ActSHEN:
ACTION FOR SUSTAINABILITY IN HIGHER EDUCATION

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To promote and develop education for sustainability in higher education, participants from six institutions across the Nordic countries participated in the project ActSHEN – Action for Sustainability in Higher Education in the Nordic region. The project was funded by NordPlus. The aim of the ActSHEN project at the outset was to develop a model and guidelines that strengthen student-driven pedagogy when working with sustainability in higher education. The work of ActSHEN was guided by the Millennium Development Goals set forth by the United Nations. These have now been revised as the Sustainable Development Goals, which will be in place until 2030.

Project work began in September 2013. In our application it was suggested that effective educational action for sustainability is based on three core principles:

1. Developing cross-disciplinary *knowledge* about and for sustainable development.
2. Encouraging *respect* for and about various *forms* of sustainability knowledge.
3. Nurturing a sense of *shared responsibility* to create *shared value* for our common future.

These principles also require authenticity i.e. the instructors, mentors or tutors working with students must have credibility with those students arising from their own practice and beliefs.

These principles were used as the basis for the implementation of the project, which was further guided by two specific questions:

- What types of student-driven activities in higher education lead students, teachers and staff to richer understanding and better preparedness to work with sustainability issues?
- What actions are needed to support and encourage university teachers and students who wish to work with and for sustainability?

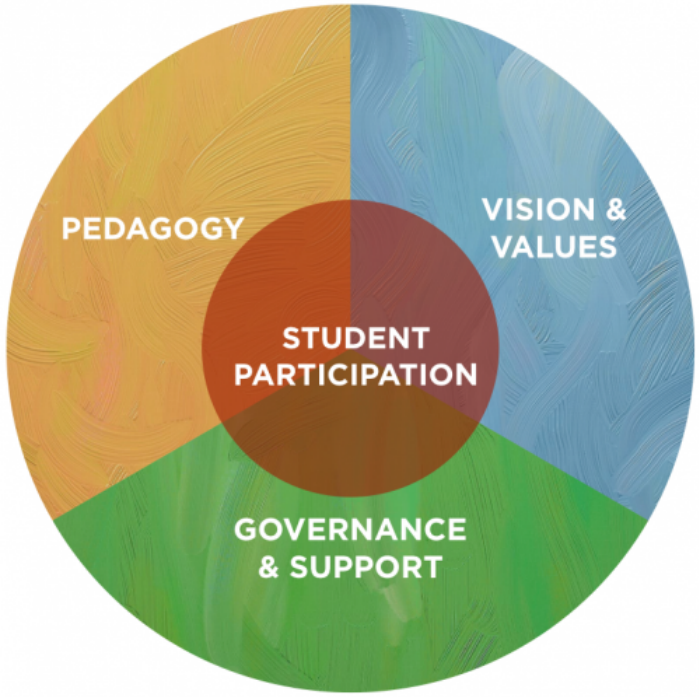
In particular the project team wanted to investigate ways in which participatory and collaborative education for sustainability can be strengthened in universities. As the

project developed, the team decided that the idea of an educational model was too rigid, and instead focused on developing a set of guiding principles to strengthen student-driven pedagogy when working with sustainability in higher education.

HELSINKI FRAMEWORK

During the meeting held in Helsinki in 2014, the group developed a set of guiding principles based on shared understanding of sustainability in higher education. These *Helsinki principles* were used to inform the design and implementation of the pilot courses. Depending on the context of the pilot, the application of these principles varied. The principles described three dimensions of education for sustainability: educational outcomes, management and pedagogical practices. As sustainability in higher education demands in-depth institutional changes and fundamental challenges to conceptions of how education is best organised around the traditional roles of students and teachers, a focus was on enhancing student participation on all of these dimensions.

In March 2016, after two years of piloting and experimenting, the project team met to conduct a final critical reflection on the project outcomes and how these should be documented. The meeting was facilitated by Stephen Sterling acting as a critical friend. It was during this meeting that the Helsinki principles were revisited and reviewed in terms of their purpose now that the pilot initiatives had come to an end. The outcome of the critical dialogue was that the guiding principles should be developed into a final framework, referred to as the *Helsinki framework*, representing elements that project team members believe to be central to working with sustainability education.



