

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Aricova Zinovia, State University of Comrat
“Enhancing University Autonomy in the Republic of Moldova” project

What did I learn during the visit?

Structural features of the educational system in Denmark, in general, and the structure of “higher education”, in particular;

The nature of reforms, conducted by the Danish Government, in “higher education”;

The level of standards of the higher education system in Denmark;

The practice of applying theoretical knowledge into practice by Danish students;

The role of regional universities in the “system of higher education in the country”.

2. Why is everything I learned important? How can be applied / implemented in Moldova everything I learned about?

I noted that the reform of 1993 introduced the general structure of bachelor’s degree in Denmark. As a result, almost all university programs now in Denmark consist of bachelor, master and doctoral programs. This is extremely important in terms of sharing experience with the Republic of Moldova since our education systems are similar from the structural point of view;

I was impressed that the Danish higher education has a long tradition of learning, combining a kind of art of the educational process with a dynamic and innovative culture in research and teaching methodologies that in my opinion is very important for the development of “higher education” of our country;

I noted for myself an important aspect: the high standards of education. It is essential to implement them in the “higher education system” in order to increase competitiveness at the global educational level;

A particularly important aspect, because the level of practical adaptation of theoretical knowledge obtained by students in the Republic of Moldova leaves much to be desired: the active application in practice of the theoretical knowledge of Danish students, interdisciplinary research and active development of assignments of exploratory nature by students. Besides attending lectures, students work in groups, where each member contributes in the process of active discussion of research issues, but he/she also works individually. Students have the right to criticize their own initiative and analyze issues and problems arising in the course of training;

It is particularly important that the role of regional universities in the country is significant and important. I noted that regional universities are opening their branches in the capital. Regional universities provide a wide range of educational programs (majors), demanded at the regional level. This leads to the understanding that the specialization of regional universities, in the qualitative and quantitative parameters, is determined by the real demand for labor market specialists, not by assumptions.

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Grigore Belostecinic, Academy of Economic Studies of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

“To become better Moldovan universities
need more autonomy and more money”

The program and materials presented during the visit at Aalborg University were of particular interest as they suggested some possible directions for higher education reform in Moldova to make it more qualitative and competitive regionally and internationally, in terms of globalization, internationalization of education and increase of academic mobility. Namely, this was the purpose of initiating reforms 10 years ago at Aalborg University and this goal was achieved. Certainly, we cannot talk about universal recipes that can be implemented to develop the competitiveness of universities. Each university should aim to achieve performance in accordance with its mission and strategic priorities.

Based on those mentioned above and from my point of view, for the Republic of Moldova and the Academy of Economic Studies, from the experience of Aalborg University, for implementing in higher education, with a positive impact on the quality of education and increase of the competitiveness of universities, of greater importance may be:

1. Changing the mechanism of research funding at the national level and active involvement of teachers in the scientific research.

Research funding in universities (institutional and on competitive basis - projects under state programs, basic and applied) cannot be performed by means of the Academy of Sciences of Moldova, an institution responsible for allocating funds for research and, at the same time, involved in the research process and active participant in the competition for funding research projects and their expert appraisal. This has led, over the past 10 years, to significant reduction of the research component in Moldovan universities, low involvement of teachers in the scientific research and, as a consequence, - lack of appreciable progress in the increase of the quality of education. Using the results of research in teaching and learning should be considered the shortest way to their practical application (transfer of knowledge to future professionals who will be involved in practical activities). I suppose that this fact has been noticed also by those responsible for higher education in Denmark, when they decided on the merging of research institutions and universities, thus creating on their basis research universities. In the Republic of Moldova budgetary financial resources intended for research should be managed by an independent body - the National Agency for Research and Innovation, divided into two components - institutional funding directly to universities, 50% of the total amount, and funding research projects on a competitive basis organized by the Agency - 50% of the total amount.

Scientific-didactic staff must have the possibility to work in universities:

- Only in research;
- In teaching and research;
- Only in teaching.

The staff engaged only in research works in research institutes (Research Centres) created as separate structures (subdivisions) of universities. At the same time, chairs/departments remain basic structures where teaching and research activities are conducted, and in order to develop and promote interdisciplinary research projects (regardless of origin of the source of funding), based on the experience of Aalborg University, there can be created (and will be created at AESM) inter-department **Research Centers**, specifying the domain (or directions) in which research will be conducted, led by people with advanced experience in research and promotion of research projects. This structural diversification of the organization of research in universities (institutes, departments, research centers) will decrease the dependence of this important component of the activity of a university on a limited number of persons with management positions (Head of Department, Vice Rector on research issues); the diversification of directions (research issues, research orientation towards solving concrete problems faced by the real sector, the involvement of business in the research process, more efficient transfer of knowledge (research results), including their commercialization on the market will inevitably lead to **strengthening the knowledge triangle - education, research, business**, and, ultimately, boost economic growth.

2. Promotion of problem based learning – is another positive outcome in the search of innovative teaching and learning model at Aalborg University and which deserves to be taken over and implemented by universities in Moldova, along with the use of case studies, in order to encourage partnership and cooperation with industry and facilitate subsequent employment of graduates in the labor market, to the extent that this method develops creativity, teamwork, initiative, competition. These tools should be also used to assess if the level of knowledge, competences and skills is sufficient to enable graduates to employ in the labor market or develop their own business, thus facilitating the correlation process of the educational offer with labor market requirements. Certainly, the knowledge gained in university today is not sufficient to develop a professional career. A university graduate must learn throughout life. And in addition to the development of other skills, learning based on problems solving teaches you how to learn. And this is very important for a future economist.

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Ion Bostan, Technical University of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

Activities during the visit included meetings and discussions with representatives of different management structures within:

- Aalborg University;
- Campus in Copenhagen;
- Danish Agency for Science and Innovation;

1. General visual observations:

1.1 University campus in Aalborg has an infrastructure (study blocks, offices, ancillary buildings) developed horizontally with a little renneted architectural concept, access to campus is free without restrictions, campus boundaries are not delineated and the access into buildings is by electronic cards. All buildings are insulated, equipped with air conditioning (in hot weather) and heating systems (in cold weather), underground electrical networks, etc.

1.2 The university campus in Copenhagen has a modern architecture with facilities developed vertically, linked together by galleries suspended on pillars and undergrounds. Blocks of study and ancillary buildings being originally designed for an industrial enterprise, auditory areas have probably been re-designed, so that to meet the rules and requirements of their educational process, but at the expense of their functionality.

I noticed few students in both campuses, which is likely due to the use of modern teaching and learning technologies.

2 General remarks

2.1 Aalborg University, founded in 1974 in a time of crisis in the economy sectors in the region (shipbuilding, cement and textiles, etc.), was conceived as an institution, which had to respond to the needs in specialists of the north region of Denmark.

From the presentations made at the meetings it is clear that Aalborg University claims to be (from the foundation) an institution that has fostered and developed a dynamic process of reform based on the principles of university autonomy.

Through the presented reports it has been shown the continuous growth of performance indicators (number of students, research results, the positive development of cooperation with economic agents, etc.). The increase of performance indicators, in the vision of the rapporteurs, is due to the implementation of new teaching and learning technologies, such as **“problem-based learning”** and the process of training in triumvirates: **team of students – coordinator/supervisor teacher - representative of the business.**

2.2 Higher education is fully funded by the state, each student in Denmark is provided with a state scholarship worth 1,100 Euro for accommodation, food, sports, etc.

2.3 Aalborg University doesn't have dormitories. Dormitories are built and managed by local authorities.

2.4 University autonomy

Universities in Denmark, after the reform of higher education and scientific research in 2003-2004, enjoy genuine autonomy with few exceptions, namely:

- Academic freedom – „full”;
- Financial autonomy – „full”;
- Institutional autonomy and freedom in their structural organization – „full” (except for ownership of property);
- Autonomy in promoting the staff – „partly”.

Speaking about „Autonomy in promoting the staff” it can be concluded that: the rector is elected by the Development Council (50% university representatives + 50% - appointed by the ministry from outside) and the elected rector **appoints** vice-rectors and deans, deans appoint heads of departments and heads of schools.

In my view, although this elective model leads to team increased accountability, it does not exactly match the fundamental principle of the right of every employee **to elect and be elected**. At the same time, choosing the rector by a Development Council, succeeded by administrative staff appointments at various levels applied lately in several European countries, has shown effectiveness, reformative teamwork, performance and dynamic development in all dimensions of academic activities (education, research, innovation, technology transfer, etc.).

2.5 Since the foundation of Aalborg University, its governing bodies have placed particular emphasis on multidimensional cooperation and integration of the learning, research and innovation process with business. Based on this strategy, it we implemented a new model of teaching and learning where students solve problems from different areas together in teams, following disciplinary or interdisciplinary routes.

2.6 Financing of universities in Denmark from the state budget is differentiated depending on the profile, using a so-called financing meter, under which universities are funded according to the following profiles:

Humanities – 55,3;
Social sciences – 46,9;
Science and engineering – 96,2;
Health – 84,4;

The distribution of university funding according to the profile in relation to social sciences in reporting coefficients is as follows:

Humanities – 1,18;
Social sciences – 1,0;
Science and engineering – 2,05;

Health – 1,79.

Financial allocations are calculated according to a grid of quantitative - qualitative indicators, including student performance in each session, % of graduation, % of employment, research performance, implementation of research results in practice (economy), etc.

2.7 Scientific research in Denmark is carried out only by Universities, which leads to raising the quality of professional training, diversification of cooperation with business through graduates; increase the competitiveness of scientific achievements, active involvement of students in the field of scientific research, etc. Research results patented at national and international level represent the intellectual property of “author-university - economic agent” (which financed patenting (research)) and is a source of revenue for all stakeholders of the research -implementation process.

3. **Conclusions**, which, in my view, should be implemented in the higher education system in Moldova.

3.1 Expansion of university autonomy envisaged in the draft of the Education Code and strengthening responsibilities at the level of universities and university structures. In this context:

3.1.1 It is necessary to elaborate a regulation for electing the governing bodies of universities, which should to be discussed by academia and society in order to improve university management, and also to take account of our realities.

3.1.2 I will support the decentralization in the use of financial allocations distributed to faculties - departments based on quantitative - qualitative indicators and based on certain criteria of accountability of their optimal use and their transparency.

3.1.3 We will develop and support the consolidation of student self-governance to provide and encourage the active participation of students in all academic fields.

3.1.4 Next we will support and enhance the development of partnerships with businesses, stimulate economic agents’ participation in the process of professional training and promote joint university scientific research.

3.1.5 We welcome the provision stipulated in the draft of the Education Code, to mandatory establish a new structure within universities – “Council for Strategic and Institutional Development”. The objectives, rights and obligations of this structure will be discussed in the academic environment and society to take into account our realities, primarily related to the state and inadequate interests of business which is in the initial stage of development and is not yet receptive to the performance achievements in education and research.

3.1.6 Technical University of Moldova will launch a pilot project on the implementation, at 2-3 faculties, of the teaching and learning methods based on “problem-based learning” - methodology initiated in 1974 and currently developed by the Aalborg University.

