Therefore, they need special attention.

Acquiring life activity skills at the lessons of home economics and technologies, students learn to balance real achievements with future activities, in accordance with their interests, needs, not being afraid of taking risks. In this regard, the orphanage children differ with their degree of risk from the children who learn music. Artistically driven children in their activities are afraid of taking risks. Orphanage children make decisions independently, select activity and perform it without thinking about the possible risks. It is a peculiarity of their self-dependence. There is a contradiction between their age and level of knowledge acquisition. Generally these are the cases when they are older than peers within the same class.

In turn, interviewing 105 primary school students it was found what students understand by the word self-dependence. The results were interesting. 38% of students understood self-dependence as the ability to do something by oneself, 13% — that they can stand for themselves, 14% - when one comes home on one’s own, 27% - when a person works alone, 8% - different responses, for example, that a person is calm and does not behave violently, that one goes by bus, that listens to one’s mum. One primary school student’s answers were not unambiguous. Most students admitted that self-dependence is expressed by their skills to do everything on their own, find answers in the books without any assistance. It should be noted that in this elementary school students learn in the grade of a project "Step by Step". Almost all the students considered themselves independent; some described situations where they acted independently, for example, at home economics and technologies they had done independent work, independently go to interest groups and operate in them. Children admit that sometimes by themselves without adult presence do their homework and prepare food, but some more students recognize that they have not been in such a situation. Students’ answers were interesting and encouraging. Each could tell a situation where one has been independent. We noticed that all those students who are participating in the project "Step by Step", choose and arrange their work week in training centres, look for information in the books by themselves, choose the training topic, tidy their place of work, clean up the classroom without reminding, do homework independently and with interest etc. A similar situation occurred in grades where students have integrated training. In our opinion, in these grades there are all the prerequisites in order to successfully develop self-dependence in virtually all areas.

It was seen the best at those lessons where students carried out a small project work in groups. For example, preparing a salad, the students themselves split into groups, found the corresponding recipes,
chose the most interesting and appropriate according to the estimated time. Students should also pay attention to the economy (to as low food costs as possible). The result at exactly these sessions was amazing and quickly obtained. It should be noted that the teacher’s assistance was asked for rarely and only at the cooking process. It was pleasant to observe the students’ joy of work, which contributed to the teacher’s trust and confidence in students.

Within the process of students’ independent work I.Vhuler’s cognition was confirmed that successful team work is ensured by each team member’s clear understanding of the role of the group, the goal of work they want to achieve, as well as understanding of the means how to do it. Therefore, the instructions should be clear, concise and unambiguous (Vhuler, 1999, 14).

Students’ self-dependence is expressed in a more complicated way in those works to be conducted on an individual basis, as many students miss the patience, have the desire to do everything as quickly as possible, in order to obtain results faster, while the students’ skills to work in accordance with textbooks, work sheets, work description or a technical drawing are still not sufficient. As a result, the quality of work suffers and hence the student satisfaction with the results of their work.

Sometimes the explanation can be also found in motivation because, according to E.Iļjins, the younger school age pupils develop new themes (needs, interests, wishes), reorganization of motives takes place within the hierarchy of motivation system (Iļjins, 2000, 191).

In the course of the research we clarified the ability of students from grade 1 to work independently according to the following schematic drawing. A research was conducted in grades where students have integrated learning; in grades that implement the teaching content within the project “Step by Step” and in test grades. The progress of work was asserted by selected criteria:

• are capable of performing the task by themselves,
• need assistance in performing the task,
• inability to perform a task independently,
• inability to perform the task.

Summarizing the results, we gained the following result:

Students’ ability to work independently according to a technical drawing
The results show that students who learn according to the integrated scheme, as well as within the
grades of a project "Step by Step", are a lot more independent in their activities in any situations, it is
proven by a specific task, because they are accustomed to continuously operate independently.

The research proves that there is a need to encourage students to work independently, without external
assistance. It develops gradual accumulation of students’ skills in their experience. Each pupil's step
towards independence, each new level of independence contributes to a new level of independence
and self-dependence.

Analyzing the results of the practice, we may conclude that the development of students’ self-
dependence depends on the teachers’ skills and their willingness to develop them in children. It is
observed, if the teacher within the training process includes types of work, which allow students to
judge for them, operate and analyze, students are much more active and more independent than if they
only reproduce the teacher's activity, which is much easier.

Summarizing the results of the research, we may conclude that I.Plotnieks’, A.Ļubļinska’s,
V.Zelmenis’, J.Azārovs’, and other authors’ cognitions confirmed that realization of independence has
to be developed in childhood, proceeding with it at the younger school age. Trends in children's self-
dependence have already been programmed – by developing self-dependence; increased attention
should be paid to the development of feeling of responsibility (Azārovs, 1986; Ļubļinska, 1979;
Plotnieks, 1988); with years a student develops one’s self-dependence, changing its direction and
expressions. Therefore, there is a need for textbooks, which contain a variety of tasks, including
project work which corresponds to the students’ age characteristics, the students' abilities. Independent
decision making to a large extent depends on life experience, for students it is still poor, and one relies
on adults.

In the course of the research it was observed that the students' self-dependence appears as a moment,
so that it would be more sustainable, teachers need to develop the ability to support the students' initiative knowingly, to encourage them, cheer, strengthening the belief in their abilities. In the course
of the research it was shown that the most successful tasks in the students’ textbooks for the promotion
of self-dependence were those that contributed to the students’ searching activities, cognitive
functioning, attracted by the humour.

In the course of the research it was also observed that adults encourage students to work independently, but the same adults constantly restrict students' self-dependence at home, often performing tasks in their place. For example, finding folk songs about work or proverbs about
diligence. At times, it was observed that when performing homework at home economics and
technologies the students successfully engage their brothers, sisters, even grandmothers. It should be
noted here that the students' self-dependence has to be complimented, which is expressed in work
organization.

In the light of this situation, moreover, the cognition was confirmed that in the promotion of students' self-dependence an important place is taken by a learning process at school, different teaching
techniques, organizational work techniques. We made sure that a students’ independent action is more
effective when combined with students’ daily life, their previous experience, unconventional lessons,
learning new technologies.

In the course of the research the cognitions were confirmed that in our society there are still problems
in the development of students’ self-dependence and it is mostly caused by adults, including teachers.
In the course of the research we had a real joy at schools where teachers enabled students to
independent action in different ways.
THE CONCLUSIONS

In the course of the research, we found out contributing factors of the students' self-dependence at the lessons of home economics and technologies:

• a favourable learning environment that corresponds to students' predisposition to act according to their abilities and needs for self-realization;

• a teacher is responsible for making operational objectives of the lesson personally important for a student, develop their self-discipline and self-organization skills;

• content acquisition consists of unity of theory and practice, what students learn with interest, satisfying their cognitive needs to assure themselves.

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USING MOBILE PHONES AS TOOLS FOR ENHANCED BLENDED LEARNING

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Abstract

With the continuing evolution of modern handheld mobile devices, an opportunity has arisen for a more comprehensive integration of these devices within educational environments. In the past, the use of mobile devices within an educational context has often been overlooked, very often being viewed as more of a distraction for students. However, over the last number of years, as common mobile devices have developed into multi-media terminals incorporating a massive amount of functionality, these technologies have permeated into both everyday life, and indeed into educational institutions. The system presented in this paper seeks to exploit a resource which for the most part has remained untapped. With a vast majority of student having access to a mobile phone of some specification, the incorporation of the students’ mobile devices into the educational realm offers an opportunity for the enhancement of the overall learning experience of the students, without the need for a great deal of investment in additional infrastructure. Mobile phones can be incorporated into the spheres of learning by utilizing the previously assimilated tacit knowledge students possess of operating these devices, which allows them to focus on presented content instead. Developments of a context-sensitive InfoStation-based architecture, tasked with supporting the provision of mobile information services within a University domain, are outlined in this paper. These services, designed to complement the traditional educational practices, provide an enhanced blended learning experience for students, and as such aid the students assimilation of the presented information. The developments described are focused on exploitation of the greatly expanding functionality, including the multi-media capabilities of modern handheld mobile devices. It also forges experience in the greater integration, exploitation, utilization and management of these modern wireless technologies in educational environments.

Key words: Multi-agent systems, InfoStations, context-sensitive mLearning

1. INTRODUCTION

Throughout the last decade, mobile phones have continued to evolve and develop, to point where the most modern devices can offer the functionality comparable to that of desktop computers. These devices can operate as personal organizers, facilitate access to email accounts, and of course provide web access. More high-end devices also facilitate access to application stores, which enable a person’s mobile phone to take on an even wider range of capabilities, bound only by the personal preferences of the user. It is estimated that the number of cell-phone subscriptions worldwide reached 5.28 billion at the end of 2010, compared with 4.66 billion at the end of 2009 according to the International Telecommunication Union (ITU) [1]. This certainly serves to illustrate the prevalence of mobile devices in the everyday lives of people, in all walks of life, throughout the world. Of course, as these
numbers continue to rise, and as modern society becomes more technologically connected, new and more innovative methods of utilizing these technologies are required.

In recent years there have been some efforts made to utilize these devices within the educational domain. However, very often in classrooms, mobile devices have often been viewed as distraction, creating more an impediment to learning. Of course mobile phones have become such a major part of the modern student’s life, becoming engrained in almost every facet of their daily activities, that most students have developed an extensive tacit knowledge of working with these devices. The harnessing of this pre-existing knowledge of utilizing these devices represents a huge opportunity to enhance the educational practices. Under the proper circumstances, the incorporation of mobile technologies can be utilized to enhance the participatory nature of education as in [2], where the lecturer interacts with students through their mobile phones, soliciting responses, and assessing the student’s assimilation of the presented material via and SMS-based system.

The system presented here seeks to incorporate user’s mobile devices into the spheres of learning, facilitating a richer blended learning experience, where a number of mobile eLearning (mLearning) services can be utilized to supplement the traditional educational practices. Access to these services and resources is facilitated through intelligent wireless access points (InfoStations), located at various locations throughout the University campus. This mLearning system, previously detailed in [3-5], is designed to facilitate “anytime, anywhere, anyhow” access to learning objects, which can be adapted to suit both the preferences and individual context of the user, as well as the device utilized to access the learning material.

In this paper we will detail how the use of technology can serve to enhance the overall learning experience of students, identifying the benefits a technologically blended approach can bring about in lectures, tutorials or laboratory sessions. Also detailed is the multi-agent architecture of the InfoStations, highlighting the main components which collaborate within the various strata of this system to facilitate this intelligent service provision. Particular emphasis is placed on the system’s ability to not only adapt to the heterogeneous nature of operating environments inherent to this type of wireless access architecture, but also adapt in order to facilitate services based on the personal context of the user. Finally, some of the core mLearning services and supplementary communication services will be discussed in greater detail.

2. TECHNOLOGY-ENHANCED LEARNING

There have been many studies advocating the use of technology in education [6-9]. Many of these highlight the inevitability of third-level educational institutions adopting the use of various technologies in their course delivery. Indeed it might be said that it is, in fact, the responsibility of educational institutions to innovate and promote the adoption of new technologies, facilitating enhanced learning environments for students, in order to stay relevant in this thriving knowledge age [10]. While typically, many higher education institutions remain quite resistant to change, more and more institutions have begun the process of adopting and promoting the use of blended and technology-enhanced learning. Indeed, the utilization of technology is already essential to the running of many educational institutions, and plays a pivotal role in not only educational processes, but also administrative and supportive processes. The proliferation of information and communication technologies (ICT) has already had a hugely positive impact from an educational standpoint, enabling swifter dissemination of information, and indeed enhanced collaboration between educators and students. While many educational institutions already have an adequate ICT infrastructure in place,
very often the utilization of ICT within educational practices is done so according to a very static approach, with ICT seen as tool for the delivery of supplementary materials outside of a classroom setting. The advent of tools such as Virtual Learning Environments (VLEs) has certainly prompted a shift in this trend, with ICT playing a far more pivotal role in the educational process than just as a tool to deliver lecture notes.

Particularly in Ireland, the use of ICT has assumed an even greater importance in recent times. Irish third-level education has undergone a large expansion over the last twenty years and is continuing to experiencing growth. This is due to a variety of reasons; initially the Irish government’s expansion policy on higher education indicated a goal of 72% of the 17-18 year old cohort entering higher education by the year 2020 [11]. Currently over 65% of school leavers are entering higher education [12]. This expansion has become far more rapid than was expected due to high levels of unemployment in Ireland and the population as a whole is turning to further education and retraining in order to become more employable. While this expansion in the third-level educational system may be viewed as progression and development, it also leads to a very diverse group of students within the third-level classroom [13-14]. [15] notes that ‘gone are the days when university classes contained only highly selected students, with present day classes now containing students with a more diverse range of academic skills, past teaching and learning experiences, prior knowledge, approaches to learning and expectations of the tertiary experience’. This diversity and wide range of mixed ability students leads to further challenges and issues for third-level educators. Student retention and attrition have become problematic, particularly in science and mathematics based courses. This is true for third-level institutions across Europe [16].

A diverse group of students calls for a re-evaluation of the teaching and learning strategies traditionally utilized in the third-level classroom. The traditional didactic ‘jug and mug’ model of teaching and learning is no longer appropriate for many third-level classrooms. The utilization of eLearning in bringing about a blended learning environment is well suited to meeting the needs of such a diverse cohort, aiming at replacing old-fashioned “time/place/content predetermined learning” with a “just-in-time/at-work-place/customized/on-demand” process of learning [17]. The blended learning approach (Figure 1), rather than a total online learning experience avoids the drawbacks of complete online learning and the lack of true social interaction it provides, which is a key component of the learning experience for many students [8].

![Blended Learning Diagram](image)

**Fig. 1.** Blended learning – crossing the void between eLearning and Didactic learning

However, while studies on the use on blended learning and online learning advocate these methods, they also call for the recognition of a number of pitfalls. In order for the students to fully engage in the
learning experience it is vital that the focus is on the material being taught, rather than on the technology. This calls for a piece of technology that can be seamlessly integrated in the students’ lives and the lessons. Key to the enhanced student experience is a tool that is capable of meeting both the students and the lecturer’s needs and one that is reliable and easy to use. The authors in [7] examine the potential usage of the students’ own mobile devices in undertaking this role and enhancing their learning experience. The benefits of this approach are numerous. Too frequently, studies report the obstacles in the use of blended learning being the vast amounts of time needed to be spent on the students’ use and acceptance of the technology, or that the technology overpowers the underlying lesson, or indeed the technology being too difficult and incompatible with each and every user requirement [7, 9]. However, when one considers the incorporation of the students’ own mobile devices, many of these issues are overcome. The time spent becoming comfortable enough with the technology to engage appropriately with it should be significantly reduced. The usage of their own mobile devices and interacting with this technology on a daily basis allows students to enjoy the benefits of the blended learning experience without the focus being on the technology. The gains that have been widely hailed in blended learning are the opportunities it offers for student collaboration and formative assessment, as well as allowing the lecturers to monitor progress and attendance more actively without losing large amounts of time [6, 9].

As mobile technologies impact, and ultimately alter the way individuals interact both with each other and the environments around them, it is the utilization of mobile technologies which can provide the next frontier in enhancing the learning experience of students within educational institutions. This point is particularly true, when we consider that young people (i.e. students), are very often seen as the earliest adopters of the newest technologies entering the market, and among the first to incorporate new technologies into all facets of their lives. This has certainly proved the case with mobile technology. However, within many educational institutions, the utilization of mobile devices has been highly restricted. Very often these devices are seen as more of a distraction for students, and indeed presenting an impediment to focused learning. For the first time, the generation entering both secondary and tertiary educational institutions are born completely of a digital age. Technology has permeated every aspect of their lives and as such, they carry different expectations and demands then the generations that have come before. As put forward by [18-19], ‘students now require different delivery modes, not only in terms of time and location but also in terms of multimedia-enhanced, interactive, and instantly-delivered educational material’.

3. INFOSTATION-BASED NETWORK ARCHITECTURE

3.1 Tiered Infrastructure

The system architecture described here, facilitating remote access to mobile services (m-Services), stems from the InfoStations paradigm [20-21]. This infrastructural system concept is based around the idea of facilitating system users with wireless access (via Bluetooth or WiFi connection depending on network constraints) to localized and contextualized services through a distributed network of wireless nodes/access points (InfoStations) situated at key locations throughout a campus.
These InfoStations essentially act as intelligent, localized service providers. Ideas pertaining to the utilization of this system within various informational environments have been discussed previously in [22-24]. The InfoStation paradigm is an extension of the wireless Internet as outlined in [25], where mobile clients interact directly with Web service providers. In this case, the role of the service provider is filled by the InfoStations. The InfoStation architecture itself involves various interoperating entities, existing throughout a 3-tier infrastructure, as depicted in Figure 2. These tiers incorporate the user’s mobile devices, the Information Station (InfoStation) nodes and an InfoStation Centre.

The mobile devices tier encompasses the users mobile devices (cell phones, laptops, tablet computers), equipped with intelligent agents acting as Personal Assistants to users. The Personal Assistant Agent (PAA) gathers information about the operating environment within the mobile device, as well as soliciting information about the user. The PAA is then tasked with initializing the initial Authentication, Authorization and Accounting (AAA) procedures, as well as generating service requests. Supplied with this information from the PAA, the InfoStation can make better decisions on applicable services and content to deliver to the Personal Assistant;

The InfoStations tier consists of InfoStations, satisfying the users’ requests for services through the ‘best’ available connection. The InfoStations may deliver services through either Bluetooth and/or WiFi wireless mobile connections, depending on current network conditions. The InfoStations maintain connections with mobile devices, create and manage user sessions, provide an interface to global services offered by the InfoStation Centre, and host local services. The implementation of these local services is an important aspect of this system. By implementing particular services within specific localized regions throughout the University campus, we can enrich the users experience within these localities. A prime example of how this type of local service can enrich a learner’s experience is the deployment of library-based services [23, 26]. Within the library domain, users experience can be greatly enhanced through the facilitation of services offering library resource location capabilities or indeed account notifications. The division of global and local services also allows for a reduction of the workload placed on the InfoStation Centre. In the original InfoStation architecture [21], the InfoStations operated only as mediators between the user mobile devices and a centre, on which a variety of electronic services are deployed and executed. The InfoStations within
this architecture do not only occupy the role of mediators, they also act as the primary service providing nodes;

The InfoStation Center tier is the core tier in the architecture. Its main components include the InfoStation manager – charged with controlling, updating and synchronizing information across all of the connected InfoStations; user profile managers – record mobile user personal information, including user location, ID, test results, interests, mobile devices, etc; mService managers – in order to facilitate the delivery of personalized mService (local & global) content to users, based on their user profiles.

Whilst within range of an InfoStation, clients may gain access to the various contextualized and personalized mLearning services and resources distributed throughout the system architecture. This system harnesses the communicative potential of modern mobile devices in order to present learners with a pervasive learning experience which can be dynamically altered and tailored to suit the learner. By building this architecture to encompass the mobile devices of the students themselves, we can exploit the tacit knowledge already gained by the students. With this we avoid the obstacle often encountered whereby the student, in gaining familiarity with new technology, can often find their attention drawn from the presented educational content. This way, the students are fully aware of the particulars of operating the delivery device and can focus their attention fully on the content being presented. Another benefit of utilizing the mobile devices of the students to deliver the service content is that this approach saves on the requirement for investment in additional devices or infrastructure.

Due to the inherent mobility support of this system, the software components housed within the student’s mobile device must have sufficient flexibility, adaptability and autonomy to facilitate the requisite functionality, whether in or out of range of the InfoStation network. In addition, these components must also be able to communicate with each other with regard to the context, business-logic of the provided services, and the individual characteristics of users. It is for these reasons that an agent-oriented approach was taken to the development of this system.

3.2 Agent-Oriented development

This agent-oriented approach means that various agents operating with each tier of the architecture cooperate to fulfil the service requests of the students. This approach also ensures a more distributed model of system control and a more efficient dissemination of informational resources throughout the network. A great benefit of this agent-oriented approach is that, as more functionality is required, the multi-agent architecture can be extended with new agents (where required). As has been detailed previously, this multi-agent environment is facilitated through the utilization of the Java Agent DEvelopment (JADE) framework [27-28], developed by Telecom Italia Lab [29]. This software framework facilitated the creation of this multi-agent system, through the provision of a predefined set of services and management tools in addition to the runtime library and agent programming library. The agents throughout this architecture communicate via the FIPA -Agent Communication Language (ACL)[30].

JADE provides a set of APIs completely independent of the underlying network and Java version, meaning the same APIs are provided for each different edition of JAVA - EE, SE, and ME. This versatility ensures that the JADE environment can be tailored to fit the constraints of a variety of target environments. Within this system, versatility and environmental independence are essential to service delivery, as PAAs will be required to operate on a multitude of platforms varying from basic cell phones to high-end laptops and tablet computers. The JADE architecture is completely modular, and by utilizing specific modules, JADE can be configured to suit the varying deployment
environments. With regards to this system, one of the most important modules or add-ons is the Lightweight Extensible Agent Platform (LEAP) module. This module replaces parts of the JADE kernel, providing a modified light-weight run-time environment, enabling FIPA-compliant agents to execute on a wide range of Java-enabled devices. By utilizing the JADE-LEAP, the runtime environment (or container) can be split into a FrontEnd (running on the mobile device itself), and the BackEnd (running from a fixed network entity – InfoStation) as illustrated in Figure 3.

**Fig. 3.** JADE-LEAP split execution

Within the InfoStations- and InfoStation Centre tiers, various agents operate fulfilling essential system management roles. Within each of these platforms, the agents take responsibility for the selection (optimal mode) and establishment of a client-server cross-platform connection, conveyance of context information and the delivery of adapted and personalized service content. Figure 4 highlights the main components which serve to facilitate a level of context sensitivity and personalization to the presented services. The mechanisms by which the services achieve this context sensitivity are dealt with in more detail in Section 4. A short description of the various agents within the architecture is presented below.

While the agents can operate autonomously in their own environments, in order to facilitate the user with access to the various services housed within a particular InfoStation, a connection must first be established. This process begins with the Scanner agent, which continuously searches for mobile devices / PAAs within the service area of the InfoStation. It is this agent which initializes communication between the PAA and the agents operating within the InfoStation multi-agent environment. On receipt of a call-for-proposal (CFP) ACL message, this agent passes the received CFP message on to the Connection Advisor agent. The Scanner Agent extracts information from the “UserDefinedHeaders” of the incoming ACL message, regarding the context of the requesting device. The role performed by the Connection Advisor agent (CAA) is to gather together a list of services applicable to a particular individual. The information required to generate this list is garnered from the headers contained within the received service request. Information needed for the filtration is stored in local DB4O [31] databases. This agent gathers a list of the classes, based on the course and year of study of the student, as specified in the ACL request header. The CAA then examines the user credentials, querying them against a DB4O database of users. If the user’s credentials pass the AAA procedure, the CAA gathers a list of services, applicable to the user, based on courses they study. This is achieved again by utilizing a DB4O database containing a list of services, available locally within
the InfoStation, which specifies the course modules applicable to this service (for example, by pairing a student studying computer networking, with the Computer Networking mTest Service).

Once a list of applicable services has been collated, the CAA passes the filtered service list to the Connection Initiator agent, who takes on the task of initiating a connection with the PAA onboard the mobile device. Once this connection has been established via the ‘best’ available connection i.e. Bluetooth of Wi-Fi, the Connection Initiator generates an agent to which it hands over the control of the connection, called a Connection Agent. From this point on, all communications between the InfoStation and the PAA are directed by the Connection Agent.
The Query Manager agent performs the role of an intermediary between the agents layer and the services layer. It determines where information received from the mobile device is to be directed. The Query Manager also interacts with the Content Adaptation agent in order to facilitate the PAA with increasingly contextualized service content. This latter agent essentially performs the role of an adaptation engine, which takes in the profile information provided by the Profile Processor agent, and executes the requisite adaptation operations on the service content (e.g. file compression, image resizing etc.). The process through which content is adapted to the context of both the user and their device is dealt with in greater detail in Section 4. The tasks undertaken by the Content Adaptation agent, the Scenario Manager agent and the Profile Processor agent, enable the system to dynamically adapt to changing service environments, even in the middle of an active service session. Once the connection to a particular service has been initialized and the service content adapted to the requisite format, the Connection agent facilitates the transfer of the information to the user’s mobile device.

4. SERVICE ADAPTATION

One of the fundamental aspects of this system is its capability to facilitate service context-sensitivity and personalization. Due to the entirely heterogeneous nature of the environments within which services are to be delivered, (i.e. the huge variation in the capabilities of the user devices), it is necessary for service content to be adapted to meet the varying constraints within these environments. In an age where students are utilizing such capability-rich devices such as tablet computers, or indeed the most basic of mobile phones, every student must be catered for. By ensuring that delivered content is suited to the target device, we ensure that the student utilizing the device is given the best possible opportunity to assimilate the presented content. However, as we’ve mentioned, within an educational domain it is also essential that the personal context of the user be taken into account when adapting the presented services. To facilitate this personalization and contextualisation, capability and preference information (CPI) is passed between the mobile devices and service providers, i.e. between the PAA and the InfoStation / InfoStation Centre, as illustrated in Figure 4.

The process of gathering this CPI is undertaken by the PAA, which solicits information such as the username, password and course of study of the user, as well as the make and model of the accessing device. This information is conveyed from the PAA to the InfoStation within the headers of an ACL – Call-for-proposal message. The Connection Advisor Agent (CAA) utilizes this information to generate a list of applicable local services. By ensuring that users are only advertised services which apply to them, we minimize the chance to users receiving unnecessary services offerings (i.e. engineering student receiving access to languages-directed mLecture services). An ACL Proposal message carries this list to the PAA, which enables the user to select the particular service they wish to access. Once a particular service has been selected, the user’s selection is placed in an ACL Accept-Proposal message and passed on to the InfoStation. Within the InfoStations multi-agent architecture, the Content Adaptation agent waits for a request from the PAA. On receipt of the user’s service request, the Profile processor agent examines the headers of the ACL message discerning the make and model of the accessing device. This information is enough to generate a User-Agent string from which we can gather the capabilities of the device.

In order to facilitate this adaptation functionality, the Wireless Universal Resource File (WURFL) [32] was incorporated into the system. This XML configuration file contains information about capabilities and features of a vast multitude of mobile devices, and with its associated API, enables the Content Adaptation agent to utilize a simple User-Agent string, to generate a directory of the capabilities and features of any device that the system may encounter. The particular aspect of the mobile device most
pertinent to content adaptation is the devices supported mark-up, which identifies the preferred content format of that particular device.

Also incorporated into the Content Adaptation agent is the Wireless Abstraction Library by Luca (Passani) - Next Generation (WNG) [33]. This library enables the creation of service content in one mark-up and facilitates the rendering of this content in WML, XHTML MP or CHTML automatically. The Content Adaptation agent needs only be provided with information about the device, and the user’s chosen service, and it can render the requisite content dynamically to suit the access device. Not only does this benefit the users, as the content they receive is dynamically tailored to suit them and their access device, but the content developers need only generate their content in one format, and the system has the ability to adapt it accordingly to each service request. Figure 5 illustrates the contextual information, which must be harnessed in order for service content to be adapted and successfully presented to the users.

![Diagram](image)

**Fig. 5.** The transition from the original content to the delivered service content.

5. ENHANCED MLEARNING & INFORMATION SERVICES

5.1 mTest service

The core goal with the implementation of this system was to facilitate the delivery of services which would serve to supplement and enhance the traditional learning experience of students. With the advent of mobile phones as a truly pervasive element within the lives to many students, a huge opportunity has presented itself for educational institutions to exploit this resource to facilitate a highly blended learning environment for students. It is only in recent years that various technologies have been embraced by the educational community, in particular though the incorporation of media such as podcasting, or indeed the use of online collaboration and learning environments such as Moodle and Sakai. However, while very often more traditional approaches to assessment take precedence over the utilization of technology enhanced assessment, the provision of a means for evaluation and assessment are crucial to the success of any educational system. Within this system, the mobile Test (mTest) service fulfils this role. The mTest facility enables the educator to more effectively shape the learning
experience of the learners, ensuring the learner remains consistently engaged in the correct material. Indeed the main benefit of using quizzes is to provide a motivation for the learners to more actively engage in the material, without the stress associated with traditional exams. By providing valuable feedback to learners regarding their progression, they can be made aware of their progress in the assimilation of the presented course content, and discover the knowledge or skills they lack or may need to strengthen. Of course educators too may benefit from such information. By monitoring the progression of a group of learners, the educator can dynamically modify their instruction style, should a group of learners encounter difficulties and require additional remedial action. This enables the educator to dramatically optimize the performance of the group and enhance the overall learning experience. The mTest service must be capable of utilizing the full capabilities of the device on which it’s being accessed. Of course, more advanced capabilities afford content developers the opportunity to be more creative in the design of multimedia mTests. On low-capability devices with limited resources, a simple text format can be adopted for the creation of the assessments. However with devices capable of supporting multimedia, assessments may incorporate elements of text, images, sounds and even videos, all of which serves to actively engage learners in the material being assessed, especially when utilised in conjunction with the mLecture service [34]. It is imperative that educational processes cater for all students, no matter the capabilities of the accessing device used. This system seeks to ensure that every student has equal access to resources, and that no student is left unable to enjoy the educational benefits of the services provided.

With mobile technology already playing such a major role in the lives of modern students, and with many having already developed an extensive tacit knowledge of working with these devices in their everyday lives, these devices represent a huge opportunity to enhance traditional educational practices. Furthermore, the incorporation of these devices into educational practices can also facilitate educators with new and increasingly innovative methods of delivering educational solutions to students. Under the proper circumstances, mobile technologies can even be utilized to enhance the participatory nature of education. One such example of this is detailed in [2], where Kinsella describes the utilization of mobile phones to interact with large classes of students, soliciting responses, and assessing the students’ opinions via a SMS-based system. Another initiative, the ‘PLS TXT UR Thoughts’ project [35], involved an in-class interface being used to capture students’ SMS messages. The mobile phone numbers were logged, but not disclosed to the lecturer or students, ensuring anonymity, and as such, promoting more active engagement on the part of the students.

With projects such as these in mind, there are two very distinct approaches taken to the deployment of the mTest service. The first approach, type A, involves the utilization of the mTest service within the classroom environment, designed to enhance the participatory nature of education, just as was undertaken by Kinsella and Markett. Within the lecture hall, the lecturer may periodically deploy mTests to be executed during the lecture to obtain the current level of understanding of learning material by the class. As well as this, the lecturer can also use this service to harvest the opinions of students, which can often prove quite difficult when dealing with large classes. The second approach, type B, involves the deployment of mTests outside the environs of the lecture hall. With this approach, the mTest is utilized for general testing of knowledge, e.g. as part of midterm tests which contribute towards the final module assessment.

The following sequence diagram, Figure 6, illustrates the various entities involved in the facilitation of the mTest service. The two mTest types identified differ only in the approach adopted by the educator to the deployment of the mTests.
Fig. 6. mTest service.
5.2 Intelligent messaging service

Communication with peers can also greatly benefit students, as often another student’s perspective on material can aid in their own retention of material. One of the elements in most blended learning environments is the facility to promote dialogue between educators and students. Garrison and Kanuka [7] put forward that “the range and quality of interactive dialogue that can be facilitated through blended learning is congruent with the widely accepted means of facilitating critical thinking and higher-order learning”. Essentially, by promoting a dialogue between those involved in the educational process, emphasis is shifted from the assimilation of presented information, to the promotion of real understanding of the presented concepts and the development of skills beyond the original remit of the lesson, thus enabling a more meaningful educational experience for the students. The intelligent messaging service seeks to facilitate and enhance this dialogue, facilitating asynchronous communication between lecturers and students, and of course between students themselves, utilising a variety of communication methods. The service enables users to send and receive messages from a variety of devices, and intelligently delivers the message to whichever device the recipient is utilizing at that time, and according to his/her predefined preferences. If the recipient is within range of an InfoStation, the message may be delivered directly to their mobile device, or to their web browser if logged into the website. If the recipient is out of range of an InfoStation and disconnected from the service, the message is converted by the system into a SMS or email. The chosen method of delivery is defined through the users’ own personal preferences, where they define a list of users who may contact them at any time and others who can only contact them during work hours. All messages generated by registered users are accepted by the InfoStation system, with basic information about the message being logged in a database. The service then selects the most optimal method of delivery and conveys the message to the specified recipient, as illustrated in Figure 7. This service is particularly useful when deployed in conjunction with the mTest service, enabling the lecturer to notify students of upcoming mTests (type B) due for completion or indeed to provide information such as the points carried by each test for the final module assessment, etc.

![Intelligent Messaging Service Diagram](image-url)

**Fig. 7.** Intelligent Messaging Service.
Each of the communication methods added to the system is implemented as a Server. All servers are agents which run on one agent platform. This ensures that adding extra communication methods to the system only requires creating an agent to handle that new form of communication (of course editing the main server to route messages to this new agent is also required). Within this hierarchy, the Main Server interacts with each of the various messaging servers, as well as all of the InfoStations, routing messages between them based on the user’s details and preferences, which are stored in the database. Each of these servers can operate on a single hardware platform, provided the hardware requirements of the communication methods are met. For example, in order to facilitate the SMS Server, a GSM modem must be installed. Messages may be sent to individual users, to selected groups of users or indeed to whole class groups. Within an educational environment, this service can be used to notify students of changes to class times or to communicate directly with individual students. This is an especially useful tool, as the lecturer knows that all the recipients will receive the message wherever they are, and all responses will be received in the single format and to one device. The service enables students to communicate with other students in the class as well as with the lecturer, via the PAA onboard their mobile device, free of charge, whilst within range of the InfoStations deployed throughout the campus. Users can also access the service off campus from their mobile phone, using SMS or email, without having to share their phone number or email address with anyone other than the system. The user can also designate other users who may send them email or SMS at any time, and others who can only contact them during defined work hours. This would alleviate the privacy concerns both students and lecturers have with sharing their personal contact information, but still allows them to communicate using their mobile device, and control who can contact them. Any messages sent outside of specified work hours are added to a queue of messages and delivered at the most appropriate time. This ensures that users are not disturbed during their time off, but they can still receive the message. The following use case diagrams illustrate the operation of this service under certain conditions.

5.2.1 Use Case 1

Figure 8 illustrates a simple use case where a student (Student1) sends a message to another student (Student2) from off campus via the SMS part of the service. The message is conveyed by sending an SMS message to the service number and beginning the message with the recipient’s username. The recipient of this message, Student2, is also off campus and has set their preferences to receive all messages via SMS.

The InfoStation receives the message to the GSM modem and the SMS listener of the SMS Server Agent is called. The SMS Server retrieves the message and sends an ACL message to the Main Server containing the recipient of the message, the content of the message and the sender’s phone number. The Main Server Agent verifies the message by querying the database to check the username associated with the sender’s phone number. The Main Server Agent next queries the database for the recipient’s preferences. The Main Server Agent checks with the AMS (Agent Management System) to see if the recipient, Student2, is online. In this particular use case, the recipient is not. The Main Server Agent checks the recipient’s preferences and sees that this message should be delivered via SMS as soon as possible in these circumstances. The Main Server Agent sends an ACL message to the SMS Server Agent containing the content of the message, the phone number of the recipient, retrieved earlier as part of the user preferences, and the delivery time, which in this case is ‘now’. The SMS Server Agent adds the message to the ‘now’ queue, signifying that the message is to be processed as soon as possible and sent to Student2.
5.2.2 Use Case 2

A sequence diagram for a second more elaborate use case is shown in Figure 9; this better reflects a real-world use for the system and shows most of the features of the system. In this use case a lecturer (Lecturer) sends a message to a class of three students (Student1, Student2 and Student3). The Lecturer and Student1 are both logged directly into the service, via the mobile client. However, Student2 is not logged into the service, and has set their preferences to receive all messages via SMS at any time when not logged into the service, but wishes to receive no emails. Student3 is also not logged into the service and has set their preferences to receive messages from this lecturer via SMS only during work hours, but to receive emails from this lecturer at any time of the day. Student3 has defined their work hours as starting at 09:00 and ending at 18:00, Monday to Friday; it is currently 14:00 on Saturday. The Lecturer sends a message from the mobile client to an InfoStation, listing the class as the recipient. The message is received by the Main Server Agent. The Main Server Agent queries the database for the recipient of the message, which in this case is the group name. The database returns a list of the members of the group (Student1, Student2, and Student3). The Main Server Agent queries the database for the first user’s details (phone number, email address, preferences). The Main Server Agent checks with the AMS (Agent Management System) to see if Student1 is online, which in turn reports that Student1 is currently online. The Main Server Agent sends the message to the user’s PAA and the message is displayed on Student1’s mobile device. The Main Server Agent queries the database for the second user’s details (phone number, email address, preferences). The Main Server Agent again checks with the AMS to see if Student2 is online, however, in this case the AMS reports that Student2 is not online. The Main Server Agent checks Student2’s preferences and determines that this message may be delivered via SMS at this time. A
message containing the recipient’s phone number, the content of the message and a delivery time of ‘now’ is sent to the SMS Agent. The SMS Agent receives the message and adds it to the ‘now’ queue, signifying the message is to be delivered as soon as possible.

Fig. 9. Use Case 2: Lecturer-to-Students communication via varying mechanisms
Finally, the Main Server Agent queries the database for the third user’s details (phone number, email address, preferences). Again the Main Server Agent checks with the AMS to see if Student3 is online, which reports that Student3 is not currently online. The Main Server Agent again checks Student3’s preferences and determines that the message is to be delivered via SMS at 09:00 on Monday. Student3’s preferences also indicate that an email containing the message is to be sent now. The Main Server Agent passes an ACL message to the SMS Server Agent containing the recipient’s phone number, the content of the message and a delivery time of 09:00 on Monday is sent to the SMS Agent. The SMS Agent adds the message to the time queue for delayed delivery. The Main Server Agent then sends an ACL message to the Email Agent containing the recipient’s email address, the content of the message and a delivery time of ‘now’. The Email Agent, on receipt of this message, adds the message to the ‘now’ queue, signifying the message is to be sent as soon as possible. At 09:00 on Monday morning the SMS Agent delivers the message to Student3. From an educational standpoint, this service serves to facilitate a flexible means of communication between educators and students. Each user may define the operational characteristics of the service to suit their own individual context. Through the incorporation of this service into educational processes, the communicative potential of modern mobile devices in the spheres of learning can be fulfilled.

6. CONCLUSION

Within this paper the roles the technology-enhanced blended learning plays in modern educational institutions were highlighted, identifying in particular the benefits this approach can offer to learners. Also detailed was the underlying architecture facilitating access to the various mLearning services. The agent-oriented approach to this systems development was detailed, highlighting the main components which cooperate to facilitate users with a personalized and contextualized mLearning experience. Finally, some of the enhanced mLearning and information services were outlined.

ACKNOWLEDGEMENTS

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LEARNING MOTIVATION AS THE FACTOR OF STUDENTS' READINESS TO COMPLY ACADEMIC STANDARDS IN RUSSIA’S TRANSITION TO A TWO-TIER SYSTEM OF HIGHER EDUCATION

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Abstract

The article is devoted to the results of an empirical research on the relation between students' learning motivation and their readiness to comply with academic standards in Russia's transition to a two-tier system of higher education. In order to achieve this aim we used specially developed techniques that allow us to differentiate known and really existent educational motives and moral norms of teaching. It was found that the presence of the students serving motivational orientation and the result, and self-development, are created favorable conditions for formation of a high level of readiness to comply with academic standards.

Key words: learning motivation of students, the level of readiness to comply with academic standards, the normative value technique.

1. INTRODUCTION

The research actuality is required by the presence of the social needs – to put Russian educational system under world standards preserving the best national traditions. The case is that the introduction of two-tier system of education in many aspects is mediated by psychological conditions – above all the peculiarities of students’ motivation. Registration of the special learning motivation will contribute to the selection of rational and moral means of action, will improve efficiency of vocational training and in addition to this will lower level of students’ emotional intensity during the innovative period.

