

## LESSONS USING TEAM-BASED LEARNING FOR 6TH-YEAR MEDICAL STUDENTS

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**Анотація:** В освіті надзвичайно важливо розвивати та зміцнювати навички вирішення проблем, критичного мислення та міжособистісного спілкування. Метою дослідження було описати проведення заняття з використанням методики командно-орієнтованого навчання у студентів-медиків 6 курсу. Слід зазначити, для ефективної роботи студент має підготувати тему напередодні. Активність учасників під час дискусій оцінюється викладачем, а також колегами по команді. Також обов'язковим є рівномірність розподілу на команди. Заздалегідь мають бути підготовлені тести та розширений клінічний кейс. Тривалість активності 160 хвилин. Висновки. Використання командно-орієнтоване навчання дозволяє додатково мотивувати студента до підготовки до заняття. Командна робота сприяє кращому розумінню матеріалу через навчання «рівний-рівному». Система взаємооцінювання та фідбеку покращує об'єктивність оцінювання та відповідальність здобувачів вищої освіти.

**Ключові слова:** командно-орієнтоване навчання, медична освіта, студенти-медики.

**Abstract.** In education, developing and enhancing problem-solving, critical thinking, and interpersonal communication skills is crucial. This study aimed to describe the implementation of a team-based teaching method for 6th-year medical students. It should be noted that for effective work, the participants should prepare the topic in advance. The students' activity during the discussions is evaluated by the teacher, as well as by teammates. Equal distribution to teams is also mandatory. Tests and an extended clinical case should be prepared in advance. The duration of the activity is 160 minutes. Conclusions. Using team-based learning allows to motivate the student to prepare for the lesson. Teamwork promotes a better understanding of the material through peer-to-peer learning. The mutual evaluation and feedback system improves the objectivity of evaluation and the responsibility of higher education seekers.

**Key words:** team-based learning, medical education, medical students.

### Introduction.

In medical education, developing and enhancing skills such as real-world problem-solving, critical thinking, and effective communication with colleagues and patients is essential. Therefore, to train a competent specialist, it is crucial to establish an educational environment that integrates theoretical training with real-life situations [1].

One potential solution to this problem is the implementation of team-based learning. This approach involves active learning in small groups, enabling learners to apply their acquired knowledge through a series of activities that include individual work, teamwork, and immediate feedback [2]. This method involves bringing together several small groups (5-7 people) during one class, typically overseen by one teacher. According to the Guidelines for Reporting Team-Based Learning Activities in Medical and Health Sciences Education Literature, this activity consists of three stages: 1) thorough preliminary preparation; 2) assessment of the readiness of higher education students by the teacher; 3) application of knowledge through group activity to solve real-world clinical situations [3].

This learning method in medicine has been shown to improve theoretical knowledge, critical thinking, and the acquisition of clinical and communication skills [1, 4, 5]. One potential advantage of this method is that leveraging peer-to-peer learning serves as a crucial platform in the professional socialization of medical students, aiding in their effective management of medical knowledge [6]. In addition, according to Garb M. and colleagues, students preferred and got more pleasure from this type of learning [7]. Therefore, incorporating team-oriented training to supplement traditional clinical classes is a promising approach.

### The aim of the study.

Describe the class conduction using team-based methods for 6th-year medical students during classes at the clinical department.

### Object and research methods.

To plan the lesson, we were guided by the basic principles described in the Guidelines for Reporting Team-Based Learning Activities in the Medical and Health Sciences Education Literature [3]. When allocating time among different parts of the class activity the publication led by A. Burgess was considered [2]. To ensure that students could prepare the topic beforehand, materials and links for preparation were posted on the department's page on the Dnipro State Medical University website and Moodle. At the beginning of the lesson, the teacher divided the students into teams of 5-6 people, ensuring an equal distribution based on knowledge level, gender, and experience. The participants were informed that their engagement during discussions would be assessed by both the teacher and their teammates. For this, a checklist was created for objectification. The following materials were prepared in advance: 1) tests (15 items) with 6 answer options (with the possibility of multiple correct options) covering all aspects of the topic including pathogenesis, clinical picture, diagnosis, additional methods of examination, and treatment, which were placed in Google Forms (the correct answers were hidden from students); 2) extended clinical case with additional illustrative material (if necessary, external signs of the disease, ECG, X-ray, etc.). The total duration of the planned activity is 160 minutes, where individual testing takes 15 minutes, team testing – 20 minutes, teacher feedback – 25 minutes, solving a clinical task – 85 minutes, and summary – 15 minutes.

### Research results and their discussion.

At the beginning of the class, each student underwent an individual test, whose results influenced the final grade, encouraging everyone to prepare for the lesson. However, the results at this stage were not disclosed to the test takers. Next, each team underwent testing with the same (as for individual checking) set of questions. During this phase, all team members engaged in discussions to select the correct answers, and one student inputted the chosen options into Google Forms. Then, the teacher provided feedback, taking into account the students' answers, as well as answered questions if they arose.

After that, the students tackled an extended clinical case that was the same for both teams. During the work, the participants discussed the information provided, debated, and collectively decided on the most suitable course of action for the given scenario. Entering the results into the protocol and having all team members sign it was obligatory. Given that the activity aimed not only at evaluation but also at enhancing comprehension of the topic, the clinical case questions encompassed

pathogenesis, classifications (with a focus on medications), etc. Questions requiring schematic representations of the pathogenesis of specific symptoms and signs were mandatory.

Subsequently, the teams swapped protocols and conducted evaluations. During the work summary, each team assessed the contribution of every member. To discourage intentional bias, the final score of the individual providing such an assessment was adjusted downwards. Finally, the teacher addressed any remaining questions and disclosed the grades for the activity.

### Conclusions.

Team-based learning is a promising method of acquiring competencies for students of higher medical education. Its utilisation provides an extra incentive for students to thoroughly prepare for the lesson beforehand. Collaborative teamwork fosters a deeper comprehension of the material through peer-to-peer learning and enhances the development of communication skills. The reciprocal evaluation and feedback improve the assessment objectivity and the accountability of higher education students.

## References

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