

PROBLEM BASED LEARNING IN BRITISH MEDICAL SCHOOLS: PROS AND CONS

Стаття представляє огляд різних поглядів на проблемне навчання (ПН) в системі медичної освіти Великої Британії на основі синтезу різних мета-аналізів. Продемонстровано ефективність ПН у порівнянні з традиційним навчанням з точки зору мотивації та підвищеного інтересу студентів до навчання; порівнянні недоліки та переваги ПН в медичній освіті.

Problem setting. The end of the XX and the beginning of the XXI centuries have become the period of dramatic changes in all spheres of social life in Ukraine. New tendencies in society transforming, transition from industrial stage development to the postindustrial one demand the elaborations of new determining factors of professional training of the specialists. In the dynamics of social development and market transformations, the vocational/professional education as an integral area of the continuous education in Ukraine takes on exclusively special significance. The process of integration to the Western World is followed by the development of the unified criteria and standards in the field of education and science. Nowadays, higher professional education (HPE) is one of the determining factors of intellectual and productive forces of society reproduction.

Though the population's health status in lots of Ukrainian areas according to WHO data leaves much to be desired, there is a need in well-trained professional, able to have clinical thinking, to solve problems and to provide people with a qualified aid.

In terms of setting national education in Ukraine, finding new ways and methods of professional education perfection, it's more profitable to analyze the current status of foreign educational systems. We, also, can't but take into account the experience of well-known medical systems and schools in training medical professionals, British ones in particular, as exactly this country, being absolutely classical in educational traditions, upholds a unique reputation; British qualifications are generally accepted in the whole world, and strict control of training courses, curricula and syllabi guarantee high standards.

Ukraine is also making real steps to the European society. Some important steps have already been taken: introduction lectures on evidence-based medicine and creditmodule system has been organized for the teaching staff, postgraduate and doctoral students, the conception of continuous medical education that in all parameters corresponds to all world standards, giving an opportunity to get qualification of different professional levels from Bachelor to Doctor of medicine has been introduced as well. But still a substantial amount of work is to be done: for example, whether to implement problem-based learning (PBL) or not? Why it is still a controversial topic?

Lots of domestic and foreign scientists argue nowadays about PBL in medicine versus traditional (classical) one. A more accurate title might be "student-centered, problem-based, inquiry-based, integrated, collaborative, reiterative, learning." Among ex-Soviet and Ukrainian researches we can't but mention such names as M. Makhmutov (М.І. Махмутов), who determines PBL as a type of development learning, T. Shamova (Т.І. Шамова) – as an original approach to learning, I. Lerner (І.Я. Лернер) – as a system of methods, T. Kudryavtsev (Т.В. Кудрявцев) – as a principle of learning, also M. Kasianenko (М.Д. Касьяненко), V. Okun (В. Окунь), A. Matyushkin (А.М. Матюшкін), M. Skatkin (М. М. Скаткін), Yu. Surmin (Ю.П. Сурмин) and many others. Among foreign scientists there are Christine Alavi (Problem-based learning in a health sciences curriculum), H. Barrows (Practice-based learning: Problem-based learning applied to medical education), L. Wilkerson and W.H. Gijsselaers (Bringing problem-based learning to higher education), Donald R. Woods (Problem-based learning: how to gain the most from PBL), Diana F. Wood (ABC of learning and teaching in medicine. Problem based

learning), also R. M. Tamblyn, L. Berkson, Robert L. Blake, Geoff Norman, H.G. Schmidt, David T. A. Vernon, Christopher E Clark and great number of others.

Andrew Walker and Heather Leary in their fundamental paper "A Problem Based Learning Meta Analysis: Differences Across Problem Types, Implementation Types, Disciplines, and Assessment Levels" [3] and Johannes Strobel and Angela van Barneveld in "When is PBL More Effective? A Meta-synthesis of Meta-analyses Comparing PBL to Conventional Classrooms" [9] have demonstrated different views of all-time researches on PBL. They have studied several meta-analyses, conducted over the past 15 years, which had specifically investigated and quantified the effectiveness of PBL compared to traditional instruction.

So, the **purpose of this article** is to give an overview of different approaches to PBL in medical education system in Great Britain on the basis of the synthesis of the different meta-analyses, and as a result, to try to compare and contrast different conceptualizations of learning, to identify common and generalizable findings with regard to the effectiveness of PBL.

Definitions of PBL vary, but a comprehensive example can be "an educational method characterised by the use of patient problems as a context for students to learn problem-solving skills and acquire knowledge about the basic and clinical sciences". [1, p. 59] Students usually meet in small groups two or three times a week for PBL tutorials. They are presented with a clinical problem (eg, a patient with abdominal pain), and, in a series of steps, they discuss possible mechanisms and causes, develop hypotheses and strategies to test the hypotheses, are presented with further information, and use this new information to refine their hypotheses, finally reaching a conclusion. In the course of this exercise, students identify both their existing levels and gaps in their knowledge. These gaps form the basis for independent learning outside the PBL tutorials. The identification and pursuit of these so-called "learning goals" is a key element of the PBL process. A tutor usually acts as a facilitator, guiding students in this group-learning process [10].