3.2 We will argue and support the dissemination, by the relevant bodies, of university funding methodology based on differentiation of budget allocations per student in credit points (ECTS), the coefficient (1.9 to 2.1) for the field of engineering (in relation to economic and pedagogical fields).

- 3.3 We will support the initiative of the Ministry of Education (ME) on urgent reform of scientific research funding mechanism through ME, which according to the experience of European countries, including universities in Denmark, will lead to the strengthening of research and innovation in universities, increase the performance indicators in professional training of specialists, including in research, attract elite students in research.
- 3.4 In my opinion, a step that would boost productive interuniversity competition on quality assurance in education and research would be universities' ranking based on quantitative and qualitative indicators of the quality of studies, including % of employment of graduates and graduation rates, performance in research and innovation, patents and publications in peer-reviewed journals with high impact-factor, etc.
- It is necessary to stimulate additional financing of universities based on bonuses for the quality of studies, research and innovation, the students' graduation in term, other unique indicators for all universities.
- 3.5 I consider it appropriate to take over from the experience of universities in Denmark the introduction of the Coordinator for each program of study that would work with **full time teachers** in order students achieve high-level and plenary professional skills.
- 3.6 The presentations of our project colleagues from Aalborg University in Denmark on the implementation of their teaching methodology “**problem based learning**” (BPL) were of special interest. This model led to the increase of performance indicators, to the strengthening of collaboration relations with economic agents and the increase of employability of their graduates.

Examples brought into discussions were generally focused on the economic field and less on the engineering one, which, in my view, is more sophisticated from the point of view of the training process and multidimensional as content.

Starting from the general BPL methodology of Aalborg University, which includes the “**team of students - teacher coordinator - economic agent**”, we will propose three routes for engineering, all synchronous oriented towards the training of final graduate's skills, i.e.:

Route I – in semester 1 –, „BPL” implemented at courses related to fundamental training.

Route II – in semesters 2 and 3 – interdisciplinary „BPL” implemented at fundamental training.

Route III – in semesters 4-8 – specialized transitory „BPL”.

Initially, we will implement a pilot project for 2-3 specialties, after which, depending on the results, we will expand the dissemination to other specialties.

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
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“Enhancing University Autonomy in the Republic of Moldova” project

I took part in a study visit to Aalborg University, Denmark, which took place in the cities of Aalborg and Copenhagen, in the period April 28 – May 4, 2013, organized within a Tempus project “Enhancing the University Autonomy in Moldova (EuniAM)”.

Aalborg University was founded in 1974, as a result of merging of several universities and colleges in Denmark. It is a public university, located in the north of Denmark. There are performing their studies 18.600 students in the university campuses in the cities of Aalborg, Esbjerg and Copenhagen. Of these - almost 13 % are foreign students. There are 3000 employees at the university, and the annual budget is 337,0 mln euro.

This university is special mostly because of its teaching-learning method, PBL, based on research and teaching methods which encourage and promote projects that ensure the link between theory and practice. Aalborg University is an internationally renowned university, an institution which recorded performance in problem-based learning (PBL). The latter, based on the preferences of AAU, provides a flexible interaction between theory and practice within study programs. *One of the basic principles of the PBL model involves students’ work based on problems and complex projects, driven by an advanced academic standard. Programs based on research at Aalborg University provide the development of skills required in the business world.* AAU provides academic programs in most areas, including elite programs and professional programs tailored to the needs of students and the public and private sectors. This training model develops the student’s abstract thinking ability and skills to solve practical problems. Studying and comprehension of theory, objectives and tasks are necessary conditions for learning. Modeling complex problematic situations is carried out in close connection with the professional practice based on modern information technology, which helps streamline information search and the ability to study the essence of phenomena.

For the Danish educational process the method oriented towards the study problem is characteristic, based particularly on developing and implementing projects in practice. This is the starting point in achieving the objectives of the learning process.

*This philosophy of teaching and training of future specialists is ensured by an **appropriate institutional structure** of Aalborg University.*

University autonomy is manifested particularly by widening autonomy of various governance structures that ensure the achievement of the educational process: teachers, administrative system – financial, planning process for the matriculation of students, development, content and scope of course programs, strategic directions of scientific investigation. This however does not mean irresponsibility to the state. The state has the right to know and ask about effective usage of means intended for education and training. Along with assigning the right

for administrative and financial autonomy, there are high requirements on the quality of training.

It is important to note that the issue of quality of education of the institution ensures competitiveness and competitiveness determines the degree of budgetary financing, as well as the revenues from extra-budgetary sources.

Universities in Denmark are funded primarily by the state. This involves expenses around 73%. The share of subsidies - various EU sources, private companies, research councils by competition - 27%.

State funding is granted based in particular on competition and results.

University grants for education are directly related to production - bonuses: they consist of exams' results and degrees offered.

- 1. All exams have a share in ECTS and 60 ECTS (credit points), one FTE, in Danish one STA is produced.**

Each STA offers a grant from the government, according to the tax-meter attached to the STA. There are three different levels of tax-meter:

Level 1: 42.000 dkr (social sciences, humanities)

Level 2: 64.000 dkr (music, "soft" IT)

Level 3: 98.000 dkr (health, engineering)

- 2. For each offered degree there is a bonus that is given if certain conditions are met:**

Bachelor level: Time used to finish the level should be less than 4 years

Master level: Time used to finish the level should be less than 2 years + 3 months

There is no specific tax-meter here but a fixed amount in the acquiring act, which is divided throughout the university sector according to the number of degrees bearing bonuses for each university (different levels for bachelor and master students).

It is remarkable that the specialties of engineering profile enjoy a high level of funding compared with specialties in medicine, humanities and social sciences. Respectively - 13000 and 7000 euro, the correlation between expenditure expected for education and scientific investigation is 50-50 percent.

It is worth mentioning that in Denmark science is given a greater role in the development of the society. The government guarantees a minimum of 1% of GDP, almost 2% come from various private funds.

At the university level, faculties have their own accumulated and won incomes. The grants obtained for research from the government, are distributed to faculties through a model based on incitement. All faculties pay a fee of 10% for utility expenses, administration, etc. It is important to note that the motivation in education and research cannot be reduced by material factor. Remarkable is the atmosphere of a genuine spirit of corporate professional, care for the future generation and pride for everything made at Aalborg University.

Based on those mentioned above, I come up with the following recommendations considered important for the further development of the institution:

1. Increase the efforts to diversify sources of funding - especially the extra budgetary ones;
2. Widening institutional autonomy regarding the planning and realization of student matriculation and, in particular, of students on the contract basis;
3. Differentiated funding of specialties on domains - priority financing of engineering specialties;
4. Development of a science funding model, which should adequately reflect the competitiveness of the process;
5. Increasing financial support from the state - a necessary condition for overcoming the current state of affairs;
6. Enhancing the quality of teaching and training of future specialists;
7. Strengthening ties between scientific investigation and needs of local and international businesses to amplify the funding process of the educational process;
8. Broader framing of students, in close cooperation with teachers, in the process of scientific research;
9. To insist on the business regarding the providing practical training to students, in collaboration with the Ministry and the Government;
10. Increasing transparency of decision making in order to amplify the motivational space of managerial, pedagogical and scientific activity;
11. Developing a set of measures targeted to promote the national and international image of TUM;

12. Initiating the creation of an “endowment – fund” and an Association - graduates of TUM, regarding the strategic development of TUM.

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April 29-May 4, 2013
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“Enhancing University Autonomy in the Republic of Moldova” project

As a result of visiting the University, hearing its staff reports and based on the discussions held, there can be found and proposed the following:

- The University was founded in 1974 in the city of Aalborg for the Northern regions of Denmark, but now has departments in Copenhagen and Esbjerg. It consists of four faculties: Humanities, Social Sciences, Engineering and Sciences, and the Faculty of Medicine, where there are studying about 16 000 students, including 9500 at Cycle I, 5500 at Cycle II and 1000 PhD students. 10% of Bachelor and master students, and approx. 50% of PhD students are coming from 100 countries. The University offers over 65 vocational programs, including 60 programs taught in English. The university's budget is approximately 340 million euros;
- The University is renowned for its learning methodology based on solving real problems coming from the economy. The problem can be theoretical, practical, technical, etc. and involves an interdisciplinary approach both in the analysis and in the solving phases. The problem must be placed as a specific example of the manifestation of general learning outcomes related to knowledge. Each problem is solved in a team of 5-8 students working together for a semester at problem's design, analysis and decision making. The cooperation of team members for successful solving of the problem is mandatory and is an essential component of learning. Skills are divided within the team. Not all team members receive the same mark at defending of the project. Each team has one or more supervisors. In addition to the project for a certain subject, students participate in lectures. The courses are part of study programs where students are introduced to the main concepts and theories. Courses are evaluated separately from ongoing projects, there are no practical and laboratory work for these subjects. In the University, approx. 50% of subjects are studied using this methodology. They consider that due to the application of this methodology the number of students and the prestige of the University increases. Although all interested people are enrolled in the first year, there graduate approx. 80%.

This learning methodology will be implemented in the State Agrarian University of Moldova (SAUM) in the academic year 2013/2014 at the second cycle, starting with master theses. Subsequently, to implement this methodology on the subjects it will be necessary that the Ministry of Education operate these changes in the existing regulations.

- The university is run by a Board, where more than 50% of its members are from outside the University and are appointed by the Ministry. They select the rector, who

de facto leads the university, because they do not have time to handle the university as they are working in other businesses. The rector, in its turn, appoints the deans and the deans appoint the heads of departments. Based on the words of the rector of the university autonomy is quite limited, and management and didactic functions are not occupied democratically, that's why I do not think that Aalborg University can serve as a model of university autonomy.

- Currently, in Denmark, there are 8 universities, including three specialized universities, for example, in engineering, etc. By 2007 there were 12 universities. Following the merging of some of them there remained only 8. I propose that RM Government to undertake a reform to reduce the number of state universities. In Denmark for 136 thousand students there are eight universities and in our country for 110 thousand students there are 18 universities.
- In Denmark all universities are state-owned. Higher education is free. Moreover, all students receive scholarships in the amount of 1,000 euros / month. In this context I propose: "If they want to have competent and competitive professionals in the RM it is necessary to liquidate private education and education on a contract basis within state universities".
- In Denmark, a special attention is paid to scientific research in universities. For this, annually there are allocated over 1% of GDP, which is about 3 billion euros. Additionally, there are allocated 2% by companies from the private sector for own scientific research, as well as for Universities, if they have joint research projects. In order to increase the efficiency of scientific research, scientific research institutes were merged with universities. In 2007, of 17 scientific research institutes there remained 4 institutes related to political and social sciences. When in the RM science will be funded by at least 1% of GDP, there will be important results and it will be rational to transfer scientific research institutions under the dome of universities. Doing this now would mean that of 2 small poverties there will remain only a big one.
- The method of examination of students is quite interesting. Each examination, including all semester examinations, is conducted by a committee composed of teachers from other universities and the teacher who taught the discipline. Theoretically, student knowledge is assessed objectively and, in the case of our universities, bribing on exams could be excluded, but practically, I do not think that this method can be effective, as all teachers in the country who teach the same specialty know and check each other.
- Since the Danish government aims at having 90% of the population with high school education and 50% with higher education, to better manage these important areas, it works with the Ministry of Education to improve pre-university education and with the Ministry of Science, Innovation and Higher Education to improve higher education and science. This structure could be taken over by our country if the

financial, demographic situation, etc. improves, and there will be no need to optimize schools.