The problem of learning motivation of students is widely represented in the works of local and foreign authors (Aseev V.G., Biebrich R.R., Weisman R.S., Vasilyev I.A., Verbitsky A.A., Vilyunas V.K., Gordeeva T.O., Dodonov B.I., Ilyin E.P., Kornilov T.V., Leontiev D.A., Leontiev V.G., Milman V.E., Morgun V.F., Orlov Y.M., Rean A.A., Smirnov S.D., Friedman L.M., H. Hekhauzen, Yakunin V.A., E. Deci, C. Dweck, R. Emmons, W. Lens, J. Nuttin M., R. Ryan, M. Seligman, B. Weiner and many others). However, across a variety of studies that reveal patterns and mechanisms of learning motivation, the problem is due to its complexity has not yet received a unique solution (Bakshaeva, Verbitsky, 2006). Existing approaches are based on various methodological grounds, are characterized by fragmentation and lack of consistency between the theory and techniques that allow you to check its validity. Key questions about the very notion of learning motivation, the classification of levels of development and criteria for their selection, an adequate method for studying the direction and measures the effectiveness of learning motivation of students and the impact on the structure of learning activities are remain open.
2. PURPOSE, DIAGNOSTIC TECHNIQUES

The article covers the results of the specially conducted experimental research which purpose was to study the relation between students' learning motivation and their readiness to comply with academic norms. By the peculiarities of the academic motivation we mean the orientation nature of the key motives range (orientation only on a result, on a desired mark or, in addition, on self-development) and the motives’ efficiency rate (if they play role of known motives only or also of the existent ones). Three maturity levels of the academic motivational component (high, medium and low) are based on these two criteria. High maturity level of the academic motivational component requires existent motives and a wide range of their orientation, both on a mark and on self-development. Medium maturity level of the academic motivational component pertains to narrow-orientated students: only on a desired mark. Low maturity level of the academic motivational component is characterized by broad or narrow orientation of the key motives range functioning as known ones. A level of academic motivation maturity is determined through the way in which a type of key motives range and students’ behaviour are linked. If the motives content is matched by the behaviour content and they are socially approved (are a purpose of the educational activity), then it is the highest level of academic motivation development. If the motives comply with the behaviour content but are limited by the need in a good mark it is the medium level. If the motives of the behaviour choice are inconsistent with the students’ acts (motives are only known), then development of the academic motivational component is at the low level (Gerasimova, 2006).

Under the readiness to comply with academic standards, we understand the three levels of its development (high, medium, low). Three maturity levels of readiness to comply with academic standards are based on three criteria: 1) availability of knowledge about academic standards, and 2) the use of academic standards for the emotional assessment of the situation as a moral or immoral, and 3) the application of these rules as standards for choice moral behavior in this type of situation. Readiness is absent if the student finds a valid breach of any academic standards. The low level of readiness has a student who does not admit the possibility of violations, but he does not survive such a situation negatively (calm or satisfied by it) and he defied the ban. In this case, knowledge of academic standards for student has only cognitive value, serves for recognition of the situation. The medium level of preparedness has a student who does not admit the possibility of violations, is experiencing a situation as alarming, but he violates the ban. In this case, knowledge of academic standards has not only cognitive, but also evaluative function for student. The high level of preparedness demonstrates a student who does not admit the possibility violations, is experiencing a situation as alarming and does not violate the ban. In this case we speak about cognitive, appraisal and control of behavior value of academic standards for students.

To achieve goal of research was necessary to solve the following tasks: 1) investigate the peculiarities of learning motivation of students of various courses, and 2) determine the level of readiness of these students to respect academic standards, and 3) to compare for each patient two groups of data: the nature of learning motivation and the level of readiness to comply academic standards adopted by the university.

As a certain diagnostic technique we applied the specially designed value - normative technique which enables us to acquire all necessary data on the main features of the students’ academic motivation: its maintenance, activity rate and degree of stability. It implements a valuable- activity approach to psychodiagnostics of valuable - motivational phenomenon’s of personality (Zalessky, 1994) and includes two types of diagnostic tasks: 1) a system of tasks for value - semantic orientation while preparing a graduation thesis which makes it possible to assess the type and degree of stability of
students’ motivational orientation; 2) a questionnaire to analyze criteria for their own assessment of successfulness which helps to determine the orientation and stability of students’ behaviour within such educational activity. By comparing orientation and stability of students’ ideas expressed in respect to the educational activity motivation, on one hand, and criteria for their own assessment of its successfulness, on the other hand, it is possible to define the connection of a certain motive and behavior (if they are consistent or inconsistent) and assess the activity rate of motivation, its role in behavior regulation (we deal with only known motive or also existent).

Each task from a system of tasks for valuable - motivational orientation contains a description of the opinion of member of group discussion about motivational orientation of students in the writing of the diploma, the statement about the benefits of some of the leading motives. At the same time in the problem are obstacles that make it difficult to decide in favor of the "correct" (public approves) the position and make it easier to choose the "wrong" position. Such interference in our case is effect of the majority and the authority of the speaker. "Correct" position is taken by those students who, in spite of the confounding factor, are targeted, they believe, not only to achieve the result (desired estimates), but also for cognitive interest, self-knowledge, self-development. Students show worldly opinion, when they find it necessary to follow a narrow range of academic motivation, and focus only on achieving the desired estimates.

To each text is attached form for answer, in which asked to select and highlight one of the ways to behavior in group discussion (will support the opinion of the speaker, make a rebuttal, refrain from speaking).

Thus, the sequence of diagnostic problems for value - semantic orientation in a group discussion reveals three main groups of students according to their preferred type of the spectrum of the leading motives for learning: students with a wide range of leading motives type (not only for certification, but also on self-knowledge and self-development), students with a narrow spectrum of the type of leading motives (if only to write a paper and get a diploma), students with situational, unstable motivational orientation.

In the group of students with a broad motivational orientation, we include those students who in all the test items showed a "correct" (public welcome) position, opposed to a narrow, utilitarian view of the degree work as a means of obtaining the desired estimates and associated good things of life, and maintain perspective on the implementation of the degree work not only as a way to get the document on higher education, but also as a means to meet the cognitive interest, self-knowledge and self-development. In the group of students with a narrow motivational orientation, we include students who have "wrong" (worldly) position in all tasks maintain a narrow, utilitarian view of the degree work and deny a broad meaning of diploma as a means of knowledge, self-knowledge and self-improvement. In the group with unstable motivational orientation included students who hold "contradictory" position on the spectrum of the type of the leading motives of writing a diploma - that support it, and then deny the narrow, utilitarian view of learning activities in the form of degree work.

In order to identify measures the effectiveness of motivational orientation of students and of the grade level of development motivational component we needed to first obtain another group of data - data about the content of criteria their own assessment of successfulness in the process of writing a diploma. Specially designed for this purpose a questionnaire contains a list of the 10 cases, 5 of which are characterized by "narrow" the motivational orientation of students only on the result (the desired estimate) (№ 1, 3, 4, 6, 9) and 5 cases (№ 2, 5, 7, 8, 10) - "broad" motivational orientation (not only on the result, but also for self-development). The subject is asked first to choose from these situations,
those who, in his view, are indicators of the success of its learning activities, or write your answer. Then he needs to rank his choices in order of importance for him.

How to identify a group of criteria that is most relevant for a particular student? For each student, we watched as the number of selected criteria relating to a particular group, and their ranking position. If the student chose only the "narrow" criteria, or they took the first position in the list (regardless of whether their more or less than the "broad" criteria), then is prevalence of this type of criteria. But if the criteria are different types alternated with each other, and was chosen as approximately equal number of "narrow" and "broad" criteria, the conclusion was drawn in favor of the criteria for implementing a broad motivational orientation and on a diploma, and for self-realization. Recall that by comparing orientation and stability of students' ideas expressed in respect to the educational activity motivation, on one hand, and criteria for their own assessment of its successfullness, on the other hand, it is possible to define the connection of a certain motive and behavior (if they are consistent or inconsistent) and assess the activity rate of motivation, its role in behavior regulation (we deal with only known motive or also existent).

The level of preparedness of students to comply with academic standards has been studied by means of a specially designed, questionnaire of A. Gerasimova "Study of the level of formation of the student’s moral values." We showed to students several forms consistently. In the first form contained a list of violations of academic standards that students are sometimes allowed to perform various types of written work (for offsets, examinations, when writing essays, term papers and theses): 1) copying - the use of any non-approved instructor in writing (typed or handwritten) sources during the passage of knowledge control, and 2) the double delivery of written work - presentation of the same text as the various written works for the passage of interim control of knowledge, and 3) fraud in the performance of written work - passing the written work done by another person as their own work to the passage of landmark knowledge control, and 4) plagiarism - using someone else's written work in the text, without full attribution, or with links, but when the volume and nature of the text call into question the independence of the work performed, and 5) fabrication - the formation of dummy data or intentional misrepresentation information about data sources and results for the passage of landmark control of knowledge.

We emphasize that the list of violations is taken from the "Regulation on the application of disciplinary sanctions for violation of academic standards in the writing of written academic work in Belgium", adopted in Belgorod State University in 2008.

Then the subjects were asked to distribute these types of violations (their numbers) in four areas: a) these acts are permissible in its sole discretion, and b) these actions are acceptable in its sole discretion, but within certain boundaries, and c) these actions are highly undesirable, but in exceptional cases acceptable, and d) these actions are categorically unacceptable. Next, students are offered a table where it was necessary to indicate: 1) Had they met with such violations in their practice? 2) What kind of the emotions were they modulating while there? 3) Did they make the same way?

Processing and interpretation of the data was carried out as follows. Summary table was compiled (separately for the 2nd and 4th year), in which compared three groups of data: acceptable and unacceptable violations of academic norms for students, their emotional feelings that arise in such situation, and characteristics of personal conduct in a similar situation. Thus, it is possible to answer the question about the psychological role played by knowledge of academic norms: only cognitive, or cognitive and evaluative function, or to the same function of regulating behavior.
In ascertaining experiment involved 60 people: 30 students of the second year and 30 students of the fourth year from Geology and Geography faculty, National Research University «Belgorod State University». The choice of such a contingent of subjects makes it possible, in our view, to obtain additional data on the characteristics and dynamics of the learning motivation of students and their willingness to comply with academic standards in process of teaching at the university.

3. RESULTS

Let us now address the most interesting data received during the empiric research and allows us to check the consistency of the hypothesis put forward by the nature of the relationship between psychological variables. We hypothesized that in the general direction of the current and the result on self-development, creating favorable conditions for the formation of a high level of readiness of students to comply with academic standards. It is also expected differences in the nature of educational motivation and level of readiness of students to comply with academic standards, depending on the stage of education (junior or senior courses). First we look at the data, clarify the answer to the question of the level of learning motivation of students at different stages of training (initial and final) (see Table 1).

**Table 1.** The distribution of students from different courses depending on the level of their learning motivation (in %)

<table>
<thead>
<tr>
<th>Level of learning motivation</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students of the second year</td>
<td>65</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Students of the fourth year</td>
<td>40</td>
<td>35</td>
<td>25</td>
</tr>
<tr>
<td>Total number of students</td>
<td>52,5</td>
<td>20</td>
<td>27,5</td>
</tr>
</tbody>
</table>

The table shows that high levels of academic motivation shows about half of the students (52.5%), while the other half shows a low (27.5%), or the average level of learning motivation (20%). In this case, there are differences in the level of learning motivation of students of the 2nd and 4th courses. It was found that the percentage of students with a broad orientation and acting on results and self-development, which is the goal of educational work at the university, higher in the initial phase of training (65% compared to 45%). But the final year to sharply narrow the number of students with actions aimed only at the result, obtaining a diploma (from 5% to 35%, respectively). Percentage of students with low levels of academic motivation (wide or narrow know the direction, or unstable situational motivational orientation) does not change during training at the university.

We now consider the empirical data on the ratio of students 2 and 4 courses to a breach of academic standards in the writing of written work.
Table 2. The distribution of students in different courses depending on their personal relationship to a breach of academic standards in the writing of written work (in %)

<table>
<thead>
<tr>
<th>Types of the relation</th>
<th>Allow the possibility of violations</th>
<th>Do not allow the possibility of violations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 course</td>
<td>4 course</td>
</tr>
<tr>
<td>Copying</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>Double delivery of written work</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Forgery</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Plagiarism</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Fabrication</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

The table shows that stand out such academic standards for which students assume the possibility of violations to a greater extent. These include cheating, plagiarism and dual delivery. For example, most students in 2nd and 4th courses (95% and 100% respectively) believe cheating is possible. About half of the subjects at 2nd and 4th courses (45%, respectively) can be plagiarism of written work in order to receive credit. Approximately one-third of students regardless of the course (30% and 45% respectively) were used to in their view, the double delivery to achieve educational goals. The number of students of 4th year, admitting a violation of academic standards, is higher than the 2nd course.

At the same time there are academic standards (such as forgery and fabrication of data), which, according to students who violate the highly undesirable. Indeed, only 10% of 2nd year students and 20% of 4-year permit forgery (using someone else's work as your own). Slightly more subjects - 20% 2nd year students and 30% of students in 4th year - believe it possible to fabricate data (an intentional distortion of information about data sources and results). Unfortunately, we are again witnessing a great loyalty to a breach of academic standards for undergraduates.

Thus, the results of our research showed that copying, plagiarism and double submission of work are less serious violations than the forgery and fabrication of data for students of 2 and 4 courses. At the same time we must note that in the process of learning at the university and the accumulation of experience in the implementation of various written works, students begin to apply academic norms less strictly.

Now we turn to the data, explaining the answer to the question of what level of preparedness of students to comply with academic standards.
Table 3. The distribution of 2nd year students, depending on the level of readiness to comply with academic standards (in %)

<table>
<thead>
<tr>
<th>Kinds of violations</th>
<th>The level of readiness</th>
<th>Low level (academic rate does cognitive function of situation)</th>
<th>Medium level (academic rate does cognitive and evaluative functions)</th>
<th>High level (academic rate does cognitive, evaluative and regulatory functions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copying</td>
<td>95</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Double delivery of written work</td>
<td>30</td>
<td>5</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Forgery</td>
<td>10</td>
<td>7</td>
<td>23</td>
<td>60</td>
</tr>
<tr>
<td>Plagiarism</td>
<td>45</td>
<td>5</td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>Fabrication</td>
<td>20</td>
<td>0</td>
<td>5</td>
<td>75</td>
</tr>
</tbody>
</table>

Analysis of the table (and especially its last column, which represents the % of students with a high level of readiness to comply with academic standards) suggests three groups of disorders, depending on the attitudes of students 2nd year.

The first group of violations which admits the majority of students is copying and plagiarism. Only 4% of the students have a high level of readiness "not to write off". In other words, among sophomores this action is in fact not a violation that is contrary to social norms. In second place in this negative rating is plagiarism. Two-thirds of students (77%) admit this violation during the study and only one-third of students (33%) show a high level of readiness do not to resort to plagiarism.

We distinguish a second group of violations of academic standards (fabrication, falsification), the ratio to which the vast majority of sophomores is clearly negative, which is consistent with social norms. Indeed, 75% and 60% students of 2 year students, being witnesses of data fabrication or forgery, experienced anxiety, discomfort, and said they have never committed such acts.

Ambiguous and contradictory can be called the students' attitudes to the third group of violations that includes the delivery of the double work. The positions were divided. One half of the 2nd year students (50%) consider it permissible to double delivery of written works, the other half - does not allow for such a violation.

Consider the data about the level of readiness to comply with educational standards of students 4th year. These data are presented in Table 4.
Table 4. The distribution of students' 4th year, depending on the level of readiness to comply with academic standards (in %)

<table>
<thead>
<tr>
<th>Kinds of violations</th>
<th>The level of readiness</th>
<th>Readiness is not (academic rate does not recognize situation)</th>
<th>Low level (academic rate does cognitive function)</th>
<th>Medium level (academic rate does cognitive and evaluative functions)</th>
<th>High level (academic rate does cognitive, evaluative and regulatory functions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copying</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Double delivery of written work</td>
<td>45</td>
<td>25</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Forgery</td>
<td>20</td>
<td>37</td>
<td>10</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Plagiarism</td>
<td>45</td>
<td>15</td>
<td>3</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Fabrication</td>
<td>30</td>
<td>27</td>
<td>5</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>

The table shows that the readiness to comply with academic standards dramatically reduced by 4 course. All students in this group (100%) made use copying, and the vast majority (85%) made use dual delivery during training at the university. In addition, students of 4 year often tolerate behavior which are considered more "serious": forgery and fabrication of data. Only one-third of students (33% and 37% respectively) show high level of readiness to comply with these academic standards. From the standpoint of the activity approach this fact can be explained by several factors both external, pedagogical (for example, the lack of approved sanctions for violations), as well as internal, psychological (motivational orientation of undergraduates at the result, to obtain a diploma).

Table 5. Type of connection between the peculiarities of learning motivation and the level of readiness to comply with academic standards for university students (the quantity of combinations in %)

<table>
<thead>
<tr>
<th>The level of readiness</th>
<th>The level of learning motivation</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Readiness is not</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High</td>
<td>51,5</td>
<td>20</td>
<td>19</td>
<td>9,5</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>37,5</td>
<td>12,5</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>7,2</td>
<td>11</td>
<td>45,5</td>
<td>36,3</td>
</tr>
</tbody>
</table>

The table shows that take place the relation between level of learning motivation and the level of readiness to comply with academic standards among university students. Indeed, from a group of students with high levels of academic motivation, most (71.5%) have either a high or medium level of readiness to comply with academic standards. At the same time, students with low levels of
educational motivation demonstrate in most cases (81.8%) or lack of readiness, or its low level. The average level of learning motivation (narrow operating focus on the results) can be combined with any level of readiness to comply with academic standards.

ACKNOWLEDGEMENTS

Thus, the hypothesis was confirmed that peculiarities of students’ learning motivation affect their readiness to comply with or disrupt the academic norms. At a high level of learning motivation conditions are favorable for the formation of the higher level of readiness to comply with academic standards. It was also found that students of 2nd year more often students of 4th years show a broad focus on results and on self-development and a readiness to behave in accordance with academic norms. Perhaps it is a prerequisite and a consequence of their successful adaptation to new social situation of development.

We have done empirical research on student motivation as a factor in readiness to choose the moral means of training activities, but it is only the first phase of development this problem. The results are obviously requires further refinement and testing. It is necessary to study questions raised by us, involving much larger sample of students, which will be enough for rigorous statistical analysis of the data. On the other hand, our study was based on the application of the "slice"- methods, in fact, on the in rather limited the possibility of stating experience. In the next stage of studying the problem you want to use the possibility of forming experiment and to expand with his help the subject of study by identifying the reasons for the lack of motivation and moral readiness of students, as well as the specific means of correction.

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Abstract
In this paper we investigate relative importance of growth factors in Croatia during 1968-2008. Growth accounting methodology is employed in order to estimate relative importance of human capital on growth rates of Croatia. This work stems from previous estimates of initial capital levels, pre-transition GDP per capita and two estimates of human capital in Croatia. The analysis is interesting on two fronts: first, it investigates relative importance of human capital; second, it allows us to compare relative importance of accumulation of production factors and total factor productivity (TFP) growth before and after transition. Our results suggest that human and physical capital were dominant and equally important during the entire period, with negative contribution of TFP before 1990 and increased role of TFP and human capital after the 1997.

Key words: economic growth, human capital, growth accounting, transition

1. INTRODUCTION
Throughout history, people have been interested in their society’s growth and development. Nowadays, economic growth is being formally studied by numerous economic researchers. Among many potential factors that are suspected to stimulate economic growth, human capital in the form of education might be one of the most promising to boost sustainable economic growth. Many economic theories and growth models were developed supporting this role of human capital in economic growth and significant number of empirical studies confirmed it. That confirmation of positive human capital impact on economic growth guaranteed an important role of education in public policies of many countries around the world. Croatia has also recognized its enormous significance. However, empirical literature that investigated contributions of production factors to Croatian economic growth has mostly ignored the question of labor quality used in national production processes. Also, there are no empirical studies that investigate the factor contributions for the pretransition period and period of early transition in Croatia. This paper, thus, uses growth accounting approach to analyze the contributions of physical capital, labor and especially human capital growth to economic growth in Croatia in the period from 1968 to 2008, with a special attention on two subperiods: period before and after the beginning of transition process.

First, paper lays out a survey of growth theories throughout history that implicitly or explicitly recognized and included human capital i.e. quality of labor input as an important factor. In addition, there is a short survey of empirical literature on contributions to, primarily Croatian, economic growth. After methodology and data overview, the paper presents the results of a growth accounting analysis of Croatian growth rates from 1968 to 2008.
2. SURVEY OF GROWTH THEORY AND EMPIRICAL STUDIES

Throughout the history, even in ancient civilizations, knowledge and education was, in various forms, regarded as an important factor of progress of one society. In recent times, incorporated in concept of human capital, education is formally studied in various formulations of economic growth as one of the most important factors of production. Since economic growth is relatively modern phenomena that virtually did not exist before industrial revolution in Great Britain, it is the 2nd half of the 18th century that the first theories of economic growth started to develop. Human capital i.e. quality of labor input was, implicitly or explicitly, present in them from the beginning.

Adam Smith was the first to claim that it was, among other factors, specialization (stimulated by technological progress and international trade) that significantly contributed to economic growth. Although not explicitly, through specialization Smith set forward the positive role of knowledge accumulation in economic theory. Another economist who saw the importance of education was Alfred Marshall. He believed that the most important capital was the one invested in people and their development, and, hence, saw human capital as the most important component of production process. Joseph A. Schumpeter, on the other hand, had knowledge embodied in his innovative entrepreneur. He claimed that there were no decreasing returns on innovation. According to him, deceleration of growth rates was the consequence of factors like bureaucracy that halted the full employment of existing innovators and their knowledge. Sir Roy F. Harrod and Evsey Domar also did not include technology directly into their growth model, but still they stressed the importance of technology in capital accumulation and hence in the process of economic growth. It was Robert Solow who introduced technology directly into his neoclassical model of economic growth and concluded that output and capital per capita grew at the exogenous rate of technological progress. And although Solow did not explicitly include human capital into his model, he nonetheless stated that shifts of production function (i.e. technological progress) had to represent enhancements in quality of labor inputs.

Since 1980’s there has been a development of new, endogenous growth models with endogenous technological change. Models closest to neoclassical model, developed by e.g. Romer (1986), Lucas (1988, 1993), Scott (1991) and others, mostly based on the work of Kenneth J. Arrow from the 1960’s, modified Solow’s model by extending the capital input on physical and human capital and recognizing the role of human capital accumulation (i.e. education) in the process of economic growth. Others like Romer (1990), Grossman and Helpman (1990), Aghion and Howitt (1992, 2007) and others focused on technology stating that the rate of economic growth depended on the amount of resources used in innovation activities. Romer (1990) hence concluded that economy with greater quantity of human capital will grow faster.

Although both ‘old’ and ‘new’ growth theories had their share of critics and approvals, Barro (1999) emphasized that they are really more complementaries than substitutes. Available empirical body of research mostly combines the two. Solow’s model has been extended many times by numerous economic theorists and empirics to include additional factors of production and stochastic

1 Agnus Maddison estimates that there was no economic growth before year 1500, between 1500 and 1700 average annual growth rate was merely 0,04% and from 1700 till 1820 just 0,07%. Even in Western Europe average annual growth rate from 1500 to 1820 was not more than 0,14%. (Weil, 2009)

2 Marshall advocated compulsory public education even before Education Act in England in 1870, which installed compulsory primary education financed by the state.
characteristics\(^3\). It was this model that stimulated huge interest of developed countries for encouraging education and research and development.

Solow’s neoclassical model is today widely used as starting point and main tool in the analysis of economic growth. Based on neoclassical production function\(^4\), it resulted in so called growth accounting method which dissembles economic growth rates on the contributions of different factors of production (mainly labor and physical capital) and technological progress (i.e. Solow residual). Basic growth accounting equation

\[
\frac{\dot{Y}}{Y} = \frac{\dot{A}}{A} + \alpha \frac{\dot{K}}{K} + \beta \frac{\dot{L}}{L}
\]

shows that output growth rate \(\frac{\dot{Y}}{Y}\) equals the sum of rate of technological progress \(\frac{\dot{A}}{A}\) and weighted sum of physical capital and labor growth rate, \(\alpha \frac{\dot{K}}{K}\) + \(\beta \frac{\dot{L}}{L}\). \(\alpha\) and \(\beta\) are, respectively, capital and labor shares in national product, \(\alpha = s_K = \frac{F_K}{Y} K\), \(\beta = s_L = \frac{F_L}{Y} L\), \(\alpha + \beta = 1\). It should be noted, though, that this equation holds as long as factors of production are paid their marginal product.

Technological progress is usually called total factor productivity (TFP) growth or Solow residual growth since it represents the residual part of economic growth that is not explained by observed growth of physical capital or labor, i.e.:

\[
\frac{\dot{A}}{A} = \frac{\dot{Y}}{Y} - \alpha \frac{\dot{K}}{K} - \beta \frac{\dot{L}}{L}
\]

Obviously, Solow residual is somewhat fuzzy measure of technology since it contains all (unknown) factors that contribute to economic growth apart from physical capital and labor. In addition, since physical capital and labor variables present heterogeneous units aggregated as homogenous, their quality differences and quality changes are ignored. The capital that enters production process might become more durable, labor might become more skillful and educated, but these changes will not be reflected in the growth rates of, respectively, physical capital and labor. These quality changes will thus enter Solow residual.

In the attempt to explain the Solow residual at least partially, many researchers did various adjustments of independent variables (both physical capital and labor) to account for their heterogeneity concerning their structure and quality\(^6\). Physical capital is rarely adjusted due to its measurement issues. Labor, on the other hand, has often been adjusted for its structure and quality, i.e. human capital. Labor variable is then seen as a vector containing employed population divided by their education level, age, sex etc. and in growth accounting analysis accompanied by corresponding vector

\(^3\) See Cass(1965.), Koopmans(1965.), Mankiw, Romer and Weil (1992.) etc.
\(^4\) Usually Cobb-Douglas production function with Hicks-neutral technology and constant returns to scale.
\(^5\) Constant returns to scale.
\(^6\) However, there are limitations to this process of residual squeezing. Since growth accounting is based on the specific theoretical model and requires income shares of all factors of production under consideration, it is impossible to include every possible factor that might influence economic growth.
of each subgroup’s income shares. One example of such studies that took into an account labor quality was Young’s (1995) analysis of growth rates in Singapore, Hong Kong, North Korea and Taiwan in a period from 1966 to 1990. After adjusting the labor variable, relative contribution of labor increased from 30% to 36%, explaining the part of Solow residual and thus decreasing the contribution of TFP growth from 27% to 19%.

In the case of Croatia, the conducted studies have mostly concentrated on ‘raw’ labor variable. Burda and Severgnini’s (2008) results, thus, suggest that TFP growth was the main contributor to Croatian economic growth in the period from 1998 to 2003, followed by capital accumulation. Moore and Vamvakidis (2007) obtained similar results for the period from 1996 to 2005. (Table 1) The largest contribution again comes from TFP or physical capital growth (depending on used data source). Both studies agree on the least contribution of labor to economic growth in Croatia.

Table 1. Contributions of TFP, physical capital and labor to economic growth in Croatia; Burda and Severgnini (2008), Moore and Vamvakidis (2007)

<table>
<thead>
<tr>
<th>Period</th>
<th>TFP contribution</th>
<th>Physical capital contribution</th>
<th>Labor contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burda and Severgnini (2008)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998-2003</td>
<td>58.7%</td>
<td>37.7%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Moore and Vamvakidis (2007)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996-2001</td>
<td>41.7%</td>
<td>88.9%</td>
<td>-30.6%</td>
</tr>
<tr>
<td>2002-2005</td>
<td>23.4%</td>
<td>57.4%</td>
<td>19.2%</td>
</tr>
<tr>
<td>Average (1996-2005)</td>
<td>34.4%</td>
<td>76.3%</td>
<td>-10.7%</td>
</tr>
<tr>
<td>Data source: HNB⁷</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996-2001</td>
<td>88.9%</td>
<td>41.7%</td>
<td>-30.6%</td>
</tr>
<tr>
<td>2002-2005</td>
<td>34.0%</td>
<td>46.8%</td>
<td>19.2</td>
</tr>
<tr>
<td>Average (1996-2005)</td>
<td>67.0%</td>
<td>43.7%</td>
<td>-10.7%</td>
</tr>
<tr>
<td>Source: DZS⁸</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: authors’ calculation based on data in Burda and Severgnini (2008) and Moore and Vamvakidis (2007)

The only paper that examines the contribution of labor once adjusted for its quality, namely human capital⁹, is done by Tica and Đukec (2008). Their results confirm expected larger contribution of labor after the correction is made. (Table 2. Contributions of TFP, physical capital and human capital to

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⁷ Croatian National Bank, [www.hnb.hr](http://www.hnb.hr)
⁸ Croatian Bureau of Statistics, [www.dzs.hr](http://www.dzs.hr)
⁹ Weighted sum of workers, with weights being income differences based on attained education level.
economic growth in Croatia; Tica and Đukec (2008) Table 2) For the period from 1997 to 2006, they conclude that contribution of human capital growth in Croatia exceeded the one of TFP.

<table>
<thead>
<tr>
<th>Period</th>
<th>TFP contribution</th>
<th>Physical capital contribution</th>
<th>Human capital Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-2001</td>
<td>51.6%</td>
<td>29.0%</td>
<td>19.4%</td>
</tr>
<tr>
<td>2002-2006</td>
<td>10.4%</td>
<td>62.5%</td>
<td>27.1%</td>
</tr>
<tr>
<td>1997-2006</td>
<td>27.5%</td>
<td>47.5%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

Source: authors’ calculation based on data in Tica and Đukec (2008)

3. METHODOLOGY AND DATA

The existing estimates of factor contributions to economic growth in Croatia have mostly ignored the question of labor quality used in national production processes. Also, there are no empirical studies that investigate the factor contributions for the pretransition period in Croatia. That is why this paper uses growth accounting approach to analyze the contribution of TFP, physical capital, labor and especially human capital growth to economic growth in Croatia in the period from 1968 to 2008, with a special attention on two subperiods: before and after the beginning of transition process. The data used in the analysis are annual and obtained from Croatian Statistical Yearbooks and Croatian National Bank data. The length of the observed period is limited by the unavailability of data on investments prior to 1967 and after 2008.

Output variable (Y) is presented by gross domestic product (GDP). Due to methodological inconsistencies in the periods before and after the transition, authors use annual GDP data estimated by Tica (2004.) for the pretransition period. From 1990, this time series has been extended by growth rates provided by HNB, WDI and TEDI which mostly correspond to the data from Maddison Data Base on the World Economy.

Labor variable (L), again due to methodological issues in the pre- and posttransition periods, presents the number of employed people without those employed in public administration, police and defense.

Physical capital variable (K) was generated using the GDP data and the data on gross fixed capital formation in fixed assets from Croatian Statistical Yearbooks. For the initial physical capital stock in 1967, authors used fixed funds estimated by Družić and Sirotković (2002), based on real inventory

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10 Tica (2004) represents currently the most precise estimate of pretransition GDP for Croatia.
11 World Development Indicators
12 Total Economic Development Indicators
13 Maddison’s pretransition data are also used by Tica (2004)
efforts mostly done by Ivo Vinski. Using linear perpetual inventory method\(^{14}\) and 5% rate of depreciation, authors generated the physical capital data for the rest of the observed period.

In this paper, human capital has been presented by two different measures\(^{15}\). First one (HC1) presents adjustment of labor variable for the differences in average monthly pay between groups of workers with different education levels. Variable has been constructed according to formula:

\[
HC1 = \sum_a \frac{AVG_w^a - AVG_{wLQ}}{AVG_{wLQ}} \cdot L_a
\]

where \(a\) represents different educational levels, \(AVG_w^a\) average monthly pay of a group of workers with \(a\) being their highest attained education level, \(AVG_{wLQ}\) average monthly pay of the least qualified group of workers and \(L_a\) total number of workers with \(a\) being their highest attained education level. Hence, one worker with no human capital (i.e. least qualified worker) counts as one effective worker, while workers that have certain amount of human capital count as more-than-one effective workers, depending on the amount of human capital they possess. This measure is a good approximation of human capital only as long as wages reflect true labor productivity. Second human capital measure (HC2) is commonly used measure – average years of schooling of the employed. The variable is obtained using the following formula:

\[
s = \sum_a \left[ n_a \left( \sum_{i=1}^{a} D_i \right) \right]
\]

where \(n_a\) presents the share of workers whose highest attained level of education is \(a\) \((n_a = \frac{L_a}{L})\) and \(D_a\) the duration of education until the completion of level \(a\) in years.

Finally, income shares were calculated using data on primary incomes from Statistical Yearbooks. Income share of physical capital was calculated as a share of gross operating surplus (GOS) in the sum of gross operating surplus and compensation of employees (CE), i.e.:

\[
\alpha = s_K = \frac{GOS}{CE + GOS}
\]

\(^{14}\) In contrast to geometrical perpetual inventory method \(K_t = \sum_{i=0}^{n-1} \left(1 - \delta \right)^i I_{t-i} + \left(1 - \delta \right)^n K_{t-n}\), linear perpetual inventory method ensures total depreciation of initial capital stock after \(\frac{1}{\delta}\) periods:

\[
K_t = \sum_{i=0}^{n-1} \left(1 - i\delta \right) I_{t-i} + \left(1 - n\delta \right) K_{t-n}
\]

where \(K\) represents physical capital, \(I\) investments and \(\delta\) rate of depreciation. In our case, complete initial capital stock depreciation occurs after 20 years. That means that after the year 1988, the measure of physical capital is no longer under the influence of the choice of initial capital measure.

\(^{15}\) Wößmann (2003)
In such a way, gross mixed income was excluded from the calculation since it is unknown which part of this income belongs to labor and which to physical capital. Certain adjustments were necessary in order to connect the periods before and after the beginning of transition, and linear interpolation was used for the years where data were missing. Income share of labor was obtained from the model’s assumption of constant returns to scale i.e. $\beta = s_N = 1 - \alpha$. On average, in the entire period of interest, share of physical capital is 0.38 and share of labor 0.62 respectively. (Грешка! Източникът на препратката не е намерен.)

Graph 1. Factor shares in Croatia, 1968-2008

Source: authors’ calculation

4. RESULTS

Results of growth accounting analysis for Croatia for the period from 1968 to 2008 are given in Грешка! Източникът на препратката не е намерен. The total period has been divided into two subperiods: period before (1968-1989) and after transition (1990-2008).

Results from Table 3 confirm that the choice of labor or either measure of human capital does not influence the contribution of physical capital to economic growth. It only influences the contributions of labor i.e. human capital and TFP, in a way that adjustment of labor variable for labor quality ‘squeezes the residual’ and, hence, its contribution to economic growth. In the rest of the paper, these results will be analyzed more thoroughly.


Relative factor contributions for the period between 1968 and 1989 presented in Table 3 are shown on Graph 2. Average relative contribution of uncorrected labor is smaller, although not significantly, than after the correction for human capital is made. It shows the biggest contribution in the case of HC2 i.e.
average years of schooling of the employed. One should recall that HC1 presents labor adjusted according to wage differentials between groups of workers with different attained educational levels, assuming that wages truly reflect labor quality i.e. workers’ marginal product. For the period under consideration, the period characterized by socialism, such an assumption is not valid. Namely, due to full employment policy that was conducted at the time regardless of true worker productivity, one can justifiably doubt the suitability of HC1 as a measure of human capital. The HC2 measure appears to be a better choice.

Table 3. Relative factor contributions to Croatian economic growth, 1968-2008

<table>
<thead>
<tr>
<th>Period</th>
<th>TFP relative contribution</th>
<th>K relative contribution</th>
<th>L or HC relative contribution</th>
<th>Average Y growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968-2008</td>
<td>23.25%</td>
<td>47.80%</td>
<td>28.95%</td>
<td>2.3%</td>
</tr>
<tr>
<td>1968-1989</td>
<td>0.36%</td>
<td>55.74%</td>
<td>43.90%</td>
<td>3.6%</td>
</tr>
<tr>
<td>1990-1996</td>
<td>9.97%</td>
<td>-48.48%</td>
<td>-61.49%</td>
<td>-4.2%</td>
</tr>
<tr>
<td>1997-2008</td>
<td>41.33%</td>
<td>34.57%</td>
<td>24.10%</td>
<td>3.8%</td>
</tr>
<tr>
<td>1990-2008</td>
<td>133.53%</td>
<td>9.57%</td>
<td>-43.10%</td>
<td>0.9%</td>
</tr>
<tr>
<td>HC1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968-2008</td>
<td>7.53%</td>
<td>47.80%</td>
<td>44.67%</td>
<td>2.3%</td>
</tr>
<tr>
<td>1968-1989</td>
<td>-5.48%</td>
<td>55.74%</td>
<td>49.74%</td>
<td>3.6%</td>
</tr>
<tr>
<td>1990-1996</td>
<td>6.34%</td>
<td>-48.48%</td>
<td>-57.86%</td>
<td>-4.2%</td>
</tr>
<tr>
<td>1997-2008</td>
<td>21.02%</td>
<td>34.57%</td>
<td>44.41%</td>
<td>3.8%</td>
</tr>
<tr>
<td>1990-2008</td>
<td>70.19%</td>
<td>9.57%</td>
<td>20.24%</td>
<td>0.9%</td>
</tr>
<tr>
<td>HC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968-2008</td>
<td>-4.30%</td>
<td>47.80%</td>
<td>47.90%</td>
<td>2.3%</td>
</tr>
<tr>
<td>1968-1989</td>
<td>-8.36%</td>
<td>55.74%</td>
<td>52.62%</td>
<td>3.6%</td>
</tr>
<tr>
<td>1990-1996</td>
<td>-3.13%</td>
<td>-48.48%</td>
<td>-48.39%</td>
<td>-4.2%</td>
</tr>
<tr>
<td>1997-2008</td>
<td>25.36%</td>
<td>34.57%</td>
<td>40.07%</td>
<td>3.8%</td>
</tr>
<tr>
<td>1990-2008</td>
<td>65.32%</td>
<td>9.57%</td>
<td>25.11%</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Source: authors’ calculation

Observing Graph 2, it is obvious that there was virtually no contribution of TFP growth i.e. technological progress to economic growth in the pretransition Croatia. On the contrary, after accounting for labor quality, its contribution even turns negative. This finding can be explained by, among possibly many other factors, full employment policy which must have had negative impact on
total factor productivity. The largest contribution to economic growth in Croatia in this period had physical capital accumulation.

**Graph 2. Relative factor contributions to Croatian economic growth, 1968-1989**

Source: authors’ calculation

4.2. **Period following the beginning of transition process (1990-2008)**

We first examine two subperiods, first from 1990 to 1996 and second from 1997 to 2008. Afterwards, we turn to the average results of the entire period.

- Early transition period (1990-1996)

Not only did the transition processes start in 1990, this early period of transition was mostly under the influence of the Hometown War (1991-1995). The War caused many civil causalities, as well as material damages. Thus, negative contributions of physical capital and labor (quality-corrected or otherwise) are not surprising. (Graph 3) As we have seen in the previous period, correcting the labor for human capital resulted in its bigger positive contribution to economic growth. In this period where average growth rate was negative, human capital contribution was smaller in the sense that it was less negative than that of uncorrected labor.

Although this period represents the period of transition to market economy and end of full employment policy, Hometown War has slowed down this, by itself delicate enough transition process. Thus, suitability of HC1 measure is again questionable. Namely, because of restricted production activities, limited availability of workers and heavy economic situation, it is justified to suspect that wages did not by far reflect true productivity. HC2 again remains more appropriate.
In the case of uncorrected labor, the biggest contributor to economic fall was decrease in number of employed, followed by the reduction of physical capital. TFP records positive contribution to economic growth, but only until labor is corrected for human capital (HC2).

- **Late transition and post-transition period (1997-2008)**

This period was in Croatia characterized by the end of occupation in East Slavonia (in January 1998) and recovering of growth rates. On average, results show human capital as the main contributor. Contrary to two previous periods, in this period HC1 shows greater positive contribution than HC2. (Graph 4) Namely, revival of the economy resulted in higher wages and living standard; entrepreneurs gradually got accustomed to new market conditions and wages started to better (although not ideally) reflect human capital embodied in each worker. Those are the reasons why use of HC1 in this period is more acceptable than in the previous two.

In case of uncorrected labor, the results point to TFP as the dominant contributor to economic growth in Croatia, followed by physical capital accumulation. Labor contribution is the smallest and amounts to 24% of average growth rate in this period. This ordering of contributors by their size matches the ordering obtained by Moore and Vamvakidis (2007) and Burda and Severgnini (2008). Still, their labor contributions were smaller than the ones obtained in this paper, which might be a result of different methodologies. Once human capital is taken into consideration, it appears that human capital had the largest contribution to economic growth, swapping places with contribution of TFP. Although this result is surprising given empirical findings by other authors, one should keep in mind again methodological differences as well as the nature of this analysis. Namely, growth accounting analysis is unable to determine the direction or statistical significance of the connection between economic growth and growth of production factors such as human capital.
Graph 4. Relative factor contributions to Croatian economic growth, 1997-2008

Source: authors’ calculation

- Average results of transition and post-transition period (1990-2008)

As Graph 5 shows, around 70% of economic growth is not possible to explain by changes in factors of production, namely physical capital and labor, both uncorrected and corrected for human capital. It stems from TFP change. This is often finding for transition countries and usually explained by so called integration shock due to redistribution and regrouping of factors of production and resources during structural changes. In this period, average labor contribution is negative, but human capital contribution is positive and on average amounts to 20-25% of total economic growth\(^{16}\). Again, although it is impossible to determine causality with growth accounting approach, it is evident that the role of human capital has been noteworthy – as a cause or a consequence of economic growth – that is yet to be determined.

