CASE STUDY OF DISCUSSION METHODS' APPLICATION FOR ENVIRONMENTAL SCIENCE STUDENTS

DISKUSIJU METODES IZMANTOŠANAS PIEMĒRS VIDES ZINĀTNES STUDENTIEM

Elīna Dāce, assistant in scientific work, M.Sc.
Alise Bērziņa, assistant in scientific work, B.Sc.
Dagnija Blumberga, professor, Dr.hab.sc.ing.
Riga Technical University, Institute of Energy Systems and Environment
Address: Kronvalda boulevard 1, LV- 1010, Riga, Latvia
Phone: +371 67089923, Fax: +371 67089908
E-mail: alise.berzina@rtu.lv, elina.dace@rtu.lv, dagnija.blumberga@rtu.lv

Keywords: discussion, study process, teaching method

The discussion method of teaching has been employed for many years and with considerable success in the humanities, business, educational, legal, medical and other fields. Discussion method is effective in getting the students to think constructively while interacting with the rest of the group. Furthermore, it is proven, that students are more motivated, and internalize material more effectively when they participate actively as learners in the classroom. Despite all the merits of discussion method as a teaching tool, it still hasn't been employed widely enough.

Teaching staff of Institute of Energy Systems and Environment (Riga Technical University) uses different interactive teaching methods to facilitate students' acquisition of study materials, like case studies, role plays, games, field trips and discussions. The case study discussed in this paper is on discussion arranged for second-year master students of environmental science on subject "Latvia has wood. Why don't we use it sufficiently?".

Before the discussion started, there were three professors invited to introduce students to the problem. Then the problem was divided into five following aspects (topics) considering wood usage:

- Aspects of environment and climate,
- Socioeconomical and financial aspects,
- Aspects of information and PR,
- Aspects of technical engineering, and
- Legislative aspects.

Each topic had a discussion leader (PhD students).

Afterwards the students were divided into five groups by 5 to 6 persons in each.

Here's how it worked: discussion leaders were sitting in one place all the time, meanwhile the groups were moving from leader to leader spending 15 minutes for each topic (see Figure below). While groups were generating ideas, leaders summarized them by writing on a poster. That way each group, approaching the next leader, could see, what has been done before by previous groups, thus the ideas stated before could be expanded and new ones generated without repeating. Another task of the group leader was to hold the students on the right direction – away from irrelevant

ideas and toward the desired goals without dominating the discussion, but by asking the right questions.

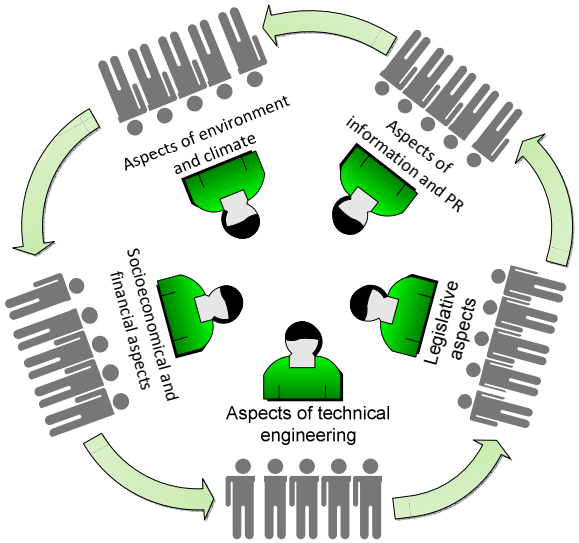

Figure: The discussion schema

When all five groups had discussed all the aspects of wood usage in Latvia, group leaders gave 5 minutes long oral presentation on the main mutual results.
The main conclusions after the discussion on such a methods application for environmental science students are:

1. The discussion method as a teaching tool was interesting both for organizers and for participants (students and group leaders), because it gave an insight into what the students are really thinking – what are their knowledge and how do they approach the problems;
2. To compare with lectures where it's basically one persons' monologue, the discussion method offers taking part into learning process for all the participants, besides they stay focused all the time, thus it is a viable method of teaching the material to students;
3. A successful discussion takes time to prepare; besides the discussion leader has to have certain skills to guide it to the goal;
4. Discussion method is appropriate teaching tool for environmental science students and can be applied for different purposes of learning process (to solve the problem, to internalize the new material etc.).

Dāce E., Bērziņa A., Blumberga D., Case study of discussion methods' application for environmental science students.
Discussion method is effective in getting the students to think constructively while interacting with the rest of the group. Furthermore, it is proven, that students are more motivated, and internalize material more effectively when they participate actively as learners in the classroom. Teaching staff of Institute of Energy Systems and Environment uses different interactive teaching methods to facilitate students' acquisition of study materials. One of the methods used is discussion, which was organized on topic "Latvia has wood. Why don't we use it sufficiently?".
The main conclusion after the discussion was, that the method is viable also for environmental science students, because it gives an insight into what students are thinking and it lets all the students to participate into the process, thus making the material acquisition more easily.

Dāce E., Bērziņa A., Blumberga D., Diskusiju metodes izmantošanas piemērs vides zinātnes studentiem.

Diskusija ir efektīva mācību metode, kas studentiem, savā starpā sadarbojoties, liek domāt konstruktīvi. Bez tam ir pierādījies, ka, studentiem aktīvi piedaloties lekcijā, tie ir daudz motivētāki un apgūst mācību vielu efektīvāk. Vides aizsardzības un siltuma sistēmu institūta mācībspēki savā darbā izmanto dažādas mācību metodes, kas studentiem palīdz mācību materiāla apguvē. Viena no tām ir diskusijas metode, kas tika organizēta par tēmu „Latvijā ir koksne. Kāpēc mēs to izmantojam nepietiekami?".

Galvenais secinājums pēc diskusijas bija, ka šāda mācību metode ir noderīga arīdzan vides zinātnes studentu apmācībā, jo tā sniedz ieskatu studentu domāšanas veidā, kā arī ļauj pašiem studentiem piedalīties procesā, tādējādi atvieglojot mācību materiāla apguvi.