- Requirements in the selection of teachers are quite severe. Approximately 30% of PhD students, with their theses defended, become lecturers-researchers, 10% become associate professors and only 3% - university professors. We should mention here that 80% of the PhD students defend their theses in term and in the next 1-2 years there will be about 100%.
- Each teacher also performs scientific research. Depending on the title held etc. the ratio of time spent on education and science is about 50%: 50%. Given that research is carried out within groups and research centers, each teacher must be a member of at least one research group. There are also international research groups. To enforce this requirement for our teachers is not reasonable because the allocated funds are not enough even for a quarter of them.
- The university budget is about 340 million euros. Approximately 75% is funding from the Government and 25% from various sources - private companies, EU, etc. The 75% from the Government are distributed as follows: 36% are for education, 37% for scientific research and 2% -scientific research at government order. It is important to note that the University decides what problems to study from the money allocated by the government except for the 2% that have special purpose. The 37% of funds allocated by the Government are distributed as follows: about 45% are received directly depending on the number of students, 20% are obtained on a competitive basis. Priority is given to those who have international projects, 25% are allocated to researches proportionally with scientific publications in journals with impact factor and 10% depending on the number of PhDs trained. From these financial sources, faculties pay 10% to cover general expenditures (administration) etc. and the additional 27% for expenses related to rent, energy, etc. The rest of the money allocated for scientific research is managed by the faculty. The faculty receives additional financial resources for education. Their number depends on the specialty and the number of students promoted to another course that have accumulated 60 ECTS. For example for a student in the humanities and social specialties there are allocated approx. 6000 euros, for those in music - 9000 euros, and for those in engineering and medicine - 16 000 euros / year. For a certain year of study there are also taken into account subjects from other faculties. For example, if the faculty of engineering is paid per year per student 16 000 euro (when all subjects are engineering) then if there is taught humanities subjects which cost less, the payment per student will decrease accordingly. In addition to this, there are offered bonuses if students graduate in less than four years in the first cycle which has duration of 3 years and if students graduate in less than two years and three months in the second cycle which has duration of 2 years. This methodology for allocating the money on Universities, depending on specialty and success in learning might be interesting to

the Ministry of Finance. Given the university autonomy, it would be rational that the Ministry of Education does not determine the weight of the humanities in the curriculum of another profile. The method of financing science could be implemented in RM, but it is necessary to take into account not only the number of students, but also the field, as it is done in education funding.

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April 29-May 4, 2013
Sergiu Cornea, Cahul State University
“Enhancing University Autonomy in the Republic of Moldova” project

Lessons learned during the visit:

1

The university management is based on the principle of “democratic centralism”. The rector is elected, but he chooses the team and appoints people in different functions.

This is very important because the university management has a greater degree of cohesion and compatibility, which offers the opportunity to streamline university management and decision-making.

In Moldova, it can be implemented in the respect that the rector may appoint the deans by meeting clear conditions or at the proposal of faculties. This would help prevent collisions and misunderstandings where the rector would appoint the deans in an authoritarian way. These considerations are valid for the lower positions of university management.

In Moldova, which is deeply stuck in ignorance and nepotism, it can degenerate into creating a management team consisting solely based on principles of kinship and personal loyalty.

2

State funding of higher education is very beneficial for the development of a competitive educational system, which is an important condition of socio-economic development.

State funding of higher education is very important because it allows universities to focus efforts only on education and research, without the stress of lack of money.

In Moldova, state funding of higher education can be implemented entirely by optimizing expenditures on research and education, covering the maintenance costs of buildings and ensuring decent wages for teachers and researchers in universities.

Given the current conditions of development of Moldova and of the management of public money, the state is not able to provide university funding at a decent level.

3

Universities are centers of regional development. Attention is paid to the uniform development of regions. In order to meet the needs of the regions, the location of universities at regional level was taken into account.

One of the major problems that the Republic of Moldova is facing is the excessive centralization of all fields of activities, including education. Enhancing the role of regional universities should contribute beneficially to ensure regions with qualified staff and would reduce the development gap between regions of the country and municipality of Chisinau where all resources are concentrated. Regional universities would help to cultivate “local patriotism”, meaning that graduates who in their years of study had collaborations with local employers would remain to work in the region.

Consolidation of regional universities in Moldova can be achieved through political will, preferential funding, and diversification of the range of study programs offered (according to labor market needs in the region) and by providing places funded by the state budget.

In the case of implementation of the concept of decentralization of the system of higher education and the development of regional universities there might occur the following problems: a) political constraints, the political class is not interested in decentralization processes, b) resistance of universities in the capital, c) financial constraints.

4

A stringent problem in the relationship between the education system and labor market in Moldova is the quality of education, employers having objections to educational institutions on the quality of specialists trained by them. The absolute majority of indicators in the assessment and accreditation procedures of higher education institutions refer to quantitative indicators, while the indicators that reflect the rate of insertion of graduates in the labor market, the degree of employers' satisfaction about the level of training of graduates, the level of representation of employers in the management of educational institutions etc. are missing.

Since employers do not have the possibility to intervene in educational policies, institutional mechanisms for such interventions are virtually non-existent, there are significant gaps between the preparedness of graduates and employers' expectations.

As a result of the visit to Aalborg University, I convinced myself once again that universities, if they want to be competitive, must maintain very close links with employers, to involve labor market actors in the training of specialists.

The adjustment of specialists' training process to labor market needs would enhance competition of graduates and would substantially increase their employment rate on the labor market.

The implementation in Moldova of a higher education system oriented towards the needs of the labor market would require accomplishment of the following measures:

1. The implementation of a results-based management, which would redirect the educational system to the direct and indirect needs of beneficiaries of education, would be based on decision making on observable and measurable outcomes: access to education, progress of trainees, the employment rate of graduates, etc.

2. Developing collaborative relationships between universities on the one hand, and the National Agency for Employment in Moldova, private agencies for employment etc. on the other hand, to achieve an efficient service of labor mediation including by organizing job fairs with participation of the enterprises and through the implementation of joint projects of electronic mediation. It is also welcomed the development of the exchange of information concerning the labor market, education route planning (modeling of curricula, programs of study and other methodological and didactic tools) in accordance with the requirements of the labor market, etc.

3. An important role in training and development specialists relates to the connections between educational institutions and employing institutions. It requires the implementation of institutional mechanisms that would give communities, organizations of employers, professional associations effective possibilities to promote their visions related to the content and purposes of vocational training, to guide educational institutions towards current and future needs of the labor market.

Involvement of relevant stakeholders in planning educational activities / offers through inclusion of social partners:

- in the development group of study plans,
- in the curriculum development group,
- in the examination board of undergraduate exams.

4. Developing collaborative relationships between universities, on the one hand, and institutions, public and private enterprises, on the other hand, to improve the training process of the specialists in accordance with the requirements of the labor market. This requires achieving the following: the efficient organization of licensed practice, attending job fairs, participation in trainings, informational seminars, conferences and other curricular and extra-curricular activities important for the professional training of graduates.

5. Involvement of branch unions, employers and associations / NGOs established based on professional and occupational criteria to ensure the quality of graduates' training and in the process of their employment on labor market, as well as the development of collaborative relationships between these social actors, on the one hand, and universities, on the other hand.

6. Stimulation, by effective public policies, of employers to employ graduates of higher education institutions and the creation of new jobs, according to labor market needs.

7. Creating databases and conducting systematic studies and forecasts on long-term needs of the labor market, ensuring, thus, the quality of planning and the response / adaptation of education and training.

Problems that may arise during the implementation process would be: a) political factor and b) resistance to changes of educational institutions, which are based on the belief that they are the ones who have to impose their requirements to employers and not vice versa.

5

Universities have a dual aspect: educational and research institutions. Research is concentrated in universities. In the financing plan, the share of research component is greater than the share of studies component.

In order to meet the challenges of globalization and to make universities competitive in Europe and worldwide, it was initiated the process of merging universities and research centers to optimize their number.

The concentration of research in universities has great significance because it provides faster transfer of scientific research achievements to the society.

Denmark's experience could serve as inspiration for Moldova. The merging process of universities and research centers and the optimization of their number have had beneficial results on the development of Denmark.

The biggest problem that may arise during the process of implementation of the Danish experience would be the position/attitude of the Academy of Sciences of Moldova that does not want de-monopolisation of resources allocated for research.

In general, any experience taken over from outside must be analyzed carefully and calculated possible effects or unintended consequences. What is available and productive for Denmark, might have an opposite effect in Moldova due to our national specificity.

6

The PBL model implemented at Aalborg University is one also worth followed by universities in Moldova because it has undeniable advantages in terms of adapting the education system to the labor market needs.

The PBL is a response to the challenges of the contemporary world and allows launching on

the labor market of a specialist able to identify the existing problems and offer possible solutions to address them.

The PBL model would have results in Moldova as well. For that, we need to change the philosophy of developing study programs, meaning their reporting to the needs of the labor market. The teaching load of teachers should be revised in the direction of increasing individual work with students.

The problem based learning should be introduced at all levels of education, culminating with universities and then the effect will be noticeable. The biggest problem lies in the fact that it requires fundamental reform of the entire education system of the Republic of Moldova, which requires political will, financial and intellectual effort.

Experience report on the study visit to Aalborg University, Denmark

April 29-May 4, 2013

Fulga Veaceslav, State University of Medicine and Pharmacy “Nicolae Testemitanu”

“Enhancing University Autonomy in the Republic of Moldova”

Education in Denmark is organized as follows:

1. Elementary school – 9 years
2. High school – 3 years
3. At the next stage, graduates have the right to choose:
 - a. Specialized baccalaureate (vocational education - 3 years) within a university college. After promoting it they have the right to work in a narrow field, for example secretariat, nurses.
 - b. Higher education: the first three years-baccalaureate, next two years – master’s degree. 85% of students who graduate the baccalaureate choose to finish masters, too. 15% choose to work as those from the specialized baccalaureate.

Admission is based on competition, throughout the country, based on the average mark. School graduates, who were enrolled at faculties in Denmark, can study at universities in EU, fully funded (cost of studies, scholarship) by the Danish government.

The Danish Government fully supports higher education. The aim is that 60% of young people have higher education (currently there are 50%). The amount allocated to education is 1% of GDP (for private research institutions 2% of own income).

In Denmark there are no private educational institutions. This sector is covered only by research institutions, whose support lies entirely on private companies (e.g. pharmaceutical companies). Until 2006 there were universities and research institutions, and then the latter ones voluntarily merged with universities (most of them haven’t changed their address, becoming new faculties or research laboratories). Before merging, these research institutions were subordinated to profile ministries. At the moment, universities are subordinated (only at the level of distribution of funds) to two ministries: Education and Research. In total, for 2013, Denmark has 8 Universities. Most of them have a traditional education system, an exception being Aalborg University, with its own system - PBL.