Diana F Wood, director of medical education and clinical dean at the University of Cambridge School of Clinical Medicine, who deeply studies advantages and disadvantages of PBL [4; 5], writes that in problem PBL students use "triggers" from the problem case or scenario to define their own learning objectives. Subsequently they do independent, self directed study before returning to the group to discuss and refine their acquired knowledge. Group learning facilitates not only the acquisition of knowledge but also several other desirable attributes, such as communication skills, teamwork, problem solving, independent responsibility for learning, sharing information, and respect for others. PBL can therefore be thought of as a small group teaching method that combines the acquisition of knowledge with the development of generic skills and attitudes. Presentation of clinical material as the stimulus for learning enables students to understand the relevance of underlying scientific knowledge and principles in clinical practice [4, p. 328; 5]

PBL in medical education began with the Faculty of Medicine at McMaster University in Canada in the mid 1960's. Soon after, three other medical schools – the University of Limburg at Maastricht in the Netherlands, the University of Newcastle in Australia, and the University of New Mexico in the United States – adapted the McMaster model of problem-based learning and developed their own spheres of influence. From these four institutions sprang one of the more important educational movements of this century. The educational significance is that, unlike other important innovations, such as "organ-based" curricula or "interdisciplinary" courses, the use of problem-based learning in medical schools incorporated goals for students that are much broader than the acquisition and application of content. Indeed, PBL is expected to influence the "whole" student, or, at least, many aspects of the students' learning experience. PBL has spread into schools of health sciences, nursing, dentistry, pharmacy, veterinary medicine, and public health. Furthermore, schools of architecture, business, law, engineering, forestry, police science, social work, education and many other professional fields have picked up the strategy [8].

PBL was first introduced into the medical curriculum in the UK in 1995. With the support of the General Medical Council, who states that 'modern educational theory and research must influence teaching and learning' [7] it has now been adopted in the majority of UK medical schools and is a core component of teaching in the four new English medical schools (Brighton and Sussex, Hull York, Peninsula and University of East Anglia [2]. At this point problem-based learning cannot be considered as an experimental method in medical education. It has probably been more thoroughly studied and evaluated than have the traditionally accepted educational methods used in medical school.

Traditional education practices from kindergarten through medical school in Great Britain produce students who are often bored with their education. They are faced with a vast amount of information to memorize much of which seems irrelevant to their future as it exists outside of school. They forget much of what they learned and what is remembered cannot be applied to the problems and tasks they later face. Very often they can probably reflect on courses in college in which they studied hard, got an "A", and later remembered almost nothing from it.

Many students are unable to reason effectively. Following graduation many are unable to assume responsibility for their own education. They also seem poorly equipped to work with others in collaborative team situations. In secondary education these bored, undermotivated students demonstrate disruptive behavior in class and truancy. With the more motivated students, conventional educational approaches lead them to view education in school as a right of passage, an imposed set of hurdles with little relevance to the real world.

These problems with traditional education have been revealed by studies in medical education. What students learn, despite intense efforts on the part of both students and teachers, is largely forgotten and natural problem solving skills may actually be impaired. It also seems apparent that physicians are not capable of continuing their own education after completion of formal training. To many faculty, medical students seem bored and dissatisfied with their experience in medical school and consider the basic science years as a difficult and irrelevant hurdle that has to be passed to become a doctor. There is too much emphasis on memorization of facts for their own sake, and students seem to readily forget what they were taught later in their clinical years [6].

The PBL approach in Great Britain is based on principles of adult education and cognitive psychology. It differs fundamentally from traditional curricula, in which students acquire "background" knowledge of the basic sciences in the early years of the course and in the later years apply this knowledge to the diagnosis and management of clinical problems. This traditional approach has been criticised for a number of reasons, as the following: 1) it creates an artificial division between the basic and clinical sciences; 2) time is wasted in acquiring knowledge that is subsequently forgotten or found to be irrelevant; 3) application of the acquired knowledge can be difficult; 4) the acquisition and retention of information that has no apparent relevance can be boring for students. Theoretically, PBL can avoid many of these problems. Various disciplines, particularly the basic and clinical sciences, are integrated throughout the curriculum. As students attempt to understand and solve clinical problems, they learn about normal bodily structure and function, and apply this knowledge to their search for a solution. Learning occurs in context and builds on what students already know. In theory, this process can aid retention, add interest and increase motivation to learn. Students (with initial help from tutors) determine both their own learning needs and the strategies they need for learning [10].

Most students enjoy the active participation which PBL encourages and consider the process to be relevant, stimulating and even fun, while teachers tend to enjoy the increased student contact [1, p. 70] Students and teachers report that the learning environment created by PBL is more convivial as traditional barriers between students and faculty are lowered.

