# INNOVATING STUDENT-CENTRED PROBLEM-BASED ACTIVE LEARNING AT THE NICOLAE TESTEMITANU STATE UNIVERSITY OF MEDICINE AND PHARMACY: PREVIOUS EXPERIENCE AND ACTUAL CHALLENGES

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**Abstract:** The implementation of study method based on problem (clinical case) analysis started at State University of Medicine and Pharmacy «Nicolae Testemitanu» (SUMPh) since 2006. Analysis of this first pilot implementation in terms of contemporary concept of the Problem Based Learning (PBL) denotes that we have implemented only an essential element of PBL method, especially for medical education – CBCR (Case Based Clinical Reasoning). So, during the subsequent implementation of the PBL method at the SUMPh we have faced a number of challenges created by adapting medical study program to the principles of contemporary method of PBL.

**Keywords:** medical curriculum, PBL, CBCR.

The implementation of study method based on problem (clinical case) analysis started at Nicolae Testemitanu State University of Medicine and Pharmacy (SUMPh) since 2006 when in the framework of TEMPUS Project "Problem Based Medical Education for Moldova" (CD_ JEP 25195- 2004) at three basic medico-biological pilot departments during the conventional annual discipline's program's running were introduced 10 practical lessons by method of Problem Based Learning (PBL) / Case Based Clinical Reasoning (CBCR).

Case Based Clinical Reasoning was introduced in a course in which clinical cases are worked through by small groups of students (size: 8-12) and in which basic science knowledge were associated with clinical patient management. Cases were created to guide students through this course. These cases consist of a clinical presentation, followed by consecutive questions, resembling the clinical reasoning patterns of clinicians, in combination of patho-physiological explanations. This "vertically integrated" teaching model combines the teaching of clinical sciences, such as internal medicine and other disciplines with basic sciences, such as physiology, physiopathology and other disciplines.

At the same time this teaching model placed students in a very central role. The student-centered nature of this education was reflected in the fact that students actually in turn run the small group sessions. The teacher was present, but had not a traditional didactic role. His or her task was to guide the learning process and problem-solving process and only to intervene when the students in the group got into trouble.

The staff has been selected among the following selected departments: Physiology, Pathophysiology, Neurology, Paediatrics, Surgery, Internal Medicine.

The training course consists of a three-day workshop in September at SUMPh and 6 small group sessions of 2,5 hours over the course of the second semester of the fourth year (semester 8), supervised by the European partners of the consortium.

60 students of the pilot departments were trained on PBL method and its implementation so as to have them playing an active role in every phase and, especially, to have their direct involvement in the implementation phase.

As a result of the training, 10 cases were created and Physiology and Physiopathology subjects were involved in each of it. Physiopathology Department, being in the middle between the hard-core basic sciences and clinical departments will have a leading role in both the training and in the implementation phase of PBL method.

The other selected clinical departments were involved in the development of the cases in the following number: Internal Medicine (4 cases); Surgery (2 cases); Neurology (2 cases); Paediatrics (2 cases).

The result of this pilot implementation of the PBL-CBCR method was successful according the opinion of students and teachers.

Analysis of this first pilot implementation in terms of contemporary concept of PBL, including experience using of current Project partners with Aalborg University „Introducing Problem Based Learning in Moldova: Towards Enhancing Students' Competitiveness and Employability (PBLMD)" denotes that we have implemented only an essential element of PBL method, especially for medical education – CBCR (Case Based Clinical Reasoning). So, during the subsequent implementation of the PBL method at the Nicolae Testemitanu SUMPh we have faced a number of challenges created by adapting medical study program to the principles of contemporary method of PBL.

The use of teaching cases in a conventional course, as practiced by many schools, appears similar to PBL, but the role of the student is far more passive. In authentic PBL, the student is asking the questions as well as answering them, teaching as well as learning, assuming primary responsibility for the process. According to a recent issue of JAMA devoted to medical education, 100 medical schools had reported the use of PBL. On closer inspection, however, it becomes apparent that most of this activity is case-enhanced teaching. While this is an effective learning mode, it is not a true PBL exercise [1].

PBL is a form of education in which information is mastered in the same context in which it will be used. Also, in its most recent medical forms, PBL is seen as a student-driven process in which the student sets the pace and the role of the teacher becomes one of guide, facilitator, and resource [1].

Contemporary PBL medical programs usually employ two fundamental principles: basic sciences are learned in the process of analyzing typical cases, and learning is motivated by student curiosity. These two elements are manifest in many different ways. For example, in analyzing a case, the student always comes to a point where more information is needed to continue. This results in the generation of an «issue.» An issue specifies an item of information that must be learned to complete the case. Once an issue has been identified, it becomes a learning goal for the next meeting. Each student then must find an answer to this question and be prepared to share it with other students. Thus, PBL employs student initiative as a driving force. The student generates the issues, provides the answers, and teaches fellow students [2].

Student-directed learning Issues are generated by students. The faculty facilitator assigned to each group does not take the lead or specify what the students are to know. In the give and-take of a small-group session, everyone serves as learner and teacher. Once all issues are generated, the students arrange them into a priority sequence that becomes the agenda for the next meeting. At the next session, students share their answers to outstanding issues and

identify another list to be covered at the following session. In this way, the students determine what they will learn (within limits), how they will learn, and how they will participate in the instructional process. A set of learning objectives is provided for each phase, but it usually is employed as a checklist in preparing for the examination [3].

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