Aalborg University (AAU) was established in 1974, thanks to the urgent need for the development of the Northern region of Denmark. Currently, the university has four faculties: Humanitarian Sciences, Social Sciences, Engineering, and Medicine. The latter was established in 2006. The University has three subsidiaries/campuses: Aalborg (80%), Copenhagen (15%),

Eseberg (5%). The Faculty of Medicine is only in Aalborg. This faculty was opened due to factors such as acute medical need for the Northern region, the increasing flow of funds for training Danes in other countries (by 2006 about 1600 doctors were trained outside Denmark).

There are 1,400 teaching staff and 1000 auxiliary staff for about 19,000 students. Studies are conducted in Danish, but there are training courses in English (Business and Management). About 10 % are foreign students (from ~ 100 countries). The income of the university at the beginning of 2013 was 335 million euros, of which 42% came from education, 37% were allowances for basic research and 21% came from private research. The courses are free, paid by the state at the end of the study year. The government pays universities for every 60 credits / student (ECTS). There is a differential payment depending on the faculty: for humanities - about 7000 Euro, engineering and medicine - 13000 Euro. Allocations are the same for the whole country. Scholarships are not differentiated; every student receives around 1000 Euro. The University has the right to determine by its own the number of students required for each faculty and to correct, depending on the number of students, the numerical composition of the teaching staff. The money received is then divided / allocated by the University to the faculty depending on the number of students promoted with 60 ECTS. The rest of 58% come from funds allocated to research (40% basic research – allocated by the state, 20% research supported by industry). Namely these funds lead to competition between universities, faculties and teaching staff.

Since its establishment until present, AAU has been based on a unique modular educational system for Denmark, PBL - problem based learning. The University operates in three areas: education, research, knowledge transfer (implementation in practice). AAU has the highest educational success rate in Denmark (80%), virtually 100% finishing the studies in time (five years, medicine - six years), the PhD graduation rate is 90%. For finishing the studies on time (baccalaureate - 3 years), Doctoral (PhD) - 2 years (3 years for medicine) the University receives a bonus of 65% (calculated for those 42%) from the Government - fund applied by law to all universities.

Why is everything I learned important?

1. I consider beneficial the participation of a representative of the Government of Moldova, which, based on the Danish model, could promote, at political level, the following proposals:
 - Universities should have full autonomy
 - The government should fully support education
 - Research funds should go directly to universities

Impediments that may arise in implementing these proposals:

- Republic of Moldova is the poorest country in the EU, where changing government is easier than changing the mentality of politicians.
 - The education system is totally politicized; the laws approved by a government are repealed by the other.
 - Of approximately 34 higher education institutions in the country, about 17 are private. The Danish system of allocation of funds to education does not include private institutions, so it cannot be used as an example for RM
2. Currently, Denmark supports financially about 6500 international projects. It is important to announce local university structures (divisions, departments) about the existence of these Danish projects.

Impediments:

- Moldovan institutions, due to low financial allocations, minor instrumental facilities and the small number of publications in journals with impact factor, are positioned by Danes in the “low interest” category.
3. Given that AAU’s Faculty of Medicine is a young structure, which currently does not have sufficient facilities for medical practice (1 hospital) and is interested to collaborate with foreign institutions, I consider it important to:
- hold discussions between the representative of SMPHU “Nicolae Testemițanu” Veaceslav Fulga and Jeppe Emmersen, Chairman of the Study Board of Medicine; Ann Karina Shelde, Deans Secretary the faculty of medicine; Jette Egelung Holgaard, Head of Development and Planning Deptment on signing a document of collaboration related to scientific research and medical practice;
 - develop a bilateral project SMPHU “Nicolae Testemițanu”- AAU regarding PBL- problem based learning;

Impediments:

- Courses at the faculty of Medicine are only in Danish. When selecting bilateral students, it will be necessary to choose only those who know English.

Wishes:

The information presented within the project is 99% related to socio-humanities. In the future, I consider beneficial to separate the work within the project on areas: socio-humanities, engineering and medicine. Each has its specificity, especially medicine.

List of documents required:

1. analytical program (curriculum) at medicine for the study period of six years
2. modular structure of medical education, on years of study
3. list of research projects currently conducted at the Faculty of Medicine, AAU

Experience report on the study visit to Aalborg University, Denmark
April 29-May 3, 2013
Nadejda Guțu, Academy of Economic Studies of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

In accordance with the work timetable of the TEMPUS project “**Enhancing the University Autonomy in Moldova (EUniAM)**”, from April 29 to May 3, 2013 there was organized a study visit in Denmark with the participation of 15 people, representatives of the Universities of the Republic Moldova.

Within the program of the study visit there were made two trips: at the headquarters of Aalborg University during April 29-May 1, 2013, and in the period May 2 to May 3, 2013 at Aalborg University in Copenhagen.

The main purpose of the study visit was the accumulation of knowledge and exchange of experience on university autonomy in a European country.

Accompanied by Mr. Romeo Turcan, project coordinator, we had meetings with: Mr. Finn Kjærdsdam - Rector, Ms. Birgitte Gregersen - Head of Business and Management Department, Mr. Jeppe Emmersen - chairman of the board of education in medicine, Mr. Ole Hansen Garsdal - Department of Finance, Mr. Daniel Thilborg, Ms. Jette Egelung Holgaard - teacher, Ms Hanne Kathrine Krogstrup - Dean of the Faculty of Social Sciences, Ms Lisbeth Munksgaard - Head of the Office for Fund-raising and Project at AAU, Mr. Niels Olesen Maarbjerger - Faculty Director, Mr. Henrik Find Fladkjær - Chairman of the Study Board, Ms. Lene Lange - Research Director at AAU in Copenhagen, Mr Jacob Fuchs - Head of Science and Innovation Subdivision, Mrs. Susanne Bjerregaard - General Secretary of the Secretariat of Universities in Denmark, Mr. Kim Brinckmann - Head of the Office for Interdisciplinary and International Research within the Ministry.

Aalborg University (AAU) was founded in 1974 with the aim of increasing the average level of educated people. AAU was created based on the unification of three institutions: business school, technical-engineering academy and industrial college, and there have been added some programs of study. AAU was located outside the city, but with the development of the city, the University has become a part of it.

Initially, after its establishment, AAU had 2,000 students and 500 employees; currently there are about 18,000 students and 3000 employees studying and working here, of which 30% are from abroad. AAU's budget increased from 9 million euros up to 337 million euros. During its activity, AAU has expanded by opening branches/campuses in Esbjerg and Copenhagen. About 80% of the activities are in Aalborg, 5% in Esbjerg in engineering and construction and 15% in Copenhagen in ICT and engineering. All researchers and teachers from AAU's branches are employed by the central campus in Aalborg. Currently, campuses have directors of subsidiaries, but after the transition period they will have the same structure as the central one, being a part of the AAU and directors will be responsible for science.

Before 2006 there were 13 research institutions under the ministry, after which, the Government concluded that the research would be more effective if it joined education and decided that research institutions be annexed as parts of university.

State policy is to attract more specialists in engineering and about 50% of PhD students are international. AAU has two types of doctoral students: academic and industrial. The academic ones conduct their research in the university and the industrial ones (about 50%) conduct their research in companies, although the structure of their thesis is the same.

The university has several faculties such as engineering, philosophy, humanities, medicine, and a laboratory that is in Copenhagen.

For many years, the management system at AAU was a traditional one: the Senate with the Rector. Then, in 2003, the Parliament developed a new regulation by which the Senate was abolished and the University Council was created as power of decision, which includes members from outside the university. Since 2005, the Rector is elected by the members of the Council. The Council consists of 13 members: the head of the Council, which is a foreign person, two members from the university, one technical member, dean and five external members. The Rector of the University is not a member of the Council; he just participates in it without the right to vote.

Initially, when this law was enacted, AAU came with some proposals to the Ministry on the composition of the University Council, after which the Ministry has reinforced its members. At the moment, the Council appoints itself the members, but necessarily with the approval of the Ministry.

One problem is that the members of the university Council from outside do not have any idea of what is happening in the University. Some Councils appointed rectors who did not know much of engineering field and caused problems to the university. In cases of failure, the Council bears responsibility (responsibility to vote) and the Ministry has the right to abolish the Council.

Basically, the rector is responsible for everything; he is the power of decision in the university. In his turn, the rector has only two consecutive terms. Council members are paid from University funds.

There is a hierarchical system in the university: the Council appoints the rector of the university, the rector appoints deans and deans appoint heads of departments. At AAU there is a dean of the faculty and a deputy dean, then there are several departments, and within these departments there are schools that develop the study programs. There are research groups within departments and within research groups there are research networks, which have total autonomy.

Danish education system is structured according to the Bologna system:

- Secondary school (0-11 years)

- High school (2-3 years)
- Cycle I - Bachelor (3 years)
- Cycle II - Master (2 years)
- PhD (3 years)

At AAU, 50% of the time of students (training) is based on solving problems, which they make themselves and each semester they pass an exam on the problem they solved.

It should be noted that in Denmark studies are free. Fees are paid only by foreign students. At the same time, the student is encouraged with a scholarship. Students, who have not passed the credits, receive scholarships anyway. The Government's goal is that the student finishes the University as soon as possible, employs on the labor market and contributes to the development of the state. The scholarship is about 1000 euros a month, of which the student pays for accommodation and other living expenses.

The university receives funding based on research parameters. The university budget, which is coming mostly from the government, is divided into 2 parts: for research (educational services) and other purposes. At AAU, the income is composed of 42% from education, 37% from basic research and 21% from grants based on competition. These funding sources are difficult to plan in a fixed amount as there is a competition for such funding.

University funding is as follows: Government - University - Faculty - Department. From the beginning 10% of the funding is allocated to the Central Department for expenses of administration, 27 % go to the faculty, and the rest goes to departments. Allocations for research (educational services) are fixed amounts and are funded depending on the results of research. Allocation of money depends on exams passed, based on credit points accumulated per university. The procedure consists of calculating credits obtained and the cost of credit and the obtained sum is forwarded to the Government with a payment account. This system has been implemented at the university for 20 years. Besides the money allocated depending on the obtained credits points, the University also benefits from financing based on degrees offered. However, the University receives bonus funding for studies' completion on time by students (up to 4 years) plus 65% and master degree students (in 2 years) plus 35%.

Funding, based on credits obtained, does not have a calculation model; it is at Government level and is composed of three levels, based on 60 credit points:

- Level I – for Social Sciences and Humanities = 42000 Dkr (\approx 6000 euro)
- Level II – for Music, Natural Sciences = 64000 Dkr (\approx 9145 euro)
- Level III – for Health and Engineering = 98000 Dkr (\approx 14000 euro)

The fund allocated according to this method does not always cover the actual expenses of the University. At the end of the year, a report with the division of expenses for education, research and administrative expenses is prepared. At AAU, most of the costs are used for salary. In Denmark the financial autonomy is at the level of faculty. The sources received

from government are distributed to faculties on the basis of obtained results such as: the number of students who passed the exam, grants through competition, number of degrees obtained, published research, etc. Because the Government allocates much money to education, universities must present reports on their activity.