4.3. Average contributions of entire period (1968-2008)

In the entire observed period, from 1968 to 2008, relative labor contribution is on average sizably smaller than relative human capital contribution. TFP contribution is convincingly the smallest and physical capital contribution the largest. After adjusting labor for human capital (HC2), its contribution rises to the size of physical capital contribution. One can notice that conclusions for the entire period are related to the results for the pretransition period. There is dominant role of production factors and small or almost non-existing role of TFP.

\(^{16}\) Although HC2 was suggested as a better measure of human capital at the beginning of transition process, the ordering of different factors' contributions does not vary with different measures of human capital.
Graph 5. Relative factor contributions to Croatian economic growth, 1990-2008

Source: authors’ calculation

Graph 6. Relative factor contributions to Croatian economic growth, 1968-2008

Source: authors’ calculation
5. CONCLUSION

Our results suggest that human and physical capital were dominant and equally important during the entire period 1968-2008. Introduction of the human capital had a huge impact on the relative importance of factors. Relative to the estimate with labor only, share of education augmented labor increases and squeezes out the share of TFP.

Prior to transition, in the model without human capital, growth is explained by physical capital and employment only and the share of TFP is practically zero. Introduction of human capital squeezed and even made the share of TFP negative. The result is in line with theoretical expectations for the economy that was dominated by socialist system with huge politically sponsored investment projects and a self-ownership system that was characterized by a lack of microeconomic incentives to produce with less labor and/or capital.

Period after transition can be divided into two segments. The first one is transitional slump and homeland war between 1990 and 1996 and a period of recovery after 1997. In the first period there was a strong slump in GDP that was attributed to the physical and human capital. Decrease of saving rate and war devastation decreased the capital stock and wide scale bankruptcy of firms increased unemployment. Introduction of human capital only squeezed out TFP share from positive to negative in the case of HC2.

In the period of recovery, after 1997, the most dominant factor is human capital and its share is larger than the share of physical capital in both HC1 and HC2 estimates. On the other hand, in the model without human capital, the dominant factor is TFP.

Due to peculiar shape of transition slump, the shares for the entire transition period (1990-2008) look quite different. TFP is the most dominant factor that explains almost 70% of the growth. The share of physical capital is very small. In the model without education augmented labor, the share of labor is negative and in the model with human capital, the share of human capital is positive, bigger than physical capital, but much smaller than TFP.

In terms of theoretical expectations, at the level of development of Croatian economy, it is expected that physical capital and TFP are main drivers of growth. Also it was expected that TFP is going to replace physical capital as dominant factor after the transition period. But, our results, especially for post-1997 period indicate that human capital can be much more important factor for the Croatian economy regardless of its level of development. In terms of policy recommendations we consider the results for post-1997 period to be most representative.

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THE ROLE OF EDUCATION AND BUSINESS INTEGRATION IN NEW FORMATION SPECIALISTS’ FORMING

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Abstract

There are features of the automobile profile specialists’ information competence forming are considered in the article. The role of employers in professional order for specialists’ preparation forming, forms of their interaction with educational institutions while maintenance of hi-tech and high technology manufactures problems decision by the highly skilled personnel, that is capable to use science and technologies achievements during formulated goals decision are mentioned.

Key words: Information competence, specialists’ target preparation, innovative processes in the area of technics and technology.

1. INTRODUCTION

Nowadays the developing economy of Russia has faced the problem, that is spoken and written by politicians as well as by the higher school’s workers and economists. It is the problem of a critical requirement in engineering staff [1]. Among the factors defining character and quality of a system challenge, that Russian economics has faced today, as it is marked in “Russian Federation’s transport strategy for the period till 2030” [2] – “… the role of the human capital increasing in the social and economic development. The competitiveness of modern innovative economies level is defined by the quality of a professional staff. In a full measure it also concerns a transport as branch that follows the innovative development way”.

Nowadays the automobile branch is one of the most dynamically developing branches where both the state of the economy and well-being of the whole nation is reflected. One of the whole factors defining dynamical development of the branch is the presence of the highly skilled personnel. The requirement of the highly skilled personnel is very high now. It is confirmed by the fact that one of eleven primary goals which are required to be solved within the frameworks of The strategy of Russian Federation’s automobile industry development for the period till 2020 [3] is the necessity of the perfection of «… automobile industry specialists’ preparation’s systems including new programs for a specialists’ education creation according to the international standards».

The enterprises-employers invest huge amount of resources to creating the systems of firm training and the corporate universities. Their purpose is maintenance of corporate culture. Competitiveness of the expert is defined by its readiness to professional work on a concrete workplace, which is a basic level which is provides by educational institution. That's why the corporate systems of training should be created in close interaction of the enterprises-employers with educational institutions of different levels, forming uniform educational space. Employers are interested in the expert, which is ready to professional work on a concrete workplace after finishing their training.
There are no doubts that professional training should become in the near future essentially another and to be at other higher level. Determining factors that characterize expert are the set of required competencies in intellectual, social, communicative and other spheres, and also ability to self-education, social activity, ability to defend the sights, legal culture etc. This significantly changes public attitudes and education, under which the latter becomes the main factor of the socio-economic development.

One of the serious problems is the imbalance in skill-mix production professionals in vocational education at all levels with labor market needs. This applies both quantitative relations and qualitative characteristics of professionals. On the one hand, technological developments and new technologies contributes to economic well-being of society, on the other hand, they provide very serious problem of finding competent person who shall design, produce, maintain, new technology and use advanced technology. Because educational system has different inertia, its development should outperform the economy and only in this case, trained professionals will be really popular by production.

In «The strategy of Russian Federation’s automobile industry development for the period till 2020 [3]» considered risks associated with restructuring and modernization of the automotive business, which may lead to increased social tensions. It states that "... you can reduce these risks through effective implementation of development projects – automotive clusters – supporting regional cluster initiatives - through the formation of coordinated programs with the companies targeted training and retraining. " Thus, the formation of human resources, meets the needs of industry, development of new and modification of existing curricula and training programs for the automotive industry, a new type of personnel, development of training research, engineering and manufacturing skills for goals and objectives of the automotive industry – are the challenges included in the package of measures to create conditions for sustainable innovation in the automotive industry in Russia.

2. THE ROLE OF IT-TECHNOLOGIES IN TRAINING ENGINEERS FOR AUTOMOBILE BRANCH

The main problem in the formation of human resources for the automotive industry is the fact that the level of professional preparedness of graduates even graduates of educational institutions does not respond the requirements of today. The level of of customer requirements for a young specialist in a changing economy is growing, and the system of vocational education is rather inert.

This results in customers (i.e. enterprises) have to invest large means to the retraining system organization. At the same time, the educational institutions have some capacity for training in accordance with the requirements of customers. And the only way to build an effective system of competitive specialists training is the focus of competitive educational institutions to the demands of the labor market and the interaction with the customer. Competence-oriented education - this is the only possible way to satisfy the requirements of employers for skilled personnel in a dynamic emerging economy. The core is not the same set of information that was received and learned by graduating student of educational institutions, but his ability to solve assigned before him tasks using received skills.

To implement such a system of training it is necessary to use an innovative approach both to its construction and to its implement. In such a case the main factors are the focus on the needs of the employer and the use of innovative teaching technologies. In our view, it is possible if during the formation of specialist training curricula in specific areas the principle of "successive accumulation of knowledge" and competences formation with the use of already acquired skills is maintained.
In such a case the computer becomes the basic tool both for teacher and the trainee, and IT technologies becomes the technologies of work with the information in the course of training. As requirements of employers in our days assume knowledge of IT technologies, while training courses are constructing it is necessary to be guided by acquisition of skills by students of use of those software products and mathematical models which are used for the decision of the problems, similar themes which it will face in professional work, in our opinion. Competence of the specialist will be expressed in its ability to orient in all variety of the information, to choose the necessary data, to analyze it and make relevant conclusions. At all stages of work with the information – gathering, processings, analysis –the software connected with specificity of branch and a concrete workplace is used.

IT technologies should become habitual toolkit for the decision of the problems connected with professional activity. In order to the student has been prepared for use of specialized software products while he is studying the special disciplines, he should possess a necessary minimum of knowledge and competences in the sphere of IT technologies. To ensure this it is offered to construct and educational program so that it met the requirements of tomorrow.

3. ORGANIZATION OF THE TARGET PREPARATION OF STUDENTS

To staff the enterprises of Kama region’s and Naberezhnye Chelney city’s automobile branch the General cooperation treaty between Kama State Academy of Engineering and Economic (INEKA) and KAMAZ JSC was concluded in 7th June of 2008 whereupon a number of specialists target contract preparation treaties with KAMAZ JSC departments was concluded.
According to mentioned contracts INECA has engaged the resource base forming (the laboratory equipment, the software, the literature) for realization of target contract preparation, and also the conditions for its realization support (fig. 1).

Fig. 1. The target preparation system support

One of areas of cooperation is educational groups for target preparation forming. It assumes: from the side of the high school – solution of the organizational problems connected with presentations, interviews and competitive selections of students by departments and enterprises of KAMAZ, JSC; from the side of KAMAZ, JSC, - direct carrying out of the mentioned actions. As a rule, target audience are the students of 4-5 courses taking part in competitive selection from calculation of 3-4 persons on one place offered by the customer.

Target preparation is realized on the basis of the tripartite contract between high school, the enterprise and the student in which conditions of the specialist preparation, undergoing industrial and pregraduation practical training, job placements for the period of target preparation and after it ending, and also other details of relationship (fig. 2).

Under the organizations-customer’s request INEKA develops schedules of educational process for target preparation of students, and also curricula of target preparation. The list of disciplines, volume of theoretical and practical training on each of them, studying terms are coordinated with customers and chairs which graduate students. To conduct the lessons under the curricula confirmed in a bilateral order both leading teachers of profile chairs of INEKA, and leading experts and production workers are involved. Such specialists develop working programs of disciplines in courses which are provided by curricula of target preparation.
Fig. 2. The system of target preparation based on the tripartite contract.
4. RESULTS OF TARGET PREPARATION OF STUDENTS PROGRAM REALIZATION

Considering sharp requirement for highly-skilled personnel for scientific and technical center (STC) and technological center (TC) of KAMAZ, JSC, since 2008 the preparation of specialists for the mentioned departments has been organized. Educational groups in demanded directions of preparation have been formed, curricula are made and coordinated, and working programs of disciplines are developed. Theoretical and practical training, carrying out of master classes by leading experts of STC and TC has been included in the training program. Students carried out course and degree projects on the themes coordinated with project manager - experts from the enterprise. Thus, in 2008 important in practice degree project connected with working out of methods of operational reliability of KAMAZ frames increase has been executed (fig. 3).

Fig. 3. The degree project on a theme «Working out of a complex of actions for increase of operational reliability of bearing systems of KAMAZ trucks of a new lineup», executed within the target preparation in 2010.

The students which training within target preparation, receive additional possibilities: use of the laboratory equipment, library fund of the technical literature, drawings, the technical, organizational-administrative and economic information of the enterprise-customer during all term of target preparation; participation in real scientific, technological, design workings outs while carrying out the course and degree projects and a possibility to begin work on them before the students trained under the usual program can do it, so far as they can get to know in advance the design object, learn it and collect and process a necessary material.

Level of progress of the students which are training within target preparation, as a rule, surpasses level of progress of the students trained under the usual program (fig. 4). It is connected with motivation growth to increase of professional competence and competitiveness, and also with works in real design groups over the decision of the assigned industrial problems. Leading experts of STC and TC are involved in degree designing management, and also in working as a part of the State certification committee in the time of degree projects protection. A number of degree projects protection is spent directly at the enterprise Such organization of target preparation allows the enterprises to receive the competent specialists involved in production at a grade level that allows to consider own requirements to potential workers at training, and also to improve contents of the higher vocational training programs in conformity with changing requirements of innovative processes in technics and technology area.
Fig. 4. Results of degree projects protection by students, having training within biennial target preparation (in 2009/2010 academic year)

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TO THE QUESTION OF FORMING INFORMATIONAL COMPETENCE WHILE PREPARING AUTOMOTIVE PROFILE SPECIALISTS

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Abstract

In this article there are considered innovative approaches of forming informational competence while target preparing automobile profile specialists: maintained the content of informational competence as a base and as a component of professional competence, and also maintained its meaning for the solution of professional problems in life cycle of automotive engineering.

Key words: informational competence, automatization of education, computer-aided design, computer-aided engineering, modeling and optimization of industrial and service systems.

1. INTRODUCTION

In the modern stage of social and economic development of Russia it is necessary to perfect the system of professional education, obtaining the balance in interaction of labor markets and educational services. The disbalance on a labor market, demographic recession, slumping in prestige of engineering education, moving to level system of education have led to an acute shortage of qualified personnel in many branches of economics, including automotive sphere too. The economic crisis has aggravated engineering education problems as preparation of experts for the real sector of economics is always resource-demanding.

Shared problems of technical colleges are aggravated with the high dynamics of development of automobile branch: expansion of a lineup of cars, growth of number of the service enterprises and change of the concept of proprietary service, discrepancy of automobilization pace of development and infrastructure pace of development, creating complexities in the organization of transportation process and its safety. In such conditions the requirement in competitive and competent experts is felt especially sharply, but situation is complicated by the fact that named branch differs both with the material capacity (it demands big expenses for creation and maintenance of laboratory base at modern level, and also while carrying out the experiments), and science capacity with high-technology (it demands big expenses for carrying out design workings out and the engineering analysis using modern software, working out high technologies and using new materials).

In particular the acute problem of education for automotive branch is facing in Naberezhnye Chelny, for which KAMAZ, the leader of the Russian cargo motor industry, became an enterprise forming a company town, but not only for named town, also for Kama economic region of republic Tatarstan. Another one intensive developed large automobile concern – Sollers is located both in Naberezhnye Chelny and in a special economic zone "Alabuga".

Everybody realize the presence of problems, both in economy, and in educational system, that’s why there was a considerable quantity of the workings out which authors offer possible variants of their
solution. In our opinion, the best result is reachable only approaching to the problem solution in a system: to generalize and analyse available positive workings out and, having systematized them, to create such educational system which would include and combine an advanced experience of both domestic, and foreign scientists and experts. While creating model of educational system, it is necessary to solve such questions as «how to teach» and «what to teach». I.e. both model of management system, and content part of the educational programs, realized in it, are important.

2. CURRENT STATE AND PROSPECTS OF DEVELOPMENT OF EDUCATION AUTOMATIZATION PROCESS

As it is noted in Strategy of motor industry development in Russian Federation for the period till 2020 year [1]: «… for the preparation of high quality experts which are able to ably solve assigned problems on working out and manufacture of modern and perspective production, it’s necessary to teach them under the multilevel program of higher education including good fundamental preparation, sufficient skills in professional work during industrial, design, technological and pre-diploma practice».

First of all the crisis phenomena were reflected in volume of sales of automotive technology, it has led to slump in production and decrease in volumes of cars release. However the requirement for the experts that exploiting and serving the automotive technology, remains high. Expansion of a lineup and growth of cars modification number demands from experts in service high level of competencies, in particular these requirements are typical for the dealer-service network enterprises experts certificated under the standards of manufacturers. The requirement in engineering staff owning the modern methods of working out the design documentation and engineering analysis, and also in process engineers that are capable to work out innovative manufacturing technologies and renovation of products is still high. (Experts at all stages)

The unique way in construction of effective system of professional training of the competitive expert – orientation of the educational institutions on requirements of a labor market and interaction with the customer. The competence-oriented formation, creation of a target preparation system – the singular way of employers requirements satisfaction in qualified personnel in the conditions of dynamically developing economy. The core is not that set of the information which graduate of educational institution has received and "has acquired", its ability to solve the supplied problems, using skills that they received.

For realizing the similar system of education it is necessary to use the innovative approach both to its construction, and to realization. Thus orientation to requirements of the employer and using of innovative technologies of education is the primary factor. In our opinion, it is possible, if at curricula of the expert preparation forming in a concrete direction maintain the principle of "consecutive accumulation of knowledge» and forming of competencies with the use of received skills.

From the point of view of a current state and prospects of automatization process development of education it is possible to distinguish two basic directions: instrumental and technological, connected with the use of new possibilities of computer science and information technologies for increasing the effectiveness of educational system; and substantial, connected with the forming of a new content of the educational process as itself. [1].
In this case the computer becomes the basic tool how for teacher, so for the trainee, and the same about IT technologies that becomes technologies of working with the information during the educational process. As requirements of employers assume knowing of the IT technologies, while constructing of training courses it is necessary to be oriented on getting by students skills to use of those software products and mathematical models which are used for the problems solving, similar themes which they will face in professional work. Competence of the expert will be expressed in his ability to orient in all variety of the information, to choose from it the necessary one, to analyze and to draw corresponding conclusions. At all stages of work with the information – gathering, processing, analyzing – are used the software connected with the specificity of a branch and with the concrete workplace.

3. FORMING OF THE INFORMATIONAL COMPETENCE WHILE PREPARING AUTOMOTIVE PROFILE SPECIALISTS

Considering the structure of informational competence, the majority of researchers consider that it assumes the ability to work with the computer technologies, to use modern software products, to involve means of information technologies for carrying out the mathematical calculations, processing the data of experiments, search of the necessary information, for business correspondence and communications, and also means rational activity in the field of development and use of the information technologies resources. Informational competence constitute, on the one hand, is a base (key), on the other hand, it is considered as an important component in structure of professional competence.

Base informational competence, being overprofessional, overobjective, includes uniform for all categories of users circle of questions in the field of base technical and computer facilities software, knowledge and experience in which the expert of any profile should possess. Informational competence as a component of the professional one includes a range of the specific questions

Fig. 1. The main directions of the education automatization process
corresponding to the level and the maintenance of computerization within the limits of the concrete professional environment, knowledge and experience in which the expert of the given profile should possess. Besides, it is supposed that the expert should be able to improve the knowledge and experience in professional and adjacent areas. Formation of the informational part of professional competence should be provided with a certain set of disciplines, educational situations and practices, simulating real professional tasks.

Informational competence as a component of professional competence of the automobile profile specialist is formed at studying of disciplines of a special cycle and inseparably connected with the subject-oriented information technology which is using to solve scientific research, design, industrial-technological and organizational-administrative problems. Thus, while studying the disciplines of a special cycle the orientation to a concrete kind of professional work is provided [\textsuperscript{4}].

Realization of this principle in a practice assumes use of such bundled software which will be used by trainees in the conditions of real production. Thus, one of the INEKA automotive faculty’s strategic targets is introduction in educational process of modern bundled software for scientific researches, visual designing and the engineering analysis. As the faculty has initially been organized for preparation of highly skilled engineering personnel for the automobile branch, its structure includes specialities which correlate practically with all stages of automotive engineering life cycle. While constructing the training courses for each speciality the proper program toolkit – from software of marketing researches and economic efficiency estimation to CALS-technologies for engineering analysis – is used at faculty (fig. 2).

Each specialist of automobile branch should be able to estimate efficiency of the enterprise activity and to predict demand for the product taking into account dynamics of market conditions. Thus, demands are made to graduates of our faculty on knowledge of bases of the automobile market segmentation, forecasting of demand for car sales, service and traffic volume, the competitive analysis, the analysis of efficiency of dealer-service networks. In this stage it is necessary to use the software which allows to carry out all above-stated kinds of the data analysis. For these purposes the KONSI software is used while teaching the following subjects:

- Business planning on transport;
- Competitiveness modeling in automotive enterprise;
- Management and marketing on automotive transport;
- Bases of marketing in service sphere;
- Forecasting and planning in service;
- Bases of business.

The main condition when preparing the automobile profile specialists is teaching to methods of visual designing and engineering analysis of automobile knots and units. Almost all of students of automobile profile specialities study bases of designing and calculation of automobile systems, calculations of dynamics and durability of products, methods of the engineering analysis and etc. The basic software product used in the field is Siemens NX, intended for development of mechanical and electromechanical systems of the car, engineering analysis of mechanical and electromechanical systems, etc.
Fig. 2. Use of modern information technology while preparing the automobile profile specialists
It is necessary to notice that studying of visual designing and engineering analysis methods have special importance for graduates of our faculty competence forming as there is «Virtual cars» program have been started in KAMAZ, JSC, which idea consists in translation of all design and assembly drawings in a digital form.

The list of subjects in which mentioned software is used:

- CAD in automobile and tractor production;
- Dynamics and durability of automobiles;
- Designing and calculation of automobiles and tractors;
- Machine components and bases of designing.

The following class of software is used for designing and optimization both industrial systems, and service systems. On older courses students of automotive faculty design infrastructure and technological processes of the enterprises which produce the cars, facilitate service and transportations engaged. Modeling of real industrial systems allows not simply to teach bases of production and service systems functioning, but also to teach methods of optimization and management decision making in these systems.

The list of subjects in which mentioned software is used:

- Designing of the automotive transport enterprises;
- Models of organizational-technical system;
- Methods organizational-technical systems efficiency analysis;
- Production-technical infrastructure of automobile service enterprises;

In the field of operation and service the software suites AnyLogic, Siemens Plant Simulation and Technomatix Jack are basic for studying. To solve practical problems of workplaces ergonomics definition at the automobile branch enterprises, comfortableness and ergonomics of a driver's place students study Siemens Technomatix Jack software. Siemens Plant Simulation allows to rapidly create realistic simulation models of dynamic warehousing and logistics operations, so it is an important part of learning process.

Such approach in a combination to development and adoption of training individual programs under contracts with employers and undergoing of industrial practices on places of the future industrial activity will allow to reduce terms of adaptation of the specialist on a concrete workplace, will raise its competence both in professional sphere, and in the field of high technologies that will provide its competitiveness on a labor market

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Abstract

Research focuses on the educative space as a context of the ecological education. It analyses the essence of the educative space alongside with the holding out of opportunities for development of ecological relationships among children in kindergarten.

Key words: pres-school pedagogy, ecological education, ecological relationships, educative space, holiday.

Studying children holidays as an educative space is predetermined by the urgent need for reconsideration of its essence, place, role and functions within the theory and practice of pre-school pedagogy.

Children holidays fall among the most effective forms of education through self expression and communication between adults and children. Holidays are defined as aesthetical, social, integrated and complex phenomena with their mass nature, emotional charge, brilliance, connection with folklore and modern times, innate festal situation – described as the other reality, other events of the existence being subject to analysis of many sciences: philosophy, ethnography, history of culture, psychology, pedagogy studied in terms of their interests in particular aspects.

Holidays integrate various types of arts by means of folklore and ethnography. It is a synthetic type of art, the same as the theatre, although different with its reality, existence of events regardless of its various interpretations.

Scientific definition for educative space of L. Novikova (1996) gives us grounds to describe educative space of holidays as a space where subjectively preset multitude of connections and relations in terms of personal education exist consisting of subjects of educative space as follows: the participants themselves and the group as a whole, with didactic relations reduced to zero.

D. Grigoriev (2006) understands the educative space as a dynamic network of mutually connected pedagogical events created by the efforts of social subjects on different levels (collective and individual) representing an integrated condition for human development. Basic mechanism for creation of educative space is the event within which teamwork is described as a technological moment.

Educative space is understood as a prerequisite for events between children and adults by V. Slobodchikov (1995), L. Novikova (1996), and I. Kolesnikova (1999) as the latter defines educative space of holidays as “space of traditions” noting that continuation of traditions is an inherent function of education. Going into the educative space matter, N. Boritko (2000) claims that according to philosophers, first logically possible human relation existing in the surrounding world was the reverence, understanding the world as a powerful something existing following particular laws that humans cannot change. Hence the contemplating attitude towards reality has been formed, as well as
the pursuit of most adequate place of humans in natural and social environment supported by folklore pedagogy and its rites, customs and traditions in particular.

Philosophy understands space as a qualitative diversity of spatial and time forms defined as “universal forms of matter being and its most significant attributes”, “boundless breadth” and “extended to the so called natural sciences”. D. Kr. Dimitrov (2001) describes most frequent spatial notions, images, metaphors and their application in pedagogy that “needs a serious thought” “through a number of further researches”. /8/

M. Yanushkina (2003) understands educative space as a place where individual and group subjects to education are realized in a special activity achieved by many connections and relations being a prerequisite for development of child personality within the interdependence child – pedagogue – parent. She draws the attention to the diverse forms and methods constituents of educative space allowing participants, regardless of their age, to multiply their options for choosing a road to personality development. Such a form is the educative space of holidays as well.

This line is followed by E. Keller (2001) in his definition that analyses holiday space as a multi-factor oversized system governing manner of holiday conduct, prescribing holiday confidence.

Pre-school pedagogy offers no strict definition about what a children holiday is. It is an instrument for acquiring knowledge by children through its rich cultural content (folk traditions, songs, dances, folklore). Large number of pedagogues stress on the cognitive potency of holidays described by them as an instrument for rational understanding of historical legacy of the past, moral conduct of the present oriented towards values and hierarchal classification of values in terms of education, development of qualities in the subject for building ethno cultural identity.


Theories of M. Arnaudov, T. Iv. Zhivkov, K. Zhigulski, L. Yordanova, D. Lihachov, A. Mazaev, D. Marinov, N. Mizov, I. Snigerov and Y. Hyozinha describing holidays as cultural phenomena recognize the existence of contradiction between philosophical, cultural and psychic concept for holidays and theoretical fundamentals of the holiday system in kindergartens.

Holiday space is studied in different ways by scientists. Many researchers of holiday space describe it in terms of events as analysis of its mythological, cultural, cyclic and current being.

M. Bahtin (1965) claims holidays to be invariably and directly related to time through a specific concept for natural and historical time underlying and connected to revival and renewal of higher aims of human existence. Here lies the relation between educative space of children holidays and nature as a bearer of ecological development for children. Other authors expatiate into a detailed review of the holiday concept studying holiday conduct, time, space, holidays in interaction with economic, political and cultural life of society containing educative space of holidays though not stressing on their functions – V. Benjamin (1935), K. Levi-Stros (1949), N. Mizov (1966), K. Zhigulski (1985), A. Benifand (1986). They have been correlated to other cultural events by V. Brudni (1968) and V. Propp (1977), to games by Y. Hyozinha (1982) and T. Apinyan (2003), and theatre – all of which being a constituents of children holidays. L. Laptev (1975) and J. Le Gof (1992) describe holidays as a contrast
in terms of life, as a delight, enjoyment of life – this is the very function of children holidays although replaced and ignored in many of the occasions. Holidays are emphasized by I. Gudzhova (2006) to occur and exist in the culture as a form of emotional and symbolical expression and modeling human’s attitude to the world. Proceeding from her definition of children holiday, there are two aspects to be found – outer, oriented towards expression, emotion, and inner, leading participants back to “the internal” and “methodological models” for their cultural self-determination. /5/

S. Arutyunov (1994), S. Lure (1998), S. Eisenstat (1999), P. Sorokin (2006) and A. Obuhov (2006) consider traditions a developing phenomenon. Educative space of holidays is developing into a bearer of the experience of past generations and putting efforts into the building of the most adequate ways for conveyance of relationships from generation to generation as well as ecological relations being the very focus of our research.

P. Sorokin attaches great importance to traditions by investigating social space as oversized interactions between individuals in a social group. By means of a multistage structure he relates society being represented by the social processes to the processes in animate and inanimate nature. He emphasizes that in their actions and deeds humans are lead by those before them. Even today we have preserved the expression “good old times” as a bearer of “nostalgia” for the past. /15/ Educative space in kindergartens is mainly based on this very relation, although its eco-educative function remains undetermined heretofore.

In its research A. Obuhov analyses the developing personality within the environment of traditional culture defined by socially stable connections: 1) with nature – natural and geographical life conditions; 2) with traditional material environment – everyday life objects; 3) with social surrounding – ethnical community, family, kinship ties, neighbour ties, 4) with value-symbolical surrounding (traditional education and life perceiving system reflected in folklore and other imagery and sign means of expression)”. /14/

Essential for the research of educative space of holidays is the analysis of human development conditions made by V. Muhina (1999) at different stages of the ontogenesis using the relation cultural conditions – individual advance in human development. Human psychology of an epoch she describes in terms of its culture with the sense and essence of cultural reality in this very historical moment: “1) the reality of the material world; 2) the reality of the imagery – sign system determining the space of human culture and being on one hand means for psychological influence on other individuals and transforming its own mentality on the other hand; 3) the reality of social space; 4) the reality of nature”. /12/ In every historical moment these realities have their own constants. Moreover, the author states that every historical moment is to be also described in terms of the development of these activities, which lead individuals into the space of their modern culture where the holiday space belongs as well.

M. Volovikova (2001), A. Borisova (2003), I. Dzhidaryan (2007) and S. Tihomirova (2008) study holidays as a complicated psychological phenomenon comprising both of the simple celebration with its important attributes and studying its function that through the roots in folklore tradition relates humans to culture and historical memory.

The research of M. Volovikova extends through several periods of time (2001, 2004 and 2007) on the basis of the associations the word “holiday” evokes. Holidays are divided into groups “with their names, emotions, typical attributes, festal food and table, decoration and flowers” /4/ and analyzed in multilayer categories expressing holiday’s specific psychosocial phenomena and satisfaction of basic human needs: “1) holidays are prerequisites for positive emotions – satisfaction of needs in a positive way; 2) opportunity to share one’s feelings with other people during holidays – need of communication;
3) holiday expectation as something unexpected and extraordinary – need of magic and miracle; 4) holidays offer a completely new experience – need of self-knowing and knowing the individuals in the surrounding environment; 5) holidays preserve and convey cultural traditions – need of belonging to one’s own nation and society”. /4/

A. Borisova develops the idea to what extend experience individuals gain expecting the holiday, in the processes of its preparations and the celebration itself is of specific essence for one’s development as a person. She describes the positive emotions accompanying this experience as important for human mentality and helping in withstanding hardships of life.

I. Dzhidaryan claims that positive emotions influence adaptive and organizing functions within human vitality while negative emotions – disorganizing ones. He supports the view that holidays are events, which after being experienced by individuals, one finds in them reserves, new ways to meet one’s urgent everyday tasks and which are to offer strength and energy for the future.

All these authors unite on the existence of a unified holiday space that activates to the maximum one’s emotional sphere and which emotional charge gives higher efficiency of holiday processes.

With the formulation of this idea children holidays are turning into events that preserve human culture with its marked personal character and enriching this period of time with other values from human existence, one of which is of importance for this research, i.e. the ecological friendliness.

Children holiday culture has not been adequately studied nor has been the holiday as an event. According to E. Yanakieva (2006) “children holidays are an important aspect of ecological attitude towards the child that gives the child a chance to “escape” from everyday life and experience glorious feelings and noble aspirations, and artistically express freedom. /21/

Applying the ecological approach developed by E. Yanakieva in the analysis of holidays as a variant of the “systematic knowledge” helps in describing holiday space as a synthesis of instruments for its implementation in kindergartens. Author reveals the pedagogical instruments for enrichment of ecological education content. She stands on the ecological understanding of the immediate dependence of children on their surrounding environment that develops children as well as “the children are to establish their ecological and creative approach to it by developing their skills to change it in accordance with their needs and ecological understanding”. /19/

Holidays offer ecological education “as a scientific school studying pedagogical instruments for breeding subjective ecological approach both to nature and surrounding environment (housing and working) and inner environment of the very person with its bodily and spiritual content for development of children as subjects to ecological relations” oriented towards: “their inner space (body and soul); their immediate surrounding environment – nature, house, society; the other individuals and their surrounding environment – nature, house, society; nature as habitat for all living creatures.” /19/

Taking into consideration all those definitions, educative space of holidays emerges from events, i.e. common being, equitable interest of the subject. Educative space is expressed in the ambition of adults to be mediators between children and inherited ecological relations and for children to acquire and implement ecological relations through knowledge, experience and activities (Picture 1, 2, 3, & 4);
Picture 1: Holidays for acquisition and implementation of ecological relations through knowledge for folklore traditions

Picture 2 & 3: Implementation of ecological relations through personal holiday experience (birthday) and (kindergarten) anniversary
for ecological relations of children, their attraction to signs, symbols, values in the approach to nature to develop within this space and for children to establish immediate relationships with their own selves and the group of individuals at the holiday.

Analysis of theory and practice of educative space organization as an environment wherein ecological relations develop allows determination of the following discrepancies between:

- theoretical researches and needs of practice due to deficiency of elaborations on the matter by kindergarten pedagogues treating educative space of holidays using nature as a basis for ethno cultural holidays and their inadequate implementation;

- formulation of holiday events and necessity of satisfying growing children needs, which are to influence the concepts for development of the holiday and pedagogical scripts transforming it into an educative pedagogical situation;

- purpose of the holiday with children as active participants in their role of subjects, not being passive, and the purpose of its use, i.e. its transformation into an educative instrument;

- children’s need in view with their physiological changing of celebrating the holidays in their life and their disregard or use as educative activity in kindergartens.

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THE USE OF INTERACTIVE TEACHING METHODS IN LOGISTICS

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Abstract

The purpose of teaching should not only be limited to imparting basic knowledge, most important thing is to teach students to master the discipline's unique analysis, research and thinking to enhance their observation and analyzing problems and problem-solving ability. Interactive teaching provides a situation in which the learner and the teacher can be more flexible and efficient in the learning/teaching process. In the field of education the last decade is characterized by a growing interest in e-learning with a recognizable trend of enhanced application of e-learning technologies. Particularly the growth of computer and the Internet technology has enabled e-learning to evolve into a feasible alternative learning paradigm. Present article deals with defining the efficiency of non-traditional teaching methods for logistics orientated subjects emphasizing the use of e-learning in this field. What are the strengths and opportunities, but also disadvantages both for teachers and students using e-learning as a teaching method in Logistics? The article will be based on the literal overview and students’ feedback gathered during years 2008-2011.

Key words: logistics, interactive teaching methods, e-learning, students’ evaluation and feedback.

1. INTRODUCTION

The importance of logistics to the global economy has been well documented and is rarely questioned. Individual firms compete on the bases of costs and service as demanded by their customers, and success often depends on an effective understanding of the interactions among transportation and other logistics functions. Many logistics decisions involve trade-offs and are not intuitive or obvious, so managers frequently base decisions relating to logistics on how their areas of responsibility are affected. Under these suboptimal decisions, important trade-offs may be ignored, which can adversely affect costs in other areas and lead to inefficient.

As world moves toward a more competitive global economy, there will be an increasing demand for highly qualified people to create and manage more efficient logistics systems and supply chains. Aquino and Draper (2008) point that businesses are beginning to recognize the importance of having knowledge in this area, they are also beginning to recognize that there will be a shortage of qualified talent: "A growing number of companies have recognized the need to develop this expertise. However, companies face a giant obstacle in achieving this goal: the shortage of trained supply chain management professionals at all levels". Businesses needing expertise in these areas should have access to well-educated managers with the necessary skills to make responsible and effective decisions.

Strong competition on the employment market causes that higher and higher demands are made
engineers due to strong command and skills of theoretical knowledge application in practical activities. There are only few problems with effectiveness of theoretical knowledge dissemination, whereas teaching the problem solution skills shows much more difficult. Technical universities use high technology achievement in education to prepare engineers for their future work better, to make education more attractive for students and therefore more effective. According to the logistics definition students are taught the characteristics and rules of a process of planning, implementing and controlling the efficiency, cost-effective flow and storage of raw materials, in process of inventory, finished goods and related to information flow from point of origin to point of consumption for the purpose of conforming to customer requirements.

Students come to understanding of logistics on lectures in theoretical sphere and during seminars (they solve logistics’ problems, discuss the logistics’ cases or calculate and optimize the logistics costs). It is supposed that it has worked well with positive effects for students’ knowledge. It was realized that this mode of teaching was not effective enough due to fast technology development, globalization and still changing economical circumstances. The scientific staff specializing in logistics started to look for new methods and tools that would allow for more attractive education within logistics and first of all for the increase of teaching effectiveness. In effects the students’ skills level of logistics problem solution should have risen.

The development of a new educational paradigm implies a rethink of traditional learning processes and teaching techniques. The new objective of the educational system is "teaching to learn". Learning provides “intellectual growth that leads to scientific reasoning, abstract thought, and formal operations”. Flexibility, adaptability, responsiveness to change, and the ability to deal with ambiguity, complexity, and diversity - these are increasingly important skills for today's logistics managers. Although it is important that future managers learn these skills, it is not at all clear that they can be taught, at least in the traditional sense. Additionally, the shelf life of knowledge is decreasing, that is, much of what we teach will be outdated by the time our students are in position to apply it. These increasingly evident facts translate into a need for management educators to place much more emphasis on helping future logistics managers learn how to learn: learn how to learn on their own rather than in traditional structured environments, learn how to learn with rather than in isolation from others, learn how to be proactive rather than passive, reactive learners". This change involves a redefinition of roles in the learning process. Teacher must become a sort of mentor or coach, in the mean time student must become an active learner who learns the right way to ask the correct questions. In this new paradigm the learner knows and learns through direct and/or indirect stimulus of the teacher and through autonomous elaboration of information flows.

As information technologies like virtual workspace and digital libraries have evolved, they have added new environments for teaching and learning, moreover they have given rise to new areas for research. Learning enhanced by information technologies is gaining momentum. This is partially in response to the demand for reduction in time-to-competency in the knowledge-based economy, spurred by intensive competition and globalization. Companies need to offer effective training to employees and business partners to ensure that they acquire new skills in a timely manner. In academia, education must be delivered to remote students who do not have physical access to the campus.

E-learning has recently become a promising alternative to the traditional classroom learning, helping society move toward a vision of lifelong and on-demand learning. It has become one of the fastest-moving trends and aims to provide a configurable infrastructure, which integrates learning material, tools, and services into a single solution to create and deliver training or educational content quickly, effectively, and economically. Thousands of online courses are now being offered. Not only
instructional material can be made available on the Internet, but online collaborative learning and discussions can also occur.

The objectives of the present paper are formulated as follows: firstly to give an overview of the different interactive teaching methods that can be used in teaching logistics; secondly to show what are the advantages and disadvantages of using e-learning in the process of teaching Logistics relying on experience of Tallinn University of Applied Sciences (TUAS) and Tallinn University of Technology (TUT) practices with 100% e-learning course and some learning objects that were used in different logistics subjects. The data was collected during years 2008-2011. This paper is not based on scientific methods and solid evidence but is a narrative of some experiences. Hopefully it serves to guide and motivate educators interested in trying a different learning and teaching methods. The findings of this paper are more indicators than solid evidence, but the paper however also supports results from earlier studies found in literature of this field.

First of all it is necessary to analyze the basic assumptions of the learning theories permeating, in an explicit or implicit way, the actions of educational institutions and the utilization of different teaching methods and/or techniques.

2. LEARNING PROCESSES IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT EDUCATION

2.1. Constructivist learning theory

Constructivism is often articulated in stark contrast to the behaviorist model of learning. Behavioral psychology is interested in the study of changes to manifest behavior as opposed to changes in mental states. Learning is conceived as a process of changing or conditioning observable behavior as a result of selective reinforcement of an individual's response to events that occur in the environment. The mind is seen as an empty vessel, a tabula rasa to be filled or as a mirror reflecting reality. Behaviorism centers on students' efforts to accumulate knowledge of the natural world and on teachers' efforts to transmit it. It therefore relies on a transmission, instructional approach which is largely passive, teacher-directed and controlled. In some contexts, the term behaviorism is used synonymously with objectivism because of its reliance on an objectivist epistemology. Jonassen (1991) describes the assumptions of an objectivist approach to learning: Objectivists believe in the existence of reliable knowledge about the world. As learners, the goal is to gain this knowledge; as educators, to transmit it. Objectivism further assumes that learners gain the same understanding from what is transmitted. Learning therefore consists of assimilating that objective reality. The role of education is to help students learn about the real world. The goal of designers or teachers is to interpret events for them. Learners are told about the world and are expected to replicate its content and structure in their thinking.

The objectivist model of learning considers the reality as external variable, independent from the interpretative scheme of each individual. The first task of instructor is to structure objective reality into abstract and/or generalized representations, and then he/she tries to efficiently and effectively transmit these representations to the learner. Under this perception learning coincides with an uncritical absorption of objective knowledge by the learner. The teaching and learning style consistent with the basic assumptions of the model are, respectively, top-down and passive.

Constructivists on the other hand view learning as a formation of abstract concepts in the mind to represent reality. They posit that learning occurs when a learner constructs internal representations for
his or her unique version of knowledge. Constructivism argues that interactive activities in which learners play active roles can engage and motivate learning more effectively than activities, where learners are passive. Individuals are assumed to learn better when they discover things by themselves and when they control the pace of learning. Therefore, it is natural to expect that self-directed, interactive learning would improve learning outcome. Constructivists put more emphasis on engaging students in the process of learning than on finding a correct answer. Many constructivists call for richer learning environments that contrast with the typical less interactive classroom environments relying on instructors, textbooks, and lectures. Graphics, video and other media can help by interesting and engaging learners. Brandt suggested, that constructivism should be a basis for Web-based or e-learning. Web-based education supported by the constructivist theory should thus enable learners to engage in interactive, creative, and collaborative activities during knowledge construction.

