

**ADVANCED FOREIGN EXPERIENCES IN APPLYING THE TASK-BASED  
LEARNING (TBL) SYSTEM IN MEDICAL EDUCATION**

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**Abstract.** This article analyzes the role of the Task-Based Learning (TBL) model in the modernization of medical education, its advantages over traditional teaching methods, and best practices from the USA, Great Britain, and European countries. The effectiveness of TBL in developing students' clinical thinking skills is highlighted.

**Key words:** Task-Based Learning (TBL), modernization of medical education, traditional teaching methods, clinical thinking skills.

**Аннотация.** В данной статье анализируется роль модели Task Based Learning (TBL) в модернизации медицинского образования, ее преимущества перед традиционными методами обучения, а также лучшие практики из США, Великобритании и европейских стран. Подчеркивается эффективность TBL в развитии навыков клинического мышления у студентов.

**Ключевые слова:** Task Based Learning (TBL), модернизация медицинского образования, традиционные методы обучения, навыки клинического мышления.

**Annotatsiya.** Ushbu maqolada tibbiy ta'limni modernizatsiya qilishda Task Based Learning (TBL) modelining roli, uning an'anaviy o'qitish usullaridan afzalliklari va Qo'shma Shtatlar, Buyuk Britaniya va Yevropaning eng yaxshi amaliyotlari tahlil qilinadi. Shuningdek maqolada TBLning talabalarning klinik fikrlash ko'nikmalarini rivojlantirishdagi samaradorligi haqida ham ta'kidlab o'tilgan.

**Tayanch iboralar:** Task Based Learning (TBL), tibbiy ta'limni modernizatsiya qilish, an'anaviy o'qitish usullari, klinik fikrlash ko'nikmalari.

Modern medical education is not just about memorizing theoretical knowledge, but also about preparing the student for real clinical situations. Task-Based Learning (TBL) is a system that places a specific clinical "task" (for example, diagnosing a patient or developing a treatment plan) at the center of the learning process. This system is a more advanced and practice-oriented form of Problem-Based Learning (PBL). [1] In the TBL model, the curriculum is structured not by subjects, but by tasks to be completed. For example, instead of the subject "Anatomy of the Heart", the task is given "Examination of a Patient with Chest Pain". In the process of completing this task, the student studies anatomy, physiology, pharmacology, and internal medicine in an integrated manner.

Medical education according to the TBL model has already been established in prestigious universities around the world. The University of Dundee Medical School in the UK is a world leader in implementing the TBL system. Harden's Task-Based Learning (TBL) model is an educational strategy developed by the famous Scottish professor Ronald Harden (the author of many innovations in medical education, including the OSCE). The TBL model, developed by Ronald Harden, presents 125 key clinical tasks. Students are faced with real clinical tasks from

the first year of study. For each task, special "study guides" (Task-based study guides) have been developed, which show the student which resources to use. The main philosophy of this model is that a medical student should learn a subject (for example, anatomy or pharmacology) not in isolation, but in the process of performing a specific professional task.[2,3,4]

As for the essence of the model, it is called "Task-centered" and while in the traditional system the student first studies anatomy, then physiology, then pathology, in the Harden model the clinical task is placed at the center of the education. For example: the task is "Helping a patient who has fainted". While studying this task, the student simultaneously studies:

- Neurophysiology (why does the brain faint?)
- Anatomy (location of blood vessels)
- Pharmacology (what drugs are used?)
- Ethics and communication (talking to the patient's relatives), etc.

Harden and his team at the University of Dundee have broken down all the skills that a medical graduate should know into 125 core tasks. These tasks are divided into 3 large groups:

1. Patient-related tasks: taking a history, performing a physical examination, making a diagnosis, and developing a treatment plan.
2. Health-related tasks: preventing disease, promoting a healthy lifestyle.
3. Professional tasks: working in a team, working on oneself (self-learning), and adhering to ethical norms.

In the Harden model, two types of integration are implemented:

- Horizontal integration: teaching fundamental sciences (biochemistry, histology) simultaneously.
- Vertical integration: linking theory with clinical practice from the first year (i.e. the student goes to the hospital from the first week).

In the Spiral Learning concept proposed by Harden, the student returns to the same task several times during the course of study and each time acquires a deeper level of knowledge.

- Course 1: The theoretical basis of the task is studied.
- Course 3: The task is practiced on simulators.
- Course 5: The task is performed on a real patient, under the supervision of a physician.

The success of the Harden model depends on specific study guides. These guides tell the student:

- What task do you need to learn today?
- What page of which book should you read for this task?
- What lab should you go to?
- What type of patient should you find and see in the hospital?

As for the advantages of the model, it arouses strong motivation in the student. That is, the student does not ask "why am I learning this boring formula?", Because he sees the place of the formula in the clinical task. In addition, the student also acquires clinical competence. When the graduate enters the workforce, he becomes not a theorist, but a specialist who can perform real work. The fact that the model is carried out with independent learning forms the student's skills in searching for information and solving problems independently. Along with the advantages of the Harden model, there are also difficulties in its implementation. First, the model requires strong training from teachers. That is, professors must study other subjects in addition to their own, be prepared, and be ready to integrate 2-3 different subjects. In addition, a large number of clinical bases and simulation centers are required. Scheduling a course by tasks, not by subjects, is a very complex organizational process.[3,4]

In conclusion, Harden's TBL model is a revolutionary model that reoriented medical education from the question of "what to study" to the question of "what to be able to do as a doctor."

