WHITE PAPER ON THE FUTURE OF HIGHER EDUCATION, SCIENCE AND UNIVERSITIES

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EXPLANATORY NOTE

This White paper reflects the common understanding of the Circle U. Think and Do Tank concerning the concept of 'sustainable education' and a shared vision related to the transformation of our institutions to become more 'sustainable'. The goal is to use the results of the project "Conceptualising and operationalising 'sustainable education'" (COSE), which created a conceptual basis by connecting sustainable education and education for a sustainable world, to design new pedagogical initiatives across the Circle U. alliance. (The Insight Paper of the COSE project is included in the Annexes).

The recommendations included in this White paper are conceived as a stepping stone towards sustainable education aiming at reaching both administrative and academic staff in Circle U. For the sake of clarity, the statements are illustrated with concrete actions implemented in the pilot phase (including hyperlinks) and with a group of initiatives identified at partner universities that may be a source of inspiration. Some recommendations refer specifically to the future configuration of the alliance after the end of this pilot phase on the 31st of October 2023.

The takeaways of this White paper might be revealing for other alliances and universities beyond Circle U. and hopefully inspirational for policymakers in the educational fields at the national or European level. The main challenge will be reaching an interested public, including students, civil society and other non-academic actors, that would probably be key in this transformational process.

TABLE OF CONTENT

1 INTRODUCTION: WHY SUSTAINABLE EDUCATION?

The ethics and politics of sustainability are discussed and supported differently depending on where one stands on the spectrum of political ideology: liberal political ideology, socialist political ideology, libertarian socialist, and green politics (Huckle & Sterling, 1996). That is why the main concept of sustainable education and its integration into curricula and teaching methods is generally seen as too vague and then superfluous; or too controversial, thus disruptive; by higher education institutions. Still, as underlined in the first White paper of the Think and Do Tank of Circle U. *'Shaping the Future of Higher Education in a Changing World'* (Circle U. 2021), considering the challenges our world is facing today and is expected to face in the coming years, there is an urgent need to foster more engaged academics and students.

Due to this context of global challenges, UNESCO formed an Independent Expert Group on the Universities and the 2030 Agenda to develop a critical report on the specific role of higher education institutions in achieving the 2030 Agenda. This report is entitled '*Knowledge-driven actions. Transforming higher education for global sustainability'* (UNESCO, 2022) and identifies three key focus areas:

- The imperative for institutions to become more open, as well as the need to move toward inter- and transdisciplinarity in education and research.
- Fostering epistemic dialogue and integrating other ways of knowing.
- The need for a much greater presence in society through proactive community outreach and collaboration with other societal actors to raise awareness of environmental degradation and the SDGs in general, as well as to influence policy.

These principles were adopted by all European alliances and, especially by Circle U., by appointing a Think and Do Tank on the Future of Higher Education with the mission of suggesting and testing new ways of teaching and learning able to drive those changes.

2 OBJECTIVES: WHO SHOULD READ THIS PAPER?

The goal of this White paper is to use the results of the project Conceptualising and operationalising 'sustainable education' (COSE project) to design new pedagogical initiatives across the Circle U. alliance geared towards the building of more sustainable learning in more sustainable universities. The research team of the COSE project was composed of six Circle U. Academic Chairs of the Think and Do Tank and eight co-researchers. The researchers conducted a literature review that mapped out the different arguments around sustainable education and held 22 interviews with members of international or national organisations, university leaders, academics or students. The wider aim was to create a conceptual basis for the work of the Think and Do Tank of the alliance in connecting sustainable education and education for a sustainable world (See the *Insight Paper* of the COSE project in the Annexes).

Specifically, the recommendations included in this White paper are conceived as guidelines that should be taken into consideration in Circle U. across WPs and reach both administrative and academic staff at partner universities, as well as inform student engagement in future education. At the first level, targeting teaching and learning spaces will allow professors to implement innovative teaching and encourage student engagement. At the university level, the identification of opportunities for and obstacles to transform the curricula and teaching and the way staff collaborate are the keys. Of course, these ideas are also useful for other alliances and universities willing to undertake an institutional shift towards sustainable education. Finally, these conclusions might be revealing and inspirational for policymakers in the educational field at the national or European level interested in linking universities and societies, and anyone engaged in broader reflections about the present and future challenges of higher education in a changing world.