Literature proposes two interesting offspring of the constructivist model: the co-operative model of learning and the cognitive information processing model of learning. In the basic constructivist model the learning process has an individual dimension; in fact the process is based on the interaction between the individual (with his own experiences and biases) and the objective world. The collaborative model substitutes this individual dimension with a group of dimension in which the knowledge emerges in consequence of the interaction of individual with other individuals. In this sense the goal of teaching is to facilitate the group dynamics. The second extension of the constructivist model focuses on cognitive processes used in learning. The assumptions of the model are:

1. The learners differ in terms of their preferred learning style;
2. The individual's prior knowledge is represented by a mental model in memory which influences how effectively the learners process information flow;
3. The attention of the learner is selective.

2.2. Application of Cognitive Learning to Teaching Models

Cognitive information processing theory is an extension of the constructivist model, based on a model of memory. It proposes processes and structures through which an individual receives and stores information and focuses on cognitive processes during learning. These involve processing instructional input to develop, test and refine mental models until they are sufficiently elaborated and reliable to be effective in novel problem-solving situations. Cognitive learning focuses on the process of learning itself and the change that occurs within. It involves being active in the learning process and is based on the thinking and reflection that takes place in an individual.

Cognitive learning theories began as a critique of behaviorist learning theory. Behaviorist learning theory largely focuses on the observable change. Cognitive learning theories strive to look at the process surrounding the learning and the mental associations formed, not necessarily a behavior change. For cognitive learning, what is happening inside the person is just as important, if not more, as to how we learn. It looks into the mental aspects of learning. It moves away from the traditional model of learning and focuses more on a student-centered approach. The student is actively engaged in the learning process. It is the responsibility of the learner to process and organize the new information and relate it to prior knowledge, this is what Piaget calls assimilation.

Cognitive learning stresses that learning is interaction and is a process. For teaching this would mean changing the student-teacher dynamic away from that of a traditional classroom. The instructor facilitates learning and guides the process while letting the learning interact with the
The instructor becomes the manager of learning. With cognitive teaching, the learner becomes the center of the environment. Important is, how the learner responds to information and makes it part of his/her existing schema. The student plays an active role in the learning process instead of simply taking in the instructor’s knowledge. The student engages in problem-solving, including exploring and organizing information that he/she has read. The student continues the process by thinking on the information, trying to apply new knowledge to prior knowledge, and synthesizing the material. Learning is an ongoing process where information is obtained, stored, and retrieved while all at the same time helping the learner grow and mature (Murphy & Cifuentes, 2001).

Cognitive teaching should center on many different methods of learning and obtaining information. This way it reaches many learning styles and allows for multiple ways to accomplish the set objectives. It gives the learner flexibility to work with the information in a manner that is comfortable and effective. It will help to get the best results for each individual learner.

2.3. Implication of Cognitive Learning to Development of E-Learning Environments

Cognitivists see learning as an internal process that involves memory, thinking, reflection, abstraction, motivation, and meta-cognition. Cognitive psychology looks at learning from an information processing point of view, where the learner uses different types of memory during learning. Sensations are received through the senses into the sensory store before processing occurs. The information persists in the sensory store for less than one second, and if it is not transferred to working memory immediately, it is lost. Cognitive psychology postulates that information is stored in long-term memory in the form of nodes which connect to form relationships; that is, in networks. In addition, information maps that show the major concepts in a topic, and the relationships between those concepts, should be included in the online learning materials. According to Stoyanova and Komer (2002), information-map generation requires critical reflection and is a method for externalizing the cognitive structure of learners. To facilitate deeper processing, learners should be encouraged to generate their own information maps. The implication of cognitive theory for online learning:

Strategies used should allow learners to perceive and attend to the information so that it can be transferred to working memory Ally (2005) suggests some strategies to promote perception and attention for online learning; (1) Important information should be placed in the center of the screen for reading, and learners must be able to read from left to right. (2) Information critical for learning should be highlighted to focus learners’ attention. (3) Learners should be told why they should take the lesson, so that they can attend to the information throughout the lesson. (4) The difficulty level of the material must match with the cognitive level of the learner, so that the learner can both attend to and relate to the material. Links to both simpler and more complicated materials can be used to accommodate learners at different knowledge levels.

Strategies used should allow learners to retrieve existing information from long-term memory to help make sense of the new information. Ally (2005) suggests some strategies to facilitate the use of existing schema; (1) Use advance organizers to activate existing cognitive structure or to provide the information to incorporate the details of the lesson. (2) Provide conceptual models that learners can use to retrieve existing mental models or to store the structure they will need to use to learn the details of the lesson. (3) Use pre-instructional questions to set expectations and to activate the learners’ existing knowledge structure. (4) Use prerequisite test questions to activate the prerequisite knowledge structure required for learning the new materials. With the flexibility of online learning, students with diverse background and knowledge can choose the most appropriate path to review previous or prerequisite learning before new information is presented.
1. A variety of learning strategies should be included in online instruction to accommodate individual differences and learning styles. Learning style refers to how a learner perceives, interacts with, and responds to the learning environment; it measures individual differences.

2. Information should be presented in different modes to facilitate processing and transferring it to long-term memory. Textual, verbal, and visual information should be presented to encourage encoding. According to dual-coding theory, information received in different modes (textual and visual) will be processed better than that presented in a single mode (text). Dual-coded information is processed in different parts of the brain, resulting in more encoding.

3. Encourage learners to use their meta-cognitive skills to help in the learning process. Meta-cognition is a learner’s ability to be aware of his or her cognitive capabilities and use these capabilities to learn. When learning online, learners should be given the opportunity to reflect on what they are learning, collaborate with other learners, and check their progress. Self-check questions and exercises with feedback throughout a lesson are good strategies to allow learners to check how they are doing, so they can use their meta-cognitive skills to adjust their learning approach if necessary.

With the explosion of the Web as a medium of delivery for instruction, the popularity of the constructivism movement and the inquiry-training models of teaching also took a rise in popularity. Proponents of the inquiry-training model often expressed their dislike for the traditional computer-based approach of tutorial and practice and drill.

When creating online learning environments it is important to pay attention to learner perception. As described by Ally (2005) learners need to “perceive and attend to information so that it can be transferred to working memory.” Web pages must be designed with the learner in mind. There is a balance needed by visual stimulus and delivery modes that help the learner organize and process information. The screen should be organized with important information visually highlighted to catch the attention of the learner. Information should be presented in a manner that learners can link what is known to existing schema. This can be done through a variety of learning strategies including by organizers and application of the material.

In order to create a student-centered learning environment where the student is most successful, multiple learning styles and methods of learning should be included in the online environment. From here, learners can figure out what works best for them and how to be the most successful. It gets the learner actively involved in the learning process. The learner should work through real-life cases and information taught there. Through this process the learner will get to reflect on his learning and truly process the information into long-term memory. It will activate higher order thinking skills and promote information retention because the information will be made meaningful to the individual.

According to Heinich et al. (2002), learning is the development of new knowledge, skills, and attitudes as the learner interacts with information and the environment. Interaction is also critical to creating a sense of presence and a sense of community for online learners, and to promoting transformational. Learners receive the learning materials through the technology, process the information, and then personalize and contextualize the information. In the transformation process, learners interact with the content, with other learners, and with the instructors to test and confirm ideas and to apply what they learn. Garrison et al. (2003) claimed that it is the design of the educational experience that includes the transactional nature of the relationship between instructor, learners, and content that is significant to the learning experience. In the e-learning environment learners have the freedom to explore the learning materials and to experience the learning process as can be seen on Figure 1.
Fig.1. Typical flow chart for e-learning influenced by cognitive and constructivism theories

The learners have the freedom to take the path of their own. For example, the learner can log in to the site and go directly to class forum to see what the teacher and peers have posted and discussed, then go to learning materials or even directly to the quiz. The learner also has the freedom to log out the program at anytime. In other words, constructivism underpins the understanding of how individuals learn in a social context and extends to the learning organization, which by nature its members learning together, improves its activities through group reflection and sharing of experiences. In this case e-learning has the potential to overcome some of the limitations of traditional learning, including the fixed times and locations for learning. E-learning allows for a synergy between advances in information and communication technologies.
3. E-LEARNING

3.1. Review of Literature

E-learning is a modern and efficient learning and teaching method in which several information and communication technologies (e.g. the Internet, electronic data carriers, databases, multimedia tools etc) are used for teaching (Orey, M.(Ed.), 2001).

E-learning is any learning that utilizes a network (LAN, WAN or Internet) for information/knowledge delivery, interaction or facilitation. This would include distributed learning, distance learning (other than pure correspondence), CBT (Computer Based Training) delivered over a network, and WBT (Web-Based Training). It can be synchronous (real time), asynchronous (self-paced), instructor-led or computer-based or a combination. It began around 1996 with appearance of the first web courses. The most important benefits of e-learning are:
1. best of both worlds solutions;
2. real world interactivity;
3. personalized learning.

E-learning allows to:
1. encourage learners to use their meta-cognitive skills to help in the learning process. Meta-cognition is a way to improve the quality of learning as it makes cooperation between educational institutions and teaching staff easier and integrates different subjects and forms of learning;
2. make learning more efficient and available, thereby promoting the maximum realization of capabilities of all members of society;
3. develop learner-focused motivating learning methods, where the learner has more important role in designing the learning process and thereby create a learning environment that supports learning in the best possible way;
4. significantly change the content of the work of teaching staff as it creates the option to individualize the learning process and make it creative and flexible considering the learner’s specific characteristics.

There are many definitions regarding the Internet based learning. In some articles this kind of learning is called distance learning, in some articles on-line learning and in some articles e-learning. In this paper web-based learning and on-line learning are used as synonyms and web-based learning is defined as learning that is delivered wholly or in part via the Internet or an Intranet (Trombley & Lee, 2002). Web-based learning is only one form of e-learning and only one form of distance learning. E-learning covers all learning with electronic technology and distance learning is all learning when students are not required to be physically present at a specific location during the term. Alessi and Trollip (2001) distinguish two types of web-based learning: on-site learning (people learn in classroom using web-resources) and distance learning.

The Internet is a powerful communication tool in education (Jain & Getis, 2003). On-line learning is considered as an effective method of instruction (Downing & Chim, 2004). Besides the universities web-based learning it is used in primary and secondary schools as well. After all web-based learning is used often as examples of materials produced by teachers for specific information gathering exercises.
or to offer information on primary and secondary level (Passey, 2000).

Web-based learning could be combined with face-to-face learning. Kerres and De Witt (2003) define this kind of learning blended learning. They claim, that despite that the blended learning arrangements have become quite popular in different contexts models, for their didactical design that are based on theoretical concepts are still missing.

Hand in hand with development of e-learning, three distinct use patterns started to emerge (Salmon, G., 2000):

1. Fully online learning – the whole learning process (content delivery, information distribution, communication, student assessment) is web-based and there are no face to face meetings.
2. Hybrid/Blended learning – learning process is mainly web-based but consists also of face to face seminars and workshops comprising no more than 25% of the whole course.
3. Face-to-face learning with online support – there are regular face-to-face lectures, seminars and/or workshops which, when combined, account for more than 25% of all learning process. The online environment is used for distributing leaning materials and guidelines as well as for submission of homework.

3.2. Overview of E-Learning in Estonia

Use of e-learning at university environment as well as in learning overall has gained popularity and not only from the researchers’ side. The number of e-courses offered has been rising constantly. Some time ago university management has not been concerned with ICT and e-learning, as they did not think of it as a core business area. But in future e-learning will tend to evolve from individual projects and experiments into an integrated feature of the universities.

Below the obstacles and strong points are listed for e-learning environment in Estonia:

Obstacles:

1. lack of resources (both human and financial);
2. lack of necessary tools (learning objects repositories, development tools);
3. lack of cooperation between the main stakeholders.

Strong points:

1. high-level of political support for development of e-learning;
2. existence of good experts in e-learning;
3. relatively good knowledge of foreign languages (mainly English).

Until the year 1999 few enthusiasts from different universities in Estonia had created 14 e-learning courses (e-courses). Since then, the interest towards new teaching methods and tools has only grown and the number of e-courses has grown rapidly (see Figure 2). This created a desperate necessity to spread the “best practice” and create guidelines for creating a good e-course. It also raised the question how to train and support teachers efficiently. Initially the e-courses were developed only at bigger universities (Tartu University, Tallinn University and Tallinn University of Technology). There was no tradition of collaboration between universities but the need of it in the field of e-learning was very obvious.
In order to solve the problems of coordination, collaboration and efficient expenditure of resources, the Estonian e-University consortium was established in 2003. Its main task was to coordinate and develop e-learning activities at the level of higher education. Rapid development of e-learning caused the creation of the second consortium two years later – Estonian e-VET consortium (consortium of vocational education organizations) which started to coordinate e-learning activities at the vocational education level. Based on these two consortia, the Estonian e-Learning Development Center was established in 2006. Today, the majority of higher and vocational education organizations belong to these consortia, counting 7 universities, 10 applied universities and 26 vocational schools and covering 95% of all students in higher education. These two consortia provide means for centralized development and assurance of the quality of e-learning implementation throughout higher and vocational education.

Fig.2. Increase of the number of e-courses within e-learning management systems Moodle and BlackBoard Vista, managed by The Estonian e-Learning Development Center, during 1999 – 2010

The knowledge level of teaching staff for using ICT in the learning process is very uneven. In order for them to be more aware of their existing skills and make right choices in choosing the most appropriate training courses, it was started to elaborate ICT competences for teachers and lecturers. Since 2006 the ICT competences model for teachers, lecturers and educational technologists (also for schools) has been available. Every competence in this model describes a skill that is known in their regular work. It can be used as self assessment tool to map individual ICT competences. The model of ICT competences and all the courses in the e-learning program are connected in a way that every course in the program includes competences that can be achieved by the end of the course. The model of ICT competences will be annually revised and renewed by a group of e-learning experts.

Estonian e-Learning Development Centre offers an opportunity to use several central services for the member institutions of both consortia.

Learning management systems:
1. Most of the universities use Blackboard Vista with more than 28,000 users and 2,500 courses. Approximately 75% of e-courses at university level are in Blackboard VISTA.

2. Half of the vocational schools and universities use Moodle with more than 20,000 users and 2,000 courses. Some vocational schools have also Moodle installed in their own servers.

3. IVA being developed at Tallinn University (Estonia) is based on social-constructivist pedagogy. The other half of the vocational schools and Tallinn University use IVA with 1,200 courses and ca 8,000 users. (http://www.e-ope.ee/en/teachers/e-learnin_environments)

In addition, e-Learning Development Centre provides use of Codian multipoint video, conference server, which provides an opportunity to connect up to 20 different points. The Codian server is very popular with universities, where it is used for organizing multi-point video conferences for various purposes.

Rapid growth of users within e-learning environments at the same time also indicated the progressive popularity of e-learning as a teaching method (see Figure 3).

![Number of users](image)

**Fig. 3.** Increase of the number of users of e-learning management systems Moodle and BlackBoard Vista, managed by The Estonian e-Learning Development Centre, during 1999 – 2010

The next Figure 4 illustrates the approximate division of e-courses in the Estonian e-University consortium according to areas.
According to this data most e-courses are made in the field of economics, social sciences and informatics. As it comes to logistics, then it can be seen from different perspectives to which area it belongs. If it is an e-course with simulating the logistics process, then it can be moved to the informatics field; if there are used some case studies or PBL, as the main teaching method in the e-course, then it belongs to the economics area; if the e-course consists from practical exercises on planning transport routs, building out the logistics and transport network, then it can be situated in the engineering area; if in the e-course are used some mathematical modeling and optimization techniques to develop new solutions to logistics problems than it can be listed either in mathematics or informatics areas.

3.3. Use of Interactive Teaching Methods and E-Learning Environments in the Field of Logistics

Logistics – in its widest scope of understanding – is an extremely rapidly developing field of knowledge and practical applications. The competence profile of a logistics practitioner as requested
by industry is a portfolio of wide-area knowledge in engineering and management, various abilities, such as problem finding and problem solving, systems’ planning, design and operation, process planning, management and control or knowledge management and knowledge generation, and well-developed logistical and social skills.

Therefore, logistics education and training needs to be designed in such a way providing students with all of:
1. declarative knowledge in the form of “knowing that...”;
2. conceptual knowledge as “knowing how”;
3. procedural knowledge which is “know-how” in the domain.

In the logistics engineering innovative personnel training process should strengthen the practice training, emphasizing the combination of teaching, research, production practices, engineering practice and design. Should be trained innovative spirit, practical ability and entrepreneurial ability throughout the entire process of personnel training. There should be provided more practical work opportunities for students involved in research and production to strengthen curriculum design and graduation project (thesis) link. The content selection of curriculum should have a certain projects or the social background and reflect the topics of application, advance and comprehension. The graduation project (thesis) should be faced to the industries and regions, combined with the actual social production activities in order to cultivate students have the ability of engineering practice, comprehensive ability and innovative ability.

Active learning as an instructional technique which engages students in meaningful learning activities such as dialogue, debate, writing and problem solving, as well as higher-order thinking, e.g. analysis, synthesis and evaluation. Bonwell and Eison (1991) suggested learners work in pairs, discuss materials while role-playing, debate, engage in case study, take part in cooperative learning, or produce short written exercises, et cetera. The argument is when active learning exercises should be used during instruction. While it makes some sense to use these techniques as a "follow up" exercise or as application of known principles, it may not make sense to use them to introduce material. Proponents argue that these exercises may be used to create a context of material, but this context may be confusing to those with no prior knowledge. The degree of instructor guidance students need while being "active" may vary according to the task and its place in a teaching unit.

As a rule interactive teaching activities that can be used in teaching Logistics may include:

- **A class discussion.** This may be held in person (face-to-face) or in an online environment during e-learning course. Discussions can be conducted with any class size, although it is typically more effective in smaller group settings. The environment allows for instructor guidance of the learning experience. Discussion requires the learners to think critically on the subject matter and use logic to evaluate their and others' positions. As learners are expected to discuss material constructively and intelligently, a discussion is a good follow-up activity given the unit has been sufficiently covered already.

- **A Lecture.** Lectures are particularly useful to give technical material or factual information, to provide structure to material or an argument, to display a method or example of how one thinks in a given field, or even to inspire and motivate students to explore further. Students who actively participate in the class generally understand the course material better and remember it longer.

- **A think-pair-share activity.** This method is applied in a way that learners take a minute to ponder
the previous lesson, later discuss it with one or more of their peers, and finally share it with the class as part of a formal discussion. During this formal discussion the instructor should let students explain the main cornerstones of previous lessons in their own words and clarify misconceptions if needed. However students need a background in the subject matter to converse in a meaningful way. Therefore a "think-pair-share" exercise is useful in situations where learners can identify and relate what they already know to others.

- **A learning cell.** This is an effective way for a pair of students to study and learn together. This is a process of learning where two students alternate asking and answering questions on commonly read materials. To prepare for the assignment, students will read the assignment and write down questions that they have about the reading. At the next class meeting, the teacher will randomly put the students in pairs. The process begins by designating one student from each group to begin by asking one of their questions to the other. Once the two students discuss the question. The other student will ask a question and they will alternate accordingly. During this time, the teacher is going around the class from group to group giving feedback and answering questions. This system is also referred to as a student dyad.

- **A short written exercise.** This method is often used as the one-minute-paper and is a good way to review materials and provide feedback from students.

- **A collaborative learning group.** This is a successful way to learn different materials for different classes. Students are assigned in groups of 3-6 people and they are given an assignment or task to work on together. This assignment could be either to answer a question to present to the entire class or a project. All project management rules are followed in use of present method as students in the group choose a leader to manage the group as well as a note-taker to keep them on track with the process. This is a good example of active learning because it causes the students to review the work that is being required at an earlier time to participate.

- **A student debate.** This is an active way for students to learn because debating gives students the chance to take a position and gather information to support their view and explain it to others. Debating not only gives student a chance to participate in a fun activity but it also lets them gain some experience with giving a verbal presentation within this process.

- **A reaction to a video.** The effectiveness of current method as an example of active learning lies in the fact that most students love to watch movies. The video helps students to understand what they are learning at the time in an alternative presentation mode. Learning process takes place through visual contact in more practical way. Additional questions before the video pay more attention and teacher’s notions where to focus at during the video make this type of learning even more efficient. After the video students either in groups or in pairs discusses what they learned and write a review or reaction to the movie.

- **A class game.** This energetic way of learning not only helps students to review the course material before a big exam, even more it helps them to enjoy learning about a topic.

- **Guest speaker.** Involving logistics professionals in the classroom provide many benefits to students and to their learning of the logistics. Also, professors supplement their general knowledge with the expertise of a guest speaker and can teach the topic with more depth and understanding. It provides a more meaningful engagement with the materials, and a new understanding of how society functions.

- **Role-playing.** Role-playing as an active teaching method refers to the changing of student's
behaviour to consciously act out an adopted role and thereby observe the progress of simulated situation. Present method may also refer to role training where students rehearse situations in preparation for a future performance and to improve their abilities within a role. The most common examples in practice are occupational training role-plays, educational role-play exercises, and certain military war-games. In Logistics’ based subjects this particular method is effectively implemented during classes of Supply Chain Management as well as Purchasing and Sales Management. Then, in the form of board games as an example different parties of a supply chain meet at particular conditions. Each participant has its need and demands within each scenario.

- **Debate.** Debate is a formal method of interactive and representational argument. Debate is a broader form of argument than logical argument, which only examines consistency from axiom, and factual argument, which only examines what is or isn't the case or rhetoric which is a technique of persuasion. Though logical consistency and some degree of emotional appeal to the audience are important elements of the art of persuasion, in debating, one side often prevails over the other side by presenting a superior "context" and/or framework of the issue, which is far more subtle and strategic. In a formal debating contest, there are rules for people to discuss and decide on differences, within a framework defining how they will interact. Informal debate is a common occurrence, the quality and depth of a debate improves with knowledge and skill of its participants as debaters. The major goal of the study of debate as a method or art is to develop one's ability to play from either position with equal ease. Debates are sometime organized for purely competitive purposes.

- **Case study.** A case study is a research method common in social science. It is based on an in-depth investigation of a single individual, group, or event. Case studies may be descriptive or explanatory. The latter type is used to explore causation in order to find underlying principles. They may be prospective, in which criteria are established and cases fitting the criteria are included as they become available, or retrospective, in which criteria are established for selecting cases from historical records for inclusion in the study. Rather than using samples and following a rigid protocol (strict set of rules) to examine limited number of variables, case study methods involve an in-depth, longitudinal (over a long period of time) examination of a single instance or event: a case. They provide a systematic way of looking at events, collecting data, analyzing information, and reporting the results. As a result the researcher may gain a sharpened understanding of why the instance happened as it did, and what might become important to look at more extensively in future research. Case studies lend themselves to both generating and testing hypotheses. Another suggestion is that case study should be defined as a research strategy, an empirical inquiry that investigates a phenomenon within its real-life context. Case study research means single and multiple case studies, can include quantitative evidence, relies on multiple sources of evidence and benefits from the prior development of theoretical propositions. Case studies should not be confused with qualitative research and they can be based on any mix of quantitative and qualitative evidence. Single-subject research provides the statistical framework for making inferences from quantitative case-study data. This is also supported and well-formulated by Lamnek (2005): "The case study is a research approach, situated between concrete data taking techniques and methodological paradigms." Using case studies is a widely accepted approach to teaching logistics and supply chain management. Case studies provide a concise description of often real-life supply chain management situations and trainees are requested to elaborate a plan of action suitable for the given situation.

- **Problem based learning.** The aim of PBL is to develop understanding and comprehension, to teach
‘know-how’ and to encourage students to seek out best practice and apply it to well known problems, which are nevertheless new to students. It reflects the way people learn in real life. The central proposition of PBL is that content is learned in the context in which it is used; that is, learning is approached holistically rather than within the boundaries of artificial (or skill) based compartments. The PBL approach is a cognitive apprenticeship simultaneously focusing on both the knowledge domain and the problem solving associated with that knowledge domain or profession. PBL is designed to integrate the subject knowledge students required in order to solve a particular problem and therefore study issues at a deep rather than surface level. PBL is proving to be a suitable learning and assessment method, as it helps the students to address their management skills and develop Supply chain and logistical knowledge.

Simulations. The main accent in development of both training and educational methods is put on using simulation techniques in developing new teaching material such as simulation-based case studies, simulation games. The application of simulation tools for teaching through seminars allows students to understand potential impact of various decisions on the supply chain network performance as various market conditions change. Simulation models have proved to be useful for examining the performance of different system configurations and/or alternative operating procedures for complex logistic and manufacturing systems. It is widely acknowledged that simulation is a powerful computer-based tool enabling decision-makers in business and industry to improve their organizational and operational efficiency. However, several limitations appear when trying to find a feasible solution to a logistic problem as only a limited number of simulation scenarios can be evaluated within acceptable time constraints.

In teaching practice there are even more active-learning methods in addition to those that were mentioned above. For example: case study simulation in the e-learning course environment, or problem solving with a simulation program or debate in the e-learning environment or an interactive lecture and so on. All of them are aimed to activate students in scope of learning together with others as well as with the teacher / lecturer. Another aspect is whether all of these methods are well applied by all subjects, both humanities and science subjects, with the maximum of efficiency. Moreover strategy of learning by teaching is a method in which guidance and active learning meet and allow students to teach the new content to each other under the supervision of instructors. Thereby behaviorism and cognitivism are integrated and form a coherent framework for theory and practice.

As a matter of experience, students face particular problems in acquiring such kind of knowledge when it comes to:

- reducing real processes to the essentials;
- recognizing fundamental structures and processes;
- understanding parallel processes causing conflict;
- understanding cause-effect relations.

Here, simulation and animation are ideal tools to support knowledge acquisition through illustration, visualization and experimentation. Depending on the focus and purpose they might be integrated into e-learning in two ways:

1. Focus on illustration: The content and appearance of animation sequences can be fixed in the form of Flash movies or pre-defined simulation-based trace files if animation is used only
for a comprehensible and vivid representation of knowledge to be imparted. For example, to illustrate processes and calculation algorithms or presenting alternative process variants for comparison. In this case animation data are created or generated outside the e-learning environment in advance. The student just starts the animation sequence without paying any attention to how the animation has been developed nor to the means and methods used.

2. Focus on experimentation: If knowledge acquisition may be supported by the independent planning, running and analysis of experiments in simulation-based exercises, animation is one of several possible forms for presenting simulation results produced by use of an existing simulation model. Students can change parameters within the range of freedom as defined by the model developer, but cannot create and implement a new simulation model.

Both scenarios for using simulation and animation in logistics learning have in common that no advanced simulation knowledge nor any specific model building competence is required by the students. They view or use models and should understand what is represented, but do not need to know how those models are designed and implemented.

3.4. Pedagogical problems in e-learning

E-learning is becoming very popular and is used all over the world. More and more organizations are beginning to use e-learning in some way. After the initial costs, it is cheap and available to a lot of people at the same time. It is convenient for distance learning students and people, who are already working. It is often thought, that e-learning magically makes everything better and solves all the problems. Often, it is not taken into account, that e-learning, like any new technology, is not without its faults and the implementations of e-learning should be carefully considered.

There is diversity in learning. People are different, they have different knowledge, they come from different cultures, especially in international courses. These issues should be taken into account when creating an e-learning experience. Khans’s (Khan, 2001) framework of e-learning dimensions (Figure 5) describes the factors that help to create a meaningful e-learning environment for diverse users.

The dimensions described by Khan (Ibid.) are:

1. the pedagogical dimension of e-learning refers to teaching and learning. This dimension addresses issues concerning content analysis, audience analysis, goal analysis, media analysis, design approach, organization and methods and strategies of e-learning environments.
2. the technological dimension of the e-Learning Framework examines issues of technology infrastructure in e-learning environments. This includes infrastructure planning, hardware and software.
3. the interface design refers to the overall look and feel of e-learning programs. Interface design dimension encompasses page and site design, content design, navigation, and usability testing.
4. the evaluation for e-learning includes both assessment of learners and evaluation of the instruction and learning environment.
5. the management of e-learning refers to the maintenance of learning environment and distribution of information.
6. the resource support dimension of the e-Learning Framework examines the online
support and resources required to foster meaningful learning environments.

7. the ethical considerations of e-learning relate to social and political influence, cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and the legal issues.

8. the institutional dimension is concerned with issues of administrative affairs, academic affairs and student services related to e-learning.

Fig.5. Dimensions of e-learning (Khan, 2001)

These dimensions should be taken into account when implementing e-learning in a Logistics courses.

It should be considered, how the people will use e-learning – the basics principles of how they will learn. In today’s rapidly changing world, the most successful skill a person can have is the ability to adapt, to learn new things and unlearn others. The notion of life-long learning is becoming more and more important. In the old times, people rarely changed their occupation and technologies they used in their work changed slowly, over decades or even centuries. Nowadays, new technologies are emerging with rapid speed and people must be able to keep up. The need is for people who are able to use their existing knowledge to make connections between the new and already known information, thus building new knowledge. This is the basic principle of constructivist theory.

It is popular claim that e-learning standards and systems can be “pedagogy neutral”- not supporting any particular pedagogic approach, but not all agree with it. Govindasamy (2001) claims, that for the implementation of e-learning to be a success, it should be built on strong pedagogical foundation – pedagogic principles should be included in the learning content management systems (LCSM). Most
learning management systems (LMS) providers see themselves as providers of technology and don’t care about the underlying pedagogical principles. LCMSs are packed with features, some of which are never used, because they don’t fit into the pedagogic approach chosen by the instructor. This is a waste of the organization’s money, as they’ve paid for the functionality that they never use.

Govindasamy warns that “the impact of not considering the underlying pedagogical principles when implementing e-learning will undermine the implementation process. Among other things, it will result in faculty members resisting the change, learners staying away from the learning courses, poor performance of learners and poor quality of content.” (Ibid.) He proposes five parameters, which pedagogical attributes should be taken into account. These are developing content, storing and managing content, packaging content, student support, assessment.

The previous models (Khan’s parameters and Govindasamy’s parameters) describe some of the aspects that should be considered when implementing e-learning. There are many problems in e-learning and at least some of them can be eliminated or subdued with proper handling.

The instructor’s role is to create an environment for learning and guide them in this process, not just present them the facts and expect them to memorize them. While this is also true in classroom learning, it is even more in e-learning, where instructors don’t have the same control over their students (Gamble, 2007). While the student are in the classroom, the teacher can assess their reactions – how they are responding to the material (are they bored, confused, interested, etc.) or do they look like they need help. In the e-learning environment, a lot of this control is lost. The instructor can’t see what the students are doing or how they are studying. They can’t help the student immediately, they can only do so if the student specifically asks for help, which not all students do. E-learning relies on the students to be able to learn by themselves. They have to have the sufficient skills and motivation to do so.

4. THE SURVEY

4.1. Review of related literature and studies on student perceptions in e-learning

Li and Akins (2005) stated, “Online teaching and learning is quick and easy” (2005, p. 56). They believed that people, including administrators, faculty, and students, who had never taught or studied online perceived that online classes were easy. They explain; that this perception led to the belief that faculty members who taught online courses must have very low expectations.

Pan, Sivo, Gunter, & Cornell (2005) found different student perceptions among different disciplines. In their study, online education worked better with psychology majors than with engineer-Mortagy & Boghikian-Whitbying students. Psychology majors perceived that faculty members had clear and high expectations and were satisfied with course activities. On the other hand, engineering majors found faculty members’ expectations unclear. Pan et al. (2005) suggested that faculty members should address students’ concerns in order to improve students’ attitudes in online education. They advised faculty to selectively use available technological features in virtual management systems that best facilitated effective course activities and increased learning outcomes. DeVillers emphasized, “Technology is a tool and a medium, but not the message itself” (2007, p. 19).

Dobbs, Waid, & del Carmen (2009) studied students’ perceptions of online course experiences. The study, which included 180 students taking online classes and 100 students taking face-to-face classes, reported that students perceived that traditional face-to-face courses were easier than on-line courses. In addition, students who had never taken any online courses had totally different perceptions about
online education compared to students who had taken online courses. Students who had never experienced online education perceived that faculty have low expectations, whereas students who experienced online courses believed that faculty have high expectations. Moreover, the study found a correlation between students’ perceptions and number of courses completed; the higher the number of online courses students taken, the higher the perception of faculty having high expectations and the stronger the acceptance of online courses.

Another study (Wyatt, 2003) revealed that students, who took online classes because they were convenient, found the courses more demanding, sometimes overwhelming, and that faculty had very high expectations compared to face-to-face courses. This resulted in a high dropout rate. Furthermore, the study found a high correlation between student age and the perception that on-line instruction provided a high quality experience; the older the student, the higher the perception.

A study by Dublin (2004) found that online learners knew what to expect; they expected immediate reply to their e-mails. According to the findings, student considered faculty not available if they did not receive a reply to their e-mails within 24 hours. Advancements in technology, such as mobile phones, have elevated this expectation to a higher level. A Recruitment and Retention survey conducted by the Noel-Levitz, Inc. (2006) indicated that online students want more faculty availability, better instructional quality, and better quality feedback.

Contrary to the above, Billings, Skiba, & Connors (2005) examined the differences between undergraduate and graduate students’ perceptions of best practices in online education. The study investigated generational differences between undergraduate and graduate students and how that affected their perceptions about online education. The study reported that graduate students spent more hours per week on their courses and needed more faculty member’s attention compared to undergraduate students. Moreover, since undergraduate face-to-face classes tended to be large, undergraduate students were satisfied by communicating with faculty members via e-mail. As a result, the study reported, that faculty availability to students in online courses was less satisfactory to graduate students compared to undergraduate students (Billings, et al., 2005).

“Online learning is a one way learning process, teacher-to-student in a given time block” (Li & Akins, 2005, p. 58). Students enrolled in online education characterized themselves as different compared to students in face-to-face classes. They had different needs and different expectations. Therefore, they perceived that faculty-to-student interaction and student-to-student interactions were more characteristic of on-campus courses and that those factors were not important (Wilkes, Simon, & Brooks, 2006).

The literature was clear about students’ desires with respect to online education. Students continuously rated student to student and faculty-to-student interactions as important factors (Sher, 2009) with faculty-to-student interactions reported as being of greater significance (Marks, Sibley, & Arbaugh, 2005; Tucker, 2001).

“Communication is about telling” (Dublin, 2004, p. 292). Faculty members teaching online tend to broadcast their messages to the entire class. Sometimes, those messages are very short and general. After a while those messages are treated like spam advertisements and students simply do not pay attention to them.

Tanner, Noser, & Totaro (2009) replicated a comparative study conducted by Wilkes et al. (2006) to generalize students’ and faculty members’ perceptions in online courses and degree programs. The study confirmed that faculty perceptions of feedback were different from students’ perception of feedback. In addition, the study recommended that administrators who are planning on offering online
courses should take students’ perception into consideration; they should address the concerns and anxieties of both students and faculty before making decisions (Tanner et al., 2009).

At the same time, the Recruitment and Retention Survey conducted by the Noel-Levitz, Inc. (2006) indicated that online students want better personalized quality feedback.

A common perception is that “Online learning is limited to content learning” (Li & Akins, 2005, p. 49). However, a study by Schilling (2009) used a textual delivery format for one group and multimedia course enhancement system for another group. The study examined internet-based and telehealth models for delivering health information to consumers. Data demonstrated that students using a multimedia course enhancement system had significant improvement in engagement with course materials and with student-to-student interaction. Further, students’ attitudes and perceptions were positive in the course evaluation (Schilling, 2009).

Dennen (2005) conducted a cross case analysis of nine naturalistic case study online classes. Her findings reflected that rubrics, deadlines, feedback, and faculty presence affect the learning of students in online courses. She reported that integrating discussions in class activities correlated with student motivation, participation, and overall satisfaction with course activities.

A common misconception regarding online students is the availability of flexible time to complete assignments. Huett, Moller, Foshay, & Coleman (2008) studied student, faculty, and administrators’ perceptions. The study found that online students were not in favour of synchronized chats due to time constrains and lack of time flexibility. They recommended that faculty members should not treat online courses the same as face-to-face course and should consider integrating flexibility to complete assignments in their online course design. Moreover, they recommended that administrators and faculty members attempting to teach online courses should start thinking outside the box, and collaborate with each other to advance the common vision of online education.

In the medical field, flexibility is a major factor in the success of online education. Another study reflected that students perceived the online delivery modality was convenient, flexible, and appropriate to their needs. Moreover, they included time flexibility to complete assignment as a critical factor, among other factors, in the success of online education (Dyrbye, Cumyn, & Heflin, 2009). Another study compared working adults with traditional students’ perception on communication and time flexibility. The study reported that working adults scored lower on communication flexibility than traditional students (Booth-Butterfield, 1998).

Is critical thinking skill a “buzz phrase?” Kuhn presented the first model of critical thinking that began with the question, “Do we really know what critical thinking is?” (1999, p. 16). Since that time, the academic community has gradually adopted the model, fostered and assessed critical thinking skills in their pedagogy, and recognized when students are using critical thinking skills (Osborne, Kriese, Tobey, & Johnson, 2009).

The literature reflected a lack of evidence about the existence of critical thinking skills activities in online education. One of the misconceptions that sparked as a result includes: “Learners’ responses to discussions cannot evolve” (Li & Akins, 2005, p. 56). The academic community constantly mentioned the misconception that critical thinking skills were implemented in online education. Beckett-Camarata (2007) investigated the existence of critical thinking skills in online courses. She reported that many online courses fail to integrate critical thinking skills in their courses.

However, the literature also reflected that case studies and asynchronous discussions included in online courses can encourage students to apply critical thinking skills (Buzzetto-More, 2008; Sanders
& Morrison-Shetlar, 2002). In a study of MBA students, Hay, Peltier, & Drago (2004) presented a reflective learning framework. After measuring the framework in online and traditional classes, they insisted that online management education was capable of encouraging higher levels of learning including critical thinking skills. They identified the key success factors as student-to-student interaction, role of faculty, and course content activities.

Another common assertion is “Online teaching and learning promote isolation, lack of community” (Li & Akins, 2005, p. 53). A study examined MBA students’ perception about student-to-student interaction in an online class modality. They reported that 64.5% of students did not perceive student-to-student interactions as an integral part in their learning outcome. They identified three possible reasons: time inefficiency, interaction dysfunction, and flexibility intrusion. They concluded that undergraduate students’ needs might not be the same as graduate students’ and recommended taking student-to-student interactions into consideration during future new course development stages (Kellogg & Smith, 2009).

On the other hand, Mash et al. (2006) stated that students valued interaction in online learning programs. The study showed statistically significant differences in faculty-to-student interactions and student-to-student interactions when comparing face-to-face to online class delivery modalities. However, more flexibility and better paced instructional design was recommended (Bloxham & Armitage, 2003).

A study by Easton and Katt (2006) compared face-to-face and online courses in social science and investigated students’ perceptions on the effect of social learning expectations and experiences of students with regard to motivation, comfort, and learning outcomes. The experiment consisted of three sections of the same course taught by three different instructors. One of the sections was online and the other two were in face-to-face modalities. The results indicated that students in all groups started the class with the same expectations. However, there was a difference in experience. The study concluded that differences in experiences were not a result of delivery modalities between face-to-face versus online and that social learning experiences were positive regardless of delivery modality.

Finally, according to Brannan (2005) online education consists of three critical interactions: student-to-content interactions (class activities), student-to-student interaction, and faculty-to-student interactions. In a study by Marks et al. (2005) students rated faculty-to-student interactions twice as high as student-to-student interactions.

It is clear that online education has evolved and it is on equal footing with the face-to-face teaching modality in many aspects. This study has successfully explained the current perceptions of many online students, and, in addition, some of the changes that have occurred over time. We are hopeful this study will encourage many more faculty members to consider offering online classes. However, this should not be done unless the faculty is aware of the many studies that outline the need for careful design of such courses.

Moreover, according to Cohen & Nycz (2006), “E-learning needs to be understood in the broader context of using technology to meet society’s needs for learning. It also requires us to understand that adult learners have psychological needs that e-learning must address” (p. 32). Hence, in a face-to-face class delivery modality, frequently faculty members instantly improvise and change their strategies based on the type of students in the class. This factor is missing in an online modality. Therefore, faculty members must assess their audience (type of students) even before designing their online courses; they should address the psychological needs of adult students during the development phase of the course; and orchestrate their instruction to satisfy the needs of all students.
The study’s findings reflect that online education is effective. Hence, the researchers hope that the results of this study will assist online education stakeholders (administrators and faculty) in gaining a better understanding of students’ perceptions and needs in online courses. Administrators will have better information to make better decisions, and faculty will effectively plan, develop, and offer online instruction based on the findings.

