

APPLYING STUDENT-CENTERED EDUCATIONAL METHODS AT TASHKENT PEDIATRIC MEDICAL INSTITUTE

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Abstract. *Improving the quality of education depends on both the teacher and the students, and both sides are equally important. Increasing the student's active participation in the learning process is one of the most important tasks, for which it is necessary to create all conditions. From this point of view, the main goal is to improve students' self-learning skills using modern teaching methods such as FL, TBL, and PBL, deviating from the traditional method in medical education. Self-learning study will be related to each practical training. And, the content of individual learning will be part of practical training topics. As a result of the using student-centered method, the students' self-learning skills are formed by effectively using the hours of independent study, and their active participation increases during the lesson.*

Purpose of the research

The main goal is to design an instructional model for self-directed learning based on flipped team-based learning methods.

We need to define step-by-step project goals to achieve this goal. Firstly, we should explain the dialectic educational method, its components, and its importance to students and all project members. Secondly, we need to define the goal of independent education and apply ways to fully and effectively use its hours. For using FL we should develop pre-class video lectures and assessment questions for individuals and teams. The next step is developing team problems in class to solve and grading rubrics for presentation. We should download instructions to students on how to use FL materials, a curriculum of the subject, links to video lectures which are downloaded to the YouTube channel, textbooks, PowerPoint files of lectures, and tests of FL to our platform. Each teacher has their login to enter the platform, and at the same time, students also have their login. Teachers should download all material of FC to the platform. Students should use these materials in pre-class activities. We can control solving tests by students, but we cannot control watching video lectures by students. It is not like this

function of our platform. Lastly, we need to find deficiencies and mistakes during the use of the FL method and eliminate all of them.

Introduction

Lectures, practical training, and laboratory hours are mainly conducted using the traditional method. In the course of the lecture, the teacher is active the students are passive, and knowledge is transferred from one person to another. Modern methods such as TBL and PBL are used in practical training and laboratory work, but not in full form. In the process of practical training, students are mainly assessed individually. Single-answer, multiple-answer, sequence finding, and matching tests are used in this process. However, each student is given a separate test and they do not solve the same tests as a team. The use of TBL also has its disadvantages. 4-6 cases were developed for each topic. During the lesson, students are divided into groups, cases are also distributed equally among these groups. Each group works on a case study separately. The downside of this is that students do not receive feedback from other group members on the solutions to case problems. As a result, critical thinking and teamwork skills among health professionals are not fully formed in medical students. Now, we count other mistakes we are making while using FL in the practical training of medical biochemistry. Students are not divided into groups based on their main characteristics. Each team does not have a maximal diversity in the knowledge and experience of the members. During the TBL does not use an immediate feedback assessment technique (IF-AT). There are no group evaluations in practical training. Students do not actively engage with one another and material in solving problems using TBL. Reflection in action will occur but reflection on action will not in using TBL.

At the time, there was a huge problem with independent hours. Although the independent education of students in the Tashkent Pediatric Medical Institute curriculum makes up 50 % of the total education, this indicator does not justify itself.

Why don't Tashkent Pediatric Medical Institute students take advantage of independent hours? First, the level of students' knowledge is evaluated in practical training, and its importance is very low. Because the level of appropriation of the given credits depends only on the final exam result. For this reason, during the practical training, students do not pay attention to the lesson and do not answer or cannot answer the questions asked by the teacher. Second, independent education level assessments are not included in the overall assessment. Thus, students do not fully use independent hours. Generally, the independent education of students is not properly established, the necessary conditions are not created completely.

Therefore, the curriculum of Tashkent Pediatric Medical Institute should be reviewed, modern changes should be made. We should create a new model for integrating practical training hours and independent hours to provide structure for students to effectively utilize hours of practical training and independent

study. These activities help students to develop self-management competence in the field of medical education.

Materials and methods

Utilizing student-centered instructional methods is required in teaching medical subjects at Tashkent Pediatric Medical Institute including flipped learning (FL), team-based learning (TBL), and problem-based learning (PBL). Based on student-centered instructional methods this project can provide students with more efficient, effective, and sustainable learning environments where students can learn key concepts via a short video lecture at home, and assess their understanding through a self-assessment test. In addition, they can discuss difficulties found in a team and prepare in-class activities such as case discussion and problem-solving based on team collaboration. Thus, it is critical to establish modern teaching methods effective for medical students to utilize independent study hours and practical training based on student-centered instructional methods.