Another advanced foreign experience is the Harvard Medical School (HMS) New Pathways program. This program is considered one of the most revolutionary reforms in the history of medical education. Introduced in 1985, this program completely transformed traditional medical education (based solely on lectures) and gave impetus to the modernization of medical curricula around the world. By the 1980 s, Harvard scientists realized that the traditional method of education (where students sit in a classroom for two years and listen to lectures) was ineffective. Students memorized a lot of information, but had difficulty applying it in practice. New Pathways was created to solve this problem. One of the main pillars of the program is Problem-Based Learning (PBL).[5] This is the "heart" of the program. The number of lectures has been drastically reduced and replaced by tutorials in small groups (6-8 students and one teacher-facilitator). In this process, students are given a real clinical situation (case). They analyze this situation, determine what knowledge is lacking to make a diagnosis, independently study the literature and discuss the results in the next lesson. The aim was to create early clinical exposure in students. While in the traditional system, students only start seeing patients in the 3rd year, in "New Pathways" students go to the hospital and start interacting with patients in the first week. This forms their "medical identity" early.

In integrated courses, subjects (anatomy, biochemistry, pharmacology) are taught not separately, but in an integrated manner according to organ systems. For example, when studying the cardiovascular system, its anatomy, physiology, and diseases are taught simultaneously. According to the program's Humanism and Ethics (The Patient-Doctor Course), great emphasis is placed on the doctor-patient relationship, ethics, and the socio-psychological state of the patient. The doctor is educated not as a mere "fixer of a biological machine," but as a "healer of a person."

In "New Pathways", the teacher acts as a facilitator, not a provider of information. The student, on the other hand, turns from a passive receiver of information into an active researcher. This method forms the skills of "Life-long learning" in students. If we talk about the results and impact of the program, studies have shown that students of this program performed 25-30% better in solving complex clinical problems than traditional students. This model was later adopted as a basis in many countries around the world (for example, the Dundee model in the UK or the McMaster model in Canada). Today, from "New Pathways" to "Pathways" In 2015, Harvard further improved this program and began to call it simply "Pathways". Students watch video lectures and materials at home, and only solve practical problems in the classroom. Students complete their main clinical rotations (internships) in their 2nd year, rather than their 3rd year, which gives them more time to engage in scientific research in their 3rd and 4th years.[6]

Conclusion: Harvard's "New Pathways" program is a historical turning point that shifted medical education from "memorizing facts" to "solving problems and caring for patients."

The TeamLEAD (Learn, Engage, Apply, Develop) strategy in Singapore is the most modern and high-tech form of TBL (Team-Based Learning) methodology. It was developed and implemented primarily by the Duke-NUS Medical School (a collaboration between Duke University in the USA and the National University of Singapore). This strategy ensures that students in medical education transform from passive listeners to active clinical analysts.

The acronym TeamLEAD stands for:

- L (Learn): Independent learning before class.
- E (Engage): Team-based testing and communication.
- A (Apply): Applying acquired knowledge to complex clinical situations.
- D (Develop): Developing critical thinking and professional skills.

TeamLEAD training usually consists of three main phases:

**A. Pre-training preparation (Preparation)**

Students independently familiarize themselves with the training materials (video lectures, scientific articles, electronic textbooks) before coming to the lesson. At this stage, all fundamental theoretical knowledge must be mastered.

**B. Readiness Assurance Process (RAP)**

At the beginning of the lesson, students take two types of tests:

1. iRAT (Individual Readiness Assurance Test): The student answers 10-20 test questions individually via a tablet. This determines whether the student is ready for the lesson. In the Singapore experience: special tablet programs are used during the tRAT process. If a team chooses an incorrect answer, the system immediately notifies them and the team continues to try until they find the correct answer (but the score decreases). The clinical application is the most important part of the lesson. Teams are given a complex clinical case (for example, a patient with confusing symptoms).

- All teams work on the same problem.
- Each team must choose a specific solution.
- Teams present their answers simultaneously (on screens or through cards).
- Then a discussion begins between the teams. The teacher (facilitator) guides the process and finally clarifies the conclusions.

**Unique Features of TeamLEAD**

1. Technology Integration: The Duke-NUS classrooms are specially equipped. Each table has microphones, computers, and large screens to display the team discussion to other teams.

2. Facilitation: The teacher does not lecture. He or she only provides guidance when students are in conflict or when a difficult question arises.

3. Peer Evaluation: Students anonymously evaluate their teammates' contributions to the team work at the end of each semester through a special system. This forces students to be accountable.

**Why is this strategy successful?**

- High responsibility: If a student comes to class unprepared, he will not only lower his own score, but also that of his team.
- Clinical thinking: The student will not memorize facts, but will learn to analyze them "live" with the team.
- Communication skills: Future doctors will learn to consult with others, argue their opinions, and make collective decisions (teamwork in medicine reduces errors).

Conclusion: Singapore's TeamLEAD strategy is a perfect example of the transition from "Teaching" to "Applying Knowledge" in medical education. This system ensures that graduates become not only knowledgeable, but also doctors who can make the right decisions with a team in any difficult situation.[7,8]

Considering the approaches used in all world experience, it can be concluded that the integration of the TBL system into medicine shows many positive results. Task-Based Learning is not just a teaching method, but a philosophy that teaches future doctors to think independently and critically. Students in Clinical Reasoning are much more advanced than traditional students in analyzing symptoms and making differential diagnoses. The information learned through the task is stored in memory longer, because it is associated with emotional and practical experience. In addition, teamwork, communication and ethics skills also naturally develop. The following stages are important in implementing foreign experience for the development of medical education in Uzbekistan:

- Vertical and horizontal integration of the curriculum (for example, linking clinical sciences with fundamental sciences).

- Wide use of the capabilities of simulation centers.
- Shifting teachers from the role of "lecturer" to that of "facilitator".

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