Helsinki Framework representing central elements of sustainability education

The purpose of the framework was to provide ideas for embedding sustainability awareness and action in higher education. It has three dimensions:

1. **Vision and Values**
   Sustainability education necessitates a holistic and systemic approach in order to bring about individual and organizational changes.
2. **Pedagogy**
   Sustainability educational necessitates flexible and experimental pedagogical approaches.
3. **Governance and Support**
   Sustainability education necessitates more inclusive and distributive leadership.

A main focus should be on enhancing **student participation** on all of these dimensions. Students should occupy a central role in decision-making and have influence on what, how and where they learn.

VISION & VALUES

Education for sustainability should support skills in analysing interconnections between social, economic and ecological trends as well as creativity and imagination to explore thoughts, experiences, and feelings.

Understanding the challenges of sustainability requires the ability to identify system characteristics that may encourage sustainable and unsustainable behaviours. Systems thinking is the practice of enhancing our understanding of how and why social, economic and ecological systems behave by seeing them in the context of relationships with each other and with other systems, rather than in isolation (Sterling, 2004). Sustainable development deals with wicked problems, where no single right answer to the challenges exists (Rittel & Webber, 1973; Murgatroyd, 2010). Coming up with solutions to such problems demands divergent thinking and the ability to create new possibilities and solutions where none formerly seemed to exist. Creativity is also needed to work with sustainable development through iterative processes of continuous learning and refinement of concepts and ideas.

Tackling sustainability issues demands not only knowledge, but also the ability and willingness to take action. The goal of sustainability education is therefore on developing students' action competence. Action competence is a formative ideal for education, which is defined by the student's capability to take action and deal with unforeseen situations (Jensen & Schnack, 1997). It has three dimensions: psychological changes in understanding of the self, convictional changes in beliefs, and behavioral changes in actions. It also involves questioning what is currently taken for granted, regarding, for example, modes of economic, political, cultural and social development.

As higher education students are future professionals, sustainability education should be connected with learning skills, knowledge, creativity, reflection and fundamental concepts that can be applied to professional practice. Working towards sustainability

goals demands transformative and transgressive action. Therefore, higher education should not only support students in acquiring a pre-existing professional identity but should also facilitate the creation of new identities of professionalism.

Three case studies focus on the design and development of common aims, the vision and values for sustainability in higher education:

> **Helsinki framework: Co-design of principles for sustainability education**
> *by Veli-Matti Vesterinen (University of Turku)*
>
> **Four phases in sustainability education: A design framework for learning, research and planning**
> *by Sydney Ross Singer & Allyson Macdonald (University of Iceland)*
>
> **Copy but don't paste: From student-led to collaborative action for sustainability in higher education**
> *by Isak Stoddard (Uppsala University)*

The first paper from Finland discusses the design process and its role in reaching accord on the *Helsinki framework i*n March 2016. In the second paper authors from Iceland discuss two approaches to planning a course, one of which would fit the *Helsinki framework* and encourages student influence. They emphasise however that the amount of student influence can and does vary and that more teacher input could be appropriate in some situations. The third paper pulls together the experience of an environmental education centre established in Sweden about 25 years ago. Even so, staff and students found that they benefitted from the ActSHEN project in receiving so many project visitors and having to answer so many questions about their courses and their organisation. The key point made by the author in this paper is that understanding the context is crucial when adopting ideas from others.

PEDAGOGY

In education for sustainability, sustainable pedagogical approaches are required. Pedagogy includes the learning environment and context in which the learning takes place, the learning community (the teachers and the students), and reflections on learning (assessment). Sustainability issues, that are inclusive in societal needs, are pivotal contexts for sustainability pedagogy. Local contexts are important to encompass by utilizing information, experiences and expectations of the local communities, as well as global, real-work contexts. Real-world connections and students' work is viewed as central in sustainability education. Sustainability education should address past, present and future scenarios, expectations and assumed challenges. Along with the expectations of the communities, academic expectations and cultures must be responded to in order to make a change at different levels of pedagogy. To work with the wicked problems of sustainability, the input of several disciplines must be acknowledged. A key idea is to use transdisciplinarity.