3 RECOMMENDATIONS: HOW DO WE IMPLEMENT SUSTAINABLE EDUCATION?

The recommendations presented by the Think and Do Tank hereunder respond to two main questions that rose during the implementation of the COSE project:

1. *How can an education that empowers individuals to make informed and critical decisions about their future lead to a more sustainable world? What is the link between the two?*
2. *How are universities to achieve these changes and become sustainable institutions themselves when they are driven by market logics?*

3.1 CONNECTING AN EDUCATION FOR A SUSTAINABLE WORLD WITH SUSTAINABLE LEARNING LASTING A LIFETIME

The first recommendation of the COSE report is to consider 'sustainable education' as a combination of an 'education for a sustainable world' and an 'education that develops the skills and abilities for students to use their knowledge towards creating a sustainable world throughout their lifetime' and connecting the two.

3.1.1 Promoting project-based collaborations with external and non-academic actors that are advantageous for both sides

Integrate external stakeholders and non-academic actors in the study programmes to show the potential of education as transformative and to ensure the impact of educational initiatives in society. Also, to learn from other civic agents about challenges and opportunities. Collaboration with external partners is easier when project-based and needs to be visible and valued by being covered by internal and external media whenever possible. Return on their investment is key to engaging associated partners and other actors. University leaders should be committed to investing intellectual and technical resources and to mobilising these resources (infrastructures, technical and scientific support, media) in a structured manner –from the top level– when collaborating with these civic actors. How can we convince external stakeholders to collaborate with the alliance if leaders at home universities do not see a clear interest in investing resources in this kind of partnership?

- The Circle U. Challenge is a good example of collaboration with non-academic actors that is project-based. The question of the return on investment and the commitment of universities at the top level needs to be further explored.
- Circle U. seed-funding schemes is a good initiative to promote project-based collaboration. Promoting the inclusion of external stakeholders in project proposals, as in the case of two selected projects, should be considered in the future (See the list of the seed-funded projects).
- Circle U. events generally include non-academic actors as speakers, mostly companies from the private sector and civil society organisations, an experience that enriches the discussion by offering different perspectives and new opportunities.

3.1.2 Adapting universities' structure to interdisciplinarity and favouring the connection of research and education

Identify the added value of interdisciplinarity for any specific educational activity, taking note also of the difficulties (e.g. the fragmentation of the university structure in departments that function as cost centres that compete with each other). Link research and education activities by promoting action research and participatory research.

- Analyse the interplay between different disciplines in the implementation of Circle U. Summer Schools; not only those corresponding to the three Knowledge Hubs of Circle U., but also the other bottom-up initiatives that have been flourishing.
- Some representatives of the platforms in the new Circle U. ecosystem after the pilot phase (CU.til, CU.mil, InCU.bator and a community of practice for early-career researchers[1]) should be invited, if not in the design phase, to the implementation and evaluation of any educational activities.
- Create a more clear and structured connection with the ERIA project[2] to link research and education. Regular meetings between the ERIA coordination and the platforms mentioned in the previous point will ensure that both wings of the alliance –research and education– nurture each other and work towards the same direction without losing opportunities for collaboration. This link will allow the implementation of more action research and participatory research, which are to be privileged when exploring interdisciplinarity.
- Promote micro-collaborations[3] within and between universities, as it supports interdisciplinarity both in teaching and research.

3.1.3 Exploring the pedagogical impact of internationalisation in relation with the added value of interculturality and global citizenship

Continue exploring the pedagogical impact of internationalisation and identify what is the added value of interculturality for any specific educational activity, taking note also of the difficulties. A shared definition of 'global citizenship' in connection with 'interdisciplinarity' in the context of higher education may also help the actors in Circle U. to move across and between disciplines and communities of practice.