However, Aalborg University is facing financial problems because the number of students has doubled, and funding has remained the same. Meanwhile, the funds attracted from outside require co-financing of 10-30% and often there are no such sources. Another problem is with spaces, so a group of students solving a problem can be found anywhere where they can find some free space.

It must be recognized that AAU has excellent cooperation relations with the business world. In its relations with the business world, the University is in the top. After evaluating it with the industry, the economic environment, AAU is ranked at the highest level. Cooperation with the economic environment has also results for the country's economy. The GDP growth for the northern region is the result of collaboration of universities with the business world.

The training program of future specialists is interdisciplinary. About 1% of research funding in the world is the funding of research in Denmark. Technology transfer is a part of the transfer of knowledge. Technology transfer is part of the core business of the University and is not something isolated. At the same time, the University, not being a company, acts on commercial terms, which brings revenues: 70% of the results of the invention are commercialized, 10% of inventions are patented.

The University has become attractive because it also drew Ministry's events. The reason they attract all is its different concept. They have worked hard on quality; have shown that the role of education is very important to society. Europe promotes excellence in research, and they move slowly to create new industries, research. Denmark is the best in biochemistry, as well as in offering subjects in this area. Also, the business school of AAU in Copenhagen is the largest school in Europe.

As a final conclusion of this visit, I can say that in the last ten years there have been made reforms in education in Denmark. The Danish government has invested money into education, changed the management of universities, allocated much money in research from 0.75% to 1.07% of GDP from the Government and about 2% from private money, and has merged all research institutions with universities.

Due to these reforms, the Government has limited influence in universities and the Ministry is less involved in university's activities. Without a legal basis, the Ministry cannot impose anything to the University. An advantage of this system is that the Ministry trusts Universities. Also, in Denmark, private companies invest in research. Simultaneously, it is remarkable the care for the growing generation and the contribution in the development of the state. In Denmark there are no private universities.

Proposals for implementation in Moldova that would be important for the development of universities:

1. Government involvement by investing more money in education and research.
2. Attracting foreign funds as a source of funding for universities.

3. Enhancing the quality of the teaching process for training specialists based more on practical lessons.
4. Promoting research to create new industries.
5. Research institutions should have close cooperation relations with universities.
6. Working together with the business, in collaboration with the Government, to ensure students' practical training. Stimulating companies to allocate financial resources in research.
7. Expanding university autonomy by little involvement of the Ministry in setting restrictions. The university should decide on: matriculation of students, especially those on contract/fee bases, motivating staff, managing financial resources, determination of fees without formula regulated by the Government.
8. The Ministry should have confidence in universities.

The problem is that the transition to university autonomy needs time: for learning, gaining experience, changing mindset, changing the legal framework and others. We, universities, have to work on the quality, educate professionals that would be able to employ on the labor market and contribute to state's development, and to prove that the role of education is very important to society.

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Guvir Stela, Technical University of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

General overview of academic autonomy

Academic autonomy refers to the ability of universities to decide on various academic issues, such as the admission of students, academic content, quality assurance, introduction or closing of study programs and language of instruction.

The capacity to decide on the total number of students and criteria for admission are fundamental aspects of institutional autonomy. While the number of study places has important implications for a university's profile and funding, the ability to select students contribute significantly to ensuring quality and student interest adjustment to the offered study programs.

The capacity to introduce study programs without outside interference and to select the language / languages of instruction allows the university to continue its specific mission in a flexible way. The free choice of the language of instruction may also be important in the context of institutional strategies for internationalization.

Although quality assurance mechanisms are essential tools of accountability, related processes can often be burdensome and bureaucratic. Therefore, universities should be free to select the regime and suppliers of quality assurance (program evaluation or accreditation, evaluation and institutional accreditation and audit) that it considers appropriate.

The capacity to develop course content is a fundamental academic freedom.

What did I learn during the visit?

Number of students - Universities decide independently on the number of study places.

The admission procedures to the first cycle (Bachelor) - Admission is completely regulated by an external authority. Admission to the first cycle programs (Bachelor) is free of charge. However, there are certain requirements on admission, for example in order to be admitted to the study program “Business and Management”, the candidate must have level B in mathematics (when finishing the high school).

The admission procedures to the second cycle (Master) - Admission criteria are co-regulated by an external authority and universities. Admission to the second cycle programs (Master) is free of charge. All students who have completed a certain program of the first cycle (Bachelor) (e.g. Economics and Business Administration) are eligible for admission to the second cycle (Master) program with the same name without any restrictions. Also, students

who have completed a similar / affiliated program (e.g. International Marketing, Innovation Management, etc.) are eligible for admission to the second cycle (Master) in the “Economics and Business Administration” without any restrictions. But although the access of students who come from other affiliated programs is not restricted, they still face some difficulties because they lack certain skills specific to the study program “Economics and Business Administration”, skills that were not provided in their first cycle study programs (e.g. organization, statistics, etc.). Students who come from another domain, for example Engineering, but who wish to follow the study program at Masters level in the field of “Economics and Business Administration”, i.e. to specialize in another field, may follow a period of interim studies, called *top-up*, with the duration of 18 months, where they can recover some basic courses and ECTS credits in order to obtain the necessary skills for the Master program they wish to follow. These courses and ECTS credits are additionally included in what we call “diploma supplement”, Bachelor studies and serve as a prerequisite for admission to a Master program in another field of specialization than the original one.

The introduction of new study programs at the first cycle (Bachelor) and the second cycle (Master) – The Ministry of Science, Technology and Innovation lays down general rules on the education process, study programs, degrees and admissions process. However, the university is free to decide what programs based on research it wants to provide. New study programs must be approved and subject to accreditation by the Accreditation Council of the Accreditation Institution for Higher Education Study Programmes before being introduced. If the program existing at the university is not approved or the period for which it was approved expired, the university has no right to enroll students to the program.

Thus, in Denmark there are two types of accreditation:

- Accreditation of existing study programs;
- Accreditation of new study programs.

The University can offer study programs, full time studies:

1. Bachelor – 180 ECTS
2. Master – 120 ECTS
3. Doctorate – 180 ECTS

(1 year of study = 60 ECTS)

The University has the right to offer the following titles/degrees/qualifications: Bachelor, Master, PhD (Doctor of Philosophy) and Doctor (Dr.). The Ministry of Science, Technology and Innovation establishes the rules on obtaining the degree of Doctor.

If it is desired to modify, improve an existing study program, there are undertaken several steps / activities:

1. the head of the Board of Studies for (e.g., Head of the Department of Studies at TUM) talks to the head of the school offering the study program;
2. the initiative has to be accepted by the Board of Studies;
3. a meeting with program coordinators and students is organized;
4. a seminar of 1.5 days off university campus is organized;
5. a working group that will write / develop the program is created;
6. the first draft version of the program is developed;
7. the first draft version of the program is discussed at the Board of Studies;
8. the second draft version of the program is developed;
9. three meetings with all colleagues are organized;
10. the third draft version of the program is developed;
11. acceptance / final approval by the Board of Studies;
12. acceptance / final approval at the faculty.

The introduction of new study programs at the third cycle III (Doctorate) - Universities can open new programs of study, without prior accreditation.

Termination / cessation of study programs - Universities can cease / terminate study programs independently.

Language of instruction at the first cycle (Bachelor) and the second cycle (Master) - Universities can choose the language of instruction for all programs of study offered by them.

Selection of mechanisms and accreditation / quality assurance providers / agencies - Universities cannot select the mechanisms of quality assurance / assessment and accreditation of study programs. Universities cannot choose the agency for quality assurance / evaluation and accreditation of study programs. All study programs are subject to assessment and accreditation by the Accreditation Council of the Accreditation Institution for Higher Education Study Programmes.

Ability to design / develop study programs content - Universities can design / develop freely the content of study programs and courses, depending on the requirements of the labor market and economic environment.

Organization of the teaching and learning process – At Aalborg University, in particular, and other higher education institutions in Denmark (partly), the teaching and learning process is based on PBL - problem based learning. The principles of this model consist in the learning based on issues identified by the students, to be resolved in a project (course work, semester project or annual project) by a group of students of up to 8 people. In this context, theory is harmoniously combined with practice and problem solving has an interdisciplinary character, i.e. to solve a specific problem, students need to develop skills offered in several disciplines. This model develops students' analysis skills, not just memorization (a skill mostly developed in the traditional teaching-learning process).

The PBL model provides, in a semester, 50% - traditional courses (e.g. 3 courses of 5 ECTS each) and 50% - project (15 ECTS), a total of 30 ECTS per semester. The work process within such a project consists of 3 parts:

1. Analysis of the problem;
2. Solving the problem (how? – by consulting literature, attending courses, conducting studies in group, field work, conducting experiments, etc.);
3. Presentation of the project report.

Examination, assessment procedure of students' academic results – Evaluation is in writing and orally. Evaluation at the end of a course is individual; each student receives individual mark for the accumulated knowledge (traditional approach). As regards project evaluation - the entire group is evaluated, but each student receives mark, depending on the learning outcomes / competences they have achieved working on the project. The examination committee consists of course lecturer / supervisor of the project team and external examiners, who come from other faculties/departments, universities, economic environment, etc. In Denmark there is a national body that meets teachers / examiners on different domains (e.g. engineering, business, science, humanities, etc.) from all universities in the country, and when there is an examination session, these examiners are sent to different universities. This ensures objectivity and impartiality throughout the course of the examination.

University-economic environment relationship – The economic environment is represented practically at all levels within the university. Business representatives are members of the University Council (the supreme governing body), participate in developing new study programs / curricula that must reflect the requirements of the labor market; the issues / problems that are the basis of projects and that the students have to solve are provided directly by the economic environment. In this context, it should be noted that the Aalborg University in Denmark, compared to other universities, has the closest relations of

collaboration with the economic environment, largely due to the implemented PBL model, directly involving businesses in students' learning and research.

Internationalization - 10% of people studying at Aalborg University are international students. According to Danish legislation, EU members can follow a program of study at one of the universities in Denmark free of charge, the tuition costs are incurred by the Danish state. This does not necessarily imply a scholarship offering for accommodation expenditure (living, food, etc.). Based on the agreements with other EU countries, Danish students are provided with full mobility. Anyone who wants to attend a master's program in an EU university is free to do so. In some cases, on basis of agreements between EU member states, the Danish government bears the cost of schooling of Danish students in another country, can offer even a scholarship equal to the one you can get in Denmark. Mobility of teachers is also provided, both nationally and internationally.

Conclusions

Danish higher education system is generally characterized by a high level of autonomy / academic freedom. But academic autonomy is somewhat restricted / limited.

