

**Education based on medical issues (Problem based learning in medicine):  
do we cancel, overturn or evolve the existent educational process?**

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**Summary**

**Starting Point:** Questions asked during the lectures of the students, small conversations and incursions during the conferences with teachers of The Sate University of Medicine and Pharmacy “Nicolae Testemitanu”, a well as conversations held with doctors beginners and with those with experience demonstrated that 95% don’t know the principles of problem based learning, while solving situations related to diagnosis establishment and treatment of the patients they do use this method unconsciously.

**Methods:** We have analyzed the educational programs and the current curriculum for the training of the doctors regarding the Medicine Specialties, Public Medicine, Stomatology and Pharmacy at the State University of Medicine and Pharmacy “Nicolae Testemitanu” from the Republic of Moldova, vis-à-vis the history of foundation and development of the university, quantitative results (numbers of graduates) and qualitative (number of graduates employed in medical activities in the country and abroad, implied in the research sector).

**Results:** Our analysis activity of materials at hand revealed the fact, that although the traditional programs and methods had proven their durability and efficiency from 1945 till now, covering completely the training necessities of the doctors and the university’s lecturers in the Republic of Moldova, nowadays we are in need of a reform in order to break this educational deadlock, to contribute to a more intense exploitation of both students’ and teachers staff’s intellectual potential. The problem based learning method seems to be an effective solution for the actual challenge of the new context of superior school of medicine’s

existence, when the educational offer should make a 20 years step forward anticipating strategically the necessities of the society that is in a transformation process. The auto appreciation made by the authors of this article confirms the working hypothesis that the professional, didactical and investigation competences of a doctor can be obtained, sustained and developed by the Problem based learning. Most of them keep their social and cognitive dimensions. As a reference to them: solving complicated cases, legal and social activity aspects, communication abilities, permanent professional development.

**Interpretation:** The introduction of the study in higher medical educational institution based on the problem, could solve the necessity of skills improvement of the doctors, that right after graduation, must demonstrate high professional skills, and especially when it comes to social and cognitive development.

Today, the medical education is realized according to two basic methods: the traditional method and the study based on problem [1, 2]. The study based on problem is considered, by the majority of experts in this field as one of most efficient, when it comes to training modern professionals in the medical field. Although, introducing such a method of study in the activity of a higher education institution, needs considerable efforts, especially when it comes to human resources. For example, the contact between the student and the trainer, in the study based on problem has to be 3-4 times greater, when it comes to timing, compared to traditional study.

As a result, the study based on problem has to face first of all the economical impediment, especially when the number of students for one speciality exceeds the number of 100 [3]. Facing the situation, when the financial resources of SUMP "Nicolae Testemitanu" are short, introducing a new method of study, that implies supplementary financial expenses, will confront managerial obstacles on all levels: faculty, rectorat, Ministry of Education, Ministry

of Health, Government, Parliament, fact that was demonstrated from the experience of many other countries [4, 5, 6, 7, 8, 9].

From specialized literature sources however, it was observed that in the universities where this method of study was introduced, both students and the lecturers became faithful followers of this method, trying to provide evidence about the benefit, that will sooner or later have the entire society and not only the University community [13, 14, 15, 16]. There are known already positive instant effects, at the level of university cycle (students) [13, 11, 12], as well as post graduate- residents [16]. It is not possible yet to extrapolate the competences of the resident doctor, when it comes to the capacity of continuous medical education of the practicing doctor, based outside of the university community [17]. With the taking over of the model of education based on problem at our University, we think that it would be necessary to examine and elaborate monitoring indicators of the competence and performances both at the stage of University cycle, and for the period of minimum 20 years after graduation, as it has been proposed by a number of researchers in the domain [18, 19, 20].

**Methods:** In this work we intend to analyze the traditional method of the medical treatment, utilized since 1945 (founding year) at the SUMP “Nicolae Testemitanu” vis-à-vis of the educational possibilities offered by the PBL, used for a long time by other universities in the whole world. That’s why we accepted Maudsley’s definition about the problem based learning, both teaching-learning and philosophy-methodology study methods.

**Results:** The medical education of the specialists of the SUMP “Nicolae Testemitanu” is based on the study programs and the curriculum taken from the State Institutes of Medicine Nr.1 and Nr.2 and Pediatrics from St. Petersburg (Leningrad about that time), transferred from Kislovodsk to Chisinau by the end of World War II. In this way the superior medical education of Republic of Moldova was founded, that gave us the possibility to train doctors of

high qualification and on the other hand it laid the foundations of the research and the native medicine scientific realizations development.

The duration of the superior medical education in Medicine and Public Health specialty in Republic of Moldova takes 6 years and in Stomatology and Pharmacy 5 years. The essential subjects at the SUMP “Nicolae Testemitanu” are studied in the course of the first 3 years, state exams for essential subjects don't exist at this moment, but there are promotion exams taken by the students on the respective subjects at the end of each semester. The preclinical subjects with interdisciplinary character are: microscopical anatomy, biochemistry, physiology, human genetics, medical terminology, philosophy, bioethics and communication skills. The students attend at patients' consultations.

The next three years the medical students consecrate themselves to clinical subjects study that are regularly held in modules (cycles) with a duration of 2-4 weeks. At the lectures and practical lessons within 3 years they get acquainted with all medical subjects. The clinical subjects besides surgery and internal diseases include: psychiatry, neurology, otolaryngology, ophthalmology, dermatology, infectious diseases, gynecology, pediatry, medical genetics, biometrics and social medicine that are taught in Germany in the course of the 4<sup>th</sup> year and the first half of the 5<sup>th</sup> year of studies. In the second half of the 4<sup>th</sup> year of studies the students start their investigation activity which ends with the maintaining of the license thesis by the end of the 6<sup>th</sup> year of studies. The last year of superior medical studies by the principle divides in a practical semester and a usual one, which doesn't differ to the previous clinical years. After the 6<sup>th</sup> year of studies, the students go in for the state examinations, which are divided in practical (clinical) part and theoretical part. The post-university medical studies can be realized among the residency program for a term of 4-5 years.

**Interpretation.** Available sources of scientific literature , based on an objective analysis of performance indexes of the activity of the Medical faculties, claim that the study based on

problem, develops at students, when compared to the traditional method, skills of a superior quality [19, 20, 21, 22]. The meta-analyses carried out by Dochy et al. [23] showed that problem-based education has no powerful action on the amount of accumulated knowledge, but exert a strong positive effect on the ability of knowledge application in practice. At the same time, the majority of studies and analysis of a large scale are based on the quality of the in fact gained knowledges, but neglects other aspects of the physician's competence [9, 14, 43]. Above the necessity to change the education stereotype, introducing of study based on problem in a medical institution, that till not so long ago used the traditional classic method, confronts an active resistance, from a large part of the professional didactic staff [24, 25, 26, 27, 28].

Due to this aspect, the authors of the present work, after discussion, have come to conclusion, that in order to introduce the method of education based on problem in SUMP "Nicolae Testemitanu" is necessary to draw up a special program, that step by step, in a evolutionary form (but not a revolutionary one) will implement the method at the beginning as a interdisciplinary course, during the second half-year of the third year of studies (at the end of the Preclinical disciplines), then at the public medical speciality, where the number of students does not exceed 60 people and only once, by this way, there will be identified the strong and weak points, this method will be implemented completely at the level of University.

And not the least will be taken into consideration the financial-economic aspect of the implementation process and maintenance of this new educational method.

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