The learning community, including the teacher and the students, are considered as active learners of products as well as processes of sustainability and its education.

Processes contain creative and critical pedagogies. The starting point is the positive vision of the world we want to create together, which requires creativity. Critical pedagogy is used as a reflexive, transformative and transgressive tool. In order to use critical pedagogy, participants' equality, action-competence to be critical and collaborative, responsibility and respect for the work at hand and the other participants, are crucial to promote. Pluralism in epistemology and methodology are considered important to address sustainability issues from a broader perspective. Pluralism is pragmatically used in order to "enlarge the space of the possible" by allowing learners to see beyond and contest the assumptions and ideology of a given theory or approach; pluralistic learning processes highlight dilemmas, deliberation and difference/disagreement in order to move beyond crude "anything goes" relativism, where all preferences are regarded as equally valid. These processes happen when learners 'travel some distance beyond their own position in order to see reality from another point of view' (Wals 2010).

There are several possible approaches on how and what to assess in learning, also in sustainability education. In addition to that, one should consider, who is assessing learning. Is it the teacher, the student (self-assessment) or the other students (peer-assessment) (Falchikov, 2003)? It is important to use assessment as a reflexive and learning tool. Black (1999) wrote that there is a concern that the teacher's feedback to students is often used for managing and social purposes rather than for learning. Besides the goals, it is necessary to assess the processes in different phases of learning. In order to promote transformative and transgressive learning, there is a need for critical discussions and creative attempts in assessment practices. Another aspect of assessment is that the student is not the only one to benefit, but also the teacher may use students' reflections in transforming teaching.

Pedagogical and assessment choices for sustainability in higher education are discussed in the following four case studies:

Teach me something: Respect for and about different forms of sustainability knowledge
by Ásthildur Jónsdóttir (Iceland Academy of the Arts)

Exploring transformative pedagogy in the context of a human rights and visual arts course
by Susan Gollifer (University of Iceland) and Ásthildur Jónsdóttir (Iceland Academy of the Arts)

Working with sustainable education in a social and educational research course
by Susan Gollifer and Caitlin Wilson (University of Iceland)

Open assessment when working with sustainability education
by Allyson Macdonald and Sydney Ross Singer (University of Iceland)

These four papers describe interventions that are somewhat different from traditional pedagogical approaches. Examples are given of how a pedagogy emphasising ability,

attitudes and alertness can support student-driven initiatives, the challenges raised in interpretations of transformative pedagogy, lessons learned when a conventional course that was not specifically designed to address sustainability concerns was aligned with student-centered sustainability education, and assessment challenges arising from student choice. These papers share the dilemma of what happens when pedagogical and assessment choices conflict with institutional expectations of teaching what is already known and contrasting with the competence approach in European universities where outcomes are planned beforehand.

GOVERNANCE & SUPPORT

Promoting, developing, and maintaining a culture of sustainability in higher education requires an approach that ensures appropriate policies, practices, monitoring processes, and accountability mechanisms. One work package of the project was concerned with analysing the interaction between university policy and academic practice with regard to student-driven learning. This was discussed at the first project meeting in October 2014. An understanding of the influence of policy on practice developed over time and became more a question of governance and support for curriculum and professional development, as well as making the system flexible with regard to assessment.

Governance is the set of regulations, principles and standards of good practice decided upon in order to ensure quality. University governance can be broken down into three stages a) it is a process which sets standards in research and teaching b) defines mechanisms to deliver standards and c) describes monitoring and assessment arrangements. The question being asked by the project is if the type of university governance is appropriate in a university that wishes to support and encourage teachers and students who wish to work with and for sustainability.

Working with transdisciplinary approaches responds to an understanding of sustainability as dependent on the participation of multiple stakeholders (teachers, students, support staff and from the wider community) to represent the multiple perspectives implicit in wicked problems. The act of identifying and actively fostering partnerships amongst stakeholders should also be an essential component of governance at all levels of operation. Early on in the ActSHEN project university governance was a topic of discussion but later more attention was paid to course governance within the overall structure.