Danish universities are free to design / develop the academic content and choose the language of instruction. Restrictions on academic autonomy refer to the ability to set selection criteria, which is limited both for the Bachelor and the Master. Programs must generally be subjected to the accreditation procedure before being introduced in the process of study.

Danish universities have freedom of action regarding key issues such as internal university structures and budget. However, certain accountability measures face important bureaucratic limitations, such as the procedures for the accreditation of study programs.

Why is everything I learned important?

All those mentioned above are just some information that I want to focus upon on academic autonomy in universities in Denmark, which allows us to have a clearer view on this aspect of university autonomy, to look at it from another angle which allows us to detect similarities, gaps that we have, and the problems we face.

How can be applied / implemented in Moldova everything I learned about?

Much of what I learned in Denmark on academic autonomy, such as the new approach to teaching and learning, assessment of academic results, *top-up* establishment, creation and contribution of *spin-offs*, strengthening relations with the direct business involvement in administration of the institution and in education, etc., can be implemented in Moldova by creating an appropriate legislative framework, both at the state and institutional level,

although it should be noted that many issues are already covered by existing legislation and regulatory acts in Moldova.

What are the challenges / problems that may arise during the implementation?

To implement those mentioned above, it is not enough only the existence of an adequate legal framework. The problems we would face in implementing these goals largely relate to the economic situation in the country, which cannot be compared with that in Denmark, the small number of companies / businesses that universities cooperate with, their inability to provide an adequate number of practice sites, material and technical basis of universities and companies that could provide a high level of training and research. Last, but not least important issue we face is the lack of motivation and interest to help each other to increase the welfare of future generations; a lack that is felt virtually at all levels (state and society).

Annexes:

1. The University Act (2003)
2. Studentersamfundet (2013): The Student Society's Articles of Association
3. The Act / Law on Patenting, Intellectual Property
4. Danish Appropriations Act
5. The Law on the accreditation of the educational programmes
6. University Statutes

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Loretta Handrabura, Deputy Minister of Education, Republic of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

Activities during the visit

Information meetings and exchange of experience with representatives of different management structures of the Aalborg University, Copenhagen, Danish Agency for Science, Technology and Innovation

What did I learn and why is everything I learned important?

1. How have they reformed and strengthened the university system, which consists of 12 universities and 13 governmental research institutes, by merging universities with each other and also with research institutes, thus creating 8 universities and 4 governmental research institutes, in which the current paradigm of higher education is realized by implementing the triangle: education, research, knowledge transfer. It was a reform supported by politicians. We have an oversized network of institutions, 34 universities, 19 public and 15 private, which must also be reformed and strengthened on quality assurance dimension and capacity building for research and innovation. The university system must be dynamic and flexible to labor market requirements in RM, and in the region.
2. To ensure better management of universities, a University Council was established of 11 individuals (6 from outside the university and 5 from the university). This structure selects and appoints the rector and the rector, in his turn, appoints the vice-rectors and deans, creating his own team. The Rector is entitled for a term of five years, and then for a term of three years if required.

I support the introduction of the Council, made up of economists, lawyers, representatives of specialized areas who can contribute to the strategic development of the institution, university management transparency, in general, and financial transparency in particular.

3. The assessment of students in each session is conducted by a panel of external experts, plus the teacher who taught the course, designated by an autonomous Council / Committee of specialists in the given field.

This provides an objective assessment, which future funding of university depends on and faculty per 60 ECTS credits accumulated in each year of study.

4. Students are represented in the same 50% proportion as teachers are in the Academic Councils of Schools and decide together on study programs and their content.

The presence of our students in the university's senate and the faculty's council is largely a formality. They involve very little, are not responsible in decision making, do not claim their right to be “a distinct voice” and decide on their training route.

5. University funding is made according to a grid of quantitative - qualitative indicators, as, for instance, student performance after each year of study, and after graduation, number of articles published in international journals, % of students' employability, etc.
6. I had the opportunity to better understand the form of studies, addressed sporadically in higher institutions in other countries, that Aalborg University applies as a basis for the training of future specialists - **problem-based learning**.

What can be implemented in RM in the future and in line with providing extensive university autonomy?

- 1) Structural reform of the university network through merging under voluntary decisions at the initial stage, after their assessment and accreditation by the National Agency for Quality Assurance in Education and Research. Subsequently, the ministry can intervene in the process of merging of public universities which will be at an impasse and refuse voluntary restructuring.
 - a) The new structures to be based on a holistic and systemic approach on tertiary education, on quality standards in education, internal quality assurance structures, extended autonomy and public accountability, transparency and openness, inclusion, effective communication internally and externally with industry, the development of research capacity.
 - b) Universities should be placed in the center of the knowledge society by: modernizing the management / governance, increasing funding from GDP, additional bonuses for quality of education, completion in time of the study program by the students, etc.
- 2) Mandatory establishment, after the approval of the Education Code, of the Council of Institutional and Strategic Development within universities, which we've already provided in the Education Code, which stipulates clearly its tasks.
- 3) Financing of universities to be made per 60 ECTS credits accumulated in each year of study, not per student at the beginning of the year. It is a logical approach that will lead to results and competitiveness.
- 4) Establishment and strengthening students' self-governance in the University for an active and responsible involvement of students in their own professional training.
- 5) To appoint a coordinator for each program of study, who would be responsible for organization of the process and its quality.
- 6) To implement **problem-based learning** as a pilot activity for some programs of study within TUM, and elements of this form of study can be applied to all study programs.
- 7) To review the structure of the ministry, through the introduction of the research dimension of universities in the subordination of this central authority, establishment of an authority responsible for the National Qualifications Framework and strengthening the 4 core divisions / departments: pre-university education, vocational-technical education, higher education, research.

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Angela Niculiță, State University of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

1. What did I learn during the visit and why is it important?

1.1. Structural and organizational reform of higher education in Denmark (2003-2004):

- **Voluntary** merging of universities with ministerial research institutions, which, on the one hand, strengthened the scientific component of higher education institutions and, on the other hand, ensured the natural exchange of generations in national research.
- **Voluntary** merging of universities, reducing the number of “weak” higher education institutions and creating more competitive universities in terms of academic offer and the quality of education.
- Transition to studies based on knowledge acquired through research and involvement of students in the process of research, providing education of a new generation of researchers.
- Establishing links as close as possible with the economic environment by conducting research and developing study programs demanded on the internal labor market. Thus, it was ensured the training of professionals with skills necessary for strategic and important areas of the economy of the country.
- Direct involvement of representatives of the economic environment and other stakeholders in the management of higher education institutions, with the majority in the university Board.
- Attracting students in the decision-making process both administratively through participation in the boards at the university and faculty level and in the academic aspect - through direct participation in the development of study programs and curricula, as equal members of the school board.
- The existence of interdependency between the labor market needs, dictated by the national economy which proposes well-paid jobs, and training programs of specialists for this economy.
- State interest in hiring as quickly as possible educated youth in the labor market.

1.2. The financing of universities:

- From the state budget (per year of study)
 - ♦ **FIXED GRANT (basic) for research** - 35%.

- ♦ **Grant for education** depending on performance, the so-called **taximeter system**: each 60 ECTS promoted in the academic year generates a grant, the value of which depends on training - level. The taximeter system comprises 3 levels.

Level 1: Social Sciences and Humanities – grant of 6100 euro (42000 DKR)

Level 2: Sciences, IT and Music – grant of 8900 euro (64000 DKR)

Level 3: Health and Engineering – grant of 12900 (98000 DKR).

- ♦ **Bonus for education**, depending on the number of graduates who have obtained a diploma in due time
 - ✓ In 4 years at cycle I – 65% of the level of taximeter per graduate
 - ✓ In 2 years at cycle II – 35% of the level of taximeter per graduate

Grant + Bonus for education = 25%

- From the state budget and private sources
- ♦ **Grant for research won in competition** (sources: state, private or international companies and organizations) – 28 %
- ♦ **Income from other sources and initiatives** – 12 %.

New research grants are allocated according to the following quotas:

- Taximeter grant – 45%
- Grants for research won in competition – 20%
- Published research – 25%
- Number of PhD students who have defended their thesis – 10%.

Thus, the funding model applied to universities is a transparent and incentive one, based on performance demonstrated by the university, with a strong emphasis on the support of university research. This model allows universities to develop strategies and make long-term investments.

1.3. Independence of universities from the Ministry.

The ministry can dictate some changes in higher education institutions only in cases when falling explicitly under legal authority.

It is ensured the freedom in carrying out university research.

This independence allows universities to have the freedom and flexibility to respond quickly to requests of the economic environment and society in terms of professional training of youth and scientific research areas and issues.

However, academics believe that there is much work to be done regarding “university autonomy” in Denmark, as state control has not decreased compared to the period of “before the reform”.

1.4. Decentralization within the university

- ♦ Faculties determine research areas and topics
- ♦ Departments / schools determine and develop study programs
- ♦ The university budget is allocated to faculties according to the following principles:
 - ✓ Share of the grant for education according to the taximeter system and bonuses.
 - ✓ The share of research grants is distributed according to:
 - the number of articles published by faculty collaborators (listed in IS journals, with impact factor);
 - grants / funds attracted from the outside - national and international;
 - the number of doctoral thesis defended within the faculty.

Thus, there is provided a participatory management at all levels of the university.

1.5. Organization of university studies / higher education.

Studies are organized in three cycles: Cycle I – Bachelor; Cycle II – Master; Cycle III – Doctorate.

- Studies in the second cycle (Master) are usually carried out in the same domain as the professional training in Cycle I. If the difference in the study programs at cycle I and cycle II is not significant, the student performs a year of recovery studies, after which he is admitted to the Master studies.
- During their studies (both cycles), because of the link established between universities and economic environment that provides the opportunity to perform an internship or solve some problems related to the economic activity, students have the opportunity to know the real situation in economic structures and what skills are required in the hiring process.

Such a “continuous and pragmatic” approach of university studies provides high quality of training of students, obtaining the skills needed to be competitive in the labor market.

The large number of students who continue their studies in cycle II is due to clear separation of employment opportunities (i.e. salary payment) stipulated in laws, and due to the knowledge by employers of skill levels obtained at each cycle of university studies.

1.6. Problem Based Learning

Application of PBL at two faculties - 2 variants, the differences in the implementation of the model derives from the specificity of areas of professional training for which students of faculties concerned are trained.

2. How can be applied / implemented in Moldova everything I learned about?

If there is interest and political will, after determining strategic areas for RM in professional training in higher education, the experience of Denmark can be applied directly on:

- ❖ merging of universities and research institutes of ASM, i.e. passing of research within universities (given that it is one of the three core activities of universities)
- ❖ decreasing the number of universities, including private ones, by merging existing institutions
- ❖ financing from the state budget of universities based on performance in research and training
- ❖ clear and explicit stipulation in the regulations (the qualifications framework, education code, etc.) of the options for employment of graduates of cycles I and II
- ❖ changing conditions of access to master's programs as follows: first cycle graduates from a certain field can follow their studies at masters in the same field only. In the case of difference of up to 30 ECTS applicants will necessarily follow a year of additional training
- ❖ evaluation of study programs by committees with international participation (EU experts)
- ❖ attraction (by universities) and encourage, as far as possible, by means of stimulation (by the state), the involvement of the economic environment in developing programs / study plans, the teaching of specialized optional courses and providing internships for students
- ❖ providing universities the freedom in setting tuition fees (at least comparable to the costs incurred by the state for a student who has gained a scholarship)
- ❖ freedom in setting the charges for accommodation in student hostels, correlated with offered living conditions, and also with utility expenses incurred by universities

3. What are the challenges / problems that may arise during the implementation?

- Lack of interest and political will to make changes.
- Lack of interest and pressure from civil society.
- Resistance applied by managers and academic staff of higher education institutions, who might be “assimilated” by the reform.
- Resistance applied by ASM.
- Reluctance, in general, of a part of the academic staff - any change, even in better, causes some dissatisfaction.