4.2. Research methodology

The aim of present chapter is to give a detailed overview of study conducted during years 2008 – 2011 based on the student’s feedback when using different teaching methods and techniques learning methods and thereby point out main advantages and disadvantages of both traditional and interactive teaching approach. During these years three learning objects -Logistical Strategy, Reverse Logistics, ABC-XYZ analysis and one online e-course Transportation Economics - were taught using different teaching techniques and in different groups at Tallinn University of Applied Sciences and in the Technical University of Tallinn. Feedback information used in the analysis was collected systematically during years 2008-2011 from all students, both daytime and distance learners, who passed subjects mentioned above. Applied methods in historical order as the interactivity of subjects developed was as follows:

1. traditional lecture in classroom environment, face – to - face (TCL);
2. traditional e-learning course mostly 50-75% e-learning based with simple uploads of learning materials (TELC); interactive e-learning course 100% e-learning based with multiple interactive add-inns (IELC);
3. traditional learning object having simple uploads of learning materials and considering less volume than a e-learning course (TLO);
4. interactive learning object with multiple various interactive application based on certain number of topics of whole subject (ILO).

4.3. Analysis of results

In order to receive adequate results of the whole research process there were purposely chosen different subjects of Logistics discipline. On one hand The basics of Logistics, where the learning objects were used, on the other hand very precise Transportation Economics, because of its close relation to micro- and macroeconomics and Reverse Logistics somewhere between them. Figure 6 reflects summarized results of the research and its better understanding needs for deeper analysis. Main outcomes of students´ feedback are therefore pointed out by examination of each question separately.

1. How active are students during the lecture / e-learning course / learning object?

Comparing to traditional classroom lecture (52,1%) interactive e-learning course (65,8%) and interactive learning object (61,2%) force students still more to demonstrate activity while learning. This result can be explained firstly by student’s self motivation and personal discipline to pass the subject. Second aspect is that within all e-based learning methods activity of students is much easily measured – number of clicks on the materials or number of comments in forums. TELC (21,2%) has significantly lower efficiency to lead students to work, very similar result is within the traditional learning object 31,5%, this can happen because of the low motivation of students to go to the lecture or seminar or to learn actively, if material is available in the e-environment, but e-course or object is not made interactively.
2. How good is students’ ability to cope with the usage of technical tools and programs during the lecture / e-learning course / learning object?

![Bar chart showing students' feedback on applied teaching methods]

**Figure 6:** Students’ feedback on applied teaching methods

Since traditional lecture usually does not have much additional technical appliances, thereby students evaluate their ability to cope with the usage of technical tools as very high (95.7%). Interesting aspect that students seem to handle technical adds within interactive teaching methods also quite well – interactive teaching object 66.3% and e-learning course 66.8%. This high percentage is mostly due to good explanation of technical description of e-learning methods within it and a good knowledge and
skills, that nowadays students have in ICT.

3. How does the lecture / e-learning course / learning object achieve its objectives?

Students feel the best results on their knowledge improvement during classroom lectures (65,0%), second comes learning object with 42,1% as its smaller volume comparing to e-learning course is all in all more concrete, more specific and more meets its final objectives. Traditional e-based learning methods have lowest shares.

4. How are you satisfied with the activities of the organizers of the lecture / e-learning course / learning object?

No doubt, the satisfaction with instructor/teacher of the subject is higher in TCL (75,1%), because it is easier to be reached. In the online environment it is very hard for the instructor of an e-course or a learning object to be active for students, the main role is to develop a good, well organized and developed, interactive e-course or learning object and to be active with the feedback and activities for students.

5. How are students satisfied with the evaluation of the lecture / e-learning course / learning object?

Evaluation is always more or less subjective process and often students need additional explanation for their grades. Relying on this aspect it is easy to justify the result why the satisfaction of evaluating is the highest when subject is managed via classroom lectures (91,2%). Evaluation according to knowledge acquired during e-learning course seems to have sense as well: as it usually covers the whole subject. Opposite situation is with traditional (4,9%) and interactive learning objects (9,6%) – due to their smaller volume, that usually covers only one specific topic of the whole course, the purpose of evaluation is often not stated.

6. How are students satisfied with the organization of the lecture / e-learning course / learning object?

According to results of the research, students prefer the organization of the interactive e-course (46,7%) rather than the organization of traditional lecture (39,5%). Despite the fact that the difference in feedback is not so big, there is reason to believe that it is still more complicated to move back and forth through the topics in the traditional lecture. On the other hand e-learning courses have these possibilities and let thereby students themselves organize their learning process.

7. How are students satisfied with learning tasks of the lecture / e-learning course / learning object (homework, group work, etc.)?

Quality of learning tasks, the process, evaluation and giving feedback is much more clearer and maybe more interested for the students in the real-time of traditional lecture, but almost the same result can be reached in e-learning environment with the use of right techniques.

8. How are students satisfied with the materials used in the lecture / e-learning course / learning object?

The results were mostly equal between these different approaches. It is very important to have good quality of materials used. On the other hand same materials presented to students during TCL lecture receive less satisfaction (42%) mostly due to the way they can be presented – visuals, presentations, other formats.

9. How are students satisfied with interactive adds used within the lecture / e-learning course / learning object?
In Traditional way of giving lecture it very easy to use different interactive methods to communicate with and motive the students, to get the same results in the e-learning course or interactive learning object there should be used different approaches and technologies, as for a example flash-card, videos, games, simulations, case-studies in the e-environment etc.

10. How are students satisfied with the structure of the lecture / e-learning course / learning object?

Similarly to a question of organization of the course or a lecture, when talking about structure of a subject, e-course, or a learning object students prefer structure of e-learning courses. During the traditional lecture, teachers rarely keep up upon a very specific structure, it depends on a lot of factors. Whilst e-learning courses and learning objects have clear structure that is not changed as the course is running.

5. CONCLUSION

Recent developments in the information technologies and telecommunications facilitate development of new training and educational methods and tools for Logistic and Supply Chain management courses, making them available for wider scope of concerned persons. This provides possibilities for organizing educational processes not only in the traditional way, but also by means of distance learning, exploring e-learning approaches. This is of special importance for vocational training, when trainees have to combine their studies with conventional work. Also, this opens new horizons for regional development, providing people with wide education possibilities within their residence and working areas. But with all the advantages, that comes in combining different interactive teaching methods together with e-environment there also some threats.

Consequently, to ensure a real return on a student’s online education investment, colleges and universities should consider following a research-based validated framework and benchmarks for planning, designing, delivering, and assessing online education. The success of an online course depends on effective course design using a student-centered model, delivery, and assessment. Since many regular university students do not register for online education, and many more drop out early in the course, further research is required to investigate the nature of students who continue, as well as those who drop out of online classes. Online education may not be for every student.

The study found that there is a difference in face-to-face and online modalities.

The initial conclusion can be drawn as follows:

- students are willing to use e-learning in their studies but not in every subject
- students still want to have face-to face lectures, but they should be held in the interactive mode, the same is with e-courses
- it is interesting that some students were completely satisfied with 100% e-course others suggested the normal proportion for in class activities and e-learning as 50/50
- the majority of students think that e-courses are better structured and organized than TCL
- group works are harder to be organized and controlled in the e-environment than in the TCL
- learning objects are sometimes good alternative for presenting some topics of the material in interactive way
When it comes for teachers then it is interesting to bring out there thoughts on the topic of using e-learning in the field of Logistics. M.Orey (Ed.), (2001), Emerging Perspectives on Learning, Teaching, and Technology, http://projects.coe.uga.edu/epltt/

University teachers have generally positive attitude towards online teaching, but there were brought out following problems related with online teaching and using it in general and in particularly in the logistics and SCM field:

- not enough supporting personnel (educational technologists, simulations, multimedia specialists, tutors);
- teaching staff is mainly interested in learning technical skills, not e-learning methodology, instructional design and that is the reason why they do not have knowledge how to organize learning process in e-learning courses;
- teaching staff is very busy and if they participate in training courses, they often drop out and do not finish the course. Older persons have difficulty to learn new skills (especially technical skills) for e-learning;
- some topics are hard to present in the e-environment;
- problems with counting workload of teachers and tutors.

From the viewpoint of Logistics’ discipline different subjects need different approaches; moreover there is never one unique teaching method in frames of particular subject. Many aspects depend on instructor (lecturer), as much preparation has to be done before in order to use any of active learning methods and gain effective result out of it. Relying on experience of implementing active learning strategies in Logistics at higher education level in Estonia, most effective are considered to be hybrid/blended learning teaching methodology, when e-learning is combined together with in class activities.

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ONLINE PROJECT ADMINISTRATION

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Abstract

Paper deals with development and use of online solution for the administration of the entire lifecycle of the projects funded under the grant of the Ministry of Education, Science, Research and Sport of the Slovak republic. Building of an online management system for administration, monitoring and evaluation of projects can be a significant milestone in the informatization of services provided by the Ministry of Education of Slovak Republic. Electronic processing of various forms and their partial unification will improve clarification of solved tasks, effectiveness of projects’ administration, consistent statistics and transparent indicators as well.

Keywords: project life-cycle, grant, online management system

1. INTRODUCTION

The main aim of the project www.portalvs.sk is to ensure the development of systematically ordered information about universities, which are guaranteed by people skilled in the area and creating an environment for the exchange of information as well as the educational products and systems offer. This aim is covered by already developed modules:

- Information about universities – In a form of bookmarks: information about the university, fields of study, universities entrance exams, etc.
- Research projects – this will enable the project applicant to go through the entire process of the financial approval of the project online.
- University News – Publishing information from the university section – such as new publications, university Open days, interesting lectures and presentations, etc.
- Conferences and seminars – calendar of events.
- E-learning – a catalogue containing all available e-learning courses provided by universities.

Very important aim was add to the project this year. The key systems of Slovak universities should be integrated to the portalVS.sk. These key systems are:

- Central student registry – registry made by universities which consist of information about all Slovak universities students.
- Electronics university application form – applicant to the university will have transparent and uniform way of enrolment to the universities. Also the university will have profit – quicker and effective enrolment process.
- On-line interconnections portalVS.sk – each Slovak university portal (XML).
Polls and discussion groups.
Study abroad – Socrates.
Publications evidence.

The main objective of the paper is to describe portal development and implement online solution for the administration of the entire lifecycle of the projects funded under the grant of the Ministry of Education of Slovak republic. Part of the solution is to link and use the available resources of the existing portal www.portalvs.sk. It is an introductory draft of the project, so the individual variants of the solution are not discussed in detail.

Recently, Ministry of Education, Science, Research and Sport of the Slovak republic is administrating seven types of the projects for universities, which electronization and unified electronic administration is suitable for inclusion in this project. Further description of each grant schemes is not mentioned because of the extension of the material.

Building an online management system for administration, monitoring and evaluation of projects can be a significant milestone in the informatization of services provided by the Ministry of Education, Science, Research and Sport of the Slovak republic. The intention is that each candidate for state support could send and monitor the project in all grant schemes, which are going to be valid starting from the year 2012.

Part of the project is:
- Description of the standard working procedure (workflow), which monitors the current lifecycle of the project from the perspective of the ministry.
- Draft of requirements for effective online management (administration) of posting, monitoring and evaluating of the projects.
- Proposal - the list of services that will be provided by analyzed functionality to different user groups (general public, applicants for the projects, reviewers and evaluators of projects) and to project sponsor (those who funded the project - usually the State through Ministry of Education, Science, Research and Sport of the Slovak republic).

Electronic processing of various forms in the various project types and their partial unification will bring not only clarification of the solved tasks, but also bring effectiveness of the administration of projects and the elimination of the need for studying different types of systems by submitters. So the solvers and evaluators of the projects can focus more on the content site of the projects, rather than formal site. Unification will also bring consistent statistics and transparent indicators.

2. METHODOLOGY FOR WEB-PORTAL CREATING

Web-portal should be defined as information source on the internet, which is accessible through web-interface. As a matter of fact it is just simple web page providing information and communication services. This kind of service serves to portal visitors and it supports necessary comfort – either during searching for information, or solving the particular problems. Information portal is created as a thematically specialized centre, providing information and news in a certain field.
For portals building it is most important to suggest an appropriate methodology. Creating of portal is analogous to creation of an information system, thence we have decided to use and adapt one of existing methodologies for IS design. We have chosen MDIS methodology, developed in Czech Republic in The University of Economics in Prague.

Figure 1 describes methods, tools and techniques we have chosen and used. In paper we don’t interpret process of choice.

Academic environment is characterized by independent and its-own opinions, as well as voluntariness. That’s why it is not possible to force users to use the portal. The only way to attract professionals and amateurs to use the portal is by its functions – provided services, information and their quality.

3. ARCHITECTURE DEFINITION

Proposal of Portal architecture has two levels - a global architecture, being the outline model and partial architectures. Global architecture has been developed. And from global architecture we specify partial architectures subsequently, and their mutual relations. To partial architectures do belong:

- Functional architecture – comes from global architecture concept, consists of functional blocks that are divided according to the functions they follow. Blocks are organized hierarchically to the elementary function.
- Process architecture – introduces proposal of basic processes by reactions on certain events. Modelling uses data-flows diagrams.
• Data architecture – proposal of portal data base, data objects and their relations, specific databases and the ways of their storage. Entity – relationships diagrams are used.

• Technological architecture – deals with portal technical solutions and choice of communication with environment standards (ODBC, SQL), as well as specific architecture (client-server). Choosing of user interface is also decided.

• Software architecture – defines software components of a portal. Specifies global software architecture, type, versions and number of licenses for both server and clients.

• Hardware architecture – defines necessary hardware components of servers, workstations, interfaces and peripheries.

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**Figure 2:** Global architecture of Slovak universities portal

Figure 2 defines global architecture of Portal, as well as interaction with target user types. Public and students, as can be seen, are only using data, and, vice-versa, Ministry of Education, Science, Research and Sport of the Slovak republic and UIPS have rights to add the data. Due to size of this paper we will not define mentioned architectures.

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**4. TECHNICAL INFRASTRUCTURE**

Because of the central electronic application of the projects and also because of the huge amount and importance of data concentrated on the portal, there is a need to have two geographically (and physically also) separated data centers. These will be interconnected by the means of geo-cluster. More information about the used solution should be found in the figure 3. The base objective of this
kind of solution is automatic cross-over of application to the secondary server in the case of primary server failure.

Figure 3: Portal data centers
5. ONLINE MANAGEMENT SYSTEM

Recently, Ministry of Education, Science, Research and Sport of the Slovak republic is administrating projects below for universities, which electronization and unified electronic administration is suitable for inclusion in this project:

Developing projects.

- Vega.
- KEGA.
- GAAV.
- Unplanned.
- APVV projects.
- Projects co-financed by EU.

Further description of each grant scheme is not mentioned because of the extension of the material.

Building an online management system for administration, monitoring and evaluation of projects can be a significant milestone in the informatization of services provided by the Ministry of Education, Science, Research and Sport of the Slovak republic. Providing of electronic services enables their recipients more effective handling of these services presented by the Ministry of Education, and for providers themselves, this means:

- To revalue the extensive administrative processes within the entities in order to adapt to new requirements.
- To introduce new management approaches that contribute to functional and effective administration of projects.
- To provide training for workers so that information and communication technologies can be used effectively.
- To create legislative and methodological conditions for the application and use of ICT in practice.

In the following text, because of the scope of the paper, we mention just a global view of each elaborated parts. In the figure 4 mentioned life cycle describes only the phases, which will be processed by the newly built system – so it does not deal with the processing of documents before the call. Important for the future will be the connection with the functional systems at the partners’ universities, as well as with the Ministry of Education, Science, Research and Sport of the Slovak republic and registers. This will cause a data exchange without the need of manual double input.

Users of the system:

- Submitter,
- Organization of the submitter,
- Administrator of the Call,
- Reporters of the projects,
• Opponents,
• System Administrator,
• Public.

Figure 4: The phases processed by the newly built online system

Services:
• Support for submitters of the projects,
• Evidence of requests for project,
• Evidence of projects,
• Support for commissions that approve projects,
• Evidence of expertises,
Evidence of the number of hours of individual submitters,
Support in administration of comprehensive agenda of projects,
Control of financial management,
Different types of statistical reports,
Remote evaluation of projects,
Multi-stage approval of projects,
Ongoing evaluation of projects,
Release of information about the results of projects evaluation,
Final opponency,
Outputs for the public.

Extent of application functions:

- Comprehensive administration of sending, approving, monitoring and evaluating of projects.
- Online information for submitters of projects, for responsible staff at universities and for the Ministry of Education, Science, Research and Sport of the Slovak republic and its controlled organizations.
- Modular structure (according to the type of project).
- CMS for administration of information data and structure of website.
- Detailed reports and statistics.
- Support of various exchange formats (pdf, rtf, csv, xml).
- Detailed search.

6. FINAL LAYOUT

Final layout (figure 5) is a result of discussion of professionals from education, information technology and web designers, we have been working on our research with.

On the ground of our practical experience and research, these technologies have been chosen:

- Client–client of the application is www browser
- Web server – It was not difficult to find out that Apache is the most popular and frequently used free web server. More than 60 percent of web portals use Apache.
- Programming language – it is one of the necessary parts if you want to create a portal (and not just for educational purposes). We have set up basic conditions - to insert text right into the HTML and simple services co-operated with database. As the result we have selected PHP.
- Database – There is a requirement for all web applications to be quick, reliable and have a safe space for storing data. The major conditions, which we take into the consideration, were the platform independence and the price. Finally, we have chosen the database MySQL where all
the necessary attributes are fulfilled.

- GNU/GPL – Entire portal for education can be built up on Open Source products. This means that software is free of charge and can be shared among the users and this rule should not be violated by anybody.

Figure 5: Homepage of Slovak universities portal

Following programming languages and technologies have been used:

- PHP4 (PHP: Hypertext Preprocessor)
- MySQL (Structured Query Language)
- HTML, CSS
- Java

Electronic processing of various forms in the various project types and their partial unification will bring not only clarification of the solved tasks, but will also bring effectiveness to the administration of projects and the elimination of the need to study different types of systems by submitters. So the solvers and evaluators of the projects can focus more on the content site of the projects, rather than formal site. Unification will also bring consistent statistics and transparent indicators.
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STUDY ABROAD AND SLOVAK REPUBLIC
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Abstract
Paper deals with research project www.studyabroad.sk – an on-line system for electronic administration of outgoing students in Slovak Republic. First, there was an analysis of approachable, recently used systems for administration of Erasmus program in particular European Union countries. Later, further analysis of possibilities of using such systems in Slovak Republic was made. In the paper mentioned facts result to the need to create a central standardized system with complex information for applicants. It shall remove informational insufficiency and eliminate students, who do not have true interest in going abroad.

Key words: on-line system, study abroad, management, administration, Erasmus

1. INTRODUCTION
Paper deals with the analysis of in the EU available systems, which form the software support of study abroad management and international cooperation. It consists of two parts – analysis of approachable recently used systems in particular countries and analysis and possibilities of using ICT in Slovak republic in the first part and a creation of a central standardized system for Erasmus administration in the second part.

To be able to define adequate conditions about access to information about study abroad at universities through ICT, we have carried out analysis of universities’ needs in Slovakia. We asked particular universities to send us information about services and information they provide, what systems they use, which specification in process they assert.

Later in the paper we also describe complex information system proposal, that creates appropriate conditions for providing informational needs to access information about abroad study at universities through internet in Slovak republic. In the pilot solution we have focused on Erasmus module, because through it travels to abroad almost 80 percent of the total amount of university students from foreign exchanging programs.

2. STUDY ABROAD PROGRAMS IN SLOVAK REPUBLIC
Main agencies and institutions, which administrate study abroad programs in Slovak republic are:

Slovak academic association for international cooperation is a voluntary association of personal and corporate entities, which goal is to support and coordinate international cooperation programs of Slovak universities and other institutions, mainly with countries of the European commonwealth within educational and other programs.

Association in its actions mainly:

- creates an information system about realized programs and about other international activities,
- provides information and consultation services about international training and other programs,
- organizes national and international seminars and conferences,
- promotes Slovak educational system in abroad and publishes information materials.

SAAIC programs:

- Comenius
- Erasmus
- Leonardo
- Grundtvig
- Sectional program
- Program Jean Monnet

Slovak academic information agency is a non-governmental organisation founded in 1990, with own programs and services strengthening society and helping internationalization of education and science in Slovakia. Important device for providing information about all SAIA programs has become internet. SAIA web page has widened (www.saia.sk) and information for research workers has been moved to a mobility portal for research workers (www.eracareers.sk). SAIA has also created an information portal about National scholarship program that enables on-line sending of the applications for scholarship (www.stipendia.sk, www.scholarships.sk).

Main SAIA programs:

- Academic studies abroad – provides information and consultancy, organizes seminars, advertises publications, organizes selection procedure for educational placements, etc.
- National scholarship program - for study abroad support.
- Action Austria – Slovakia, cooperation in science and education – program is finished provisionally. Legal basis for continuing of action is planned to June 2009.
- CEEPUS – central European exchanging program for university studies.
- Fond NIL – for internationalization of education support.
- M. R. Štefánik Scholarship.
Mobility centre for research workers – provides information about conditions for research workers placements, practical information about placements, organization of seminars, conferences, etc.

Except the most often performed (realized) types of abroad study mentioned before, placements are realized also in projects, whether international or national. Ministry of Education, Science, Research and Sport of the Slovak republic in Slovak republic provides coordination process of selection candidates from SR for scholarship placements at United World College (high school scholarships), university teachers and research workers within the exchanging program DAAD (German Academic Exchange Service) and foreigner students, who can study in Slovak republic according to achieved scholarship from government of Slovak Republic. To other programs belong:

- Fulbright’s program – its aim is to increase mutual understanding between people from USA and from other countries. Fulbright program is one of the biggest and most varied exchanging programs in the world and currently is carried out in 140 countries.
- International Visegrad Fund - The mission of the fund is to promote closer cooperation between Slovakia, Czech Republic, Hungary and Poland and strengthen mutual bonds between these countries.
- Studia Academica Slovaca – Comenius University in Bratislava, Philosophic faculty organizes summer school of Slovak language and culture Studia Academica Slovaca (SAS). The aim of this course is to achieve deeper communicative competence in Slovak language and wider the knowledge of Slovak linguistics, literature, history and culture.

3. SYSTEMS FOR ADMINISTRATION OF ERASMUS PROGRAM

In Europe, there are currently available systems creating software support for study abroad management. Existing software are:

- MoveOn - System consists of two modules MoveOn – International Relations Management, and MoveIn – Applications and Admissions Management. It is possible to use MoveOn for management of international cooperation and abroad study. MoveIn is used in the applications and admissions process. Primarily, it is dedicated for international universities’ offices. It is an application based on Microsoft Access database module and every licence has to be installed on user’s computer.
- Mobility-Online (Budget-Online) - System consists of two mutual integrated modules - Mobility-online and Budget-online. Mobility-online enables to direct, administrate and evaluate all processes connected with international cooperation and mobility of teachers and students. Being integrated with Budget-online, system enables to realize budget management and financial operations, too. This system operates as an internet portal.
- SocratesManager - Program is technically and contextually similar to MoveOn. It serves mainly for universities and it is oriented for exchanging students within Socrates program.
- LLP link - serves for statistical evidence of data about abroad studies in LLP programs (mainly Erasmus). It enables coordination of financial budgets and cost statements of particular countries.
- www.stipendia.sk – It serves to process the processes in the National scholarship program.
4. UNIVERSITIES' REQUIREMENTS

To be able to define adequate conditions of information access about abroad studies at universities through information and communication technology (ICT), we have carried out an analysis of Slovak universities’ needs. We have asked particular universities to send us information about what services and information they provide, what systems they use and/or what specification in process they assert.

Institutions administrating Erasmus study abroad programs in Slovak Republic are:

- SAAIC
- Universities

Ministry of Education, Science, Research and Sport of the Slovak republic co-ordinates Slovak candidates’ selection process for scholarship placements at Erasmus and United World College (high school scholarships), university teachers and research workers within the exchanging program DAAD (German Academic Exchange Service) and foreigner students, who can study in Slovak Republic.

Slovak academic association for international cooperation is a voluntary association of personal and corporate entities, whose goal is to support and coordinate programs of international cooperation of Slovak universities with other institutions, mainly within countries of European community educational and other programs.

Data acquired from different sources require a specific database system - MS Excel documents cannot connect particular data and therefore create actual or historical statistics.

There are currently four types of Erasmus mobility programs – students study mobility, students internship mobility, teachers mobility at university institutions and mobility–training of workers from university institutions and workers. Erasmus is a part of operational program of European committee LLP (Lifelong learning program) focused on university education. Its aim is to increase the quality of education and support European dimension of university education through international university cooperation.

The aim of our research was to find out the needs of universities and to find the requirements for student selection, as they create essential part of applicants; selection of workers is carried out usually by chief employee. Questionnaire contained 17 questions. We do not mention complex evaluation of the research because of its range.

We have analysed 20 universities, all of them joint the Erasmus program. Unfortunately, we were not able to establish a contact with two of them at that time, therefore as an analytic sample – 100 percent – we considered the amount of 18. We focused primarily on the state evaluation, i.e. if the items occurred or not.

Some important questions were:

Do you use any kind of ICT for administration?

All universities replied equally – they do not use any kind of specific software - MS Excel is used for data collection at all universities. It has two reasons – to create a system at an university would be difficult and expensive on one hand, and using xls files comes from the requirement of national agency to deliver statistics in this form (due to the data import to the EU system) on the other hand.
Did your superiors require from you any specific statistics?

Academic officers require from coordinators different types of statistics at 12 universities – mainly they are concerned in outgoing student statistic at a specific moment or period sorted out by countries. But only one university (STU Bratislava) keeps special record of these statistics (actual state sorted by countries). Others have to obtain these statistics with difficulties from different sources (paper forms, xls files). The remaining 6 universities have not met with any kind of requirement for specific statistic yet.

Will you be able to use mobility system on-line?

All of the 18 universities responded to this question positively - they would really welcome mentioned system. Four universities would probably use the system, but they needed to have more information about it. The result - every university joint in the Erasmus program will use ICT support - seems to be more then positive.

How many students refuse to attend the mobility after being chosen?

This question is critical because if a student is chosen and he/she finally refuses to take part, he/she does not have any responsibilities or restrictions. On the other hand, significant complications emerge for school – it is not possible to use an alternate participant, usually. It also happens that school cannot use assigned finances alternatively - they have to be returned back to the agency and to the EU, respectively.

Discovered state is negative. There is not an university, where it has not happened, that the chosen student, because of different reasons, has not taken part in study abroad. Three universities even declared that more than a half of chosen candidates have given up the possibility to travel.

According to our survey at universities, these limitations and requirements for using ICT were found:

- Criteria for financing the placement in a particular country are not exactly defined - it would be adequate to design a key for dividing finances according to the costingness of the particular country for Slovak Republic citizens.

- It is not possible to gain historic and actual data about outgoing students by the means of an easy method - it is necessary to automate these processes, not on the central level only, but mainly on an university level.

- Students are not able to choose neither university, nor a country appropriately, because they have not enough information about that place of mobility and they choose by chance, consequently. This is the reason why the selection of participants is sometimes noticeably unsuccessful.

5. INFORMATION SYSTEM FOR STUDY ABROAD IN SLOvak REPUBLIC

From the analysis and expert dialogues arises the need to process mainly the program Erasmus (it creates 70 percent from all mobilities carried out in the SR) in the best possible way. The aim of an on-line Erasmus mobility portal is to define and create adequate conditions for securing information needs in access to information about mobility at universities through internet. It will deal with the development and setting of an on-line solution for administration of international cooperation of educational institutions and exchanging Erasmus programs. Associated aim is the creation and
realization of new, successful web pages and setting of a publication system for content administration.

Solution will proceed in these basic phases:

- analysis of needs for a study-abroad on-line portal solution,
- analysis of current state and the needs of University in relation to Ministry of Education of the SR and SAAIC,
- specification of software requirements and hardware securing,
- development of the portal.

Basic function of the portal is to mediate given data in an adequate form and by an adequate user. Erasmus on-line deals with the most complex study abroad module used in Slovak Republic. As it resulted from the analysis, after the proposal of informational structure fulfilling requirements of Erasmus program will be another parameterisation for other modules possible by achievable process.

In the pilot year of solution it is supposed that together with Erasmus module also other modules will be solved – exchange projects in the basic version and National scholarship program (nowadays processed on-line, therefore probably data-interconnectable). Not less important part will be the automatization of producing Europe mobility confirmations.

Figure number 1imagines block structure of the proposed portal. Particular users of portal are displayed around. It is an abstract view, therefore particular ties among users or systems are not defined. Accurate ties description comes from the realization of the project and specification of the conditions from the claimer and upon the proposal of informational architecture by the creator of the system. Public can utilize the data and on the contrary, universities, Ministry of Education, Science, Research and Sport of the Slovak republic and agencies have the authorization to enter the data. Specified users are applicants – preferred group (predominantly made by students). Applicants utilize data from the portal (about study-abroad possibilities, information about universities etc.) and they enter data as well – personal details, documents necessary to travel abroad and many others.

The content of portal will be divided into several units – informational character for all kind of study abroad, processes character for study abroad (possible to process on Slovak site) and statistical character for abroad study (not possible to process in Slovakia, but possible to keep data about them).

Particular functional blocks itemized for concrete functions, as accurate description of algorithms particular functions, or actions done by users, will be accurately specified in the realized project. We mentioned here basic classification of functional units with its brief description only:

- **Basic functions** – basic function of portal will be to mediate given data by adequate form and adequate user. Modules, which will not be solved complexly yet, will be registered with basic data about the placement (how many people and how long were on particular study abroad placement) and by complexes informational data (through CMS).

- **CMS** – important element which provide whole administration of data in databases and their intervention into application layers. Also it is concerned with providing parameterisation of particular modules without the need of programmer to intercede. It is concerned with management of various kinds of registers, statistics, users, documents, functions and content as such.
• **Core** – core of application, which provides process in particular modules. It is concerned with reporting services, monitoring of the processes, exchanging data between modules and between various systems, personal details administration, setting deadlines, generation of documents, notifying service etc.

• **Erasmus** – basic module of portal in the first year of building. Debug mistakes, find possible shortcomings. Deal with the most complexes module for study abroad used in Slovak republic. As it came from analysis, after the proposal of informational structure fulfilling requirements of Erasmus program will be another parameterisation for other modules possible by achievable process.

• **Further modules** – in the pilot year of solution it is supposed that together with module Erasmus will be solved also another modules – projects in the basic version and National scholarship program, which is processed on-line recently, so it will be probably an interconnection of data. Not less important part will be the automatization of producing Europe mobility confirmations.

**Figure 1 – Block structure of study-abroad portal**
Final layout (figure 2) is a result of discussion of professionals from education, information technology and web designers, we have been working on our research with. On the ground of our practical experience and research, these **technologies** have been chosen:

- **Client** – client of the application is www browser
- **Web server** – It was not difficult to find out that Apache is the most popular and frequently used free web server. More than 60 percent of web portals use Apache.
- **Programming language** – it is one of the necessary parts if you want to create a portal (and not just for educational purposes). We have set up basic conditions - to insert text right into the HTML and simple services co-operated with database. As the result we have selected PHP.
- **Database** – There is a requirement for all web applications to be quick, reliable and have a safe space for storing data. The major conditions, which we take into the consideration, were the platform independence and the price. Finally, we have chosen the database MySQL where all the necessary attributes are fulfilled.
- **GNU/GPL** – Entire portal for education can be built up on Open Source products. This means that software is free of charge and can be shared among the users and this rule should not be violated by anybody.

![Study Abroad](image)

**Figure 2:** Homepage of StudyAbroad portal

Following programming languages and technologies have been used:

- **PHP4** (PHP: Hypertext Preprocessor)
- **MySQL** (Structured Query Language)
6. CONCLUSION

One of the key problems of the effective communication, coordination and verification development in the knowledge society belongs to quick and effective providing of guaranteed information, to possibility of its quick and flexible searching and to mediating and exchanging of valid experiences and knowledge as well. To ensure these processes in desired quality and extension can be real nowadays only with the help of the information and communication technology. They require the fulfilment of the basic conditions – technological equipments and informational literacy of the people.

No one stopped upon high penetration of population with mobile phones today. It is so because, for users they bring services, without which they could not imagine their life. Internet environment behaves similar for those, who have the interest in new information and the speed of its acquiring. They become addicted on internet in the positive meaning – they are able to carry out their duties quickly and comfortably. Man using internet services is not addicted from news in radio, television or from thousand pages of newspaper. He is stored with information, which needs and it is up to him, if the sources could be found and give information correctly evaluateable.

ACKNOWLEDGEMENTS:

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REFERENCES


THE QUALITY OF THE ACCOUNTING EDUCATION ON UNDERGRADUATE AND GRADUATE LEVEL IN ESTONIAN UNIVERSITIES
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Abstract
The change from a command to a market economy has inevitably influenced the entire educational system in Estonia. One of the most significant features of the new educational system is that each Estonian university received a freedom to design and adopt its own curriculum in any field of study. A wide variety of programs exist with even greater variations quality. The paper gives an overview of the content of Accounting curricula on undergraduate and graduate level in Estonian universities. The aim of the research was to evaluate the quality of Accounting education and its conformity with the needs of Estonian economy (enterprises) and to figure out the critical areas.

Key words: accounting education, accounting curriculum, Estonia, methods of study, general skills, undergraduate level, graduate level.

1. INTRODUCTION
In the context of accounting in Europe, Estonia is one of the less-known states. The Estonian accounting regulation has only a relatively brief history compared to those of some other European countries.

On the period 1918–1940 it was possible to learn accounting in several trade schools all over Estonia, in short and also long time courses mostly in South-Estonia – Tartu, Viljandi and Valga, and also at Tartu University. In 1920 Law Faculty of Tartu University opened the Institute (Department) of Commercial Studies. In 1936 the Accounting Department was established at Tartu University. It has to be noted that in spite of several learning possibilities the quality of the education was quite poor. It can be explained by the fact that there were no good teaching materials and Estonian speaking academics.

After incorporating Estonia into the USSR in 1940, and in fact after the World War II, the Soviet system of bookkeeping was in use. From 1945 until 1990 the Soviet influence on accounting development (including accounting education development) had been total because Estonia was a part of former Soviet Union. Under the Soviet period all Estonian institutions of higher education had been conducting the accounting curricula on the basis of a single curriculum designed in Moscow. After declaring the restoration of the independence of the Republic of Estonia in 1990, it became possible to
begin reform of accounting and join the system of accounting of developed market orientated countries.

Each Estonian institution of higher education received a freedom to design and adopt its own curriculum in any field of study. A wide variety of programs and courses exist with even greater variations quality. Due to the absence of official curricula and textbooks, the initiative for the development of these programs has been foremost with individual instructors and institutions.

The paper seeks to review the possibilities of obtaining higher accounting education at applied higher education, bachelor and master’s level. The volumes and structure of curricula in Estonian institutions of higher education have been compared in the paper based on data of the Estonian Ministry of Education and Research and the data available at websites of local institutions of higher education.

Additionally the authors conducted from 7 November 2008 to 8 February 2011 a questionnaire survey on accounting education in Estonia. An objective of the survey was to evaluate the conformity of accounting education to enterprises’ needs and to identify the knowledge and skills which should be focused more attention to. Also the suitable forms of study for obtaining accounting education were mapped. The survey discussed most important problems, on the basis of the survey results, encountered while obtaining accounting education.

2. HIGHER ACCOUNTING EDUCATION IN ESTONIA

2.1. Applied higher accounting education

It is possible to obtain applied higher accounting education at Tallinn College of Tallinn University of Technology (TCTUT), at three institutions of applied higher education (Lääne-Viru College (LVC), Mainor Business School (MBS), Institute of Economics and Management (IEM)), and at one vocational education institution (Tallinn School of Economics (TSE)).

Estonia has established a national accounting curriculum at the vocational education level, which requires the vocational education institutions to bring their curricula into conformity with these from the academic year 2007/2008 (Nikitina-Kalamäe 2010). Curricula of other higher schools are not regulated at the national level.

Next we list the curricula which enable to acquire applied higher accounting education:

4. TCTUT curriculum Accounting (major: Accounting);
5. LVC curriculum Accounting;
6. MBS curriculum Business Administration (major: Entrepreneurship, minor: Accounting and Financial Management);
7. IEM curriculum Business Management (specialisation: Business Finance, Bookkeeping and Audit);
8. TSE curriculum Bookkeeping.

Table 1 compares the five applied higher education curricula in accounting. The figures in bold in the table denote compulsory subjects. Since many subjects in the curricula contain components of different subjects, then in order to make the curricula of different universities comparable, the authors of this paper have modified the subjects based on the actual contents of the study programmes and course descriptions, depicting them on different rows in the table.
Depending on the volume of curricula in Table 1, applied higher accounting studies last 3–4 years. Most of the subjects are compulsory and the share of optional subjects in curricula is insignificant. It can be seen from the comparison that curricula are quite different, in terms of both content and volume of subjects, which in turn leads to different levels of graduates and might cause problems for continuing in master’s courses.

The comparison of curricula in Table 1 shows that the share of speciality subjects in the curriculum is the biggest at Lääne-Viru College (61%). The most diverse by accounting subjects is the curriculum at the Tallinn College of Tallinn University of Technology, which includes also subjects (International Accounting, Taxation and State Budget) that are missing in other curricula of applied higher education. The course Accounting Information Systems is available in all five curricula and also the subject volumes are similar.

Table 1. The Comparison of Five Higher Education Curricula in Accounting.

<table>
<thead>
<tr>
<th>Institution</th>
<th>TCTUT</th>
<th>LVC</th>
<th>MBS</th>
<th>IEM</th>
<th>TSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount of curriculum (ECTS)</strong></td>
<td>210</td>
<td>180</td>
<td>180</td>
<td>240</td>
<td>180</td>
</tr>
<tr>
<td><strong>Subjects in ECTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Accounting</td>
<td>8</td>
<td>4+2</td>
<td>3</td>
<td>1</td>
<td>5+2</td>
</tr>
<tr>
<td>Intermediate Financial Accounting I (Advanced Course)</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Intermediate Financial Accounting II (Advanced Course)</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Accounting Theory</td>
<td></td>
<td></td>
<td></td>
<td>4,5</td>
<td></td>
</tr>
<tr>
<td>Group Accounting</td>
<td>3</td>
<td>1,5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting for Nonbusiness Organizations</td>
<td>4</td>
<td>2</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>International Accounting</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Information Systems</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Financial Reporting</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Reporting Analysis</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Accounting</td>
<td>2</td>
<td>2,5</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cost Accounting</td>
<td>10</td>
<td>2,5</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Auditing</td>
<td>3</td>
<td>1,5</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Internal Audit</td>
<td>6</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Taxation</td>
<td></td>
<td>6</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Taxation and State Budget</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Communication</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics for Accountants</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### An exception standing out is the subject Accounting Theory, which by its level and content should be part of the master’s study. Some curricula include also such subjects as Group Accounting, Accounting for Non-business Organizations, International Accounting, Internal Audit, Accounting Communication and Ethics for Accountants, which at the applied higher education level are not indispensable, in the authors’ opinion. At the same time, such subjects as Financial Reporting and Financial Reporting Analysis should be definitely available in all applied higher education curricula.

The curriculum of the Mainor Business School lacks the subject Management Accounting and that of the Institute of Economics and Management such subjects as Cost Accounting and Taxation, which most definitely should be available. The most conservative from the aspect of teaching accounting as a speciality might be the curriculum of the Institute of Economics and Management, where the structure and volume of specialty subjects is insufficient.

The share of practical training (Table 1) in the curricula is rather high (15–27% of the curriculum). The share and volume of practical training is the highest in Lääne-Viru College and Tallinn School of Economics. An exception here is the Institute of Economics and Management – a document at its homepage mentions practical training in the curriculum but its volume cannot be identified and therefore it was omitted in the comparison.

Figure 1 depicts a bar chart which compares the total volumes of speciality subjects in applied higher education curricula in ECTS in Financial Accounting, Cost Accounting and other specialties. Omitting from the comparison the curriculum of the Institute of Economics and Management, where the subject volumes are not comparable to those of other applied higher education curricula, the biggest difference in the volume of curricula is in Financial Accounting. The volume of subjects in Financial Accounting varies up to 44%, which may be regarded as a too big difference in teaching speciality subjects. The most equal are the subject volumes in Cost Accounting, which vary by curriculum only up to 17%. The proportion of other speciality subjects varies up to 37%.

### 2.2. Bachelor level accounting education

One can obtain a bachelor degree in accounting in three universities: Estonian University of Life Sciences (EULS), Tallinn University of Technology (TUT), University of Tartu (UT).