- Representatives of future CU.mil should ensure that intercultural skills are considered and developed within the alliance in any educational activity (Summer Schools, Circle U. Challenge, Joint courses and other bottom-up activities) as well as in the way of working and collaborating among Circle U. partners.
- Deliver a Toolkit and training based on the first experience of the Circle U. Intercultural Lab in London. A specific hub with some of the participants of this Lab is currently flourishing and would need to be supported.

[1] The Teaching Innovation Lab (CU.til) will be a collaborative space to support, reflect, research and develop activities to boost innovative teaching and learning. The MultililIngualism, Interculturality and Language Lab (CU.mil), in turn, will focus in international and intercultural knowledge, skills and competencies. The InCU. Bator will promote student-led innovation and entreprenurship skills and competence.

[2] The project Circle U. ERIA (Empowering Research and Innovation Actions) aims at strengthening the research and innovation dimensions of Circle U. by supporting pilot activities in its Knowledge Hubs and empowering its early-career researchers.

[3] We refer to the "micro-collaborations" of the Erasmus + Strategic Partnership DIONE, coordinated by the Lead of the Think and Do Tank at Humboldt-Universität zu Berlin

3.1.4 Promoting transformative and sustainable learning and agency (thinking & doing)

Promote experiential learning and, more generally, pedagogical practices involving both thinking and doing, because this combination appears to be more effective in producing sustainable learning, that is learning lasting a lifetime. Universities should provide an education that sustains a person for life through the acquisition of transferable skills and encourage students to take ownership of the environments in which they live (Nicolaides, 2006). Sustainable Education nurtures democratic processes of learning rather than knowledge accumulation and emphasises how to think rather than what to think (Thomas, 2009), in order to develop student capacities to think critically, creatively and constructively through complex problems. Transformative learning and agency are two complementary concepts that should guide the curricula, the teaching methods and students' assessment towards sustainable education.

- The final report from the project InnovEd4TS delivers recommendations for supporting and developing transferable skills that should be disseminated through the alliance and known by the Academic Chairs developing joint courses and any educational activity.
- The WP on Student-Led Sustainable Innovation created several examples of problem-based learning, such as the Sustainable Change-Makers Programme and the Circle U. Challenge, that might be reproduced within the alliance with the goal that these became an integral part of the curriculum of some study programmes at partner universities.
- The Model of the United Nations on Sustainable Education organised in Belgium in March 2023 serves as an example of peer-to-peer learning and transferable skills training. This massive simulation was an ambitious Circle U. experience of student empowerment and reflexivity, engaging the participants in critical discussions about the world.
- Immersive simulations are bringing theory into practice and bringing together different disciplines and professions. The possibility to scale up these initiatives at the international level should be contemplated.
- A meaningful education that is lifelong needs to be contextual, constructive, holistic and human in scale, integrative with greater emphasis on interdisciplinary and transdisciplinary enquiry. The initiative 'Body and Mind, Esprit de Corps' led by a teacher in Université Paris Cité and expanded to other Circle U. students is a model example.
- Transformative learning is defined as ways that humans change their perceptions of what they know about the world (Chen & Wu, 2022). Education should be critical (ideologically aware and socially critical), balancing, systemic and connective, ethical, purposive, inclusive and lifelong. Education for sustainability brings an excellent opportunity to put into practice transformative learning and Sustainable Education as it helps learners to critically reflect on the different meanings of sustainability and education and imagine alternative futures in a more informed and democratic way (Huckle & Sterling, 1996). The Summer School 'Reimagining universities as drivers of sustainability' was organised in Berlin in 2022 and illustrates perfectly the connection between education for sustainability and sustainable education. The students were tasked with finding solutions which were presented at the university rectors' conference in November 2022.
- Transformative agency captures students' competence in taking initiative and transforming their practices. This involves moving beyond the transmission of information from educator to learner; emphasising educator-learner interdependence, critical reflection, collaboration, agency and problem-solving (Brevik et al., 2022). At the Think and Do Tank Café organised in Paris in January 2023, the importance of students' assessment in relation to agency was highlighted.
- The Student-Led Female Founders network entails transformative learning as it aims at shifting perspectives about self-purpose and overcoming barriers through inspirational, skill-building

workshops. The last retreat of the network in Paris on March 2023 put the accent on the transformative agency with an action plan and the founding 'manifesto' that will serve as the cornerstone aiming to strengthen and uphold collaborative entrepreneurial initiatives from women innovators.