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Valentina Pritcan, State University “A. Russo” from Balti
“Enhancing University Autonomy in the Republic of Moldova” project

1. What did I learn during the visit?

The learning experience gained in Aalborg University was an unusual one, even if my experience of exploring best practices in European higher education is not modest. The possibility to access information of various types, ways in which interventions of staff and students were planned, the diversity and complexity of the program of work, informal discussions have contributed to the good understanding of information, formation of a holistic vision about Aalborg University, in particular, and the Danish higher education system, in general.

The relevance and significance of professional and personal acquisitions following the visit can be found in the “lessons learned”:

- I learned how universities can add value to society through knowledge, research and innovation;
- I learned how universities can become competitive by implementing research-based educational programs;
- I found out how the problem-based learning model can be applied in practice, which became an institutional philosophy for Aalborg University and which complements / facilitates contextual learning, project-based learning, work-based learning / experience;
- I learned how the social dimension of learning can be implemented in our universities which involves focusing on the participant in the learning process and team-based learning;
- I learned how to project, select and teach educational content focused on compliance with the correlation between theory and practice, interdisciplinary learning, learning by examples, meta-learning, dual learning;
- I learned about the real mechanisms of development of partnership between university, private and public sector, which has a beneficial impact on developing professional standards, constant updating of the process of training of specialists, creating real opportunities for providing effective and innovative solutions for a sustainable and competitive society;
- I re-conceived the university leadership and management as a key element for enhancing and optimizing the training of specialists;

- I convinced myself again that for a modern and competitive university transparency and openness, inclusiveness, participatory approach, leadership and clear references, well-defined international perspective, innovative and interdisciplinary approach to problems, constant communication, internally and externally supportive, creating consolidated media for research and showing respect to students are of vital importance;
- I learned that the way the University is organized / structured facilitates or hinders the implementation of enhanced models of university autonomy;
- I contemplated Aalborg University's model of investment in human resources by creating and supporting the work of the Committee on Health and Safety of Workers;
- I explored the essence of the successful model of Aalborg University which is different from other models by: group work / group classes, the type of problems addressed, the duration of the project period, increased attention to learning and research, group based evaluation, determine students to define the problem within a certain theme and highlight possible solutions, determine students to refer to a broader ecological and socio-cultural context, the exchange of roles from teacher to facilitator, creating space for academic discussion among students, encouraging students to independently find relevant literature, encouraging students to reflect on their own learning experiences;
- I convinced myself that universities are the most important goods of the regions when it comes to retaining and attracting businesses based on knowledge and technology transfer;
- I noticed that strong universities with extensive industrial collaboration act as a magnet on businesses that compete in innovation and highly skilled workforce;
- I realized that the mission of universities located outside the capital is to produce future entrepreneurs for the growing industries;
- I realized that competitive universities are important partners in the transfer of new knowledge to traditional industries and for the development of new industries.

2. Why is everything I learned important?

Learning experiences are important because they represent top managers of higher education institutions in Moldova, who are called, due to their functional tasks, for a change in universities, to develop policies of institutional capacity building and to facilitate the inclusion of Universities in the European / international area of knowledge and research.

Everything I learned strengthened my knowledge about the visions of those responsible for the European Higher Education Area, gave me the opportunity to disseminate the good

practices of Aalborg University in my University, to better understand how I can support my University to be more competitive.

What I have learned is essential to the process of internationalization of the University I work in, for the implementation of policies set forth in the Commission's agenda on the modernization of higher education of CoE which sets out five key areas for reform - increasing the number of graduates to achieve Europe 2020 objective according to which 40% of young people should have higher education qualifications by 2020; increasing the quality and relevance of higher education for employment needs and demands of society; a mobility for better quality studies; the integration of higher education in the "knowledge triangle" consisting of education, research and innovation and improving governance and funding.

The Bologna Process and the Commission's modernization agenda reinforce each other. These provisions are likely to be realized successfully in modern universities, as demonstrated by Aalborg University.

The learning experience gained within Aalborg University was important in the context of changing of higher education institutions in the Republic of Moldova to university autonomy. It is very relevant for managers to properly understand the essence of this concept, strengthen institutional capacities and empower the entire academic community to increase the competitiveness of the institution.

The importance of the experience gained is reflected in the fact that I saw a model of institutional philosophy focused on problem-based learning model which has added value to society through knowledge, research and innovation. This model can be also implemented in the higher education system in the Republic of Moldova, which would lead to the harmonization of the processes of learning and research, would approach the level of training of specialists to the labor market requirements.

The importance of acquisitions following the internship is also found in the experience acquired to facilitate the implementation of dual education in universities, to optimize the process of internationalization of the University, to manage real mechanisms of development of partnership between university, private and public sector, which has a beneficial impact on the development of professional standards, constant updating of the process of training of specialists, creating real opportunities for providing effective and innovative solutions for a sustainable and competitive society.

The study visit was also important from the perspective that I saw a real model of logistical and technical support to regional universities from the Danish state.

I learned about several models of financial support of the institution, including by supporting quality research.

Useful and significant was to explore the creation and operation of research incubators,

their significance in the support of research and technology transfer, the way the research teams are set up and maintained.

3. How can be applied / implemented in Moldova everything I learned about?

The implementation of the things learned can be achieved by:

- authentic promotion of the “knowledge triangle”: education, research and innovation with the development of institutional models tailored to the needs of a changing society at the system level of HEIs;
- assuming responsibility by managers and employees of universities to promote common values and commitments in training highly qualified professionals who would have skills adjusted to the labor market;
- placing the research on “equal” positions with education - this should be a common goal: for university staff and students;
- developing project competition programs at national level to support research in universities;
- capitalizing acquisitions from modern pedagogy of adult education such as: the problem-based learning, contextual learning, project-based learning, work/experience-based learning etc.;
- promoting interdisciplinary learning and dual learning by dosing the correlation between theory and practice;
- promoting a transparent and effective system of quality management, external accreditation of universities;
- internationalization of universities by diversification of education and teaching offers in several languages, inclusion of students from abroad, etc.;
- adapting study programs to the European and international educational standards;
- facilitating competitiveness of study programs;
- inviting foreign teachers - experts in certain areas;
- developing joint programs with universities from abroad at Cycle I - Bachelor, Cycle II - Master and Cycle III – Doctorate;
- upgrading and diversification of study programs by adapting them to the European system of values;

- optimizing the process of lifelong learning of teachers, enhancing their professional skills through training traineeships and, as a result, the increase of the quality of learning / teaching / evaluation processes in higher education;
- implementation into study programs of performance scientific results from different countries;
- evaluation of investigational activity, mainly from the prism of international visibility, encouraging academics to diversify the study programs, to elaborate papers with impact factor;
- academics' participation in competitions organized by the European Commission for education and research, in order to access international programs of education and research;
- self-assessment of the profiles of studies content through international educational offers and quality management system;
- expanding international visibility of research by increasing publications in ISI and / or accredited scientific journals.

4. What are the challenges / problems that may arise during the implementation?

The implementation of best practices offered by Aalborg University in HEIs in RM involves a process of profound institutional and personal change. Any changes lead to personal and / or collective resistance.

Possible challenges / problems:

- Acceptance of change by a small number of academics;
- Inadequate / fragmented understanding of the concept of university autonomy;
- Managers and employees with a low level of institutional commitment;
- Insufficient competitive human resources (number, level of skills, level of responsibility and commitment);
- Lack of coherent policy in the field;
- The need to create an autonomous National Agency which would expertise the quality of the learning, teaching, assessment, research, innovation processes in Universities;
- Reduced capacities for teamwork and establishing social partnerships;

- The need for external audit processes that would assess the situation in Universities impartially and unconditionally;
- Reduced capacity to create visibility of opportunities for collaboration with universities;
- Inability to reduce the gap between universities and industry.

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Revenco Mihail, State University of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

The visit was organized and guided by the project coordinator Dr. Romeo Turcan and the national coordinator Prof. L. Bugaian, according to a strict agenda, well planned and carried out at a very high level. The Moldovan team was introduced to representatives of Aalborg University by the project coordinator. The agenda contained reports on aspects of university life such as university organization and governance, structure of the university, the university's relationship with the government, the triple nature of the university (national and internationalization aspect and the interaction with local business), the inauguration of a faculty, how to launch a new school of medicine, the management of a department, organization, composition, tasks, funding, activity indices. The interaction with other university structures, research and teaching activity, autonomy of the department, methodology for financial needs calculation per student, per specialty, methods of collecting finances and management of research projects, innovational policy, technology and knowledge transfer, organization of the educational process, curricular insurance, launching new courses, students' knowledge assessment, evaluation of teachers' activities including by the students, the role of the student and student organizations, etc.

I. WHAT DID I LEARN DURING THE VISIT?

Higher education in Denmark is very dynamic and responds to current needs of economic, social, territorial and cultural development of the society. Organization and inauguration of a university is correlated with regional needs, aims to stimulate the development the area, increase the influx of the studying youth, create jobs in the area, and interact with local economic enterprises. Simultaneously, I liked the way the university system is optimized and organized. For a country with about 5 million inhabitants, there are available only 8 universities that are located in different cities. All universities are funded depending on the degree of involvement in teaching and research. In Denmark there are no private universities

Universities are autonomous, but there is a strict quality control system, which allows the formal classification of universities and is manifested primarily by differentiated funding from the budget. The governance of universities is interesting. The superior authority of the university is represented by the University Board consisting of 11 members, including 5 internal and 6 external. The 5 ones include: 2 - teachers and PhD students, 2 - administrative body and technical staff and 1 - students. The President the board is elected from the number of external members. Board elects the rector; the rector appoints vice-rectors and deans with the approval of the board. The dean appoints deputy deans and heads of departments. Heads of department appoint heads of schools, teachers, etc. Such organizational autonomy is easily controlled by the elected person (Rector) who can intervene and control the research and

educational process through different mechanisms. It is more reasonable in comparison to the false democracy of our elections by contest. Each protagonist of this edifice is responsible for a particular segment in front of a particular superior.

Education cannot be separated from research. Of the 12 national research laboratories and 12 universities that existed, the system was optimized in different ways to only 8 universities, a process which raised the educational process to a new level and strengthened research. This measure has resulted in a cost-effective form of planning the academics' load by dispersing their activity into two equivalent parts - 50% teaching and 50% - research.

