Contribution ID: **988**   Type: **Verbal**

Radiochemical education of university students using a flipped classroom

Wednesday, 18 May 2022 11:42 (18 minutes)

At present, frontal-type teaching is still very widespread. Although it has many advantages, it also has major disadvantages. It is one of the least effective ways of teaching, where information is received only passively by students. In most cases, the quantity of information is preferred over quality. Another problem is the lack of space for internal differentiation, where for some students the subject matter may be too easy and for others too difficult. With this method of teaching, students' attention decreases with increasing time, which leads to their passivity.

Flipped classroom-type teaching makes it possible to suppress or completely eliminate these shortcomings. Students get acquainted with the subject matter in an interactive form, the emphasis is on information retrieval and critical thinking, which is much more important today than simple memorization. A group discussion on a given subject/problem speeds up its understanding, as students more easily receive information from their schoolmates. Within the group, each student can also participate in activities according to his abilities and his own speed.

The project was attended by 23 students of a radiochemistry course at the University of Chemistry and Technology, Prague, in 2022. Before each lesson, the students had the task of getting to know the topic. Tutorial videos were made for this purpose. At the beginning of the course, there was a brief summary of the subject matter covered by the teacher. The students then completed a 10-minute multichoice test containing questions from the subject matter, for which they could use any literature, including resources found online. Then they formed 3-4 member groups and completed an identical test again. Group activities followed, in which the students practiced the subject matter. At the end of the course, the students evaluated this type of teaching in a survey.

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Session Classification: Education

Track Classification: Education