- Involving students as co-researchers in ongoing research projects and connecting the co-research initiatives to their education, including courses and programmes on all levels as done in the COSE project is a model example of transformative agency through an education that is process-oriented and empowering rather than product-oriented (engaged and participative rather than passive).

3.2 SUSTAINING STUDENT- AND TEACHER-LED INITIATIVES AND STUDENT-TEACHER COLLABORATION THROUGH TOP-DOWN COMMITMENT

The second recommendation of the COSE report is to convince higher education institutions to sustain student- and teacher-led initiatives and student-teacher collaborations through commitments from university leadership and governance structures. In some cases, initiatives might also need the support of policymakers at the national or European level to be sustainable.

3.2.1 Building innovation from within and sharing good practices

Rather than thinking of something new in terms of pedagogical innovation, it would be more beneficial to begin by building innovation from within; identifying what we already do and how it can be used as a springboard for new development. One of the missions of the forthcoming CU.til should be to continue mapping and upscaling existing initiatives among partner universities to ensure that staff and students can learn from best practice examples at other universities.

- Circle U., in its foundational phase, gathered examples of innovative initiatives promoting transferable skills under the frame of the Erasmus + Strategic Partnership InnovEd4Ts.
- The Think and Do Tank mapped flagship education initiatives carried out by our Circle U. communities considering innovation in sustainable education under four categories: Integration of external stakeholders, Internationalisation of education, Inter and trans-disciplinarity and Involvement of students. The Think and Do Cafés and the Circle U. Cafés in Oslo contribute to feeding this mapping and consolidating a community of practices around pedagogical innovation and education.
- The Task Force Multilingualism of the Think and Do Tank implemented a first survey *('How languages and cultures travel'*) that provided some general information regarding the intercultural and language diversity of the staff community in Circle U. and showed the formal programmes students may register for as well as other informal ways in which linguistic and cultural competency is fostered.
- Through interviews, the COSE project identified four bottom-up student-led, or student-teacher collaboration initiatives being married with the support of university structures and top-down commitment, which are exemplary and could be used as models for universities to address sustainable education (see page 43 of the *Insight paper* in the Annexes).

3.2.2 Fostering, facilitating and valuing pedagogical innovation and international collaboration in education (also at the micro-level)

Whereas there is a type of holistic understanding that has been fostering transnational collaboration in the research field through models, frames and incentives, there is still too little connectedness within the education side. Thus, the alliance should promote micro-collaborations among academics (both teachers and students) which are feasible with fewer resources apart from engaging in long-term projects such as joint formal programmes. Setting up a digital collaborative platform to facilitate these connections and smooth the managing process is imperative.

- A series of hybrid Cafés organised by the Think and Do Tank and other members of the alliance are progressively building a network of innovators in pedagogy willing to engage in continuous professional development through a community of practice. (See the Cafés organised by the Think and Do Tank).
- The creation of various specific and topic-centred Hubs following a bottom-up process reveals the potential of the Alliance as a testbed of innovation and fertile ground for collaboration. The French Hub was the first one to take action, by launching an online language course to support the integration of students coming from Ukraine. The foundation of a still incipient South-East European Hub followed the lead. More recently, a workgroup on Teacher Education and a Hub on Intercultural competencies are being consolidated.
- The recommendations of the Erasmus + Strategic Partnership DIONE should be put into practice to facilitate bottom-up collaboration.
- The platform Projects, designed by the Learning Planet Institute, is a good model to facilitate project-based, competency-based and peer-to-peer learning.

