STUDENTS AS TEACHERS: DESIGN OF A STUDENT-LED COURSE ON SUSTAINABILITY EDUCATION

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Students' role as active learners can be enhanced by giving the students more responsibility for their own learning. Could the students be suggesting the content and methods used in a class? Could the students be designing them? Or even, design the whole course and run it? These questions lead to a pilot course on student-led teacher education course on sustainable development in the chemistry teacher education unit, the University of Helsinki. This pilot course design, "Sustainable development in Education", is presented in this chapter in the light of the initial ActSHEN-principles. The following chapter, 'A student point of view', is written from the perspective of the students, who planned and ran the pilot course.

BACKGROUND

In the University of Helsinki, the chemistry teacher education unit has a strategy for sustainable development because future chemistry teachers are in key position to educate youth about sustainable chemistry. Sustainability issues are incorporated in many of the unit's courses. However, a course which would concentrate more thoroughly on the sustainability and teaching for sustainability did not exist. Therefore, during one ActSHEN-meeting, an idea was brought up amongst a group of Finns to pilot a whole new course on sustainability education in the chemistry teacher education unit. A course of a similar kind was held in Stockholm 2007 (Almlöv & Moberg, 2008). They considered the bottom-up perspective and gaining ownership, important. In the pilot course in Helsinki there was a key intention to give the students more ownership of their own learning, which was one of the goals of ActSHEN. A decision was made in our unit to launch a student-led course "Sustainable development in Education", and invite the students to apply to design and run this course. The students who were chosen to plan and run the course are called the *leader-students*. The students who participated in the course planned by the leader-students are called the *participating students*.

The unit of chemistry teacher education has provided courses that give the teacher students responsibility in what and how they learn. The chemistry teacher as a researcher and lifelong learner is one of the goals in a research and inquiry-based teacher education programme (Aksela, 2010). A number of our courses are based on a collaborative peer teaching model developed utilising educational design research methodology (Vesterinen & Aksela, 2013). On courses based on the collaborative peer teaching model instructors have a consulting and facilitating role. The pre-

service teacher participants have responsibility as well as freedom in planning and carrying out the instruction on the course. During the courses pre-service teacher students solve complex and realistic educational problems, working cooperatively to solve those problems, examine the problems from multiple perspectives (including students', teachers', and scientists' points of view), take ownership of learning rather than being a passive recipient of instruction, and become aware of their role in the knowledge construction through constant reflection. Based on the experiences from the courses, the use of collaborative peer teaching supports the development of pre-service teachers' conceptions of their role as facilitators of learning and the use of open and dialogic discourse in teaching.

INTERVENTION AND THE ACTSHEN-PRINCIPLES USED

One of the ActSHEN-principles was to approach sustainability education by transdisciplinary approaches. Therefore we wanted the leader-students as well as participating students to come from different faculties. Co-operation between teachers of different disciplines is also important for the future teachers, which was another reason to open the course for different faculties. One of the points in the initial ActSHEN-principle of transdisciplinary approaches was "working with multiple dimensions and perspectives". To carry out a course planning amongst students of different backgrounds, we assumed the students could then benefit from the different aspect each discipline has for sustainability education. To take the different aspects of sustainable development into account, it is necessary to combine knowledge of varied sciences. The course itself was also designed for students of different backgrounds, especially those who were interested in teaching.

In launching the course, we also promoted the ActSHEN-principles on action competence, creativity, working with professionalism and multiple learning arrangements. By organizing the course we wanted the leader-students to learn from these, for example to take action by teaching other students, but also the participating students were influenced by them. However by letting the students plan and run the course, we could not, and did not want to, decide beforehand what the participating students would actually learn in the course and how. This is important, because we wanted to acknowledge that the students are the best experts in knowing what and how they want to learn and be taught. By doing so, we also wanted to indicate to the students that it is important for sustainability in teaching and learning to open up the concept of the teacher and the student. We did not however tell the students that they would have to design a student-centered course. Our aim was to give the students the possibility to inquire what is sustainable development in education by planning the course by themselves. The creativity and working with professionalism as future teachers were combined in this. We gave the possibility for multiple learning arrangements by not making decisions for the students.

Based on the initiative of the students, the principle "continuous development" was also included, because after and during the pilot course, both the planning and participating students wanted the course to continue and develop further. Therefore

the planning students and the ActSHEN-member of the university started to refine the course idea. The group decided that the next course would be longer or could be divided for a longer timeframe, the whole 4th period. The refined course was then advertised to the students, especially those who had taken part in the pilot course, but also other students in the university. The group interviewed groups of students and chose a four-member team for the second year, one of whom was a student from the previous course. The members of the pilot course planning team took action by suggesting themselves as mentors for the next group of the planning students (= *mentor-students*). The students also challenged the chemistry teacher unit to make a societal commitment to sustainable development, which is a national commitment for any actor, company, group of people, a school etc. to work for a self-decided sustainability goal. The unit's commitment was to facilitate the course for the next five years, if the course planners would mentor the next year's course.

WHAT WE LEARNED FROM THE PILOT COURSE?

The course was a learning experience for the action-members in the unit as well as the students involved in the process. The pilot course also presented challenges, some of which we had not anticipated. Both the successes and the challenges are discussed in the following paragraphs.

The varied group of both leader-students and participating students was good. One of the participating students wrote after the course:

> Transdisciplinary was a really good thing that the students were chosen from different disciplines. Richness in perspectives.

This was also a challenge, because it was not easy to make decisions or even have the conversations on how to design the course. Overall the team building in the beginning was considered important, and it was suggested that this would be taken more into consideration on the next course. The students were given free hands to design the course, and the final course was, according to the feedback of the participating students, a success. Students appreciated the possibility, but also thought it would be a good idea to have more support, for example by mentors. Therefore they suggested that they could mentor the next course.

During course planning, the leader-students went to visit CEMUS on a critical friend visit. Students reflected after the visit that the visit was useful, and suggested a visit of a similar kind on the next courses. Students said that:

> Maybe it clarified our own plans in there, when you had to present it, what we are going to do. So that in that phase we had to think also why we are doing like this.

The students also raised that the visit was important for them as a group, and that it provided an opportunity to get concrete ideas for the course.

Challenges in the course were linked to the transdisciplinary, the non-predefined goals of the course design and the students' personalities. The different backgrounds and expectations of the students resulted in difficulties in the planning process. The

students had different goals in mind, and it took time to draw conclusions on what the goal really was. The openness of the task, to plan the course from scratch, was a process that required many conversations on the issues related to both sustainability and education. Students needed to address these issues in considerable depth before they could start planning the course. It therefore requires time and patience to create something new with people from different backgrounds. Especially when planning something that people are really passionate about, in this case, education for sustainability.

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