The involvement of multiple stakeholders across multiple levels calls for multiple learning arrangements. This involves restructuring, redesigning, and creating programmes and courses and assessment and evaluation processes in ways that are underpinned by sustainability principles and that foster the ability and willingness to take action in response to wicked problems. Monitoring of policy implementation and practices is an important governance dimension in that it places necessary emphasis on stakeholder accountability for sustainability. Monitoring involves

ongoing reflection and action at the individual level, and at all levels of institutional operation, creating a form of continuous reflexive development, leading to necessary transformative change or transgressive action.

Governance and support for sustainability in higher education are discussed in the following three case studies:

Issues in developing a new university course in sustainability within teacher education
by Auður Pálsdóttir (University of Iceland)

Contextualizing learning: Changing and making place
by Sydney Ross Singer and Allyson Macdonald (University of Iceland)

"It feels almost surreal": Being strategic about how we design participation in order to enlarge the space of the possible
by Jakob Grandin, Sanna Gunnarsson and Sara Andersson (Uppsala University)

In the first study reported here the Icelandic researcher found that some of her class did not like the idea of having to make their own decisions about what they had to learn. They felt that this was the teacher´s task and they were paid to do this, no-one else. The second study considered examples of off-campus and on-campus events in Iceland and the positive reaction from students. The third study from CEMUS in Sweden traces the challenges involved in the co-creation and co-design of education.

STUDENT PARTICIPATION

A central role of students in decision making underpins all the dimensions described above. It is the red thread that ties our vision of sustainability in higher education together. As Gough and Scott (2007) point out, a traditional authoritarian approach does not fit education for sustainability, as we don't even know what sustainability looks like. Therefore, students need to be given more influence on their learning, by giving the freedom to explore, critique, analyze and create. Learning these skills could help students make sound choices when facing uncertainties in the future (see Vare & Scott, 2007).

For higher education to genuinely take on sustainability in education, there are implications for how institutions are structured and operate, for what students learn and how that is determined, and for how students learn and how that is determined. In student-driven HE, students are guided to see themselves as both producers and consumers of knowledge. Through co-collaboration between teachers and students, students are encouraged to become active and engaged in the acquisition of knowledge, the teaching and the application of what they have learned. Thus, the organizational structure, with a lack of clear didactic authority, creates space for active involvement from the students. Students can take control and become co-responsible for their learning process. This raises questions for institutional management and what possibilities it affords at the program and course level.

Student influence can take many forms, work on many levels and imply different roles. When the student is in the learning role, pedagogy becomes student-centered. Teaching is tailored to student interests; the student is active and the teacher is a facilitator of learning. This commonly takes the form of choice-based pedagogy, where teachers offer choices and students can have influence on them. There is shared responsibility for learning.

When students take on roles other than as learners, they can become instructors and coordinators at the course or program level. In the instructor role, learning is student-driven with students facilitating and peer-teaching. Students have influence on content and pedagogy. At the coordinating level, students themselves make pedagogical and managerial decisions. They influence and/or determine learning outcomes, learning methods and assessment methods, thus having significant influence on their own curricula. When this is possible at the institutional level, student-initiated courses and programs can represent a powerful way students influence their education.

Student participation is discussed in three case studies:

> **Students as teachers: Design of a student-led course on sustainability education**
> *by Jaana Herranen, Sakari Tolppanen and Maija Aksela (University of Helsinki) and Veli-Matti Vesterinen (University of Turku)*
>
> **Students as teachers: A student point of view**
> *by Nelly Heiskanen, Janina Käyhkö and Heli Virtanen (University of Helsinki)*
>
> **The emotional challenge of sustainability education**
> *by Auður Pálsdóttir (University of Iceland)*

In the first study from Finland students were employed as teachers, in part modelled on developments discussed on their visits to CEMUS. The second study complements the first and presents the experience of Finnish students who became teachers. In the final study, from Iceland, the author discusses the emerging emotional dimension when students are asked to take more responsibility for their own choices.

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