3.2.3 Evaluating digital platforms critically by considering the pedagogical component of academic design

Multinational and powerful corporations are offering several platforms and portals for digital learning. Some of these platforms are not only platforms for communication, but they are also suggesting particular pedagogical designs, which impact the content, the disciplines, and the knowledge. There is a danger that some of these tools can force institutions (and alliances) into a specific type of student learning that is not really where they want to go. Universities need to critically evaluate digital platforms and integrate them into their own academic design without forgetting that digital teaching is a good supplement to face-to-face teaching, but not a substitute.

3.2.4 Involving students in consultations and decisional procedures concerning their own education

Continue asking students about their perspective on university education and use it for further designing teaching practices.

- The survey on language learning and multilingualism implemented by the Task Force Multilingualism of the Think and Do Tank is one example of a massive consultation with the student community that will allow the recommendations delivered by the Task Force to include more than the vision of academic staff.
- Some students were interviewed by the research team of the COSE project about the notion of sustainable education and sustainable universities.
- A group of students shared their views concerning their own assessment at a specific Think and Do Tank Café organised in Paris.
- Students' Circle U. Ambassadors and other students should be included in discussions concerning pedagogy and curricula. The forthcoming platforms CU.til, CU.mil and InCU.bator should provide a regular space to allow student participation.

3.2.5 Facilitating massive democratic consultations across the university community and the alliance

For a university to deal with the diverse and sometimes contradictory calls for justice and equality requires structures that facilitate participation by all university community members —managers, administrators, academics and students— contributing actively to democratic processes. This in turn requires nurturing self-critical reflexive and agentive capacities. This applies to the governance of partner universities and the governance of the alliance.

- Within the Knowledge Hub Global Health, and especially in the aftermath of the Covid pandemic, the interconnectedness of global health politics and geopolitics is unquestionable. The members of this Knowledge Hub reached a consensus and stated that to reform the way global health is currently taught, the colonial aspect of both global health and global health education must be acknowledged, and racial inequality must be addressed. This position will translate into the inclusion of specific content in the joint courses and conferences organised by this workgroup and the will to collaborate with non-EU partners in the next phase of the alliance.
- It would be useful to undertake a consultation at partner universities so that the political and ideological position of each university community is clearer: how universities use their resources on campus and beyond and their position in the world. In parallel, whether before or after this consultation the alliance should express its own position concerning sustainable education and related concepts so that realistic and concrete objectives that can have a clear impact are presented to the members of the new Circle U. ecosystem until 2030.
- In a similar vein, concepts such as 'diversity', 'inclusivity', 'equality' and 'multilingualism' would require a precise political position from the top level to allow fruitful academic collaboration and other actions able to have a clear impact. The criteria used to select students, staff and projects need to be discussed in the light of those definitions (e.g. Should we prioritise students with the best grades, those who show more motivation or those who have access to fewer opportunities or are at risk of exclusion?)

3.2.6 Taking the time to introduce significant and sustainable changes with a greater impact

Proposing alternative pedagogies, curriculum, and structural modes need reflection, involving the whole educational community (academics, administrative staff, students, and other stakeholders that are not necessarily from academia), and testing some ideas before undertaking any long-lasting change. It is,

therefore, a process that takes time and cannot be constrained by a tight calendar of unrealistic deliverables, such as the ones pretending to introduce changes in the curricula in only three years' time.

- The alliance should evaluate and point out in the final report the constraints of the financial schemes of the European Commission and other national funds and make proposals for improvement.

3.2.7 Taking care of and valuing the professional and human contribution of the different actors to ensure their long-term engagement

Sustainable education cannot be achieved if the way of working and the professional relationship among the actors engaged in this transformation and between those individuals and their own institution is not sustainable. The contribution of all the academic and administrative staff should be considered seriously to ensure their engagement in the long run. Transparency concerning decisional processes is also key.

