SEEKING SOLUTIONS TO ENHANCING COMPETITIVENESS OF MOLDOVAN UNIVERSITIES: IMPLEMENTATION OF PROBLEM-BASED LEARNING

Ala Cotelnic
Academy of Economic Studies of Moldova (ASEM)

Abstract: Higher education institutions are considered to be an institutional resource absolutely indispensable for an economy in the process of building a knowledge society and achieving the objectives of redefining the foundations of competitiveness. During the recent years higher education has undergone multiple changes. The number of students worldwide is steadily decreasing due to demographic decline. Therefore, European universities, and not only, are constantly facing a fierce competition in attracting better, more talented students. Under these conditions, boundaries practically have no importance. In order to cope with competition, but also to face the changes in society, Moldovan universities should implement such learning methods that would allow the development of students' creativity, which would make the able to work in the most complex organizations. We are confident that implementing the student-cantered learning methods in the practice of higher education institutions, including problem-based learning, would allow universities to have a better connection with business environment, become competitive in the regional market and may be even the European one.

Keywords: change, student-centred learning, problem-based learning, competitiveness of universities.

Moldovan society is in a process of change in which all the economic, social, political elements have known a new dynamic trend while adapting to the current conditions. The importance of higher education is becoming more evident in modern society. Universities become the institutional resource absolutely indispensable for the Moldovan economy for building a knowledge society and achieving the objectives in redefining the foundations of competitiveness.

## TRENDS IN HIGHER EDUCATION AND THE NEED FOR CHANGE

Universities are working in an environment that has changed fundamentally nowadays. Among the main challenges and trends in contemporary higher education we can mention the following:

1. Increased demand for higher education. It is a global phenomenon faced by all countries. Articles dealing with this topic (M.L. Strajeri, 2009) mention that higher education began to gain a mass character since the 40s of the XX century in the USA, changing from education of social and political elite to one accessible to all. In Europe this trend came 30 years later. Usually, the mass access to higher education is manifested by the rapid growth in the number of students, both in global terms and as a share of population. Some authors associate the mass character with some decline in quality, an increase in inequality [between types of institution], an increased diversification of the types of institutions, a decline in working conditions among academics and an explosion of admission in private universities.

As mentioned above, Europe and the whole world in general are experiencing a growing demand for education; the objective of the Europe 2020 strategy to achieve a number 40% of higher education graduates requires diversification of educational offer. It is estimated that by 2030, the number of students worldwide will reach 414 million, which means that education and training systems must become more flexible so as to meet the needs.

If we refer to the Republic of Moldova, we find that after a doubling of the number of students in higher education institutions (HEIs) in the 90s, in recent years, the number of students has reduced steadily. (Education 2020) (Figure 2). During the 90s the increase in the number of universities has not spared our country. However, the number has decreased and since 2004/2005 we have a stable situation in the number HEI, but anyway, very high for a small country like Moldova, with a number of students steadily decreasing. (Figure 1)

