

ISSUES IN DEVELOPING A NEW UNIVERSITY COURSE IN SUSTAINABILITY WITHIN TEACHER EDUCATION

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In 2008 the law on Teacher Education in Iceland was changed. Since then, to receive a licence to teach at preschool, compulsory school or upper secondary school level one needs a master's degree instead of a bachelor degree. In 2011 a new national curriculum was issued in Iceland for all three school levels. Two major changes were introduced. One is that the National Curriculum defines competence criteria for each subject area and each subject, i.e. all learning is based on learning outcomes as is in the context of university education. The other is six fundamental pillars/concerns of education, sustainability being one of them. These fundamental concerns should be an intrinsic part of and evident in all educational activity, thus visible in the content of school subjects and fields of study, both regarding the knowledge and the skills that children and youth are to acquire.

In this case study the design and first execution of a new transdisciplinary university course about sustainability and education within teacher education in Iceland is examined.

THE CREATION OF A NEW COURSE IN TEACHER EDUCATION ON SUSTAINABILITY

In fall 2013 a new course in teacher education about sustainability and education, within the School of Education of the University of Iceland, was formed and made obligatory for teacher education master students. Learning outcomes of the course were negotiated by a group of academics in the faculty of teacher education since working processes of creating a course or study line always include a group of specialist in the field or related fields of study. This group included individuals with diverse views of the role of a teacher/instructor, both in the context of the academia and within schools, and different views on sustainability at that time. These views reflected a level of understanding of the concept of sustainable development and the type of aims most important with regard to sustainability and education: knowledge aims and affective aims.

Aims at the affective domain seemed most important to those who had a broad view of sustainability, being in line with UNESCO's explanations of three pillars of sustainable development. On the other hand, there were those who seemed to have a narrower view of sustainability understood as being primarily about the environment, knowledge aims and the role of the teacher/instructor as primarily to provide students with knowledge. A course description for a 5 ECTS course was made including learning outcomes based on both *content* with a focus on sustainability issues emphasised by UNESCO, and *processes* of learning planned to make

participants active and engaged in the acquisition of knowledge, the teaching and the application of what they have learned. The name of the course is: Education for sustainability – skills in a changing world (EfS-Skills).

The preparation phase of the ActSHEN project ran parallel to the preparation phase of the EfS-Skills course. In funding applications the ActSHEN team had put focus on pedagogy to guide work with sustainability education within university settings. Later, as part of formal project work, the team defined *pedagogy* as one of three principles to guide education for sustainability within a university setting, emphasising student-centred or student-driven learning approaches. This principle addressed context-based approaches, teaching and learning processes and student assessment. This view on pedagogy was used as a viewpoint for structuring and later reviewing the course after its first execution.

THE COURSE DESCRIPTION

Within the university course catalogue the description of the course states that the purpose is to work with conceptual issues in sustainability and global initiatives such as those being implemented by UNESCO. Examples of problems in the environment and nature are explored, eg. climate change, decrease in number of species, soil erosion and pollution. Emphasis is on the role of teachers in dealing with controversial issues and how they can teach children to analyse problems, evaluate information and put forward possible solutions. Participants read and use research about sustainability education. Participants also examine their own perspectives on sustainability, their values and behaviour. The learning outcomes presented are as follows:

At the end of the course the student:

- Knows the concept of sustainable development and the main ideas of international agreements about sustainability
- Knows the United Nations suggestions of how sustainability education could be enhanced and what competences and skills are important in a changing world
- Knows examples of good solutions of environmental problems
- Can distinguish challenges Icelanders face locally and globally
- Can deal with controversial issues in an open debate
- Becomes able to teach about controversial issues in the society about environment, society, culture and economy
- Can differentiate challenges and opportunities that are implied by working with sustainability in schools
- Can review one's own attitude, values and behaviour with respect to sustainable development

The number of students was around 70 and they were on their first or second year of a master's programme in teacher education. Two-thirds of the students were long-distance learners and thus around 20 students came to class on campus. Others used a virtual learning environment (Moodle) to follow and/or participate in classes and

discussions. All course material was provided on Moodle, such as course schedule, readings (documents or links), discussion threads, links to recordings of lectures, instructions or informative videos. The semester was planned in two weeks slots.

Each slot started with a lecture provided on Moodle (Monday) and the following Friday a class was held including pedagogical exercises related to the content discussed in lectures. The aims of the exercises were to give students hand-on experiences of tasks based on learning outcomes of education for sustainability, which they could further develop for their own students in schools. Each two week slot was closed with an individual consideration assignment (reflections). The assignments were:

- **Pairs** construct an argument to include SE in the curriculum
- **Individuals:** Who are the people in your life (who made the clothes, the food ... where does it come from)?
- **Group** of 2-3 select a controversial issue, analyse what are the facts/opinions and who's interests are involved. Explain who should work with it in a school setting.
- **Individual:** summaries/considerations after each slot about the readings for that slot. Done five times (after each slot).
- **Final exam – collective preparation, individual performance!**
- All assignments were handed in through the virtual learning environment on Moodle and feedback was provided through that channel. The course finished with a final exam which included a considerable amount of choice of topics drawn from a frame presented two weeks earlier.

PRELUDING CHALLENGES

The project proposal asked what actions are needed to support and encourage university teachers and students who wish to work with and for sustainability. The learning gained during the preparation and first time execution of the EfS-Skills course circled around the question of how the course could be organised in order to have it student-driven, taking into account that students should influence *what* and *how* they learn.

Right from the beginning three main issues became evident. First, how long-distance and on-campus learners could participate actively in student-driven learning approaches within the same course. Second, how this work could be organised and kept within the workload allocated to the teachers. Third, how students can be guided to see themselves as both producers and consumers of knowledge. These became important challenges since students seem not to be used to making choices about what and how they learn, either within the academia or in their prior education. In fact, they seem to be very much used to do what they are told in response to teachers' view of their role.

THE MAIN LEARNING

Looking back and reflecting on the experience of the first time trial of the EfS-Skills course the experience has given ample opportunities to improve and further develop the course. The feasibility of mixing on-campus and long-distance learners in student-centred courses on sustainability and education has revealed constraints, most of them based on teachers' and students' technical knowledge and skills in using and organising diverse media and tools. Within the School of Education each teacher is required to be technically competent.

Looking at the content and processes of the course the main learning can be summarised into three factors.

First, certain extrinsic factors were viewed as constraining. The EfS-Skills course is part of a very formally established institution in the context of university education with limited flexibility in terms of teaching hours and defined learning outcomes.

Second, intrinsic factors included views of ones role within the university setting and the role of assessment as part of a learning process. The academic teachers seemed to have a predefined view of what their teaching role within the university setting was comprised of. These views are reflected in what type of aims they seem to prioritise and these views influenced what type of content and learning processes were suggested to be included in the course. Also, these views became evident in what type of assessment processes were valued as useful, how students should get feedback and for what purpose.

Third, and also an intrinsic factor, was related to views of the concept of sustainable development. The view of sustainability seemed to be largely viewed in terms of environmental protection. Strong emphasis on subject based knowledge aims was stressed mosly by those with a more narrow view of sustainability (on environmental protection) and linked to the view of the role of teachers as mainly being to inform and provide knowledge.

With this in mind the challenge is to further identify what is the most limiting factor within a university setting and what is the main contributor that such work can offer to student learning. Is the main challenge encompassed in the number of students in each course or the combination of long-distance and on-campus learners in one collective cohort? Or is it the question of how the challenge of creating participatory learning processes, asking students what they can bring to the course (what they have to offer) can be managed? To address these challenges, a different view of one's role as a teacher and as a learner is required.