- The involvement of students needs to be valued through top-down commitment and resources to sustain student-led initiatives, credit recognition, academic certificates and/or financial compensation.
- We should be aware of institutional and social pressures on students to finish on time and begin a career at a young age. Education itself should be an act of community and not only an act of professionalisation and employment readiness. The alliance should also develop community building, cultural activities and self-care among the student community (and also staff).
- Teachers, in turn, should have enough time and resources to devote to the missions assigned and find institutional recognition and compensation for their contribution to pedagogical innovation and teaching development, not only for their research work.
- Administrative and technical staff must have fair work conditions (at least a permanent contract and a competitive salary) to avoid employee turnover and burnout.

4 INITIATIVES THAT CAN BE USED AS MODELS FOR UNIVERSITIES TO ADDRESS SUSTAINABLE EDUCATION

Through interviews and further consultation, the COSE report and the Think and Do Tank identified several bottom-up student-led, or student-teacher collaboration initiatives being married with the support of university structures and top-down commitment, which are exemplary and could be used as models for universities to address sustainable education.

- *The University of Oslo – SHE (Sustainable Healthcare Education - Centre of Excellence in Education) is given national support and funding to offer opportunities for students to serve as leaders in university courses and as active partners and co-researchers in ongoing research projects.*

At the SHE Centre, students and researchers collaborate in varied ways both nationally and internationally. Students are actively involved in defining learning outcomes in their master's programmes, as well as facilitating and leading team-based learning. Some students have taken the initiative to develop the programme 'Students for Wise Choices' in order to include students of medicine and clinical/human nutrition

in a collaboration with the Medical Association in Norway. An important aim is to help students develop the capacity to make wise professional decisions for healthy and sustainable treatment in order to avoid medical overactivity.

- *The University of Oslo – ILS (Department of Teacher Education and School Research) is given local support and funding to offer opportunities for students to combine research and education by being co-researchers in ongoing research projects and presenting research findings in university courses.*

At ILS, 'Students as co-researchers' is an innovation that connects research and education. It is targeted at master's students in the five-year integrated teacher education programme who are invited into ongoing research projects as part of their master's specialisation. The innovation builds on and extends the notion of research-based education, moving from students' consumption of research, towards active student engagement with and in research. An important aim is to provide collaboration between students, teachers, researchers and engineers for a joint investigation of classroom research, which is highly relevant for future practices both as teachers in school and researchers in academia.

- *At Humboldt-Universität – LFP (Lernforschungsprojekt) are given local support to offer opportunities for master's students to carry out a mini-project and thereby allow students to develop a critical professional mindset during initial teacher education.*

The LFP follows the rationale of research-based learning in teacher professional development. Through LFP, students are encouraged to give their school experiences a critical framing and a change of perspective. LFP is about learning to see what goes on in the complex world of a classroom – allowing students to feed this research-driven reflection into their professional development. LFP aims to shape the vision of emerging teachers of the future to independently and creatively build the knowledge base needed to innovate classrooms and foster school development for sustainable education and educational equity.

- *The Sustainability Office at Humboldt Universität zu Berlin is a student initiative with a history of activism of about 15 years.*

The work of the Sustainability Office was instrumental in setting the university on the right track for achieving carbon neutrality by 2030. They contribute to the sustainability strategy of the HU and provide a forum for all sustainability initiatives at the HU. The Sustainability Office also ensures that sustainability is and remains an important part of teaching and research. Last but not least, it works towards transforming the university's administration to create a sustainable institution.

- *At Aarhus Universität, a student movement for sustainable education met with support from the Ministry of Education and Science establishing working groups to explore how to introduce sustainable education at every level from pre-school to higher education.*

This student movement was an example of a student initiative to achieve institutional and policy change. A member of a green student movement wrote an open letter to the university leadership demanding the university be more sustainable. This led to the formation of the university's climate strategy, written by faculty and two student representatives. The student pushed for a broad strategy within education, but the university's governing board decided to focus more narrowly on energy and resources. The green student movement considered that the university's strategy only focused on 'symptomatic solutions', whereas they aimed to tackle climate issues more holistically through education. They continued campaigning to gain political attention through social media. This resulted in the Ministry of Education and Science establishing working groups to create a national action plan for sustainable education at every level from pre-school to higher education.