Figure 1. Evolution of Higher Education Institutions in the Republic of Moldova
(www.statistica.md)
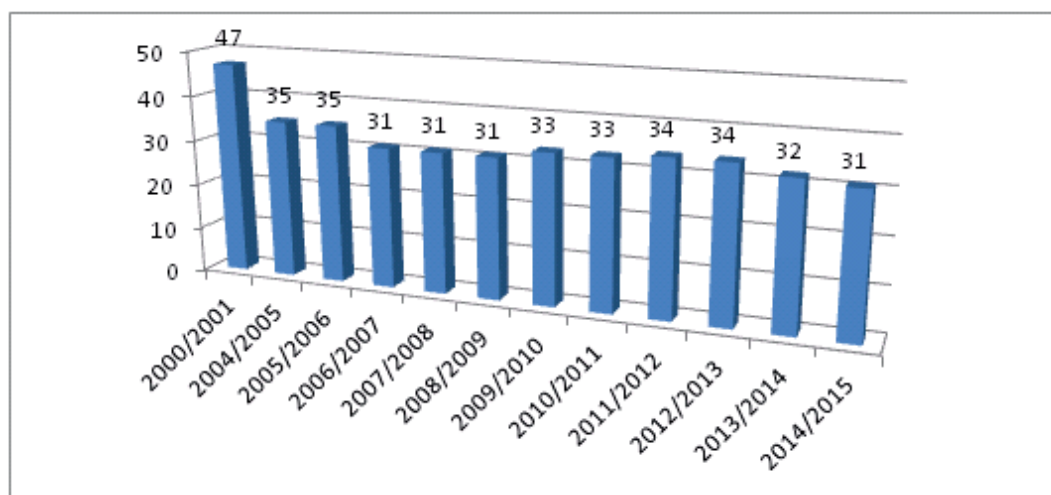
The number of students in the 31 higher education institutions amounted to 89 500 people at the beginning of academic year 2014-2015, or 27.2% less than in the academic year 2007-2008 (but, 7 times more than in the academic year 1990-1991). Thus, at the beginning of academic year 2014-2015, we had on average 273 students and 68 graduates to 10 thousand inhabitants, compared to 344 students and 56 graduates in the academic year 2007- 2008.

Figure 2. Evolution of the number of students in the Republic of Moldova
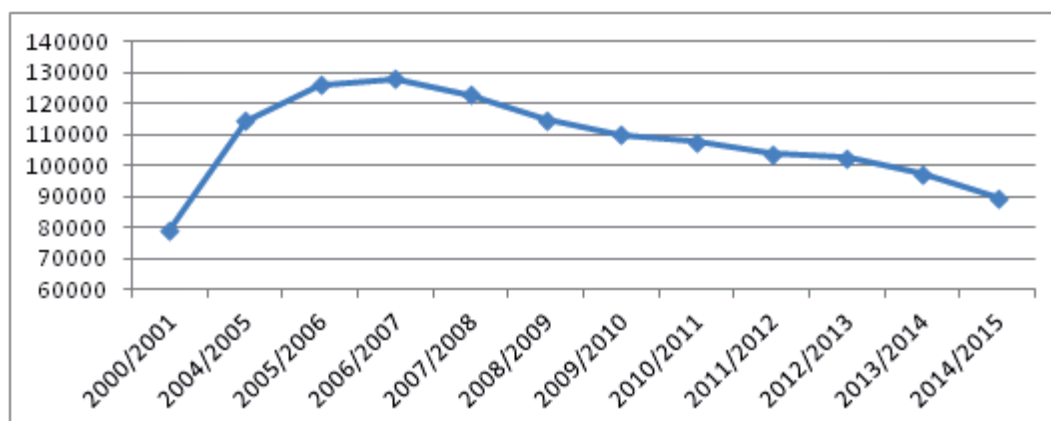
2. Internationalization of higher education. Moldova's accession to the Bologna process in 2005 made possible the mobility of students in universities in different countries. The number of students and staff involved in mobility is increasing everywhere. The rate and amount of the increase varies, but the number of mobile students reveals a clear trend – here we mention short-term mobility periods (for obtaining a number of study credits) or degree programmes, seeking for a diploma (during a study program).

However, almost free access to education in different countries is a risk to Moldovan universities, as more and more high school graduates leave to study abroad without coming back. Besides, this involves the creation of a competitive market with universities able to cope with market requirements, including the European ones. This change leads to increasing competition and internationalization is based on objectives that include interest for talent, international student recruitment, strategic partnerships, revenue generation, rankings and institutional positioning.

3. Technology and information development. This trend highlights the necessity of increasing staff training, including in terms of appropriate opportunities in order to achieve academic and administrative unity. With an estimated 90% of jobs requiring digital skills in the near future, it is thus essential that education and training systems provide individuals with the required skills [2].