Internationalization of education. Keeping Danish as the official language of instruction in universities, knowledge of English is a must. This provides universities with three indisputable priorities: a) teachers and highly qualified research staff from abroad can be employed; b) access of students from other countries to quality education based on fee; c) opportunity to be employed in international enterprises or organizations.

Students participate actively in the development of study programs and schools' launching. The student is not an agent who accumulates knowledge according to the programs proposed by the teacher. He participates in the elaboration, discussion and approval of these programs along with representatives of business and economic environment.

A service is organized specifically for the accumulation of financing through research, which, in its first year of existence, is paid by the university, and then from the amount of sources attracted by winning research, community projects, projects undertaken in the interest of economic agents. This service is also dealing with project management and has representatives not only in Aalborg, but also in other centers, where problems with project contests are solved and exercise some lobbyist functions to promote research and the accumulation of financial resources.

Distribution of finances for research in the university and faculty. Examination of faculty's position in the university rating and setting priorities among faculties and departments (number of doctoral students, the presence and size of external financing, the presence of international resonance research groups, previous results and the level of service previously offered, the level of research conducted in comparison with the international level, the prestige of publications).

Promotion of the third mission of contemporary universities - entrepreneurship, building a bridge to link the private business sector and the public environment. The university is not just a body in charge of education and research. An entrepreneurial university is a source of self-financing. The university is seen as a source of knowledge and new technologies transfer.

Problem-based learning. Unlike discipline-based method that is reduced to tasks, case studies for a narrow and concrete specialization under the teacher's supervision, the general

method developed and promoted at Aalborg University, dealing with launching the problem and finding an appropriate solution, is based on projects that require contextualization of several disciplines, chapters selected to be undertaken and is led by the participant. From an individual learning of a discipline, this method envisages group learning, the involvement of each participant in the project in accordance with his possibilities and capabilities, switching from knowledge and abilities to skills, from abstract learning to the concrete examples, from theory to practice. This combination is expressed by the adage “Tell me and I’ll forget, show me and I may remember, involve me and I will understand, step back and I will continue”. The interdisciplinary character of this method is visible through the multidisciplinary approach necessary to obtain new knowledge, which intersects at the interface of several fields.

Application of evaluation questionnaires of courses and teachers’ activity by students.

The questionnaires proposed to students are placed online and, after completion by each protagonist, statistical data processing is done and the final picture is presented. It is very important that each student fills it separately and the questionnaire is well thought out and reflects many parameters of the teaching process.

2. WHY IS EVERYTHING I LEARNED IMPORTANT?

Problems reported above are important to me because I see in them a complex mechanism for modernizing higher education. There are no separate sections taken, but a total, concomitant modernization and at all levels is carried out.

3. HOW CAN BE APPLIED / IMPLEMENTED IN MOLDOVA EVERYTHING I LEARNED ABOUT?

To apply or implement these optimizations / changes, it is required a general approach to the structure and didactics in higher education in Moldova. After this study visit, I think we want to initiate, or even started, some optimizations and changes, but unfortunately from another side. We try to announce new programs, new specializations, new teaching methods based on student. In this work we focus only on the changes to be sent to the student’s mentality. It seems wrong to me. We must begin from the change of mentality, place, tasks, and organization of working hours and remuneration of teachers. So many old notions have lost their actuality but we are trying to conduct modern education still applying them. From what I saw in Aalborg, I understood that the significance and roles of departments and teachers have changed. Students and public-economic actors, consulting the teacher, develop the curricula; choose the subjects they wish to be included in the curriculum. This choice is based on labor market requirements. The department is the one offering services, it ensures the achievement at high level of curricular requirements. If the teacher imposes a program that the student believes that is useless to him, then there occur situations when the student does not attend the course, does not pass the examination, the number of students who did not pass their exam increases. To overcome this situation the teacher can propose optional courses

chosen by the student without changing the curriculum proposed by the head of the school (the initiator of specialization). It is possible to implement the method of training by launching problems and solve them by conducting projects. In these situations it is not always necessary to teach all the compartments of a subject, it must be modeled and structured according to the needs of the project. The teacher is the one who will choose the material in a way that will allow students not only to understand what he does but will be able to find solutions when the teacher will simulate his absence from the project.

4. WHAT ARE THE CHALLENGES / PROBLEMS THAT MAY ARISE DURING THE IMPLEMENTATION

Currently, the first problem is the lack of a legal document on higher education. The launching of the Education Code would greatly facilitate movement towards modernization. A second problem is the financial ensuring of education. Effective education requires investments. It is necessary to bring to a common denominator school education with higher education. The methods currently practiced in these two segments are very different. If pre-university teachers enjoy some benefits, trainings, internships, then for teachers in universities nothing is done. There are missing refresher, practical courses, visits to the greatest universities in Europe, schools and workshops. A third issue is the language of instruction. Students should be able to attend and understand courses in another language. Thus we could attract teachers from outside, who, on one hand would teach at a modern level, and, on the other hand, would be a source of local staff training, who cannot or do not have the means to go to trainings abroad. A fourth problem is the enormous number of universities in the country. In the situation when the number of children is decreasing, the reduction / association of number of universities is indispensable, too. A fifth problem is the lack of legislation that would determine the posts to which holders of different types of degrees (Bachelor, Master, and PhD) may claim.

5. ANNEXES

- a. Statutes of the self-governing institution Aalborg University**
- b. Hard or soft copy of the methodology on the calculation of the costs per student and per specialty**

Experience report on the study visit to Aalborg University, Denmark
April 29-May 4, 2013
Eugeniu Zacon, State Agrarian University of Moldova
“Enhancing University Autonomy in the Republic of Moldova” project

The visit was conducted under TEMPUS project ”Enhancing University Autonomy in Moldova”.

The purpose of the visit: familiarization with the existing experience in the Aalborg University and other universities in Denmark, in the field of academic autonomy.

Training visits were conducted in the following institutions: 04/29/13 to 05/01/13 - Aalborg University, 02/05/13 - Aalborg University, campus in Copenhagen, 03/05/13 - Danish Agency for Science, Technology and Innovation, Copenhagen.

What did I learn during the visit?

Education, including higher education, in Denmark is free. Higher education is provided by eight universities, funded by the state. There are no private universities.

For the reasons mentioned above, there is a relative autonomy in the academic field which is combined with the monitoring of education by the Ministry of Science and Innovation.

Unlike other universities, the educational process at Aalborg University is conducted on the basis of PBL model - problem based learning.

At all undergraduate (Bachelor) programs, the duration of studies is 180 credits (equivalent to 3 years of study), and at the Masters - 120 credits (2 years of study).

Undergraduate (Bachelor) are focused on fundamental applied training.

Master programs are not divided into research and professional programs, having a high degree of applied research and implementation.

Why is everything I learned important?

How can be applied / implemented in Moldova everything I learned about?

For Moldova it is extremely necessary to have a National Agency for Quality Assurance, which would have the status of independent body and would promote reforms in the field of quality of higher education as part of the European one. It is also needed the urgent creation of a national accreditation body with independent status, integrated into the network of European accreditation agencies in higher education.

Although Moldovan universities currently enjoy a certain degree of academic autonomy, however there are some gaps in the capacity and capability of universities to decide on

various academic issues such as – admission of students to study, academic content, quality assurance, etc. Thus, for example, the University Senate could: determine the number of students for each program of study, language of instruction at undergraduate or master cycle, choose their supplier of quality assurance recorded in the European Register of Quality Assurance.

I think that the PBL principles, implemented at Aalborg University, can also be applied at SAUM because they cover the fields of: training (based on: issues and contextual learning, project and learning as a result of experience), social (focus on the participant and learning based on teamwork) and content (relationship between theory and practice, interdisciplinary learning and learning through examples, meta-learning or double learning - the student must be aware of what he has learned and the values that underpin the learning).

Jette Egelung Holgaard, in her presentation on the PBL model implemented at Aalborg University, emphasized that everything we learn should be a problem that needs to be solved. Because the student must generate, integrate, interpret and act, the teacher's role to achieve these goals will change - he will become a mediator and will be the one who will boost the student. When forming teams of students, they can be from the same year of study or from different years of study in order to cover many subjects. The teams can work at the level of subject or Bachelor. For example, they study a course a semester and then have an industrial project. The 30 credits for a semester are divided on 3 modules of 5 credits and the remaining 15 credits are for the project. Groups/teams are composed of maximum 4 students, so students are self-motivated - they choose the problem by themselves and must resolve it. All students of the team are involved in the individual assessment; they can help each other and thus propose a better response. PBL provides the transition from training based on a topic to the problem based one, from tasks to case studies, and finally to projects; specializing in contextualization; from the process led by the teacher to the one led by the participant; from individual learning to group learning (communities of practice); from disciplinary focus to the interdisciplinary and finally transdisciplinary one; from knowledge acquisition to training and obtaining of skills; from abstract learning to the one based on examples and thus moving from theory to practice.

The project itself has the following steps:

- Analysis of the problem;
- Solving the problem;
- Project Report.

The preceding conditions to solve the problem are: the study of literature, attending classes and group studies. In the process of solving the problem, there are involved the following activities: tutoring, field and experimental activities.

It is worth mentioning that the specific of Aalborg's PBL model is due to the following aspects:

- Group classes;
- Type of problems;
- The duration of project realization;
- Attention to the training process;
- Assessment based on the group;
- Strong dedication of the group members.

For this purpose teachers will take into account the following indications of PBL:

- Make the students to define the problem within a certain theme and highlight possible solutions;
- Make students address a broader ecological and socio-cultural context;
- Change the role of teacher into facilitator (student);
- Create space for discussion among students (in groups);
- Make students find relevant literature independently;
- Create conditions for students to reflect on their own learning experience;
- Collaborate with external partners so that your problem be real.

Conclusions and proposals. What are the challenges / problems that may arise during the implementation?

The visit was very useful (effectively programmed, involving specialists from different fields), and the purpose and the proposed duties were performed.

In the near future it is necessary to analyze what are the conditions required to implement PBL at SAUM. For example, it is necessary to clarify the following:

- If the teaching process in the PBL version provides only the realization of classes and project fulfillment, then by what means instrumental skills (obtained by the student in the classic version, doing lab work for the respective subject), specific skills (obtained by the student in the classic version, by participating in the development of practical lessons for the respective subject), and systemic skills

(obtained by the student in the classic version, making didactic, technological, production internships etc.) are formed?

- What are the procedures for training general and socio-humanistic abilities and skills (obtained by the student in the classic version, by participating in seminars within the respective subject)?
- What is the correlation between the volume of material of a subject included in the content of the classes and the one designated for the individual study of the student and how can the teacher control this self-study?
- How to solve the problem in the case when a project on the respective subject is not done or the complex (year) project does not cover a certain subject?
- What is the difference between projects done within a subject from the complex (year) projects, Bachelor or Master projects?

We asked during the visit, and we reiterate this request, to get acquainted with some examples of project reports:

- subject projects;
- year projects;
- Bachelor projects;
- master projects.