

## **EXPERIENCE OF IMPLEMENTING PROBLEM-BASED LEARNING (PBL) IN EDUCATION OF KAZAKHSTAN: STUDENT'S OPINION**

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**Summary:** *Problem-based learning (PBL) is described in this article that develops clinical thinking and stimulates students to acquire knowledge through self-searching and analysis of the medical information. Students take more active role in trying to solve a practical problem. This becomes especially important nowadays due to the transition of the educational process in the credit system. PBL technique has been tested in 4 students' groups of the 1-2 courses. Analysis of the questionnaires showed that 96.9% students liked to conduct classes using the new method. According to all students, PBL is a useful technique for more efficient assimilation of the subject. 67.9% liked the approach and style of tutors' work. 100% students liked to formulate independently questions for the further study. 93.8% liked how our tutors are encouraged the discussion between all members of the group, guided group.*

**Keywords:** TEMPUS, Astana Medical University, problem-based learning (PBL), medical education, competence, tutor, virtual patient.

Call for the innovative processes in the field of content, structure, organization of medical education updating with the purpose to perfect competences of medical university undergraduates, increase of competitiveness of the Kazakhstan experts in the world market of medical services are defined in the State program of health care development in the Republic of Kazakhstan and the Concept of medical and pharmaceutical education development of the Republic of Kazakhstan for 2011-2015 [6, 7].

The implementation priority of the innovative learning approach was proposed for the achievement of general and special competences by the graduates of JSC "Astana Medical University", and purposes of higher education institution, and Strategic plan of the higher education institution development. For this purpose, along with the other higher educational institutions of Greece, England, Georgia and the Ukraine, since 2013 Astana Medical University has started to work in the international grant project «Establishment of the Supra-Regional Network of the National Centers in medical Education, focused on problem-based learning (PBL) and Virtual Patients» within the European program "TEMPUS". "TEMPUS" – is one of the European Union

programs directed to the support of the higher education updating processes in the partner countries of Eastern Europe, Central Asia, the Western Balkans and the Mediterranean, mainly, through projects implementation of interuniversity cooperation.

There are supported consortia, within the “TEMPUS” projects, consisting generally of higher educational institutions or their associations, and also unacademic partners.

For this work coordination at the level of higher education institution there were created the Centre of medical education and Committee on implementation of new educational technologies, the TEMPUS working group. The principles of quality management system are used for more effective result. Within the integrated system of management “Provision on tutoring” was created. All work is carried out according to the perfection model (EFQM) that is new, higher criterion of innovative activities assessment.

The PBL method is considered to be a successful innovative method of learning directed to student's individual work. In this method the accent of training process displaces from teacher on student inasmuch as students play more active role, trying to solve a practical task. This technique instructs the student to comprehend everything told by the teacher during lectures and written in textbooks more widely and more deeply.

Howard Barrows, taken part in the development of the PBL method at MacMaster University in Canada gives definition of PBL from the point of view of the specific attributes peculiar to this method [2]. Such characteristics of PBL as personal directivity, fixing learning process around the problem and orientation to work in small groups, where the teacher acts as mediator. Gijsselaers defines PBL on the basis of the theoretical training principles, such as step-by-step creation of knowledge, meta - learning and context learning [1]. Savin-Baden systematizes the PBL models as follows: PBL for knowledge achievement, PBL for professional activity, PBL for interdisciplinary understanding and comprehension, PBL for interbranch learning and PBL for critical competences acquisition [3,4].

The literature distinguishes three levels of the learning method based on a problem: theory, model and practice [7]. Simply speaking, a certain task (problem), often taken from real life, is offered to students and “a set of tools” for its solving.

For the greatest efficiency of this method it is necessary to organize educational process properly. The use of this method assumes that certain changes will be made in the plan of classes, lectures, seminars and also in the knowledge assessment methodology to optimize benefit of PBL.

At the present moment at JSC “Astana Medical University” groups have been created which are working on clinical cases adaptation on PBL, introduced the required changes in the existing educational program “General medicine”, selected groups of the first-year students who participate in the project, made a schedule of classes, opened a website with the materials reflecting the

“TEMPUS” project implementation and a Web portal for virtual patients creation [3]. Workgroup members in association with the tutors have analyzed educational programs of partner higher education institutions, defined general structures of the program, scrutinized the distinctions in educational programs design, and adjusted approaches of common accordance for PBL implementation in each new educational program. At the present time there has been conducted an analysis of the PBL existing cases of educational program of Saint George University (London) and accomplishing their integration into the educational program of JSC “Astana Medical University” for the 1, 2 and 3 years of education. The process of cases adaptation has been started according to the “Virtual Patient” program, provided by the western side. These cases require modifications and add-ins concerned with normative and legal acts of the Republic of Kazakhstan, peculiarities of diseases diagnosis and delivery of health care, the nomenclature of medicines, ethnic features. The technology of cases adaptation is based on bringing the listed peculiarities in accordance with the standards of our country.

After the PBL tutorium students completed anonymous feedback questionnaires with the Survey Monkey in which they reflect their attitude to studies by the method of PBL. Scores are calculated on a point system, where 5 - strongly agree, 4 - agree, 3 - hard to say, 2 - disagree, 1 - completely disagree. PBL technique has been tested in 12 small groups (87 students) of 1-3 courses of the “General medicine” faculty.

Analysis of the questionnaires showed that 96.9% students liked to conduct classes using the new method, 3.1% filled in the column "Hard to tell". According to all students (100%), PBL is a useful technique for more efficient assimilation of the subject. 67.9% liked the approach and style of work of tutors. 100% students liked to formulate independently questions for further study. 93.8% liked how our tutors are encouraged the discussion between the all members of the group, guided group.

Both students and tutors were pleasantly surprised with the extensive information volume about structure and functioning of an organism, diagnostic methods and treatment, patient's rights which can be derived while studying a simple clinical case. And that is especially important, to make training activity very fascinating. “It is very interesting for us. There is high motivation for individual study of the material. We feel like doctors and we clearly realize that the patient's life and health depend on the level of our knowledge and solutions”, - tell students during the reflection which is carried out by the tutors after each class. And it is the evidence of the PBL method efficiency, stimulates functioning of the Medical Education Centre, the Committee on implementation of new educational technologies, the “TEMPUS” working group and tutors for its improvement.

PBL develops the student skills such as team work, improving leadership skills, ability to listen and participate actively in the discussion, collaboration and cooperation, respect for the views of colleagues, the ability to analyze and critically evaluate literature, focused study and use of resources, mastery of presentation skills.

Thus, the implementation of PBL in educational process of JSC “Astana Medical University”, providing tutors and students with necessary conditions for the development of their creative potential, training in small groups and personal oriented environment contribute to the improvement of medical personnel training quality, competences perfection of undergraduates, increase of competitiveness of the Kazakhstan experts in the world market of medical services.

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