4. Transfer of higher education cost to students and their families (to be covered by them)[3]. Decrease in higher education funding from the state budget is valid for all European countries. Johnstone and Bruce (2007) argue that in the context of mass character of higher education; increase the operating costs of universities at a higher inflation rate led to a decrease in capacity and availability of public authorities to fund public higher education. An alternative practiced by many countries, but also by Moldova, was the gradual introduction of co-payment mechanisms. The most common form of co-payment in the public university sector is the direct student fees (tuition or administrative). In some countries the majority of students pay fees (for example in England, Wales, the Netherlands and Spain), while others use dual models in which only part of the students have to pay (e.g. in Russia or Romania)[4]. There are also states that do not charge tuition fees in public university system (for example in Scandinavian countries, France, Turkey and Scotland).

5. Extended requests to align higher education with the labour market, including in terms of lifelong learning. Thus, the content of employment strategy of the European Union includes confirmation that, in order to continue to be competitive in the global economy and information society in training, human resources must be able to apply certain skills at a high level that can be easily adapted to meet a range of changing needs. In this context, we can say that at present the development of education appears as a requirement of social progress. In the long term, education contributes to the country's economic development, stimulate progress and raise the standard of living of the population. However, in order to answer the above mentioned, higher education must be dimensioned, rationally organized, adapted and adaptable to current and future needs of society, led with professionalism and competence.

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[2] http://ec.europa.eu/education/policy/strategic-framework/education-technology_ro.htm

[3] Cadrul strategic pentru internaționalizarea Învățământului Superior din România. Analiză și recomandări, București, 2015

[4] European Commission /Eurydice (2014). National Student Fee and Support Systems in European Higher Education . Date preluate pe 21 mai 2015 de la: http://eacea.ec.europa.eu/education/eurydice/documents/facts_and_figures/fees_support.pdf

It should also be borne in mind that currently, the labour market shows a substantial imbalance between supply and demand and a shortage of skilled labour force. Analysis of employment fields and unemployment structure indicates that the education system is not sufficiently connected to labour market requirements and provides no relevant qualifications. Labour migration, combined with demographic decline, comes to challenge the myth that Moldova workforce is skilled and cheap (Education 2020) and the relatively small number of well-paid jobs discourages demand, with people preferring to stay inactive or leaving to work abroad.

So, the situation in the country, in the higher education institutions, diversity and complexity of large emerging problems in national higher education and the difficulties universities are currently facing, but also, the trends in contemporary higher education show clearly the need of numerous changes. Changes must also be made at the level of staff and the curricula.

IMPLEMENTING STUDENT-CENTRED LEARNING

Historically speaking out, most Moldovan universities focused mainly on teaching and learning. We can say that we are currently lacking universities that have undertaken visible research activities at national or international level.

The classic system, teacher-centred education, still predominates in universities. We consider it out-dated, because it was designed to integrate graduates in stable and inflexible to changes in society labour markets, especially compared with international influences. However, taking into account the speed of changes, the flexibility of the labour market, it is obvious that a student-centred education offers more benefits to the society, enables training specialists who would have the required skills. Changes from teacher-centred education to student-centred imply a cultural transformation, and, therefore, behavioural and attitudinal changes, both from students and from teachers, and the institution in general. Non- involvement of one of these factors makes it impossible to achieve this method.

In terms of student-centred education, the student is no longer perceived as a passive subject in the training process, but is considered a partner of the teacher in building knowledge and an active part in carrying instructive activities, in qualitative evaluation and in shaping their own academic route. (Todorescu LL, 2009)

The teacher is no longer providing knowledge as a product but focuses on the model "knowledge as a process", paying more attention to learning needs, motivation, counselling and student guidance. The teacher can become for example: an instructor, a guide, a tutor who stands by, a mentor, an advisor, a consultant, a knowledge provider, the person who makes things possible, a trainer, a supervisor, a teacher, a coordinator, critical researcher, broker of knowledge, model, ..., facilitator, collaborator. (Jedeskog, G., 1999).

The literature on this subject provides several definitions that reflect the subject: "Student-centred learning describes ways of thinking about learning and teaching that emphasise student responsibility for such activities as planning learning, interacting with teachers and other students, researching, and assessing learning" (Cannon, R., 2000).