Next we list the curricula which enable to obtain a bachelor degree in accounting:

- **EULS curriculum** *Rural Entrepreneurship and Financial Management* (specialisation: Accounting and Financial Management);
- **TUT curriculum** *Business* (major: Accounting);
- **UT curriculum** *Business Economics* (speciality: Finance and Accounting).
Table 2 provides a comparison of the three bachelor level accounting curricula. The figures outlined in bold in the table denote compulsory subjects. Since many subjects in the curricula include components of different subjects, then so as to make the curricula comparable to each other the authors of this paper have modified the subjects based on the actual contents of the study programmes and course descriptions, depicting them on different rows in the table.

Bachelor studies last 3 years in all three universities. Most of the subjects are compulsory and the share of optional subjects in curricula is insignificant. The curricula presented in Table 2 are relatively similar in terms of both subject content and volume. An exception is the curriculum of the Estonian University of Life Science, where Practical Training is absent while other subjects missing in other curricula have been added (Accounting for Non-business Organizations, Accounting Information Systems). The authors of this paper are of the opinion that the subject Accounting Information Systems is so important for accounting speciality from the aspect of contemporary information society that it should be definitely included in the bachelor curricula. The bachelor level curricula should also contain such subjects as Financial Reporting, Financial Reporting Analysis and Auditing. The curriculum of the University of Tartu lacks the subject Taxation, which is definitely necessary at the bachelor level.

Comparing the applied higher education curricula (Table 1) to bachelor level curricula (Table 2), the different is noticeable. The volumes of special subjects on the bachelor level are twice smaller and the share of practical training in curricula nearly non-existent. This, however, indicates that from the aspect of obtaining a speciality the bachelor level education does not allow entering the labour market in real life although it was one of the main objectives of higher education reform and transition to 3+2 system. While speciality subjects in applied higher education curricula (Table 1) account for 45–60% of the total volume of the curriculum, in bachelor curricula (Table 2) the speciality subjects account only for 21–26%. Comparing the share of practical training in curricula, we can see that in applied higher education curricula it is 15–27%, but in bachelor curricula only up to 3%. To sum up, it may be
said that the students who have obtained applied higher education have undoubtedly better theoretical knowledge and practical skills in accounting than the students with a bachelor degree.

Table 2. Comparison of Bachelor Level Accounting Curricula.

<table>
<thead>
<tr>
<th>Institution</th>
<th>EULS</th>
<th>TUT</th>
<th>UT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of curriculum (ECTS)</td>
<td>180</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>Subjects in ECTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Accounting</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Intermediate Financial Accounting I (Advanced Course)</td>
<td>2.5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Intermediate Financial Accounting II (Advanced Course)</td>
<td>2.5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Accounting for Nonbusiness Organizations</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Information Systems</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Accounting</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Cost Accounting</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Taxation</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Accounting Communication</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Practical Training</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree Course Workshop</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Graduation Thesis</td>
<td>12</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Total number of European credit transfer system (ECTS)</td>
<td>42</td>
<td>47</td>
<td>38</td>
</tr>
<tr>
<td>Total number of accounting-related courses (compulsory + elective)</td>
<td>8</td>
<td>8+1</td>
<td>5+1</td>
</tr>
</tbody>
</table>

The bar diagram on Figure 2 compares the total volumes of speciality subjects (in ECTS) in bachelor curricula in Financial Accounting, Cost Accounting and other specialities.
The most similar are the subject volumes in Financial Accounting, which vary only up to 18% in different curricula. The biggest difference in curriculum volumes in bachelor education is in Cost Accounting. The subject course volumes in Cost Accounting vary up to 52%, which makes a more than two-fold difference. The shares of other speciality subjects in curricula vary up to 21%.

2.3. Master’s level accounting education

It is possible to obtain a master’s degree in accounting at four universities: Estonian University of Life Sciences (EULS), University Euroacademy (UE), Tallinn University of Technology (TUT) and University of Tartu (UT).

Below are listed the curricula which enable to obtain a master’s degree in accounting:

- EULS curriculum Accounting and Financial Management;
- UE curriculum Business Administration (specialisation: Accounting);
- TUT curriculum Business Finance and Accounting (specialisation: Accounting);
- UT curriculum Economics (specialisation: Finance and Accounting).

Table 3 compares three accounting curricula on graduate level. The figures outlined in bold in the table denote compulsory subjects. Since many subjects in the curricula contain components of different subjects, then so as to make the curricula comparable to each other the authors of this paper have modified the subjects based on the actual contents of the study programmes and course descriptions, depicting them on different rows in the table.

<table>
<thead>
<tr>
<th>Table 3. Comparison of content of Accounting curricula on graduate level.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount of curriculum (ECTS)</strong></td>
</tr>
<tr>
<td>Intermediate Financial Accounting I (Advanced Course)</td>
</tr>
<tr>
<td>Intermediate Financial Accounting II (Advanced Course)</td>
</tr>
<tr>
<td>Accounting Theory</td>
</tr>
<tr>
<td>Group Accounting</td>
</tr>
<tr>
<td>Accounting for Nonbusiness Organizations</td>
</tr>
<tr>
<td>International Accounting</td>
</tr>
<tr>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>Financial Reporting</td>
</tr>
<tr>
<td>Financial Reporting Analysis</td>
</tr>
<tr>
<td>Management Accounting</td>
</tr>
<tr>
<td>Strategic Managerial Accounting</td>
</tr>
<tr>
<td>Cost Accounting</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Cost Management</td>
</tr>
<tr>
<td>Auditing</td>
</tr>
<tr>
<td>Internal Audit</td>
</tr>
<tr>
<td>Taxation</td>
</tr>
<tr>
<td>Taxation and State Budget</td>
</tr>
<tr>
<td>International Taxation</td>
</tr>
<tr>
<td>Accounting Communication</td>
</tr>
<tr>
<td>Social and Environmental Accounting</td>
</tr>
<tr>
<td>Ethics for Accountants</td>
</tr>
<tr>
<td>Ethics for Public Accountants</td>
</tr>
<tr>
<td>Practical Training</td>
</tr>
<tr>
<td>Master Degree Course Workshop</td>
</tr>
<tr>
<td>Graduation Thesis</td>
</tr>
<tr>
<td>Total number of European credit transfer system (ECTS)</td>
</tr>
<tr>
<td>Total number of accounting-related courses (compulsory + elective)</td>
</tr>
</tbody>
</table>

Master’s degree studies in accounting last 2 years. Master study curricula are characterised by a relatively high share of optional subjects compared to applied higher education (Table 1) and bachelor (Table 2) curricula, where these are nearly non-existent. The comparison of master study curricula in Table 3 shows that the curricula are extremely different, both by subject content and volume, leading to quite different educational levels among those who have obtained an accounting master’s degree.

Table 3 indicates that the share of speciality subjects in total volume of curriculum is the highest in Tallinn University of Technology (80%), whereas this share may be also twice smaller in other master study curricula. The most diverse by accounting subjects is the curriculum of Tallinn University of Technology, which contains also subjects missing in other master level curricula (Accounting Theory, Strategic Managerial Accounting, International Taxation, Accounting Communication, Social and Environmental Accounting, Ethics for Accountants, Ethics for Public Accountants). The authors are of the opinion that these subjects should definitely be available in the second stage of higher education.

The weakest by the volume of specialty subjects might be the master study curriculum of the University Euroacademy, where several subjects are missing (Group Accounting, Accounting for Non-business Organizations, International Accounting, Auditing, Internal Audit) which in all other master study curricula are available. Additionally, this curriculum contains subjects (Managerial Accounting, Cost Accounting, Taxation) which by their content should be taught at the first stage of higher education.
The authors of this paper are of the opinion that the subject Intermediate Financial Accounting should also be taught at the first stage of higher education. For example, in the curriculum of Tallinn University of Technology it is included as an elective course, to enable students from other higher education institutions who have not obtained this subject in a similar amount to improve their knowledge.

As regards the share of practical training in master study curricula, it is nearly non-existent because it is assumed that when a student comes to obtain a master’s degree he/she already has a sufficient work experience and practical training and in the curricula it is not necessary to include. Moreover, in order to encourage studying in master’s courses and to reconcile work and study, lectures in master’s courses are held in the evening and on weekends. An exception is the curriculum at the University of Tartu, which contains also practical training in speciality, at the same time the Master Degree Course Workshop is missing.

The bar diagram on Figure 3 compares the total volumes of speciality subjects (in ECTS) in master degree programmes in Financial Accounting, Cost Accounting and other speciality subjects.

3. SURVEY OF THE QUALITY OF HIGHER ACCOUNTING EDUCATION

The survey was conducted in four stages. The first round was held on 7 November 2008 at an international conference “Business Analysis, Accounting, Taxation and Auditing” in Tallinn. On the conference approximately 60 questionnaires were handed out, from which 19 were completed and returned. 11 of them were taken into consideration when interpreting the results. The second round of
questioning was conducted by e-mail on 1 November 2009. 61 questionnaires were sent. 23 people responded, and 21 responses were taken into account in the research results. The third round was conducted on 5 February 2011 when the participants in training courses of chief accountants were interviewed. 51 questionnaires were distributed, from which 17 were taken into account in the research. The fourth round of questioning was held on 8 February 2011 where 38 master’s students were interviewed within the framework of a TUT master’s workshop. 35 responses were taken into consideration in the research. A total of 84 responses were taken into account in the research.

The questionnaire comprised lists of subjects, forms of study, general skills and problems, which the respondent had to assess in a five-point scale. The questionnaire contained also open-ended questions, which enabled the respondents to supplement the lists and express their opinion.

For constructing the questionnaire the authors of this paper used curricula of various schools of higher education as well as results of the research into accounting education conducted by US professors W. S. Albrecht and R. J. Sack in 2000.

3.1. Profile of the respondents

All respondents whose responses were taken into account in the research had (applied) higher education in accounting, which was a prerequisite for selecting the questionnaires. Graduates/students from four universities (Tallinn University of Technology, University of Tartu, Estonian Business School, Estonian University of Life Sciences), one applied higher education institution (Lääne-Viru College) and one vocational education institution (Tallinn School of Economics) were represented.

Table 4 provides the age structure of the respondents to the questionnaire.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percentage share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 35 years</td>
<td>71</td>
</tr>
<tr>
<td>36–50 years</td>
<td>23</td>
</tr>
<tr>
<td>51–65 years</td>
<td>5</td>
</tr>
<tr>
<td>Over 65 years</td>
<td>1</td>
</tr>
</tbody>
</table>

15.5% of the respondents were males.

Table 5 gives the profile of respondents by title.

<table>
<thead>
<tr>
<th>Title</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant</td>
<td>24</td>
</tr>
<tr>
<td>Chief accountant</td>
<td>24</td>
</tr>
</tbody>
</table>
Table 6 gives an overview of respondents’ work experience in accounting.

**Table 6. Work experience in accounting**

<table>
<thead>
<tr>
<th>Number of years</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–5 years</td>
<td>58</td>
</tr>
<tr>
<td>6–10 years</td>
<td>12</td>
</tr>
<tr>
<td>11–20 years</td>
<td>14</td>
</tr>
<tr>
<td>21–30 years</td>
<td>6</td>
</tr>
<tr>
<td>More than 31 years</td>
<td>2</td>
</tr>
<tr>
<td>Respective work experience is missing</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 7 presents the size of enterprises based on the number of employees.

**Table 7. Size of enterprises based on the number of employees.**

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10 employees</td>
<td>18</td>
</tr>
<tr>
<td>11–50 employees</td>
<td>30</td>
</tr>
<tr>
<td>51–250 employees</td>
<td>38</td>
</tr>
<tr>
<td>More than 250 employees</td>
<td>14</td>
</tr>
</tbody>
</table>
Respondents had work experience in very different areas of activity, from public sector (local governments, educational and research institutions), enterprises providing accounting and auditing services, various production (chemical industry, construction, real estate development) and service enterprises (IT, medicine, retail and wholesale, advertising, telecommunication, transport, logistics) to financial institutions (banking, leasing, insurance).

### 3.2. Assessment of knowledge and skills obtained

Table 8 depicts the assessment of respondents of the knowledge and skills they have obtained in the educational institution based on the adequacy to what they need in their profession.

**Table 8.** Adequacy of knowledge and skills obtained in educational institutions for the professional career (number 1 in the five-point scale means “inadequate” and number 5 “completely adequate”).

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Obtained knowledge</th>
<th>Assessment of obtained skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Accounting</td>
<td>4.55</td>
<td>4.36</td>
</tr>
<tr>
<td>Intermediate Financial Accounting II (Advanced Course)</td>
<td>4.34</td>
<td>4.04</td>
</tr>
<tr>
<td>Accounting Theory</td>
<td>3.94</td>
<td>3.21</td>
</tr>
<tr>
<td>Group Accounting</td>
<td>3.65</td>
<td>3.64</td>
</tr>
<tr>
<td>Accounting for Nonbusiness Organizations</td>
<td>4.09</td>
<td>3.63</td>
</tr>
<tr>
<td>International Accounting</td>
<td>3.55</td>
<td>2.91</td>
</tr>
<tr>
<td>Accounting Information Systems</td>
<td>3.79</td>
<td>3.93</td>
</tr>
<tr>
<td>Financial Reporting</td>
<td>4.33</td>
<td>4.27</td>
</tr>
<tr>
<td>Financial Reporting Analysis</td>
<td>4.21</td>
<td>4.10</td>
</tr>
<tr>
<td>Management Accounting</td>
<td>4.01</td>
<td>3.75</td>
</tr>
<tr>
<td>Strategic Managerial Accounting</td>
<td>3.89</td>
<td>3.55</td>
</tr>
<tr>
<td>Cost Accounting</td>
<td>4.03</td>
<td>3.68</td>
</tr>
<tr>
<td>Cost Management</td>
<td>3.89</td>
<td>3.64</td>
</tr>
<tr>
<td>Auditing</td>
<td>4.16</td>
<td>3.72</td>
</tr>
<tr>
<td>Internal Audit</td>
<td>3.68</td>
<td>3.37</td>
</tr>
<tr>
<td>Taxation</td>
<td>4.16</td>
<td>4.26</td>
</tr>
<tr>
<td>Taxation and State Budget</td>
<td>3.84</td>
<td>3.77</td>
</tr>
<tr>
<td>International Taxation</td>
<td>4.19</td>
<td>3.91</td>
</tr>
<tr>
<td>Accounting Communication</td>
<td>3.63</td>
<td>3.76</td>
</tr>
<tr>
<td>Social and Environmental Accounting</td>
<td>3.35</td>
<td>2.94</td>
</tr>
<tr>
<td>Ethics for Accountants</td>
<td>4.00</td>
<td>3.83</td>
</tr>
<tr>
<td>Ethics for Public Accountants</td>
<td>3.64</td>
<td>3.46</td>
</tr>
</tbody>
</table>
The responses demonstrated that the knowledge and skills obtained in educational institutions quite well correspond to the knowledge and skills required in their professional career.

The knowledge and skills obtained were most adequate in such subjects as Introduction to Accounting, Intermediate Financial Accounting I (Advanced Course), Intermediate Financial Accounting II (Advanced Course) and Financial Reporting. Less adequate than other subjects for work in the professional were knowledge obtained in such subjects as Social and Environmental Accounting, International Accounting and Accounting Communication.

The most applicable were such subjects as Introduction to Accounting, Financial Reporting, and Taxation. Less applicable than other were such subjects as International Accounting, Social and Environmental Accounting and Accounting Theory.

The biggest mismatch with the knowledge and skills obtained was in such subjects as Accounting Theory, International Accounting and Accounting for Non-business Organizations. The considerable mismatch in the first two subjects can be explained by their little application in everyday work. Accounting for Non-business Organizations, however, is less applicable because most of the respondents were working in the private sector.

The respondents could make supplementary suggestions regarding which professional knowledge and skills should be paid more attention to. These included mainly specific sector based accounting peculiarities (e.g. banking, insurance, construction, real estate development, retail trade) and activities concerning company’s future (e.g. budgeting, (cost) management, planning, analysis). Several suggestions were about business finance and financial management rather (e.g. enterprise value assessment, enterprise’s financial position analysis and prognosis). Students also wanted to obtain more knowledge and skills about using accounting software in their profession. They were also interested in group accounting and accounting for taxation purposes. Additionally they wished more advice how to use the theory obtained at school better in practice.

3.3. Suitable forms of study

Table 9 lists the forms of study in terms of their suitability for obtaining accounting speciality and percentage of respondents, based on the opportunity to practice this form of study.

<table>
<thead>
<tr>
<th></th>
<th>Suitability in accounting area</th>
<th>Share of respondents (%) based on the opportunity to practice this form of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical lessons</td>
<td>4.88</td>
<td>91</td>
</tr>
<tr>
<td>Lectures</td>
<td>4.60</td>
<td>98</td>
</tr>
<tr>
<td>Internships</td>
<td>4.55</td>
<td>61</td>
</tr>
<tr>
<td>Meetings with top specialists</td>
<td>4.45</td>
<td>53</td>
</tr>
<tr>
<td>Seminars</td>
<td>4.40</td>
<td>80</td>
</tr>
<tr>
<td>Case analysis</td>
<td>4.35</td>
<td>74</td>
</tr>
</tbody>
</table>
Based on the most suitable forms of study for teaching accounting, such active methods of study as assignments with real companies, meetings with top accounting specialists, accounting case studies and computer based practical lessons could be used more, where possible.

3.4. Development of general skills

Table 10 lists various general skills that need to be developed when obtaining accounting profession. The respondents have also assessed their personal experience based on whether the development of respective skills was sufficient in their educational institution.

The most important general skills which should be developed upon obtaining accounting education are analysing, computer use and time planning skills.

Table 10. Importance of developing general skills for obtaining accounting profession.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Importance (in five-point scale, 1 “not in the least important” and 5 “very important”)</th>
<th>Assessment of personal experience (in five-point scale, 1 “completely missing” and 5 “quite sufficient”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical/critical thinking</td>
<td>4.90</td>
<td>3.77</td>
</tr>
<tr>
<td>Computing technology</td>
<td>4.88</td>
<td>3.45</td>
</tr>
<tr>
<td>Time planning</td>
<td>4.61</td>
<td>3.04</td>
</tr>
<tr>
<td>Written communication</td>
<td>4.49</td>
<td>3.57</td>
</tr>
<tr>
<td>Foreign language</td>
<td>4.40</td>
<td>3.48</td>
</tr>
<tr>
<td>Oral communication</td>
<td>4.37</td>
<td>3.31</td>
</tr>
<tr>
<td>Coping with stress and strain of specific profession</td>
<td>4.29</td>
<td>2.61</td>
</tr>
<tr>
<td>Teamwork</td>
<td>4.23</td>
<td>3.51</td>
</tr>
<tr>
<td>Interpersonal skills (conflict/problem solving)</td>
<td>4.23</td>
<td>3.04</td>
</tr>
<tr>
<td>Skills of using office and communication equipment</td>
<td>3.65</td>
<td>2.38</td>
</tr>
</tbody>
</table>
The biggest mismatch between the importance of general skills and actual development of the respective general skill in higher education institutions was in coping with the stress and strain from the specificity of profession, time planning and use of computer.

The skills of coping with stress and strain in accounting profession are actually closely linked to time planning skill. In case of good organisation of work and planning of time it is possible to reduce the work related stress significantly. Since accounting and reporting are directly related with work of other departments in a company, it is important to know that good communication skills help cooperate better, which in turn help meeting the reporting deadlines.

Shortcomings in computer use skills can be partly explained by the lack of subject Accounting Information Systems in previous curricula. On the other hand, this subject is available as an optional subject in some curricula and therefore not all students may select it.

3.5. Major problems in accounting education

Table 11 reviews the problems encountered while obtaining accounting education, which are listed by order of importance of the problem identified on the basis of the questionnaire results.

<table>
<thead>
<tr>
<th>Importance of the problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient awareness of technological development related possibilities and skilful implementation in the profession</td>
</tr>
<tr>
<td>Too much focus on obtaining knowledge at the expense of obtaining skills (balance between theory and practice).</td>
</tr>
<tr>
<td>Teaching too much focused on successfully passing examinations, based on rules, memory and assessment of knowledge</td>
</tr>
<tr>
<td>Inability to link theory to practice</td>
</tr>
<tr>
<td>Curricula too general</td>
</tr>
<tr>
<td>Lectures dominating excessively over other forms of teaching</td>
</tr>
<tr>
<td>Problems with finding internship places</td>
</tr>
<tr>
<td>Study materials repeated in different subjects</td>
</tr>
<tr>
<td>Study methods do not develop creativity, learning and analysing skills</td>
</tr>
<tr>
<td>Curricula are inadequate</td>
</tr>
<tr>
<td>Teaching too lecture room focused</td>
</tr>
<tr>
<td>Curricula out of date</td>
</tr>
<tr>
<td>Curricula too rigid</td>
</tr>
<tr>
<td>No whole picture of the profession was created by the end of the study period</td>
</tr>
<tr>
<td>The order of obtaining subjects is not logical</td>
</tr>
</tbody>
</table>
The research identified that the biggest problem for students obtaining accounting education was insufficient awareness of technological development related new possibilities and lack of skills to use them in their profession. Accounting is very closely connected to information technology and its development, which undoubtedly has been very fast. The newest trends in information technology are sending, processing, settling/paying of electronic sales and purchase invoices up to electronic archiving of documents.

A problem was also that during the studies the focus was excessively on obtaining knowledge at the cost of obtaining skills, and students are not satisfied with the proportions of theory and practice. This problem may be regarded as recurrent in higher education as a whole. Students’ wish to obtain more practical skills for the profession is dominating, on the one hand. On the other hand, teachers make curricula based on that university as an academic institution must provide a considerable theoretical groundwork of knowledge from what to proceed in everyday work practice.

The authors of this paper agree that teaching in institutions of higher education is excessively focused on passing examinations successfully, based on the rules, memory and assessment of knowledge. Since higher education has turned into mass education and students studying in universities are much more numerous than some years ago, the most wide-spread method of assessment of knowledge is written examination, which is the fastest way to assess students’ performance. In accounting written examinations with open-ended answers in the test form are often used. Ideally, more complex assessment methods should be used, especially for output based curricula; unfortunately these are not used because of the lack of time and financial resources.

Additional arisen problem was that theoretical knowledge obtained cannot be linked to practice, which actually requires from teacher additional efforts and greater use of active methods of teaching (see Table 9 comments) under even so limited temporal resources.

The problem that curricula are regarded as too general is also linked to the topics discussed, since students mainly wish to obtain a narrow speciality as a result of studying at institution of higher education. Unfortunately, the needfulness and proportion of general subjects in curricula can be neither underestimated nor reduced. Table 3 shows that, for example, in the master study curriculum at Tallinn University of Technology, with specialisation in accounting, specialty subjects account for even 80% of the curriculum.

The research identified that a problem is also excessive domination of lectures over other forms of teaching. Based on the results presented in Table 9, lectures are regarded as one of the most suitable forms of teaching in accounting. At the same time, more attention should be paid to active methods of teaching, where possible.

Students have also problems with finding internship places in their specialty, which is confirmed by that only 61% of the respondents to the questionnaire (see Table 9) have been able to practice
internship in an enterprise. Therefore, more cooperation is needed between higher education institutions and enterprises to increase enterprises’ interest in creating more places for internship.

Another problem is that teaching materials are duplicated in different subjects. This problem arises to the agenda especially among those students who have been previously studying in some other higher school. Since higher school curricula and study programmes are not nationally regulated, the comparison of curricula in tables 1–3 shows that these may be very different by their structure and volume.

Several suggestions and recommendations were also made during the research, which should be considered for improving the quality of accounting education, where possible. A recurrent topic was increasing of the proportion of practical training in curricula and obtaining of additional skills with the purpose of being better capable of implementing theory in practice. More attention should be focused on legislation, increasing the proportion of lectures in English, as well as providing a better picture of the profession. Students were also missing accounting textbooks in Estonian, although the list in Table 11 shows that the lack of proper study materials is not regarded as a very big problem.

4. CONCLUSIONS

The comparison of the content of accounting curricula at undergraduate and graduate level at the Estonian institutions of higher education shows how different the structure and content of the curricula can be in one relatively small country. The freedom to design and adopt its own curricula gives an opportunity to be the best provider of accounting education in Estonia. But at the same time, due to the absence of official curricula, sufficient amount of well-qualified instructors and textbooks in Estonian, the quality of accounting education in Estonia can vary to a great extent.

The comparison of higher education curricula in this paper shows that the share of accounting subjects in the total volume of curriculum is 45–60% in applied higher education, 21–26% in bachelor education and 44–80% in master’s education. The best knowledge and skills in the speciality in the first stage of higher education can be obtained just in applied higher education, since it contains a substantial amount of practical training in the speciality. However, attention should be paid also to that the difference in knowledge and skills acquired in the first stage of higher education between different types of higher education institutions may cause problems to students when they want to continue in master’s education.

The authors of this paper are of the opinion that from the aspect of obtaining accounting profession, the bachelor level education unfortunately doesn’t justify itself and it is relatively difficult for the students who have obtained a bachelor degree to manage in the professional career. Therefore it may be said that one becomes an accounting specialist after obtaining a master’s degree and after at least five years of studying in an institution of higher education.

The research about the quality of higher accounting education, the conformity of knowledge and skills obtained in different higher education institutions to the knowledge and skills required in work related to this profession was discussed in this paper. Also the most suitable forms of study and most important general skills required in accounting were assessed. Special attention was focused also on major problems encountered while obtaining accounting education. The research identified that the major problems could be insufficient awareness of the technological development related new opportunities and small proportion of practical training.
The system of professional certificates of accounting specialists (accountants) has not been used very extensively in Estonia as a certificate of professional qualification in practice. The multitude of different higher schools and curricula, and their markedly different levels make it difficult to compare and assess the knowledge and skills obtained. Therefore it is hard for the students to select the most suitable accounting curriculum and later it is difficult for employers to compare graduates from different higher schools with the purpose to employ an accounting specialist with the most appropriate profile for the company.

High-quality accounting education, including accounting curriculum, evolves as a result of maximum effective cooperation between different area related interest groups. These interest groups are society (state), employers, university (teachers) and students (employees). In order to ensure high quality in higher education the most suitable compromise should be found, which would take sufficient account of the expectations and needs of all interest groups.

REFERENCES


USING OF E-LEARNING TO EDUCATION OF ELASTICITY AND PLASTICITY
AT THE FACULTY OF CIVIL ENGINEERING OF THE TU KOŠICE
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Abstract
Modernization and application of information and communication technology in education process at technical universities have been necessary supplement and very effective method of student’s study. This contribution is dedicated to electronic teaching’s support of subject Elasticity and Plasticity at the Faculty of Civil Engineering of the Technical university of Košice.

Key words: e-Learning, study materials, the virtual e-Learning environment

1. INTRODUCTION
The main task of the e-TUKE program is to implement e-learning, and support ICT use in the teaching process. The Faculty of Civil Engineering as a part of TUKE regards the support of innovative teaching methods and technologies as well as e-learning as the crucial part of its development plan.

To follow the main task of e-TUKE program we like a teachers prepared a project focused on the development of the set of e-learning study materials for course Ground of elasticity and plasticity. The main reason for this choice was the possibility to offer such study materials as an independent lifelong learning course for professional public. we obtained a grant from KEGA (Cultural and educational Agency of the Slovak Ministry of Education) No.: 043-007TUKE-4/2010 in 2010.

2. WHAT IS ELEARNING?
e-Learning is an umbrella term that describes learning done at a computer, usually connected to a network, giving us the opportunity to learn almost anytime, anywhere.
e-Learning is not unlike any other form of education - and it is widely accepted that e-Learning can be as rich and as valuable as the classroom experience or even more so. With its unique features e-Learning is an experience that leads to comprehension and mastery of new skills and knowledge, just like its traditional counterpart.

Instructional design for e-Learning has been perfected and refined over many years using established teaching principles, with many benefits to students. As a result colleges, universities, businesses, and organizations worldwide now offer their students fully accredited online degree, vocational, and continuing education programs in abundance, [1].

Some other terms frequently interchanged with e-Learning include:

- online learning
2.1. How could we explain e-Learning?

Jay Cross (2004) has normally been been credited with coining the term elearning in 1998. However, the term seems to have been in use as far back as 1997 when Aldo Morri wrote an article for Telephony Online, A bright future for distance learning: One Touch/Hughes alliance promotes interactive 'e-learning' service: “The market for corporate interactive distance learning - now known as 'e-learning,' has boomed along with the growth in the Internet and corporate intranets.”

Since then, it has generally taken four forms of definitions: Internet, Eccentric, Electronic, and Framework, [17].

Marc Rosenberg (2001) confines elearning to the internet as: the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance. It is based upon three fundamental criteria:
Allison Rossett (2001) defines elearning as: Web-based training (WBT), also known as elearning and on-line learning, is training that resides on a server or host computer that is connected to the World Wide Web.

She considers WBT or elearning as belonging to Technology-Based Training — training that is delivered partially or entirely through electronic hardware, software, or both, [17]. These two definitions perhaps come the closest as to how most learning professionals define elearning.

Another one that pretty much stays within the network framework is Clark Adrich (2004). He defines elearning as: a broad combination of processes, content, and infrastructure to use computers and networks to scale and/or improve one or more significant parts of a learning value chain, including management and delivery. Originally aimed at lowering management cost while increasing accessibility and for measurability of employees, elearning is increasingly being used to include advanced learning techniques such as simulations and communities of practice and to include customers and vendors as well, [17].

A somewhat different approach carries it beyond the internet to the computer itself. ASTD's Learning Circuits defines it as “electronic learning” covering a wide set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, and CD-ROM.

Thus, this definition defines elearning as basically anything that is electronic.

In a May 2003 Chief Learning Officer article, Brook Manville defines elearning as: including not only Internet-published courseware, but also the tools for managing, modularizing and handling the following:

- Different kinds of content and learning objects (including both electronic and non-electronic forms, and even traditional classroom instruction).
- Just-in-time and asynchronous learning, such as virtual labs, virtual classrooms and collaborative work spaces.
- Simulations, document repositories and publishing programs.
- Tools for prescribing learning, managing development pathways and goals and handling e-commerce and financial transactions related to learning.
- The utilities and capabilities for supporting informal learning, mentoring, communities of practice and other non-training interventions.

In other words, elearning does most everything in the corporate world related to learning except for training!

In a Delphi Group white paper, Drucker (2000), defines elearning as: just-in-time education integrated with high velocity value chains. Whew — that is some mouthful!
Elliott Masie defines the e in elearning as: the EXPERIENCE dimension of elearning, which includes such factors as: engagement, curiosity, simulation, and practice.

Gilbert said that performance has two aspects: behavior being the means and its consequence being the end (1998). Learning is similar in that it also has two aspects: a learning method or experience being the means and the resulting skills or knowledge being the end (consequences).

Victor Jeurissen, global practice leader for IBM Management Development Solutions, defines elearning as: the use of innovative technologies and learning models to transform the way individuals and organisations acquire new skills and access knowledge (Moeng, 2004). He further defines learning as a collaboration of information, interaction, collaboration, and in-person.

Jeurissen's definition is the most interesting and promising in that like Gilbert, who refers to the two aspects of performance, he also refers to the two aspects — “innovative technologies and learning models” to provide the means, with the consequence being “acquiring new skills and access knowledge.”

The “means” provide the learner experience of absorbing (reading, seeing, etc.) doing (activity), interacting (with people), and reflecting (connecting the new learnings with previous learnings).

So the right skills and knowledge can be learned (consequence), rather it be face-to-face or over through elearning, requires good instructional design:

The reason that we have to design and develop for the “right skills and knowledge” is that we are accountable to the organization for spending resources wisely. Victor Jeurissen reported that, “75% of CEOs think employee education is the most critical success factor relative to other people issues. Learning directly supports the top agenda of CEOs, business groups and customer responsiveness” (Moeng, 2004).

By viewing elearning and learning as having two aspects, we can better define learning's role in the organization.

In vogue, e-Learning is the all-inclusive term for training and education delivered by a number of means. These have included the use of mainframe computers, floppy diskettes, multimedia CD-ROMs, and interactive videodisks. Recently, Web technology (both Internet and Intranet delivery) have become preferred delivery options.

According to [16] e-Learning is a broad definition of the field of using technology to deliver learning and training programs, typically used to describe media such as CD-ROM, Internet, Intranet, wireless and mobile learning. Some include Knowledge Management as a form of e-Learning.

E-Learning can be a confusing topic, partially because of many different definitions, variety of delivery options, and the converging histories of the two disciplines of technology and training. At present, what most people really mean when they use the term e-learning is Web-based training.

If we simplify, we could say that e-learning is really nothing more than using some form of ICT to deliver training and other educational materials, [17-6], [8-11].
3. STUDY MATERIAL “GROUND OF ELASTICITY AND PLASTICITY”

The set of supporting e-learning material Ground of Elasticity and Plasticity has been developed for students of second year of bachelor study in the study Architectural and Indoor Engineering, Structural and Traffic Engineering, Civil Environmental Engineering and Civil Engineering.

Study materials of the chosen course Ground of Elasticity and Plasticity is built according to the rules of distance education and is divided into single topics according to the information list of the courses. Source of additional materials and information, there are lists of recommended literature and web sites as other supports of the basic terms.

The project team has set for itself the following goal: to develop the set of catchy and interesting but at the same time professional supporting e-learning study materials that could be easily updated and adjusted according to the students’ as well as teachers’ needs and skills. Such an approach should motivate students to gain current information and enhance their ICT skills.

The contents of the e-learning study material for course Ground of Elasticity and Plasticity is divided into 12 topics/lectures. The important is "zero" topic/lecture of educational texts topic/lecture „Repetitorium“, in which are summarized shortly necessary the most important theoretical fundamentals of subject Elasticity and Plasticity. Students have to need theoretical fundamentals for study of this subject. All parts of topics/lectures have the same structure, navigation, and graphical design, elements of student support, communication, and evaluation. The study text includes aims, goals, self assessment questions and activities and is divided into chapters and sub-chapters. Video sequences and Power Point presentations, assignments, and final test are also included. Every page of supporting e-Learning material Ground of Elasticity and Plasticity has been is divided into 3 parts. In top of pages is title of e-Learning study material: Ground of Elasticity and Plasticity. In left parts of pages finds menu of study material with link to moving in/out study material. In "main" parts of pages of screen can see educational texts this study material.
These e-Learning study material has link to „own manual“ - electronic guidebook this e-Learning study material too. This electronic guidebook this e-Learning study material can be allowable from every pace of e-Learning study material.
Fig. 4. Look on the pages of educational manual

Fig. 5. Look on pages of FAQ (Frequently Asked Questions) and Harmonogram
Educational manual this e-Learning study material is accessible from every pages of study material and clarify student:

- why has been e/Learning textbook for subject elasticity and plasticity composed,
- what are minimum technical request for study object in the offering form,
- how open educational tool,
- as he was orientate in the study material tool and what all in the she student finds,
- how traverse between individual pages study material widgets and between individual lectures,
- how communicate with tutor and classmate.

The set of developed supporting e-learning study material is placed into the virtual learning environment that has been developed by 5 project team members. The fact that two project team members have had the previous experience as e-learning students was of great value for the project team, [7, 12-16].

4. CONCLUSION

E-Learning will probably never replace face to face study in full extent particularly in such professional field where the personal contact of students and teachers is crucial and inevitable. It is obvious, that e-learning will be more and more used in combination with face to face study. We have to admit that it brings many advantages, is progressive and widens access to education and training. For teachers, e-learning opens the new opportunities and challenges and enriches the educational process. Based on our experience, we can conclude that e-learning might be a very suitable support for the face to face study at our faculty particularly in the courses, which require explanation and description of complicated and very often unrepeatable construction processes.
ACKNOWLEDGEMENTS:
The preparation of the paper has been supported by the Cultural and educational Agency of the Slovak Ministry of Education of Slovak Republic under Project No.: 043-007TUKE-4/2010.

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AXIOLOGICAL ASPECTS OF PRESCHOOL TEACHERS TRAINING

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Abstract

The paper analyses the hierarchy of values in future preschool teachers. The worrying results obtained determine the necessity of using psychological and educational methods in modifying the value orientation of the students. The paper stresses on the idea that the value orientation of the students is a leading factor in optimizing the position of the teacher’s profession and the further improvement of its sociological and economic status in society.

Key words: external control, internal control, TYPES OF REACTION TO FRUSTRATION: extrapunitive reaction, impunitive, intrapunitive reactions

The incredibly rapid progress of science and technology today offers us opportunities for enhancing our standard of living, for a wider and mass usage of all the goods created by the society. It has also developed a respective understanding in a large number of people leading them to believe that this is the ideal state they have to aim at. And here lies the big trap of what is happening in my home country and all over the world – our systems of values are dying out and are being abandoned, you feel alienated even in your family and society, aggression and selfishness are becoming stronger. If pedagogy continues existing as a science in future, it will have to strive to counteract all these negative tendencies. Therefore, it is necessary for the pedagogues to see that young generations regain interest in values such as altruism, honesty, unselfish friendship, human solidarity, the interest in creating human culture.

Young people’s points of views are very different – some of them restrict the sphere of their personal attachments, others preach social values and ideals in the form of slogans which they feel deeply doubtful about. All this has provoked me to begin a research on the system of value orientation of future preschool teachers – who are at present students of ours. Their attitude toward these common human values is absolutely crucial as the latter may be considered leading characteristic features of teachers’ occupation.

Being at the very core of any personality, values are closely connected to our inner feeling of self-identity. The Self-concept itself can be viewed as a value model of the personality, since it contains everything that any personality treasures and likes inside and outside itself. As it is already known, even though the system of values depends on some genetic predisposition (ex. locus of control), on the dominant value model of parents, it may be subjected to radical changes in accordance with the personality, group pressure etc. Unpredictable situations, such as the current crucial moment, always lead to a significant movement of the value layers.

Conducting interpersonal contacts through the medium of technology constantly depersonalizes human relations and makes people more and more lonesome, incapable of personal-intimate communication, and this is a serious challenge to the system of social values which determines the
social maturity of an individual. The famous futurologist A. Toffler offers instruments with which to counteract this tendency. According to him, schools should cooperate actively to form the feeling of community and belonging. For instance, some of the evaluation grades should be given not on the basis of individual achievements, but on the basis of what the class or groups of students have demonstrated.

Various sciences have emphasized on the social maturity of the personality, and for the relatively new sphere of the personality studies like acmeology (Greek for “acme” – flourishing), it is a central issue. The very subject of acmeology is the phenomenon of human maturity. This science has its sphere of interest in the process and the result of humans reaching great, peak achievements as an individual, a personality, a subject of the activity and individuality.

Due to these various results, the issue of maturity can be discussed from different aspects: on the level of the individual, the personality, the subject of activity and the individuality. In relation with another system of concepts, there can be differentiated intellectual maturity, emotional maturity and personal maturity. The most complex and unstudied of all these aspects of maturity is that of personality maturity. In science, even today, there is no complete model of the social-personal maturity of an individual. N. V. Bordovska and A. A. Rean consider the following components as its key and basic ingredients: 1) responsibility; 2) tolerance; 3) self-development; 4) positive way of thinking, positive attitude toward the world (this component appears in the others as well).

Responsibility is the key indication that is used to determine a socially mature personality. Taking personal responsibility for what is happening or looking for a reason in external factors is all connected to the dominant attributive style and the locus of control. **Locus of control** in social psychology refers to the extent to which individuals believe that they can control events that affect them. Understanding of the concept was developed by J. B. Rotter in 1954, and has since become an important aspect of personality studies. One's "locus" (Latin for "place" or "location") can either be internal (meaning the person believes that they control their life) or external (meaning they believe that their environment, some higher power, or other people control their decisions and their life).

According to the psychology of causal attribution, there are two varieties of responsibility.

- **In the first type of responsibility** the personality considers itself responsible for all its successes and failures (The terminology used by J. Rotter for this is the so called internal locus of control). This also determines the high level of pretensions since a person with this type of locus of control believes that the final result depends only on their efforts.

- **The second type of responsibility** is connected to the situations in which people are inclined to consider external circumstances or situations responsible factors for everything that happens to them or other humans (external locus of control). The reason for both failure and **success** is attributed to coincidence, faith, chance, parents, teachers, acquaintances, colleagues, and bosses. It seems obvious that this type of responsibility is actually **irresponsibility**.

A. A. Rean quotes researches in which it is stated that the internal (the people with the first type of responsibility) are far more self-assured, calmer and more positive, and with a better social status. The fact that the internal have higher level of good intentions toward others has also been proven by research data that show that the children growing up with this type of locus of control treat teacher in a more positive way. The results also provide evidence for a positive correlation between the internal locus and finding a meaning in life. People who believe that everything in their life depends on their own efforts and abilities also are able to find the meaning of their life in addition. And vise versa, the studies show that people with external locus of control are characterized by higher level of anxiety,


they are also less tolerant to everything that surrounds them, exhibit higher levels of aggression, and they are conformists and are less popular in society.