Currently, the syllabus of our subjects includes the objectives of the module, lecture, practical training, and laboratory work. In addition, the syllabus includes professional competencies, educational technology and methods, and requirements for obtaining credit. First of all, it is necessary to identify the mistakes and shortcomings of the existing syllabus to implement this project. After that, it is necessary to fill the syllabus with the content corresponding to the requirements of the Unit system. Assessment methods should be included in the syllabus. In many subjects, students are assessed mainly orally, partly through tests and cases. Cases should be used more to improve students' critical thinking skills. Students should be given the same tests before and after the lecture. This increases students' attention to the lecture. In addition, students should be fully informed about the updated syllabus, FL, TBL, PBL, and assessment methods. In particular, the Unit system and its purpose, tasks, and execution procedures should be fully taught.

One of the main tasks of the project is to evaluate students' use of FL and its effectiveness. Because efficiency determines the plans of the project. We need to implement the project inspection process every two months to evaluate the efficiency, interim evaluation at the end of each semester, and outcome evaluation twice a year. For doing milestone evaluation we should create tests and cases related to one chapter. These tests and cases should be created based on pre-class information. For mid-term evaluation, an exam should be conducted after each semester, using tests and cases used in each unit. We can call that tests and cases in each unit are pre-class exams, and mid-term assessments are post-class exams. Students should not know that identical tests and cases are used in each unit and midterm exam. In an experiment by Xiao et al., the same method was used for interim evaluation and it was successful [3]. The same method can be used for module/outcome evaluation. In addition, the overall results of the module can be evaluated by comparing them with the results of the previously used traditional

method or with the results of medical institutes that use other traditional methods [1, 2].

For the implementation of the module, we use the online platform of Tashkent Pediatric Medical Institute which is called *mt.tashpmi.uz*. Through this platform, students who need to learn this subject are allowed to access and use the module.

Evaluation of the effectiveness of the Unit system is carried out through the level of students' mastery and conclusions obtained from students on FC. In addition, we should take feedback from students. We do not want to apply FC on one or two groups to compare with groups that are using FC. The final exam results of these groups are evaluated and compared to each other. The results of the feedback and comparison will show us the effectiveness of the Unit system.

We have more modern methods in medical education. Team-based learning, case-based learning, evidence-based medicine, problem-based learning, simulation-based learning, peer-assisted learning, observational learning, e-learning, and flipped classrooms are used in several high medical institutions [4]. In this project, we will use more efficient and useful methods like flipped classrooms, TBL, and PBL. Using these methods helps us to improve our utilization of independent hours. These methods are convenient for our online platform.

For creating FL, we should record video lectures for difficult parts of the topic or part which is not included practical training plan. These video lectures will be in Uzbek, Russian, and English language. After that, we should create tests for I-RAT and G-RAT in three languages which are related to the content of video lectures. For the PBL method, we will need cases according to the topic which help us to increase making differential diagnoses.

When using FC, we must fully comply with the requirements given in the literature [5, 6]. In the project which is given in the literature, 80% foundational material of the topic and 20% complex concepts are included in pre-class activity. In class activity, the instructor assesses foundational learning with clicker questions and pair&share. Then, the instructor gives a micro-lecture that includes a complex concept of content. After that, students present a summary and interpretation of the assigned readings and answer other students' questions about material related to that class's topic. At the end of each class, the instructor administered a multiple-choice quiz on paper which covered only the class's material and cases. Students can work in pairs and openly discuss the questions and cases [5, 6].

The main purpose of the using flipped classroom method it helps us shift from knowledge to competencies. When using FC students can construct personal knowledge, engage in cognitive and physical activities of learning, set and meet personal goals, and monitor progress in their knowledge [7]. We should use the TBL method and it requires students to actively engage with one another during the lesson. TBL method plays the main role in the development of critical thinking

and teamwork skills of students⁶. Why are we using the PBL method? In PBL, a situational problem given to the student forces him to acquire the necessary knowledge to solve the problem [8]. Using PBL helps us to improve how to approach clinical problems, communicate with patients, identify complaints to make a diagnosis, and find useful treatment methods [9].

Study results. The result of this method will be increasing the effectiveness of independent education by implementing a student-directed self-learning program for medical subjects. In addition, this module can help students retain information and improve cognitive skills. On the other hand, students use their independent hours to encourage knowledge and competencies.

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