Student-centred learning refers to the situation where students work both individually and in groups in order to explore issues and process knowledge actively, being active knowledge workers rather than passive knowledge recipients. (Harmon, S. W. & Hirum, A., 1996)

From the above definitions, we can draw some characteristics of student-centred learning, which can be summarized in the following items (Lea et al, 2003):

- the reliance on active rather than passive learning;
- an emphasis on deep learning and understanding;
- increased responsibility and accountability on the part of the student;
- an increased sense of autonomy in the learner;
- an interdependence between teacher and learner;
- mutual respect within the learner teacher relationship;
- a reflexive approach to the teaching and learning process on the part of both teacher and learner.

PROBLEM-BASED LEARNING – STUDENT-CENTRED LEARNING METHOD

Problem-based learning (PBL) is a student-centred learning method, an approach that challenges students to learn by engaging in a real problem. It is a format that develops simultaneously with problem-solving, strategies and disciplinary knowledge base and skills, by placing students in the active role of solving problems. Students face situations of inadequate structure that simulate the kind of problems they might face as future managers in complex organizations. The essence of problem-based learning is that this is a group approach which encourages self-directed and independent study. The approach is based on providing a problem or a situation commonly encountered in everyday life organization. Usually, students are those who choose areas or nature of their projects. They are asked to investigate the nature of the problem, analyse situations and use relevant theoretical frameworks to study possible solutions, dilemmas and conflicts. Significant emphasis is given to the concept of students" understanding of what they are doing, the importance of their work and how they will be evaluated. Students can help in setting some goals for which will be evaluated and how the evaluation will take place. All these characteristics of problem-based learning is focused on student motivation and contribute to their active involvement.

While the content and structure of PBL courses may differ, the general goals and learning objectives tend to be similar. PBL begins with the assumption that learning is an active, integrated, and constructive process influenced by social and contextual factors (Barrows, 1996; Gijselaers, 1996). In their review of the literature, Wilkerson and Gijselaers (1996) claim that PBL is characterized by a student-centred approach, teachers as "facilitators rather than disseminators," and open-ended problems (in PBL, these are called "ill- structured") that "serve as the initial stimulus and framework for learning".

Learning is "student-centred" because students have the freedom to study those subjects that interest them most and they determine how they want to study.

Students should identify their learning needs, help plan classes, lead class discussions, and assess their own work and their classmates" work (Reynolds, 1997). In addition to emphasizing learning by "doing", PBL requires students to be metacognitively aware (Gijselaers, 1996). That is, students must learn to be conscious of what information they already know about the problem, what information they need to know to solve the problem and the strategies to use to solve the problem.

CHANGING THE ROLE OF FACTORS INVOLVED IN LEARNING BY PBL

PBL implementation changes the role of different factors involved in the teaching-learning process. Thus, in the student's point of view, problem-based learning allows students to participate in their own development and
• is focused on student and is intrinsically motivating;
• encourages collaboration and cooperative learning;
• requires students to produce a product, make a presentation or action;
• allows students making gradual and continual improvement of the product, presentation, or action;
• is designed so that students are actively involved in "doing" things rather than "learning about" something;
• is a challenge, focusing on higher knowledge and skills.

From the point of view of the teacher, problem-based learning:
• has a real content and purpose;
• uses authentic assessment;
• is facilitated by the teacher, but this is more a "student guide" than a "sage on the stage";
• has explicit educational goals;
• is rooted in constructivism (a social learning theory) and gives careful consideration to learning theory;
• is designed so that the teacher becomes a student, learning from student and with them.

Finally, a partnership is created between the two factors oriented towards building a set of skills required for optimal socio-professional insertion.

Higher education institution has a particularly important role in achieving the student-centred education along with the teacher and the student, as it makes possible the optimum interaction between the two factors mentioned above.

This implies that the higher education institution must provide:
• Appropriate material base for PBL implementation: equipped classrooms, equipment, resources,
• Qualified and competent human resources to conduct effective educational process;
• Study programs: flexible, with optional courses allowing students to shape their own academic path.