The data provided by A. A. Rean also show a correlation with the type of behaviour: among the delinquent adolescents (the ones who are breaking the law) the part of those with external locus comprises 84%, while the part of those with internal is only 16 %. Therefore, the absolute majority of the research target group is not able to shoulder responsibility. What they do is they shift the responsibility to others or the situation, or chance circumstances. Having external locus obvious seems connected to a lack of social maturity, and under specific conditions it is a factor for the risk of anti-social behaviour.

The results of the study conducted by the author (M. Balabanova), with 100 teacher in kindergartens in Blagoevgrad involved, provide the opportunity to determine a specific positive correlation between the way of attributing (types of reactions to frustration) and the level of personal and situational anxiety. It turns out that the larger part of the people subjected to this study have an internal locus of control, (dominant) intrapunitive reaction and at the same time they demonstrate a higher level of situation and personal anxiety. The reason for having higher level of anxiety is probably because they all connect failure mostly with the idea that they have not put enough efforts in what they are doing, and therefore they feel personally responsible for all the failures they have experienced.

Teachers who work with children are always worried about something. Their anxiety and worries because of a situation becomes intensified by another situation etc. Not being able to overcome this feeling of anxiety and inner restlessness, teachers have it piled up inside them, and thus it becomes their characteristic feature.

The indicators of their personal anxiety are:

1. the feeling of helplessness and unprotectiveness in recurring situations – real-life situations and professional ones;
2. law self-esteem and lack of self-confidence;
3. the feeling of constant fatigue and exhaustion;
4. the feeling of constant irritability about everything, constant disappointment in the people surrounding them.

The most important prerequisites for this high level of personal anxiety in any teacher are probably the psycho-emotional and nervous pressure, all of which are caused by several factor. It seems that the most evident factor is the condition of constant readiness expressed in the everyday preparations for the situations of pedagogical influence during the following day.

An enormous part of the harmful impacts that teachers bear are connected with the communicative function that they have to implement. During the process of communication with children, colleagues, and parents they fall under the pressure of many and various situations, a large part of which are unique and never repeated, and are connected with the diverse and often changing object of impact, the lack of professional qualifications, and the skill to communicate as well as to influence intellectually.

The data from this inquiry have also proven that other factors for this strong personal anxiety are the intensified irritability, individualism, conflicts between children, the constant changes in school curriculum and the necessity for planning and filling in the massive school documentation. This comes to show that the nature of teachers’ work is the kind which suggests this constant anxiety, full of a lot of strain and pressure, which transforms into a separate quality of the personality.
In psychology this type of attribution, despite being connected with negative emotional conditions is considered the best, since it leads to higher motivation rates for pursuing success (efforts) and also to shouldering responsibility for what is happening.

Whenever the individuals subjected to the study who have dominant extrapunitive reactions fail, they emphasize and blame it mainly on outside factors and causes, including lack of capabilities, but they never stress on or consider the efforts they have put in. Consequently, even though they do not experience conditions of intense anxiety, there is a chance that they feel depressed and helpless, experience guilt and alienation.

There is a lack of negative emotional conditions even with the people with impunitive reactions. They accept events in a calmer way (according to them it is a phylosophical way) without searching for the specific causes of what is happening.

We have noted that four of the teachers working with children have the inclination of the so called “hedonistic” attributive deformation – they attribute the failure to outside factors, and meanwhile they have the tendency of protecting the Self by taking responsibility for the success (“nowadays children are ill-mannered, they have no respect for the adults and elderly, there is nothing you can do to raise thier interest no matter how good you are as a pedagogue”). Such a point of view is harmful as it leads to an inadequate Self-conseption and inability to change and develop.

Responsibility is a necessary component for a mature behaviour. For instance, the famous scientist-humanist E. From believes that caretaking, responsibility, respect, and knowledge are all ingredients of the qualities of a mature person. It is not only the very existence of the mature personality that is connected with responsibility, but also successfulness and the means of a personality’s self-actualization.

“Community feeling” is another central concept in the written works of the famous sociologist and psychologist Erich From. According to the author, its development is impossible without creating some social interest. Alfred Adler believes that the lack of a developed social interest is the main cause of neurotic diseases. Consequently he thinks that stimulating social interest via practicing in cooperation is the main goal of the therapy.

When looking at the scale of social interest created by Crednal it becomes obvious that her positive grades correlate with personal traits such as empathy, providing assistance, responsibility, and sympathy toward the others. The author registers positive correlation between these grades and liberal values such as equality, peace, family happiness and family safeguarding.

The fact that the values are arranged in a hierarchy structure according to their degree, importance and then form value systems is probably the only one of that kind about which there is a unanimous agreement in literature. There is also no argument about the existence of two relatively self-dependent value systems – social and personal. Of course, we may suppose that there exist group value systems, which are formed according to professional, social, class, and ethnic symptoms.

The whole of the personal system contains only internalized social values, which have been arranged in an individual and unique style. It has a complicated determination, because it is influenced not only by all the determinants that are valid for the whole value system, but also by the social group standards and the social status of the personality.

McKinney proves that the value systems are more developed with individuals who have “internal control” than with those who have “external control”. This provides evidence that with the people with external locus of control the stimuli of the environment bring about bahavioural reactions without
enough filtering through the value system. Such behaviour may become dangerous since it is also easily influenced by outside factors. In a few words, these people can be manipulated.

The personal value system includes facts, phenomena, people – their features and qualities that have a positive valence. The system of values has its central part in the psychological field of any personality. In it there are no values, facts, events or people with negative valence, which are not needed or which the person does not like. In the personal value system there are specific and as many values as needed. They make the values of the Self stable and enlarge them, at the same time determining the Self’s attitude toward other people and events.

There are hardly any authors who have dared to describe a model of the hierarchy structure of the values. E. V. Shorohova has it stated that the hierarchy of the values represents the hierarchy of the needs of any person. The thesis of V. A. Yadov has a similar meaning. He says that the formation of value orientations correlates with the higher social needs of any personality of self-development and self-realization, and all this should be happening with specific, historically predisposed forms of life activities which are characteristic for the way of life of the society and social group to which the individual belongs.

The analysis of the above mentioned theoretical formulation give me a reason to believe that the studies on the system of values of an individual can have a diagnostic importance in relation with the development of the community feeling and the social interest.

The intriguing character of the diagnostic procedure in accordance with the methods of M. Rokich has provoked me to conduct a research on the value orientation of the young people nowadays (a similar study was implemented during the period 1989 – 1995 by M. Patseva and M. Momov), and to be more specific with the future pedagogues – 40 students majoring “Preschool pedagogy”. In contrast with the research of Patseva and Momov, which was analyzed in their work “Initiation of values of the 90s’ in Bulgaria” /1998/, my work has covered not only today’s understandings of the young people and the subjective self but also their evaluation of the importance of the stated 18 terminal and 18 instrumental values for a past period (5 years ago) and for a future period (“How would they arrange them after they have realized themselves the way they have dreamt?”)

The individuals subjected to this study had to arrange the values in separate columns in accordance with their understanding of the importance that the today’s society attributes to them, and in a way that they should be viewed in an ideal society.

Despite this small extract presented (due to time limit), there are several conclusions that can be made, which are worth paying attention to. As you can see from the data, the students have put on the first place their health (physical and inner harmony), which is just the opposite of the above mentioned study. The second place is for “love”, which is considered different from good friendship, which goes to the eighth place. The third place according to importance is taken by the “materially well-provided life”. This pragmatism of the system of values is definitely connected with the current economic reality. The students have put on the fourth place “being self-assured”. According to the classification made by Schwarz the mentioned values (put on the first four places) belong mainly to the personal arrangement. “Freedom” has been only placed on the fifth place, followed by values like “life full of a lot of activities” and “life wisdom”. The values connected with altruism and interpersonal relations are at the end of the arrangement scale. “Having good and loyal friends” takes the eighth place. Place nine is for “happy family life”, and “other people’s happiness” goes to place fifteen. Seventeenth place is for “entertainment”, and the final is for “creativity”. Creativity is an important factor for the development of any profession, science and society as a whole.
Therefore, having it on the last place should worry us.

There is a significant change in the value orientation when compared to the past period not long ago, when the first place was (according to today’s understanding) entertainment, followed by love and freedom. The comparison between the value priorities of the young generation in the beginning of the transition and today shows that there is an increase in the importance of the values from the individualistic spectrum, as well as in the importance of the self-assurance values.

When students have answered the question “What is the order of importance of values that an ideal society should have?” they have shown again an orientation to the more abstract and personally important values (connected with personal existence). The first place is for “love”, second – “health”, third – “development”, and fourth – “productive life”. The sixth and seventh places are respectively for “freedom” and “entertainment”, and the eighth and ninth places are “life wisdom” and “knowledge”. These are followed again by values connected with personal life – “self-assurance” and “materially well-provided life”. The values connected with the community feeling and social interest are again put at the end of this scale – the thirteenth place is for “having good and loyal friends”, sixteenth – “other people’s happiness”. The last place is for the concept “public acknowledgement”. The value “creativity” takes up the seventeenth place.

The result about creativity is a bit surprising, taking into consideration the tendency for a significant increase of the importance of the individualistic creative potential in the post-modernity. We can look for explanations of this result in several directions – it takes time after the change of the political and economic system for “the wheel of the change to turn” and for the new tendencies to be shifted toward post-modernistic ones. Formulated in this way the value “creativity” does not sound as something prestigious in the world of economic relations, or as anything that can bring profit, wealth, money or other important assets. Yet, the educational system does not treasure and is not aimed at stimulating creativity in children. Most probably domestic values concerning children have also become far more pragmatic, being obedient is still treasured more than having individuality and creative potential.

The gradation of the importance of the instrumental values as a preferred way of acting or a feature of the personality in any situation is important for revealing the key orientation of the students involved in the study. The fact that they have been put in clusters really helps; these are: ethnic, conformist, altruistic, values of self-assurance, and the values of accepting the others.

There are values of personal arrangement that stand out in the first place: accuracy, being well-behaved (having good manners), having higher education. The seventh place is for “intolerance toward yours and other people’s shortcomings”; “honesty” stands only in the eight place, and place nine and ten are for “rationalism” and “responsibility”.

What surprises here is the low place – 15- of “conscientiousness” (“being disciplined”) since “being obedient,” with which these terms are most probably connected, also have the meaning of observing social norms.

Condescension, tolerance is placed on one of the last places – 16 , which can be explained with a lot of difficulties, since ignoring conscientiousness, which was demonstrated above, does not correspond to either the refusal of being tolerant, tolerant toward the disobedient, or to the incapability to forgive other people’s mistakes and lack of conscientiousness. Probably students consider being disciplined as conformism. However, the strive for autonomy is typical for the early years of development. This strive may be the reason for the high places of values such as “bravery when asserting you opinion”, “having strong will”, “being independent” (4th, 5th, and 6th place). Nevertheless, this position should worry us as it is in opposition with the yearning for cooperation and understanding others. A negative
characteristic is also the low place of the sense of humour and exuberance, as well as of the concepts “responsibility” and “being concerned” – all qualities especially necessary for the occupation of a teacher.

According to the data, we can talk about a dominant selfish, individualistic, and not altruistic orientation of the students.

When looking at the occupation of the preschool teacher as a profession that requires intensive communication and skills for emotional devotion and giving happiness, we can consider the demonstrated tendency in the whole hierarchy of values of the students being prepared for this job as deeply disturbing. There is a noticeable rejection of liberal common human values and directing the personality of young people to individual achievements, self-assurance and welfare. These negative tendencies can be counteracted by the help of the active pedagogy – pedagogy that will work for the re-establishment of some of the traditional values and for decreasing the individualism and alienation among people.

Where should we put the stress in our own profession? It is obvious that we cannot make it without psychology. It will be absolutely crucial to have group trainings for forming social and communicative skills, skills for cooperation and working in teams. Taking into consideration all these highly important qualities and personal skills, and the nature of a pedagogue, I believe the diagnostic process during examinations for university students should include a test for available communicative skills and ability of empathy (Jusupov’s test), as well as a test for altruistic inclinations of personality.

Our pedagogical responsibility requires that we direct the attention to the ways of forming appropriate value orientation of the young generation and to make special efforts to raise the social-economic status of the teachers’ occupation. Thus, we will guarantee pedagogical specialists with positive motivation toward their professional preparation – founders of highly humane, expedient and perspective style of educating and raising children.

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DEVELOPING DEBATE SKILLS AND TECHNIQUES IN TEACHING ESP.

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Abstract

Intensification of the educational process in higher education on the basis of interactive learning technologies use, creation of psychologically comfortable environment for students and teachers providing the freedom to choose educational forms and methods is the call of times. Thus, the article is concerned with the main concepts of developing skills and techniques in teaching English language for professional communication. A brief outline of organizing and holding debates as one of the interactive methods for teaching English in ESP classroom is provided; a choice of the subject and materials for discussion is analyzed; and major steps involved in a complete formal debate method are considered.

Key words: debate, interactive activity, asserting party, denying party, case, issue, argument

1. INTRODUCTION

Language education in the modern world has enormous potential, related not merely to the acquisition of foreign language, but also to the focus on personal enhancement, which contributes to the formation and development of future specialists in various spheres. Social and technological transformations in society expand the scope of communication and involve more and more people of all ages and professions. In connection with the expansion of communication the need for establishing international contacts is increasing, which involves overcoming the language barrier as well as acquiring the ability to understand the cultural identity of other people, recognition of justification of another reality vision and acquirement of a new conceptual view on the world allowing to understand social reality and culture. In modern conditions foreign language communication becomes an essential component of future professional activities of a specialist, and proficiency in English from «it is desirable or encouraged” has turned into essential condition of employment. Professionally-oriented teaching of foreign language is recognized at the present time as priority area in the modernization of education. There appeared an urgent need for a fresh look at learning in general and foreign language teaching in particular. The purpose of language teaching in non-language universities is to reach a level, which is sufficient for practical use in future careers. Thus, the training of specialists on technical faculties of universities involves formation and development of communication skills that facilitate professional contacts in a foreign language in various areas and situations of communication (Rybkina, 2005).

2. FORMATION OF ACTIVE STUDENT PARADIGM

A sphere of communication is defined as a set of homogeneous communication situations of the same speech stimuli, the relationship between the communicants and the situation of communication (Kolshansky, 1985). Foreign language communication of nonlinguistic universities graduates can take place both in formal and informal ways, in individual and group contacts, in the form of conversations...
with foreign colleagues, presentations at conferences, negotiations when discussing contracts and projects. In this regard, it is considered efficient to include into the content of teaching English for specific purpose (ESP) in such spheres of communication like educational, scientific and professional that imitate the situations of professional contacts. One such type of contacts that have been widely used at present is participation in debates.

In addition, another main task of higher education is developing students’ skills of independent work with knowledge. It means: to be able to accurately define problems; quickly, efficiently collect and evaluate information, identify a problem with traditional approaches and contradictions, make independent alternative approach to a problem; come up with new ideas and offer original solutions to the problems (Vershinina, 2008). Modern requirements on modernization of education and development of unified information educational environment form the paradigm of an active learner to replace the old paradigm of a passive learner.

When a student has a passive role in educational process:

• a teacher, being a central figure of the educational process, gives to the group of trainees complete training material which corresponds to the learning stage;

• students, having received theoretical basis of the learning stage, work with it and reinforce the acquired knowledge;

• a teacher controls the process of knowledge reinforcement (colloquium, laboratory work, etc.) and then examines the trainees, to move them to a new stage of training.

When a student has an active role in educational process:

• a teacher fulfils a function of expert-consultant and provides students with relevant, problematic core of educational material, using modern means of hyper-media (Internet) and communication. Training material comprises a detailed plan of essential topics, including a list of references, a set of introductory and topical articles, links to professional Internet sources, etc. The main task is to give good initial attitudes for trainees and to create conditions for individual work with the subject;

• a student uses the primary course material for individual and more detailed study of learning material. In this case, he takes into account his interests and area of his professional orientation. A student is studying course material in a process of continuous expansion and improvement of domain knowledge base;

• a trainee regularly consults with the teacher. At the lectures and colloquiums the teacher is primarily concerned with key issues and discusses burning issues of considered topic;

• a student acquiring knowledge demonstrates it to the teacher. A teacher comprehensively assesses student’s ability: the ability to understand the problem, the ability to collect relevant material, the ability to adequately understand and apply the found material, for example, write a literature review, make a laboratory work, write an article, prepare a presentation, etc.

Adopting the paradigm of active students in the field that are experiencing rapid rates of knowledge modernization such as IT sphere allows users to raise their skills to the highest level.
3. FEATURES AND PEDAGOGICAL POTENTIAL OF DEBATES

There are several ways of handling a problem – a discussion, a dispute and debates. A discussion means considering any controversial issue, when each party opposes its opinion to the opinion of another party and reasons for its position. The purpose of a discussion is to confirm each point of view, defend it, and win over to cause at any cost. A distinctive feature of a discussion is absence of thesis, but presence of a subject as a unifying beginning. A discussion is often viewed as a method of activating the learning process, study of a complex topic or theoretical problem. A dispute deals with scientific and socially significant topics. The participants express their opinions; give an estimation of events, considering the problem from different points of view. Debate is the formal method of a dispute where the parties communicate with each other representing a certain point of view in order to convince a third party (the spectators, judges, etc.) Debate as a form of a dispute differs from simple logical argumentation, which only checks things for consistency in terms of axioms, as well as from a dispute about the facts, in which participants are interested only in what has happened or has not happened. Although both logical sequence, and the actual accuracy, as indeed, an emotional appeal to the audience are important elements of persuasion, in debates one side often prevails over another by means of presenting more qualitative "sense" and / or framework for addressing the problem. In the formal competition in debates, there are special rules for conducting a discussion, for decision making on the winning / losing side, as well as procedures / format of holding debates. The quality and depth of debates improves with possession of special knowledge and skills of conducting debates (Mashkina, 2009).

As an educational technology debates have been used successfully in teaching ESP. This method of teaching can be referred broadly to a method of educational discussion, which consists in conducting educational group discussions on a specific problem in relatively small groups of students (from 6 to 15). Debates - is an interactive activity, which is characterized by a clash of positions, one of which gets preference in an exchange of arguments. Debates participants are subject to the relevant rules, which allow the existence of two opposite points of view. The technique can be effectively used by teachers in teaching ESP, as it not only gives the opportunity to develop spoken language, but also increases the overall level of erudition. Furthermore, debates contribute to the enrichment of knowledge relating to the area of professional activity of the future specialist, develop skills to select literature and critically evaluate information to perform communicative tasks in professional activity, develop critical thinking and skills to analyze various ideas and events, make reasonable conclusions, and build a chain of evidence. Moreover, participation in debates develops students' research and organizational skills and abilities, such as creativity, the ability to take a fresh look at the problem, a desire to use innovative ways to solve it, the ability to see something new or unusual in the commonplace events, flexibility and productivity of thinking, quick rate of response, the ability to appreciate creativity in others (Zaretskaya, 2002). Let’s consider in detail the main, key features of debates as educational technology.

3.1. The benefits of using debates

The use of the technology "debates" in educational process helps to create sustainable motivation for learning:

- provides personal relevance of educational material for students;
- an element of competition stimulates creativity, the searching activities, thorough work with the material under study;
- allows to accomplish effectively the full range of educational objectives.
3.2 Principles of debates

To achieve intended objectives and results, the following three principles should be followed:

Principle 1. Respect is essential. Personality of each participant is not affected: it’s prohibited to humiliate a person if he does not agree with someone. Debates concern the ideas and their collision. In the clash of ideas the only acceptable weapon can be sound arguments. In other words, the arguments of opponents, their reasons and evidence can be attacked, but not the opponents themselves.

Principle 2. Honesty is obligatory. Honesty is a core of debates. The task of participants in the debates is to be honest in the arguments, in the use of evidence and answers in a round of cross-questions. To be honest means to admit that you have not enough material to support and prove your position. Sometimes it means to confess that your logical constructions are erroneous. Such confession is beneficial, since then due to this honesty a debater learns more and develops better his skills.

Principle 3. There is no loser in debates. The main purpose of debates is to enrich education and also to give pleasure. The first purpose of the game is learning, i.e. learning in this game is more important than a victory. To participate in debates for the sake of victory is wrong stated objective (Vershinina, 2008).

4. MAIN COMPONENTS OF DEBATES

The essence of debates is to convince a neutral third party (the judges) that your arguments are better than your opponent's arguments. Although the idea is simple, the strategies and techniques that help to achieve the desired result can be complicated (Debate, 2001: 123). The main elements of the debate include:

1. Issue: its choice is made taking into account the topics of communication, which are typical for the subject area, which future graduates specialize in. Debates issue should be familiar to students and meet their professional interests. In debates the issue is formulated in the form of a statement, but in a way that does not give advantage to any of the parties. Hence, the issue should:
   - contain a significant problem;
   - be interesting (be relevant);
   - be suitable for debates.

It is important that both parties understand the issue. The definition is necessary as a starting point. It is important that the issue is widely represented by definitions. I.e. the formulator must be honest with the introduction of the definition. Definitions should provide space for debates. If the terms are too constricted, the debates could turn into debates over those terms. Therefore, definitions should be:

- clear (asserting party must clearly define how it will use each concept);
- valid and correct (terms should be easy to understand. No restriction or expansion of the scope and content of the concept is allowed. If the explanations of the definitions are incorrect, the opponents may challenge them);
- strategic (definitions must correspond to the position of the party, by which they are provided).

In order to give a correct definition of the issue, it is necessary to search for relevant information. Speech, making the greatest impression arises as a result of the completeness of knowledge. It requires
a large supply of information from which to select the most necessary. Therefore, information search is a very important stage of work on the issue. It should be explained to students that to conduct information search they need a range of skills. One of them is the use of bibliographic search. Students should understand that working with the book, they can use its reference matter: abstract, introduction, commentary, bibliography, annex. Some practical exercises can be given to students at this stage of preparation for the debates:

- address a systematic catalog of the library, choose books and write a bibliographic list on the issue you examine for debates;
- make a full bibliographic description of any book from your list;
- information processing (pre-reading, accelerated reading, skimming);
- keep two-part diary (on the right - the most impressive part of the text, on the left - comments: why the quotation is written out, what thoughts come to mind in connection with it);
- annotation writing (summary of the main ideas of the book), thesis writing (writing notes while reading), abstracting (making a brief outline of the studied articles or books content), precis-writing (opinion of the author is not included into writing), quoting.

2. Asserting party. In debates, speakers of the asserting party try to convince the judges of the rightness of their positions.

3. Denying party. Speakers of the denying party want to prove to the judges that the position of asserting party is wrong or that the interpretation of the issue and arguments of their position by speakers of the asserting party has shortcomings.

4. Arguments. Using the arguments each party must convince the judges that their position on the issue is the best. That is, to give the judges a reason to believe that the position taken by their party is the only correct. Arguments can be either weak or strong. Students need to present the most powerful, persuasive arguments and convince the judges that they are the best. Judges are rather skeptical. They want to see that arguments have been thought out, taking into account both points of view on a particular issue, and that the arguments can stand the attack of opponents.

5. Support and evidence. Together with the arguments debaters should present to the judges the evidence (quotations, facts, statistics), confirming their position. In debate, evidence is obtained by means of research. Basically, it is the opinion of experts.

6. Questions. Round of questions is used both to clarify the position and identify potential mistakes from the opponent. Information obtained in a round of questions can be used in the statement of the next speakers.

7. The judges' decision. After the judges listen to arguments on the issue from both sides, they fill in the protocols, which record the decision about preferred team on the results of debates (arguments and the method of evidence which have been more convincing).

5. THE MAIN STAGES OF EDUCATIONAL PROCESS USING DEBATES
Preparation for debates includes the following steps:
1. Orientation
2. Preparations for debates
3. Conducting debates
4. Discussion of debates

An important role in debates plays a system of argumentation, which should be prepared in advance. Constantly playing in debates, students can learn new ways and means allowing to repel the arguments of opponents, to find and put forward new arguments, clarify the variants for their use. Reasoning system (a case, or the plot of the proof) – is a set of aspects and arguments of a party, introduced in the statement of the first speaker. There can be distinguished an approving case (i.e. a case, represented by the asserting party), and a denying case (that of the denying party). A bright, clear, strategically-designed case has a particular importance because it keeps the structure of debates. A case should adequately represent the position of a party and contain the proof of its correctness, as well as a strategy of the proof. Table 1 represents the structure of the approving case.

<table>
<thead>
<tr>
<th>Table 1. The structure of the approving case</th>
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<tr>
<td><strong>Issue</strong></td>
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<tr>
<td><strong>Introduction. The proof of the issue relevance. Providing definitions</strong></td>
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<tr>
<td>Aspect 1</td>
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The following tasks can be done on the preparatory step by the students:

1. Work with the concepts: to provide a definition of any issue; to prove the introduction of definitions.
2. Make up a story (presentation), uniting aspects and arguments in a single whole. Speaking time is limited.
3. Make a statement of the first speaker on the chosen issue. As an alternative it is possible to hold a competition of speakers.
4. Think over and write down questions to the text or to the speech of a group mate.
5. Find and formulate arguments for and against any thesis.
6. Find support (evidence) to the argument.
7. To evaluate different points of view, to prove personal position.

It should be noted that the quality of debates in ESP classroom and the achievement of the set objectives - the development of skills and abilities of foreign language communication for the
development of communicative competence in the field of professional activity – is affected by the amount of time spent on preparation for the game. The stage of preparation includes: a choice of the issue, roles allocation, data collection and processing, building plot of the evidence on the issue.

Preparing and conducting debates suggest group work. There are following possible principles for dividing students into groups. The instructor can make a team himself, having distributed the roles, or groups of students create their own groups, and the roles are allocated by mutual agreement or by lot. It is also possible to test students before the beginning of classes, and divide students into three groups according to the results ("strong", "medium", "weak") and combine one person from each group into the team. (Debates, 2001:158).

Before conducting debates a serious preliminary preparation of students should be taken. At this stage, methods to stimulate creative and critical thinking are frequently used, such as brainstorming, memory cards, outlining the problems with Metaplan, and others.

The method of brainstorming is applied at the stage of generating and selecting ideas and suggests a number of principles. First of all, goals, objectives and constraints are clearly stated. Students are given maximum freedom: each of them can express a personal point of view (encouraging shy students, restricting the most active and influential), and complete freedom of opinion, promotion of "crazy" ideas and similarities. The discussion is held hierarchically: first – in "breadth", and then estimation of the prospects of options and selection of the best, then again in "breadth." While using the method of brainstorming the role of a leader controlling the discussion and fixing ideas is important. However, despite the efficiency of the method, its results are highly dependent on the preparation and conduct (Titova, 2004).

More formalized version of the method of brainstorming is "635" method. Six people express three ideas on the questions during five minutes. Then the sheets with the views are passed to the neighbors, for example, clockwise. Over the next five minutes, each participant should become familiar with all proposals of his neighbor and detail them. Thus, it continues until each participant has worked on all the ideas of the group. Half an hour later, as a maximum, 18 offering are ready. The next half an hour is given to their discussion, adding details and selecting the best options (Titova, 2004).

The main idea of "Memory Cards» method («Mind Mapping») is rejection the conventional "linear" records and recording information in graphical form as a branching tree crown, using illustrations, symbols, patterns (samples, templates) and associations. Nancy Margulies in her work «Maps of inner space" brings the principles of creating memory cards, developed by their creator Tony Byuzenom. The main issue is located in the center of the sheet, and then the most important aspects of the topic are mentally selected, for which the branches are drawn from the main issue. Each sub-issue has a separate main branch, and each concept uses a single word. Where possible, the concept is accompanied by an illustration. Nancy Margulies recommends to make «mental" cards during not less than 30 minutes without being distracted. After creating the card the so-called phase of "intelligent reading" should follow when before making a statement the speakers briefly examine the main ideas, note key factors and important details on the card. As a result, the method is used for searching, structuring, and timely use of ideas (Margulies, 1999:208). Dr. Vebler of Bielefeld University offers the method of Metaplan, originally developed for business planning, but today used in the educational systems of different countries. In debates the method of Metaplan can be applied in determining the issue, creating aspects and arguments, finding supports, etc. The work takes place in small groups. The participants receive an assignment to write statements, judgments, or keywords on a given issue with a felt-tip pen or a marker on the card. Then, statements or keywords are read aloud, explained and fixed on the board. The advantage of the method of Metaplan lies in the fact that while attaching the cards
on the surface they can be ordered on the given attributes. In the learning process a variety of ideas and connections between them could also be generated (Webler, 2005).

In the allocation of roles a personal desire to participate in approving or denying party, as well as the level of language skills of each student group should be considered. None of the parties should have a clear advantage. A teacher at this stage is a consultant-expert, who introduces students to the rules of debates, proposes issues for discussion, including list of references, a set of introductory and topical articles, links to professional Internet sources, etc. At the stage of constructing a plot of evidence on the issue students consider such questions as: why do we agree with the issue?; what strong arguments can we bring in support (deny) of the issue?; what are the main aspects of the issue and what examples can be given?, what questions arise in connection with this issue?, what denying arguments can be brought? Answers to these questions provide an opportunity to clearly justify the position with regard to proposed issue for debates.

6. CONDUCTING DEBATES

After careful preparation the day of debates is assigned. They are conducted under regulations and each participant is given a certain amount of speaking time.

The issue will be debated by a panel of six students: three “pro” and three “con.” Each team thus has three persons, each with a primary responsibility, as follows:

The stater. This person will be primarily responsible for stating the position taken by the group. He or she will bring up, point by point, the issues inherent in each part of the argument. A prepared written outline may be quite helpful, but direct reading of a prepared statement will not be appropriate. A conversational presentation of the position in the stater’s own words will be much more acceptable. The stater will also be responsible for watching the flow of the arguments. At the end, the stater will summarize, recap, and state which of the points made can be salvaged to ultimately support the team’s position.

The prover. The prover will be responsible for citing relevant research to back up any of the statements given by the stater. He or she must have intimate knowledge of the empirical content of the positions taken and should understand the research supporting the side chosen. The prover can do well by looking up outside sources in order to strengthen the stater’s arguments. He or she can support points by using survey data gathered in class or outside. Any effort (short of murder) is legitimate for generating support for a position. However, the prover will be “attacked” at some length by the opposition—so he or she had better be able to back up his or her supporting data. It should be empirical and responsible.

The attacker. The attacker will be responsible for probing the opposite team for weaknesses in their arguments. He or she may question data, disprove, counter, and use any rational method to discredit the opposition’s position or data. An appreciation for research design and data analysis may help the attacker. It is also strongly suggested that the attacker be very familiar with the articles and materials being used by the opposing team. Unless role-playing is extremely good, personal attacks are considered in poor taste. The questioner may insult one of the authors but should refrain from attacking the student who has that position.

Debates consist of the following points:

Pro—the pro stater makes his or her points.
Con—the con stater defines his or her counterpoints.
Pro—the pro prover brings on his or her evidence.
Con—the con prover delivers his or her data.
Pro—the pro attacker can move in.
Con—the con attacker can respond in kind.
Pro—the pro stater salvages all the undamaged arguments he or she has left and makes a summary.
Con—the con stater salvages all the intact arguments he or she has left and makes a concluding statement.

Other team formats are possible. For example, it would be feasible for the stater and the prover to work together, with each statement being supported by research as it is made. The questioners (pro and con) should restrain themselves until this procedure is over. Each team may layout its “attack” plan in advance. Members should stick as close to their formats as possible unless it becomes cumbersome when they are rebutted.

The audience. The students not involved in a debate are still a part of the situation. They will get special points for participation (and it will be noted by the teacher).

Two kinds of audience participation can be expected: clarification and question.

Clarification—if a student is uncertain of a point, counterpoint, interpretation of data, a study, or any other portion of a presentation, the students in the audience can ask for clarification. Whoever is explaining the concept or supporting members on the team should clear the problem up for the student as a teacher would do in any class. Clarification questions should be asked at any time (interruptions are fine).

Question—this kind of audience participation can come after a position is clarified and the research is in. Questioning is appropriate when a student is disturbed by an answer or has data to counter or expand upon a position taken by the panel. It should be noted, that the panel (pro and con) is primarily responsible for this sort of question, and the audience should wait and see if the panel will develop the response before they question too deeply. Other kinds of audience participation and general discussion will be discouraged after the attackers have completed their jobs. Figure 1 shows the location of parties at conducting debates (Draiden G., 2003).

7. CONCLUSION

Taking into account all the above said, it can be stated that debate is primarily an educational technology that allows students to be included in an active dialogue. Debates considering professional orientation in ESP classroom are one of the organizational forms of teaching and learning activities, which keeps the principle of harmonious development of a personality as a human expert of a team culture and having an ability to solve problems in a professional context.

Educational debates are most effective in studying and working on complicated material and forming necessary attitudes. This active learning method provides a good opportunity for feedback, reinforcement, practice, motivation and transfer of knowledge and skills from one area to another, which is especially important in teaching ESP. The methodology of debates teaches students to see the
multi-faceted palette of life, the whole spectrum of opinions, find the advantages and disadvantages of each of them, logical, not emotional explanation of personal position.

Fig.1. The location of debates participants in the classroom.

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METHODOLOGICAL INTERPRETATION OF THE DEVELOPMENT OF
ECOLOGICAL CHILDREN RELATIONSHIPS IN PRE-SCHOOL AGE

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Research focuses on the methodological interpretation of the development of children relationships in pre-school age in view with their eco friendliness. It analyses the categories “development” and “formation” in terms of their structural and functional features. In accordance with the conclusions drawn a summary has been made on the selection of the category “development” corresponding to the aim of the pedagogical research before the category “formation”, which is a general and pedagogically undetermined one. Perspectives before pedagogical researches focused on ecological children relationships in pre-school age have been treated.

Key words: methodology, pre-school pedagogy, development, formation, ecological relationships

Nowadays scientific categories extend their sense and meaning. The integrative trends in the development of the modern scientific knowledge enable the use of the same category in various branches of science. Categories are general, universal concepts presenting the common ties and relations of reality. The grade of their generality is so high, that no theoretical knowledge or even scientific thinking could be achieved without them. The uniform system of categories and concepts is needed as a universal language of mutual understanding in science.

The categories „development” and „formation” are defined as generally scientific and broadly applied. Their use if often based on intuition and is not theoretically grounded.

K. Levin (1948), studied the necessity of defining the “conceptual measure” of the concepts used. If they are an individual phenomenon or used as phenomena close to the worldly ones. He studied the process of creation of concepts and the procedures comprising their development, studying first the “qualitative” and the “quantitative” aspects of phenomena in the individual system; second, presenting conditionally – the genetic (and / or causative) properties of phenomena; third, facilitating the measurement /or operational definition / of these properties, and fourth, determining the options of generalization as universal laws, as well as of specific treatment of individual cases./5/

„Formation” is defined as a relative process of completion of development and is almost always connected with the influence of external impacts. For example: after child’s preparation for the 1st school form there begins the stage of formation in the child of readiness to systematically study the basic sciences. Applying the theory of K. Levin (established in the time of dominating objectivism, but fully directed to subjectivism), formation is related to development, but both of them are separated by the part of their qualitative differences, revealed in regard to their quantitative alterations.

Hence, „formation” provides „development” with a certain accomplished and relative sustainability, during which in the course of “development” there results the “formation”.

Formation is most often associated with a subject’s influence on some object.
Formation requires some external tool, which “forms” and this sounds like pedagogy of the past century. Even the socialist pedagogy during the process of its development began rejecting the subject-object approach attempting to replace it with the subject-subject approach. Such an example is the theory of E. Petrova (1967) of the unity of major activities in which the two subjects of the educational process (children and teachers) have the opportunity to be a subject in relations in the process of purposeful training servicing the game playing, and thus children develop their independence and acquire social experience due to the education and not despite it. /6/

This sets new issues for pedagogy of ecological education. E. Yanakieva (2003) proves that „the implementation of various methodological approaches could provide us with an opportunity to understand the differences in understanding the fundamental issues of pre-school childhood and to find the optimal ways for structuring the pedagogic reality”/10/.

Proceeding from the definition of E. Yanakieva „the ecological relationship is a conscious, subjective relationship we study mostly from the position of the issue of significance for the child of the ecological knowledge learnt by him/her (in order for the knowledge to be the base of the ecological relationship it should have a „vital significance” for the child).”, i.e. the ecological attitude is developed and falls into the category of „development”.

A central sense-forming feature of the child’s ecological attitude to reality is the subjective implementation of an ecological approach in the interaction with the environment (through activities), because the process of and the result from the activities are factors that change the appearance of environment”. /9/

To that regard the ecological attitude is the relation between two essences, and its development is a change of the essences. If the relation is studied as an essence it is also a subject to development and theoretically the hypothesis should be clarified that it is an issue of a vector characteristics where the ecological attitude is purposeful and „involves acquiring by the part of the child (= the developing subject) the skill to notice the lack of compliance between the ecological parameters in a certain situation of life and to formulate a goal the achievement of which is to overcome such an incompliance”. /9/

The category of “development” is a philosophical one and as a common scientific category it has taken its place in all the branches of knowledge through the manifestation of the action of the universal philosophic law of the quantitative changes transition into qualitative ones and vice versa, through the constant transition from one state into another, transition from simple into complex, from lower into higher. It is one of the leaders in modern scientific research. Based on the structural elements comprising the concept of “development”, it can be defined as cumulative, comprised of many generalizations. „Development” is related to the processes of movement, display, maturing, changing, transformation, new formation and accumulation. Like every other fundamental concept it has a sufficiently voluminous semantic space covering objective and common philosophic definitions, as well as personal and subjective.

From a methodological point of view the category of “development” is based on the researches of E. Yanakieva (2006), where at the implementation of the ecological approach to environment “active, effective and practical ecological relationships between the child as a developing subject and the world” are provided /9/. She builds her theory based on the researches of U. Bronfenbrenner (1979), N. Kobayashi H (1984) and L. A. Kitaev-Smyk (1989), where the environment is a set of spatial structures (mini-ecosystem; meso-ecosystem, exo-ecosystem and macro-ecosystem). We rely on her researches and if we choose the concept of formation the ecological paradigm of human development
shall be misinterpreted with the variety of interactions between the developing person and its social environment.

“Development” is a major subject of studies by dialectics, and the dialectics itself steps in as a science in the commonest laws of development of nature, society and scientific thinking. The knowledge of laws of development provides an opportunity to manage the processes of development.

Within the systematic-structural approach at definition of “development” its criteria, mechanisms, forms and trends are displayed, its determinants are revealed, and the category of “development” is included in a particular system of concepts, and the development itself is revealed as a systematic-complete process. /4/ For the development of the ecological relationships of children of the pre-school age the child is assumed as a developing subject, where the „interaction between the child and environment is studies as a bilateral one and is characterized as a mutual one”. /9/ As a result from the established structure of environment by U. Bronfenbrenner and N. Koboyashi the child develops from the inside to the outside, from the central object to periphery. This way, on the one hand we have the opportunity to deduce the consequences from the relations at the development of the child’s personality, of its structural elements, and on the other hand to establish the different proportions between them, their similarities and likenesses.

The concept and idea of development obtains a qualitatively new contents in psychology and this is reflected by a series of researches on ecological education and the research trend created by the researchers to study the development of the value attitude to nature (E. Zalkind, 1951, V. Kulebyakin, 1987, E. Yanakieva, 1991). Psychology brings up the issue of complexity, multiple dimensions and multiple degrees of human mental development, of the motive forces, regularities and determinants of development of mentality, for the criteria, mechanisms, forms and trends of development. L. Vygotski (1931) contributed to understanding of development grounding it: social and historic laws take effect in development and they determine its specificity, and education is the motive force of mental development. Development is a general principle and method of research of all the issues in psychology. The humanistic and existential trends in psychological theories developed by C. Bühler (1931) and A. Maslow (1954), who develop the idea of the subjective in development from the point of view of realization of the personality internal essence; J. Piaget (1932), L. Kohlberg (1969), M. Donaldson (1992), P. Bryant (1897) study development as an evolution of mental structural schemes, as a way of processing of knowledge, perceptive images and subjective experience; D. Elkonin (1967), A. Leontiev (1971), P. Zaporozhets (1986) and P. Galperin (1995) study development as a process of self-movement of subject from his/her activities; S. Rubinstein (1976) – the dependence of development on consciousness and personality on peculiarities of common life of the individual and his studies proved that development was the basic way of existence of personality; B. Ananiev (1956) studies development of mentality as a part or grade of individual human development, as an united process in all the states and properties, determined by the historic conditions of life of man in society, hence by education, too. /1/ These researches are fundamental for the development of ecological relationships of children in the kindergarten, as there are some age-based capabilities that are to be complied with the social aspects of relations between the child and the surrounding world, to be personally orientated to the child as a subject of activity, and the child him/herself is to be a self-developing subject of the ecological relationships.