There is convincing evidence that PBL fosters self-directed learning skills and this may help medical school graduates to be life-long learners [10].

If to speak about disadvantages, the criticism most often voiced is that PBL is costly, in demands of staff time and teaching materials and other physical resources. Both initial and on-going

costs should be considered -- considerable energy and resources are needed over several years to develop the curriculum and to train tutors and students in the PBL process. Most schools need to import expertise to help initiate, develop and sustain PBL. Other necessary resources for PBL include properly furnished and equipped tutorial rooms. For successful PBL, ready access to first-class library and computer facilities is a necessity rather than a luxury. Accordingly, PBL may not be economically viable for medical schools whose annual student intake exceeds 100 [1, p. 77].

Another possible disadvantage of PBL is its relative inefficiency -- some research suggests that PBL curricula cover about 80% of what might be accomplished in a conventional curriculum in the same period [1, p. 80]. PBL can also be stressful for both students and staff, at least until they become familiar with the process. Most students come to PBL from educational backgrounds where teachers direct learning. By contrast, PBL does not limit what students may choose to learn, and the process may provide little guidance on the best ways of achieving learning goals. Students may be concerned that their learning strategies are misdirected or inefficient. Some teachers find that PBL is unduly demanding of their time and some are uncomfortable in small-group situations and with their role as facilitators. Tutor training is needed to address these issues.

Really, introducing PBL into a course makes new demands on tutors, requiring them to function as facilitators for small group learning rather than acting as providers of information. Tutors should be given information about the institution's educational strategy and curriculum programme so that they can help students to understand the learning objectives of individual modules in the context of the curriculum as a whole. Methods of assessment and evaluation should be described, and time should be available to discuss anxieties. Staff may feel uncertain about facilitating a PBL tutorial for a subject in which they do not themselves specialise. Subject specialists may, however, be poor PBL facilitators as they are more likely to interrupt the process and revert to lecturing. Nonetheless, students value expertise, and the best tutors are subject specialists who understand the curriculum and have excellent facilitation skills. However, enthusiastic non-specialist tutors who are trained in facilitation, know the curriculum, and have adequate tutor notes, are good PBL tutors [4, p. 330; 5].

Conclusion. PBL is an effective way of delivering medical education in a coherent, integrated programme and offers several advantages over traditional teaching methods. It is based on principles of adult learning theory, including motivating the students, encouraging them to set their own learning goals, and giving them a role in decisions that affect their own learning.

Predictably, however, PBL does not offer a universal panacea for teaching and learning in medicine, and it has several well recognised disadvantages. Traditional knowledge based assessments of curriculum outcomes have shown little or no difference in students graduating from PBL or traditional curriculums. Importantly, though, students from PBL curriculums seem to have better knowledge retention. PBL also generates a more stimulating and challenging educational environment, and the beneficial effects from the generic attributes acquired through PBL should not be underestimated.

Literature:

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Статья представляет обзор различных взглядов на проблемное обучение (ПО) в системе медицинского образования Великобритании на основе синтеза различных мета-анализов. Продемонстрирована эффективность ПО по сравнению с традиционным обучением с точки зрения мотивации и повышенного интереса студентов к обучению; сравнены преимущества и недостатки ПО в медицинском образовании.

The article gives an overview of different approaches to PBL in medical education system in Great Britain on the basis of the synthesis of the different meta-analyses. The effectiveness of PBL over traditional learning in terms of students' motivation and increased interest has been demonstrated; the PBL advantages and disadvantages in medical education have been compared.

УДК 378.001.45

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ОБ ИСТОКАХ КРИЗИСА В ОТЕЧЕСТВЕННОЙ ВЫСШЕЙ ШКОЛЕ

(прочитывая публицистические произведения Л.Н. Толстого)

Автор аналізує причини глибокої кризи в системі освіти, спираючись на філософсько-педагогічну спадщину Л.М. Толстого.

Постановка проблеми. Нет для специалистов в области теории педагогики более важной темы, нежели истоки, последствия и способы преодоления глубокого кризиса в украинской высшей школе. Она не имеет авторитета в мире (ни один наш вуз никогда не попадал в число 500 лучших), и не может силами своих выпускников изменить ход событий в стране. Проблемам, порожденным кризисом, нами посвящен ряд статей [1-7], однако комплексный характер проблем актуализирует продолжение усилий в этом направлении.

Цель статьи – в результате анализа ситуации присущей времени, когда происходило формирование отечественной высшей школы, и уже были выполнены первые важные рефлексии ее тогдашнего состояния, показать подлинные, глубинные истоки остро ощущаемых сегодня кризисных явлений.

Основные результаты. К числу этих рефлексий относятся философские и мировоззренческие размышления Л.Н. Толстого, датированные 1855-1886 гг. [8-10]. Более того, внимательный читатель, знакомый с соответствующими официальными документами (имеем в виду текст Болонской декларации), обнаружит, что главные