PBL PROMOTES TEAMWORK AND DEVELOPS CERTAIN SKILLS

Small group's activities are dominant in case of PBL. Group work is also an essential aspect of PBL for several reasons. First, teamwork helps developing learning groups where students feel comfortable in developing new ideas, search for information, etc. It also improves communication skills and students' ability to manage group dynamics, leads to higher rates of involvement in various activities aimed at increasing the students' responsibility for personal but also for the group's learning, educates self-control and a tolerant behaviour towards the opinions of others, overcoming bias and acceptance of collective thinking. Finally, teamwork is exciting and motivating for students because they are actively involved in the work and have a high degree of responsibility for their actions against the members of the group. For these reasons, teamwork can enhance student performance. However, the groups do not always work effectively without adequate guidance. Usually, the trainer facilitates and monitors group

interactions because many students have not been taught how to work effectively in groups. Clear-formulated open issues require the skills of all group members and are essential for positive experiences of teamwork.

PBL makes a fundamental change – changing the focus from teaching to learning. The method aims to use the power of solving real problems, involving students and increasing the learning ability but also motivating them. There are several unique aspects that define the PBL approach. Learning takes place in contexts of authentic tasks and problems that are aligned with real-world concerns. In a PBL course, students and teacher become co-partners, co-evaluators, as they together design, implement and continually refine their programs. PBL approach is based on solid academic research, on learning and promotes the best practices. This approach stimulates students to take responsibility for their own learning, because there are few courses and need to know certain information determines the individual of study route. PBL is unique in that it promotes collaboration among students, focuses on developing skills in problem solving in the context of professional practice, promotes efficient motivation and self-directed learning, and aims to increase motivation for learning throughout life.

It was found that problem-based learning develops the following skills to students:
• Critical thinking – student's ability to issue clear and reasoned judgments;
• Problem solving – a component that requires the person to apply an ordered / structured process to solve problems;
• Teamwork – students' ability to work as part of a team and with others;
• Self-control – students' motivation to conduct their own learning.

BARRIERS AND RISKS IN IMPLEMENTING PBL IN HEI

It is obvious that any change meets resistance. As far as the implementation of PBL is concerned, we are aware that there will be some barriers that could slow down the implementation of this method. Among them we can mention the strong influence of educational tradition; discomfort and anxiety of change; limited incentives for change.

Thus, teachers will have to spend far more time to prepare for teamwork, they will have to overcome the knowledge limitations of the previously course taught, as finding solution to real problems requires deep knowledge of all aspects of this activity. Therefore, they will have to learn from their students, but having deeper knowledge.

Students will need more time to search for information, to process it by themselves or in groups.

There are obviously some risks:
• The risk that teachers do not accept the implementation of problem-based learning, teachers will feel a loss of control, lack necessary skills;
• The risk that students may not want to work in teams or using higher order thinking.

But progress is important not only to identify barriers and risks, but also to find ways to overcome them.

CONCLUSIONS

In the context of the above mentioned, we can conclude that problem-based education involves switching from the traditional type of teacher valued so far – a teacher who is

the author of the academic treaty, brilliant speaker oriented towards a neutral student, to a teacher who facilitates student learning, involving the student in active learning, in building their own knowledge, a teacher who is an advisor (who guides the student in finding his own knowledge path) and a moderator of knowledge (who encourages students to experience cognitively).

PBL is no longer providing ready-made knowledge by the teacher to be memorized by the student and, eventually, reproduced by him; the student is no longer treated as an object of instruction, but as the subject of it, as an active participant and responsible for building their own learning, their own knowledge.

PBL education is both a mentality and a culture within an institution of higher education. PBL is characterized by innovative teaching methods that aim to promote learning through communication with teachers and other students involved in learning, methods that consider students as active participants in their own learning.

Although there have been identified many aspects so far, on what is student-centred education in general and what is PBL education, in particular, its implementation in academia, continues to remain a challenge both for the teacher, for the student and for the university. Efficiency and effectiveness of student-centred education is possible but only if it does not remain constant but always improved in practice.

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