A starting point of analysis of notions of “development” is worked out by the Moscow Methodological School (circle) established in the beginning of 1950s with an ideological and organizational leader – G. P. Shtedrovitsky that developed a set of ideological works crossing beyond the limits of logic and passing in the field of humanitarian sciences. Development is analyzed and depicted on the one hand
as a large natural-historic process, and on the other – as human action. The author particularizes, specifies and analyzes the classical ideas of development; develops a conception that is put in the foundations of practice of organizational and action games and these conception forms the ideas of development in methodology as “developing thinking and activity”.\textsuperscript{8/}

In pedagogics G. Shtedrovitsky (1993) analyzes the significant features of „development”, which is applied only to the objects and processes that allow such an application and is to be understood as a qualitative process, i.e. „movement” within the frames of the object chosen. Such understanding is based on the method originating from abstract to concrete – development is understood as a process connecting the consecutive (coming one behind the other in time) conditions of one object or another. At that two adjacent conditions should have the following properties as „a structural complication of the following condition, in comparison to the precedent and dependency of the first on the second”.\textsuperscript{7/}

Whereby the first property fixes the formal relations expressing the general idea of development, and the second confirms that the object is subject to change under the influence of some internal mechanism. And that is what allows us to characterize such a process as „development” of ecological relationships of children of the pre-school age. The author explains it as: „Structural complication of the object that requires special models for which there is a reason and it is desired that there is a mechanism of complication. If the object is studied as developing the requirement for a belonging quality is to explained, too”.\textsuperscript{7/} If the ecological approach is applied to that thesis two systems shall be included in the presentation of a given object. The central system is studied as a principal object, and the other as a surrounding environment where the developing person is progressively moving inside the environment, re-organizing it and the interactions between them are studied from two sides and mutually. Upon such an interaction the development is what characterizes the process, not formation.

G. Shtedrovitsky holds to the classic understanding of the concept of development and answers the question: what are the reasons under the influence of which the transition is performed? The trainee as an object is not isolated and is influenced purposefully or accidentally, systematically or chaotically by environment. But this circumstance, however, does not mean that its change can be understood as development. In this case the unorganized chaotic external impacts on the change can be defined as development if the structural complications are caused under the influence of internal reasons, and the external impacts are conditions of one’s own complication. Therefore an ecological relation is such a relation that has a “vital sense” for the child. This is the condition that is compared to one of the tasks of ecological education defined by E. Yanakieva as „Development of the child’s attitude to him/herself as a bearer of realized, active and leading beginning of interactions with the surrounding environment”. She adds that „the child has to develop him/herself to the direction of becoming aware of his/her abilities to exert influence on objects, processes and phenomena from the surrounding environment that is accompanied with the acceptance and recognition of nature as an active beginning, too”.\textsuperscript{9/}

On the other hand, if external influences are organized and setup in accordance with a particular scheme – project even the structurally analogical changes of the object are to be related not to a development of ecological relationships but to their formation. No matter what the conditions of change are the process follows the scheme defined from outside. Then the understanding of development of children’s ecological relationships depends on the manner in which the external influences are presented, where the position of the observer who describes the process of education is important.

In his schemes G. Shtedrovitsky analyzes the proportion of “development” and “formation” processes describing the relation trainee’s activity, learning of contents, abilities and mental functions. Applying
E. Yanakieva’s ideas of development of ecological relationships this relation is in the development of the child’s ecological competence where he/she feels free and independent. This is a „function of notions, intellectual and practical skills and dexterities and is reflected in the manner in which the child organizes his/her interrelations with the environment, in the ecological changes (no matter how small they are) resulting from such interrelations, and in the child’s skill to adequately apprehend them and take them into consideration”./9/

If this structure is extended it can be presented in projection: if we take the part of skills and try to present them as an accumulating sequence of natural movement from one skills to another, we shall obtain the line of the „child’s pure development”; if we take the processes of activities for development of ecological relationships and the objective contents of learning them, we shall obtain the „normative line of complication of the child’s activity set by the education and training programmes”./7/

„Every process of child’s activity originates from a particular system of external conditions, i.e. a particular situation. During this process the activity on the one hand “collides” with the elements of this situation, and on the other hand creates the situation itself, structuring it. There could be a twofold relation between the situation elements and the child’s activity. In some cases they “match” the activity and slightly organize the processes – this is a case of a match of the conditions and processes of activity or equilibrium of the situation and activity (this is development). In some other cases there is incompatibility between the conditions and the processes of activity: the number of objects could be too small, or vice versa, too large, the objects themselves can “resist” their involvement in the particular process (this is formation)”./7/

G. Shtedrovitsky divides in two: on the one hand the conditions and processes of activity, and learning of contents, as well, and on the other hand – the abilities. This way based on the conditions set from the outside the child builds up the process of activity of development of ecological relationships on the basis of the temporary mental functions and abilities formed in the child. The child finds him/herself in an externally set situation which is managed by the process of education. As a result from which new abilities are acquired / mental functions allowing the child to build the new processes of development of ecological relationships. But neither the abilities, nor the mental functions or the processes of activity of development of ecological relationships and the externally set conditions of their development can be studied as developing ones if there is no transition between abilities, from a process of activity of development of ecological relationships; from one externally set conditions to another.

At development the external impacts are the condition for changing of object, but the source of the complicated structure and the ecological relationships is inside the object itself. And this is the essential difference between development and formation – the nature of conditions for building of processes of activity of development of ecological relationships. At formation of ecological relationships the conditions are created in accordance with the plan to obtain a particular result. Hence, not every process of ecological relationship organized from the outside and being under the educator’s external control, is development. If we assume that every formation of an ecological relationship is determined only by the end result. The end point then is the formed man with given ecological skills and ready to implement given processes of activity of their existence, and the intermediate conditions of the trainee are just events on the way to the end condition, then in this case the relationships in every stage of ecological attitude are not satisfied by additional conditions and by the structural complication and this way development is precluded. The issue of education – development relations
is significant for the developing society. The man has to get involved in the developing system of his activities that maintain and provide his existence; to be an “active guarantee” of the developing spheres. In this case the trainee is the subject of the process of his/her own development, without any purposeful external influence he/she builds up him/herself in situations through his own activities. And this process is a directed one, not a chaotic. „The major ecological law of the educational process reads that it is governed by the leading function of the adults’ ecological attitude to the child and his/her surrounding environment towards clarification and strengthening of the role of the subjective ecological attitude (on the one hand of the child) to him/herself (to his/her biosystem, personality and socialization) and his/her surrounding environment and acquiring the ecological competence (skills and dexterities) for interaction with it “./9/

G. Shtedrovitsky draws the following conclusion: „Development within the own sense of the word is every system of education of children that includes the scientific-pedagogic service”./7/ He stresses on the fact that the system covers the knowledge necessary for the organization of education and training, as well as the training itself, its motive forces.

In accordance with this definition there should be such a structural picture of the object and mechanism of development of the ecological relationships of the children of pre-school age that it could be said that the object is developing and not just altering or changing This means that the development of children’s ecological relationships is oriented as a subject – object or subject – subject relation and in the state of the object such dependencies and relations are established that will allow the previous grounds of such relations to result from them. The concept of „development of ecological relationships” has its objective-operative contents and such a regularity and relation between the following and preceding states of the object that shall allow the drawing of conclusions.

When the methodological interpretation of development of ecological relationships in children of the pre-school age are studied, and when the category of “development” is compared to the category of “formation”, it is seen that the latter is a not yet established pedagogical category regardless of the fact that it is broadly used and its meaning is either shrunk too much, or extended without limits. The preferences are for the category of development of children’s ecological relationships, and development requires a process of education that is preliminarily defined and organized as a source of the structural external complication, and at the same time personally oriented to the child as a subject of activity, but also for the development of every system of education including the knowledge needed by it.

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ANTHROPOCENTRIC APPROACH TO THE ANALYSIS
OF INTONATION OF A KAZAKH TEXT

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Abstract

This article is devoted to the problem of Kazakh intonation. The intonology is just the discipline where the most recent trends and tendencies of the linguistic science are concentrated, which provides a multilevel analysis of language phenomena, thus opening wide prospects to the researchers. Developing on the basis of fundamental concepts, methods and technique of the allied sciences, the intonology itself was conductive to the extension, increase and development of new trends of scientific knowledge (cognitive linguistics, pragmalinguistics) in the course of their integrity and interdisciplinary coordination. As our analysis has shown, the intonation provides the most natural access to the consciousness, the cogitative and cognitive processes and is in close interrelation with the semantics. The analysis of a small fragment being an sample of spontaneous speech, shows that the discourse description of texts at the superfix level subject to the semantic and cognitive factors is promising and expands the horizons of new trends of linguistics.

Key words: Kazakh intonation; intonology; the cognitive linguistics; the pragmalinguistics; the psycholinguistics; the linguistic culturology; Kazakh text; sounding speech; presupposition; an utterance; speech communication; the accent; the intonemes; the discourse.

The research in relation to the intonation unveil great opportunities in researching new trends of linguistics associated with the text linguistics (discourse), the cognitive linguistics, the pragmalinguistics, the psycholinguistics, and the linguistic culturology. The intonology is just the discipline where the most recent trends and tendencies of the linguistic science are concentrated, which provides a multilevel analysis of language phenomena, thus opening wide prospects to the researchers. Being a sign of sounding speech, intonation is closely connected with an oratorical skill, a theory of declamation, and acting skills. It is no mere chance that already the ancient Greeks and Romans paid attention to some elements of intonation and laid the basis for the study thereof under the oratorical skill.

Being an object of regard and study by different experts, the intonology covers a lot of areas of knowledge, both allied relatively dissimilar such as literary studies, stylistics, dramatic art and oratorical skill, psychology, philosophy, physics, informatics, culturology, anthropology, ethnology etc. But just due to the linguistic research, the intonation has achieved its theoretical understanding and formed as a science.

The science of intonation has passed some stages of development along with the linguistic science itself. For a long time remaining at the periphery of linguistics, it has currently taken a worthy place among other linguistic disciplines. Developing on the basis of fundamental concepts, methods and technique of the allied sciences, the intonology itself was conductive to the extension, increase and development of new trends of scientific knowledge (cognitive linguistics, pragmalinguistics) in the
course of their integrity and interdisciplinary coordination. Moreover, with the origin of the intonology, some facts of language have been adequately covered, formalized in scientific theories, generating new fundamental ideas and outlining such linguistic phenomena and concepts as remained out of view for a long time.

For the last decades, pieces of speech falling beyond a statement become an object of linguistic research increasingly frequently. And the analysis thereof is performed from the different points of view: syntactic, lexical, and phonetic ones. A transition from the analysis of an isolated statement to that of the whole text is being observed in the field of intonology that extends opportunities to study a functional potential of intonation and to identify its substantial aspect.

In the scientific literature, linguistics of a text is often defined as a science studying «language in use», which is engaged in search of general regularities to build up a system of grammatical categories of a text with substantial and formal units of a different scope and complexity [3]. A text is understood as structure of any completed and coherent, independent and grammatically correct written text or oral statement at an emic level and as an actual realization of the said statement at an ethical level. As related to written texts, one can rely on the inner saying or reading of a person, who is writing or reading, the more especially as the existence of the intonation specifying continuation of the text, may be deemed to be a universal. And for written and oral texts, the absence of segment means instead of superfix ones (connectors) of the larger-than-thesentence link in the beginning or in the end of texts is proveable. An initial and final sentences are not marked in relation to the connectors, which do not correlate correspond with the middle of a text. A more distinct downturn in the end of a text is not marked as well. On the contrary, a plurisegmental link is marked just as segment connectors, which consists in the intonation of continuation of a text.

The russian linguist T.M.Nikolaeva thinks that development of linguistics of a text was supported by studying phrasal and prosodic structures, and it is noted that in an oral statement, it is possible to establish a set of units of a minimal extension, which are syntagms - primary units of an oral statement [4].

A functional potential of intonational means extends in the transition from the analysis of an isolated statement to that of a coherent text.

The analysis of functioning prosodic means within the linguistics of a text enables to find out influence of an intonational structure of a text, or an utterance upon the intonational contours of elements constituting it, to reveal a cognitive function of prosodic parameters in the semantic and pragmatic organization of a text, to describe properties of intonation in the realization of an interphrase link and in the accentuation of informative pieces according to the extent of importance, and also in the performance of a function of an aesthetic influence on a person.

In studying different properties of a text, the cognitive aspect of the text and its pragmatics arouse the greatest interest. The analysis of texts (discourses) involving social, mental and psychological qualities of an individual in the range of interests of the intonology makes it possible to estimate a process of communication and speech behaviour of a person under natural conditions. In case of the cognitive aspect based on a versatile approach to the text elements, and to the subject, who perceives and produces information and guided certain strategies his/her cogitative activity subject to the speech reality in a specific communicative situation, the analysis of intonational data is realized more fully and deeply.

The cognitive analysis of intonational components enables to refer to the pragmatical factor, and to the presupposition theory. In the linguistic literature about the presuppositions, it is written quite enough.
Semantic and pragmatical presuppositions are distinguished. They are defined as preliminary knowledge, available with the communicants, of a communicative situation, previous speech acts, a speech context where an intercourse is developed, all preceding the act of communication. The presuppositions regulate relations between the communicants long before the time of the beginning of the act of communication. Entering into an act of communication, both partners expect that they have some general «information on the world», which will let them to keep to the reference points and limits, known to both of them, in the process of communication [1].

The prosodic means participating in the design of texts (discourses) and imparting various semantic meanings can be indicators of different types of presuppositions. The articulation of an utterance with prosodic elements predetermines the availability and the location of the said presupposition. For example, subject to the accentuation of words, it is possible to describe the presupposition of the following utterance:

Қарлығаш // биыл емтиханды «беске» тапсырыды.
This year, Karlygash// has got full marks in her examination.
Presupposition: Nobody has got full marks in the examination other than Karlygash.

Қарлығаш биыл // емтиханды «беске» тапсырыды.
This year//, Karlygash has got full marks in her examination.
Presupposition: Last year, she was not so successful.

Қарлығаш биыл емтиханды  «беске»// тапсырыды.
This year, Karlygash has got full marks// in her examination.
Presupposition: Formerly she had the other notes.

The presupposition refers to the facts well-known to the listeners, and it is still not a illocutionary act but just a base for it. The presupposition of an utterance changes if its articulation changes. The articulation of an utterance in along with the accentuation determine the presupposition. The illocutionary act constituting confirmation of an utterance, according to the examples, is accentuated with prosodic means. The accent and the intonation serve as indicators of illocutionary forces producing a speech act. The are several types of speech acts such as a demand, a statement, an advice, gratitude, a warning, a question, a greeting, and congratulation, which regulate relations between the communicants. And the statement in a proposition is a speech act, which is to attach a true significance to the proposition.

If to refer to the actual articulation theory, one can note that this is nothing else but a rheme, i.e. what is asserted, and it is, as well known, always accented by acoustic parameters of speech. According to J. Searle [6], the communicative presupposition of a promise means that the addresser expresses an appropriate proposition having designated his/her future action therein, which is desirable for the addressee.

Commenting on the systematization of speech acts recommended by J. Searle, which purpose is to ensure that «words correspond to the world» and «the world corresponds to words», E.V. Kluyev notices that adaptation of the world to words is done by the addresser, and the task of the addressee is to adapt words put at his/her disposal to the world, and to return to the same referent, who has provoked the addressee to pronounce words [1].
The study of the theory of speech acts may be an incentive in the development of the current trends in the linguistics associated with a versatile analysis of sounding speech at a superfix level with all its intra- and extralinguistic features. In the expression of different types of speech acts, a substantial part is assigned to the prosodic means subject to the speech situation. It appears that speech acts universal for all languages can differ by differential prosodic attributes, and it should be noted that based on the experimental data it was found that some speech acts (a demand, an advice, a statement, a question), according to their distinctive acoustic parameters, correspond to the intonemes found out due to the Kazakh material. In terms of the cognitive and pragmatic approach, the analysis of prosodic means enables to determine a ratio between the semantic and intonational characteristics, and to describe a deep nature of interaction between the intonational units and the other communicative units. The intonational characteristics of a text, which are a combination of several sentences closely interrelated by implication, express a fuller development of an idea as compared to a particular sentence, the same producing the single intonation, sense and structure. The larger than the sentence units express such a complex idea, which cannot be expressed within the simple and complex sentences, thus they constitute a dismembered text, in which relatively independent sentences find their completion in the end of the whole unity. A text is segmented with pauses accompanied by the changes in the intonation contour, the tempo, and the intensity, and utterances are united by implication using prosodic means. And the articulation of such text admits modifications subject to the purposes and the desire of the speaker.

Let’s consider spontaneous oral speech as a dialogue where the interlocutors engage in a conversation to achieve communicative purposes in a situation of conversation. Utterances are exchanged in the unity of semantic, structural, pragmatic and cognitive aspects. The pragmatic orientation of the dialogue determines structural and grammatical specificity of utterances, which are characterized by ellipticity and incompleteness:

1. - Today we shall go to ducha.
2. – When shall we go?
3. – In an hour...
4. - By what shall we go? // By bus?
5. - No, by the neighbour’s car. // Call Marat right now quickly!
6. – What shall we do in the dacha?
7. - We shall water fruit // and vegetables.
8. – Shall we gather apples?
9. – Just ripe ones...
10. - And what about cucumbers and tomatoes?
11. – We’ll gather red-ripe and headed ones as well.
12. – Take your bags and bags // and get ready as soon as possible!
13. – We’ll come back just in the evening.
For a successful dialogue between the interlocutors, there should be necessary conditions and preconditions. In other words, the addresser and the addressee entering into a communicative act should have a common subject matter. The content and the tonality of intercourse usually depend on the addresser initiating speech communication, and on the common speech presuppositions. The so-called frames, speech situations, on which background communicative acts occur, are closely connected with common presuppositions. In the said dialogue, the subject matter develops about a trip
to the dacha. The beginning is realized in the first utterance, and the ending in the last, the thirteenth one. The subject matter is developed from the second to the twelfth utterance. There are different communicative types in the dialogue (narrative, interrogative, and incentive). The dialogical unity is provided with a link of question-answering conversational turns, which volume depends on the personality of the interlocutors with their specific communicatively speech strategy and tactics. The participants of the dialogue in the said particular situation use a minimum of verbal means filling verbal information due to the nonverbal communication - intonation, mimicry, and gestures.

In the said example, many intonemes are realized: an intoneme of a special question, and intonemes of categorical and polite order. Some words (when, by what, quickly) are accented with the maximum values of frequency of the basic tone, intensity and duration. The tempo of pronouncing sentences depends on their type. Thus, the intoneme of the order is realized in a slow tempo, the intoneme of the general question - in an average tempo of pronunciation. As regards the amplitude of intensity, it is average for all intonemes other than the intoneme of categorical order characterized by a high amplitude of intensity, and the intoneme of completeness having a fading amplitude of intensity and constituting the ending of the text. The descending tone of a low level of the ending, the reduction of intensity and the loudness of the final sentence in combination with a long pause are an indication of the final completion of the larger-than-the sentence unity as the completed prosodic phenomenon.

In the dialogue (discourse) being analyzed, we have a typical pragmalinguistic situation where the addresser tries to show the necessity of a trip to the country, and he/she has a full mental picture of what they will do in the country. The pragmatics studying language, when in use together with intonation, plays a key role in the speech act. Due to the components of intonation and subject to the speech situation, various shades of meanings, purposes and intentions can be imparted. There occurs an exchange of information in communication between the addresser and the addressee made by the communicants towards each other, and the prosodic means are of paramount importance in the expression of different communicative functions.

Thus, the intonation, performing functions of organization and articulation of elements of speech (text), and of expression of a degree of link between them, segments them into the notional elements. In the segmentation of speech, rhythmic, syntagmatic, phrase, logical and other kinds of emphases are prominent having an influence upon the meaning of phrases. The phenomenon of the accentual emphasis is of interest to us in terms of its link with the intonational structure of a phrase. Various types of the accentual emphasis in combination with other prosodic means play a key role in the process of communication. The accentual emphasis marking a word, which is important by sense, may take up any position in the phrase. Having an effect on the phrase, it is used to attract attention to a particular word. In the speech flow, any word may be emphasized by sense in evocative phrases. The logical emphasis is closely connected with the meaning of the word, on which it is localized. The logically emphasized word usually has a clear articulation in the speech flow. At the beginning or in the middle of a phrase, it is characterized by the maximum values of frequency of the basic tone, duration and intensity. But if the emphasized word is at the end of the phrase, its intonational characteristics are only realized due to the time and dynamic maxima. Irrespective of the position held, emphasized words are characterized by substantial intervals at the junction with the other words in the phrase. The problem of articulation of the speech flow may be considered from different positions and in different aspects, being of a keen interest to such scientists-linguists as engaged in solving problems of the science of speech.

As related to the so-called pragmatic turn in linguistics, the attention of linguists is focused on a detailed study of the real products of speech with all their complexity and variety: what the role of the
communicative situation is, what principles of the composition of speech are, into what parts it is divided, how these parts connect with each other, and which of different ways of its segmentation are semiotically relevant ones. Formation of a new paradigm in studying voice communication is associated with a theory of speech communication and psycholinguistic research. The task of intonologs is to ascertain, accumulating new trends in the linguistics, what function is performed by the melodic, temporal and dynamic means of intonation not only in the notional articulation of the speech flow, but also in the speech activity, in the broad sense of the word, in interrelation with extratextual factors. Being a sign of oral speech, intonation is realized in speech communication performing different cognitive and distinctive functions. The superfix means are demonstrated particularly clearly in spontaneous unprepared dialogical speech where the addressee engage in conversation on a free subject matter. Spontaneous speech has its peculiar features, for example, in generating an utterance, one interlocutor often interrupts the other, and a result, a usual syntagmatic articulation intertwines with a hesitative one. The segmentation of the said discourse depending on the context and the communicative situation, is done through psychological pauses and other prosodic components. In the text there are voiced pauses (ә-ә) and hesitation pauses, which are the indicators of spontaneous speech.

The intonational means are one of the main indicators of the cognitive activity and the pragmalinguistic relations in the speech communication. Neutralization of intonemes is often seen in the unprepared speech due to the variation of differential distinctive features. The pragmatic presupposition at the level of the superfix phonetics acts as a precondition of a successful communication. Functions of the components of intonation in the implementation of the universal general linguistic laws of economy and compensation are especially clearly demonstrated on the basis of the material of the Kazakh spontaneous speech. The universal principle of economy set up by the French linguist Andre Martine [2] is concretized on the temporal parameters, and the law of compensation of Russian and Soviet linguist A. M. Peshkovskiy [5] is confirmed by the tonal characteristics of spontaneous speech.

As our analysis has shown, the intonation provides the most natural access to the consciousness, the cognitive and cognitive processes and is in close interrelation with the semantics. As a result of the experiment, we managed to find out that the prosodic means can “speak” about a greater or smaller semantic significance of utterances. And, as a rule, the acoustic parameters (tonal levels, a level of intensity, average syllable duration) make themselves evident the most clearly in the communicative acts, which contain more weighty information, since the meaningful information obtained in the course of the cognitive activity of a person, and which has become a product of its processing, finds its expression in speech forms, fully promoting to the realization of its content. When transferring information data, which are less significant for the recipient, intonational characteristics of utterances are neutralized by reason of their collaterality. The intonation is of paramount importance in imparting any shades of meaning, being a form of expression of the content, and it is directly proportional to the semantic fulness, and as the data of the prosodic parameters of speech have shown, the more the meaning, the clearer the intonation.

Thus, the analysis of a small fragment being an sample of spontaneous speech, shows that the discourse description of texts at the superfix level subject to the semantic and cognitive factors is promising and expands the horizons of new trends of linguistics.

In our intonological concept, component of the intonation, its units and functions were considered in their interrelation and interaction constituting an integrated intonational language system being a total of intonemes differing in functions and meanings expressed by them, and also in prosodic means
Differentiating various types of phrases with certain communicative and modal-and emotional shades, which are present in the text articulation into intonational segments and convey character of relationship between them.

Problems and methods of studying the Kazakh intonation, which is an independent level of the language structure, were considered from the position of a system and functional approach, which proposes to study a variety of internal properties and meanings conveyed by the intonation, and its links and relations with other phenomena of the language system, the part of which it is. The language system consisting of a number of interrelated subsystems takes on new properties and features in the integration of new elements. A complex system and functional approach to the prosodic phenomena provides, to our opinion, a comprehensive and all-around study of speech properties in the field of the superfix phonetics and formation of a linguistic view, which enables to value the language in all variety of its manifestation.

It seems that the results of this work may substantially deepen, supplement and in particular cases adjust the already known rules for the role and the meaning of an intonational level attracting data of the Kazakh intonational system not studied yet, and will allow us to interpret some aspects of the general theory of intonation in a new way. In our work, we’ve made an effort to cover facts and phenomena as many as possible, which regard problems of the superfix phonetics, however, some interesting, to our opinion, aspects are considered just fragmentarily, having been not covered in detail; the detailed study is a task of the future.

A further research in the field of the intonology may be conducted in view of a typological research of the intonation of kindred and non-kindred languages to find out typological and all-purpose features in their intonational structure. It should be noted that the problems associated with the study of language universals have always held a prominent place in the linguistics and studied at all levels of the language system. Universals in the field of intonation are studied the least of all, though some linguists offer an opinion that the intonational level must be of general-purpose at its core. Some general features of the intonation of different languages can be explained, apparently, by the international character of the thinking of all people, and the intonation, as compared to other linguistic phenomena, associated with the meaning to a greater degree. As it is seen from our research, according to the formal matter, the Kazakh intonation has its own specific features differing it from other languages. Typological works in the field of intonation is, undoubtedly, of value both on the theoretical level – in the development of the universality and intonology, and on the practical level: in the teaching and the instruction of an intonation belonging to another language.

In our opinion, the phonostylistic direction in the research of facts of the superfix, prosodic level is also promising, which is aimed at a comprehensive study of a variety of styles and genres of the modern oral speech, and at the ascertainment of regularities of functioning prosodic means in different communicative spheres and situations describing intonational characteristics of different functional styles. The phonostylistic approach to the study of prosodic means makes it possible to represent an authentic picture of the intonational structure of the language with a variety of the existing intoneme variants realized in certain functional styles of speech.

The study of different functional styles at the prosodic level is closely connected with an increase in the culture of a public speech in the field of the intonation of the native language. An expressive speech during lectures, public speakings, radio and TV broadcastings in compliance with the rules of intoning has not so much an aesthetic value as promotes an adequate perception of the meaning of what has been said. An incorrect intoning mutilating the meaning of utterances may even lead to the breach of communication. That is why one should know rules and laws of the native language...
intonation studying the widest capabilities of the intonation in conveying various nuances of the meaning with prosodic means. In this respect, it is necessary to master norms of pronunciation for the intonational composition of speech and use, if required, intonational transcription.

The intonational research is of a special interest as related to the articulation of the speech flow, the ascertainment of principles of the composition of speech: into what parts it is divided, how these parts connect with each other and what prosodic means participating in the segmentation are semiologically relevant. These aspects have been generally considered in our work in accordance with concrete objectives; in future, one should pay attention to a detailed research of the intonational structure of a text (discourse) describing not only linguistic but also extratextual factors, having an influence on the selection of superfix means in the integrated prosodic characteristic of speech in view of the theory of speech activity, pragma- and sociolinguistics that would comply with the modern trends in the development of linguistics.

The determination of technique and methods of articulating a speech flow with a further integration of prosodic segments is the basis in the development of theoretical principles of an automatic recognition and synthesis of speech. Currently, based on theoretical data obtained from the study of an intonational structure of the Kazakh speech, ascertaining specifics of the semantic and intonational articulation of a speech flow by a degree of importance of segments, and also describing a set of intonational units, work is in progress in order to recognize and synthesize prosodic characteristics of speech.

Along with a synchronic description of intonational systems, there is an urgent necessity in the diachronic study of a superfix level of the language. Such research, in our opinion, should refer to the historical phonetics, the phonology, the historical grammar, the theory public speech, and the oratorical skill. This difficult and at the same time interesting work requires further special research.

REFERENCES

THE HUMAN CAPITAL AS THE BASIS OF FORMATION OF WORLD OUTLOOK CULTURE OF THE PERSON
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Abstract
In given article the world outlook culture of the person is considered. It is revealed actual features of world outlook culture of the person for societies and for the concrete person in connection with the number which has become aggravated in new cultural-educational conditions of contradictions: between religious and secular education, a religious and scientific explanation of the world, national and universal values, between pragmatical both aspirations of mass consciousness and the high purposes of life preached by philosophy and art, differently directed influences of a family, school, mass media, etc.

Key words: The person, the human capital, culture, outlook, world outlook culture, world outlook culture of the person.

1. INTRODUCTION
In dynamically changing world the basic human capital is formation. Level of modern achievements in any sphere allows to speak about worthy fruits of scientific and technical progress. President N.A. Nazarbayev constantly pays attention to necessity of constant perfection of educational system – from preschool to the ambassador high school. The thought on competitiveness of the Kazakhstan society and its each member on the basis of a mental potential in the conditions of globalization sounds in annual Messages to the people. As one of priorities of the Strategic plan for development of Kazakhstan till 2020 development of human resources is defined. Without the formed people it is impossible to create a modern infrastructure, effective machinery of state, to provide a favorable business climate. And consequently the main feature of the program of a development of education forthcoming decade is its accent on increase of competitiveness of formation, development of the human capital for improvement of material and spiritual well-being of the citizens, steady growth of economy by maintenance of availability of quality education for all and each person separately [1]. The person - steady system of the world outlook, psychological and behavioural signs characterizing the person. The person is a product of social development and inclusion of individuals in system of social relations by means of active subject activity and dialogue [2] and on it today in the conditions of a labor market, it is necessary to raise a qualitative condition and development first of all the human capital.

2. THE HUMAN CAPITAL AND WORLD OUTLOOK CULTURE
According to B.G. Ananev as the human capital it is understood – set of knowledge, abilities, the skills used for satisfaction of diverse requirements of the person and a society as a whole. As writes Korchagin J.A. to for the first time given term Teodor Schultz, and its follower – Gary Bekker who
has developed further this idea used, having proved efficiency of investments in the human capital and having formulated the economic approach to human behavior, as a whole. The human capital covers in itself it is intelligence, health, knowledge, qualitative both productive work and quality of life [3]. At the heart of the psychological theory of the human capital and its empirical measurement basic ideas of psychological school of B.G.Ananev and V.A.Ganzen [2; 4].

Psychologists allocate main with a principle – a principle, the psychological structure of the person consisting of the individual, the subject, the person and individuality. Within the limits of the present research set of parameters of the individual was interpreted, as an indicator of viability of the person. Set of parameters of the subject was interpreted, as an indicator of working capacity of the person, set of parameters of the person is interpreted, as ability to economic-political innovations, and set of parameters of individuality was interpreted, as ability of the person to training. Actually, these parameters were entered into a scientific turn in 1947 by academician B.G.Ananev. In development of ideas, the scientist association of indicators of viability, working capacity, ability to innovations and to ability to training that give an integrated indicator of quality of the human capital was necessary, the data on which turns out on representative sample of examinees of investigated region, branch and others the visible phenomena [2].

At aforesaid level it is necessary to notice that the human capital possesses four base qualities:

1. Viability — ability of people as much as possible long to prolong the private life and to continue it in the descendants, thanks to an intelligent way of life, despite from continuous vital changes and tests. The demographic problem connected with a condition of a way of life of people, or viability of the person is shown. Viability is defined by the relation of the sum of positive vital needs to the sum of negative requirements, as for example displacement of the ship is defined by the relation of its displacement to weight of transported cargo: at an overload the ship sinks, and the impractical person perishes under cargo of uncontrollable own requirements destroying it.

2. Working capacity — ability of people to work outside of the forces necessary time, creating cost of world level at the expense of the developed vital forces and intelligence. Here the economic problem caused by washing out of a vital position of people and decrease of their vital force. Working capacity is calculated as the relation of cumulative force of any mental processes to cumulative force of involuntary processes (memory, attention, thinking, perception, emotions). Domination of involuntary mental processes stops labor activity of the person and does its invalid. So the ship, having faced ices, because of the a small stock of fuel and weakness of the engine stops advancement and stops.

3. Ability to innovations — ability of people to create innovative products in all spheres of life, realizing the vital values, and without losing in constantly changing world a self-confidence, in people, in the business. Such ability to innovations is found out in social discussions or the conflicts caused by the contradiction between traditional outlook and outlook of a new reality which one accept, and others aren't present. Ability to innovations is defined by the force relation strokes of bad luck to force of belief of people in itself, preventing a nervous breakdown as heavy doesn't allow to overturn to the yacht from gale-force wind blow in sails [2].

4. Ability to training — ability of the person to acquire knowledge, abilities, skills and to give them in the course of the decision of absolutely new problems which continuously arise in all spheres of life. It is shown in formation of a new picture of the world, allowing to find new ways to achievement of the purposes. Ability to training is defined by the relation of the sum of the got knowledge, skills to the sum of almost applied knowledge, skills which are used for purposeful movement to the purpose continuously changing the position. Ability effectively to get and apply knowledge, skills it is
comparable with the ship which easily bypasses obstacles and turns, moving to an object in view

V.A. Ganzen allocates four psychological qualities of the human capital.

The universal description of mentality of the person of V.A. Ganzen at research of the human capital has received the following interpretation covering in itself:

1. Set of parameters of the individual is interpreted, as an indicator of viability of the person.
2. Set of parameters of the subject is interpreted as an indicator of working capacity of the person.
3. Set of parameters of the person is interpreted as ability to economic-political innovations of the person.
4. Set of parameters of individuality is interpreted as ability of the person to training [4].

The human capital is non-uniform. It is subdivided into general (moved) and special (unmovable). The general capital includes the theoretical and other enough encyclopedic knowledge having a wide scope and got, first of all, at schools, high schools and other educational institutions, and also the general professional (specialized) knowledge. The important form of escalating of the general human capital is self-training [3].

The individual as the subject of outlook, always in own experience correlates itself with “representation about the person in general” and to “image of the world” which is formed at it as a result of mastering of cultural experience and acquisition of individual experience of life in the world. The world thus acts as the life focused on the statement of subjectivity, as "the world for the person" [6], for formation of outlook of the person.

The person as the subject of outlook possesses world outlook consciousness. Important feature of world outlook consciousness is it: on a surface of public life it is shown as already something stiffened, not dependent on the separate individuals joining in system of occurring outlook as a phenomenon. As such objectively-ideal phenomenon the outlook functions as substantial system of consciousness in which all questions, concerning external and internal life of the subject have already received answers where all problems are definitely already solved [6]. In this case the great value gets world outlook a component.

The world outlook component (outlook) of personal sphere (person) of the person represents system of its generalized sights at world around and a place in it the person, on the relation of people to the surrounding validity and to itself, finding expression in cultural wealth of the person, its ideals, belief and vital positions (principles). Thereof in it three basic types are allocated: the philosophical outlook in which experience of spiritual and practical development of the world is generalized, the scientific outlook, allowing to estimate subjects and phenomena of the objective world from positions of various sciences, everyday (ordinary) outlook in which the common sense representations, traditional sights at the world and the person are reflected; the religious outlook connected with a recognition of the spiritual world beginning [7].

3. OUTLOOK AS A PROJECTION OF THE PERSON

The most original line of outlook of the person as special psychological formation is its quasiobjectivity: being a subjective psychological reality, world outlook generalizations are perceived by the subject as reflection of a real world order, as the exact characteristic of the objective validity. The divergence between the subjective nature of outlook and objective character of the validity reflected in it usually remains imperceptible for the subject at least for two reasons. First, the outlook represents the form of synthesis, interosculation of knowledge of a reality and its judgement, it is
Impregnated by sense, reproduces the validity phenomena first of all in them not objective, but semantic communications (Ivanov, 1986; Kozlovsky, 1986, etc.). Secondly, an outlook distinctive feature is its claim «to express the universal point of view and a position. It means that in the major as the general requirement, following of essence of the person or a world order of things» (Ivanov, 1986, 69). The outlook speaks about how the world "actually" is arranged; when I express the world outlook belief, I consider that I speak not about myself, and about the validity.

Illusion of objectivity of outlook does by its most valuable material of studying of the person and its subjective world. Thanks to this feature of outlook we have the right to expect that its maintenance will be to a lesser degree subject to deforming influence of psychological protection, than the JA-concept maintenance as protection is provided with the form which those or other semantic orientations get, being formulated as world outlook postulates, as judgements about a world order, about an order of things. World outlook generalizations as a result appear extremely projective, reflecting deep enough and intimate tsennostno-semantic orientations of the person, they speak about the person of the one who states them, than how the world actually is arranged much more. For example, it is difficult to imagine that the moral, fair person can adhere to belief:« All people steal ». Behind world outlook belief that any person will steal another's if the risk of exposure is excluded, absence of internal barriers of moral character is distinctly looked through. Formulating a certain general law and submitting own personal features as display of this law, the person removes from itself a private responsibility. But actually this general law exists only in its consciousness and, telling about how the world is arranged, the person tells to us about itself. Thereby the outlook appears not only interesting object of psychological studying, but also perspective way of indirect diagnostics of deep personal structures. It is possible to speak even about a special methodical principle of a world outlook projection. In particular, it is a lot of years having worked with such technique as Thematic the test (Leontev, 1998), I have found out that the greatest projective value in it the material which consists in generalizations, twisted stories in a fabric possesses. On the basis of it the new category has been entered into the scheme of the analysis of Thematic Apperceptivnogo of the Test — a category of generalizations.

It concerns not only those generalizations which the person states from itself, but also to those world outlook generalizations which it borrows somewhere in a ready kind and includes in the picture of the world. One of versions of such generalizations are elements of the parental scenarios, which parents inspire to children (Bern, 1988). Often these scenary instructions have character of world outlook generalizations. Type generalizations «all muzhiks of the swine» often are not generalization of personal experience, and are transferred from mother to the daughter. Not always, of course, scenary instructions have character of world outlook generalizations (sometimes they look like direct instructions and imperatives: do that, don't do it, be such, not be such), but their considerable part is that.

One more embodiment of a methodical principle of a world outlook projection is the developed diagnostic technique of limiting senses (Leontev, Buzin, 1992; Leontev, Filatova, 1999; Leontev, 1999). It is intended directly for studying of semantic aspects of outlook. It is dialogical procedure under construction by certain rules. The psychologist consistently sets to the client some question on the set algorithm, writing down answers. Questions are under construction on the sample «What for people watch TV?». Words — "what for" and "people", and an activity kind about which the question is asked are basic two first, undertakes from the answer of the client to the previous question (except for the very first). These questions are set until the person doesn't reach some limiting point for which definition there are special criteria. Always already from the second step the person leaves on the generalized structure of representations of senses not concrete kinds of activity, and in general the
general system of activity of the person in the world and in spite of the fact that questions are formulated about people in general, really speaks about itself. The count reflecting system of communications between categories by results are under construction. There are three ways of its analysis. 1. The projective analysis of the maintenance similar to the analysis of any projective material. 2. The content-analysis: 3 categories of the answers which frequency it is possible to express quantitatively are used. 3. The structural analysis: A number of signs which characterize structure of counts, degree, connectivity, integration of semantic structure of outlook is allocated. Indicators have good psychometric characteristics and yield valuable and uncommon results.

4. CONCLUSION

The recognition of presence of the presented world outlook types allows to draw a conclusion that it has huge practical sense and solving impact on formation of norms of behavior, vital aspirations, valuable orientations and other important components of personal sphere of the person makes. So, for example, the system of representations of the person entering into outlook about the morals, reflecting presence at it firm foundations both defining its actions and behavior in a society, opens its moral shape. At the same time, generated on the basis of world outlooks of the person a steady frame of reference on norms of relations of people in a society and their worthy interaction predetermine features of its moral shape [7].

At the heart of outlook folding the outlook represented by set of certain knowledge of last, present and expected future, and providing integrity of the person lies. Not less important role in formation of outlook of the person is played by its world outlook culture which essence is expressed in certain ideals, models and the images of a reality formed in practical life, art, culture, a science, religion etc. World outlook culture - this embodied in a way of life of the person outlook of special quality, the outlook, ideally authorizing cultural way of life.

The world outlook culture of the person is non-uniform and represents difficult hierarchy of its layers in which experience of self-determination of the person is reflected. It is especially important to underline that world outlook culture sensual relations. It can be sensation of harmony with world around or disharmonies with it, satisfaction or a dissatisfaction with a reality which can be reflected in consciousness of the person against a pride, pleasure, shame, alarm and other emotional conditions [7].

Thus, on the basis of the aforesaid follows that the human capital defined as the capital in the form of knowledge, the skills got by the person in the course of education and practical activities can serve as a support on its emotional condition, a basis for formation of world outlook culture of the person.

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