One of the student activists then chaired the Ministry's working group on sustainable education in higher education whose members included the national students' union and the rectors' associations for universities and for colleges of art and culture. The working group aimed to introduce sustainability into the universities' education, research, administration and relations with society. They saw universities as playing a central role

in moving society towards sustainable development and providing the future-orientated knowledge and competencies needed to tackle complex and intertwined social challenges. However, they found an overall lack of ambition to implement sustainable education. Their research showed that some institutions had a top-down strategy and others preferred a bottom-up approach based on individuals taking initiatives in individual courses and that there was a lack of synergy between the two. They identified how some students and lecturers were making important changes from the bottom up but unless there were structures to support them, students' and lecturers' initiatives were not sustained by the institution. The green student movement had targeted the Ministry because of its role in making change from the top down and it is still following progress in the implementation of the resulting action plan.

- *At King's College London, both students and staff were involved in SDG curriculum mapping with the support of the university (60 students mapping 1.000 modules).*

The identified opportunities show the need for a systematic approach to Education for Sustainable Development (ESD), and for an overarching strategy which implements ESD across the university within faculties and departments. Such an approach would include all stakeholders from senior management and professional services staff to educators and students to jointly develop a vision for ESD which spans all elements of the university. Due to its interdisciplinary nature, sustainability can be fed into any discipline and incorporated into existing structures and teaching relatively easily and without too much additional work for educators. This will ensure all students get the opportunity to learn about sustainability as part of their formal education, and that they have plenty of well-developed opportunities to engage further in extracurricular activities as seen in the wider sector.

5 ANNEXES

CONCEPTUALISING AND OPERATIONALISING SUSTAINABLE EDUCATION

THINK AND DO TANK FOR THE FUTURE OF HIGHER EDUCATION. INSIGHT PAPER, APRIL 2023

CONCEPTUALISING AND OPERATIONALISING 'SUSTAINABLE EDUCATION' (COSE)

Think and Do Tank on the Future of Higher Education Insight Paper

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Conceptualising and operationalising ‘sustainable education’ (COSE)

Andrea Cini, Adéla Funova, Sandeep Kaur, Katrine H. Larsen, Rebecca W. B. Lund, Melissa Matar, Nikola Milošević, Lisbeth M. Brevik, Anne Enderwitz, Gabriel Reedy and Susan Wright

with Nora Ackermann, Vejlko Mijušković and Min Reuchamps

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Circle U Co-researchers:
Andrea Cini, master's student, Aarhus University
Adéla Funova, master's student, University of Oslo
Katrine Holmdahl Larsen, master's student, Aarhus University
Sandeep Kaur, master's student, Université Paris Cité
Rebecca Waters Boldsen Lund, postdoctoral researcher, University of Oslo
Melissa Matar, MPhil/PhD student, King's College London
Nora L. Ackermann, master's student, Humboldt University
Nikola Milošević, PhD student, University of Belgrade

Circle U Academic Chairs*:
Lisbeth M Brevik, professor, University of Oslo
Anne Enderwitz, professor, Humboldt University
Veljko M. Mijušković, assistant professor, University of Belgrade
Gabriel Reedy, professor, King's College London
Min Reuchamps, professor, Université Catholique de Louvain
Susan Wright, professor, Aarhus University

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Table of Contents

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Summary: The Research Findings and Future Actions

Since the 1970s, there has been increasing awareness that the world's growth-based economy, excessive resource extraction, climate-changing pollution, global inequalities and loss of biodiversity are unsustainable. The United Nations (UN) has produced reports, held conferences and set targets, and member states have made agreements and commitments. The European Union (EU) has produced a Green Deal (2019). However, substantial changes are not being implemented fast enough, with catastrophic effects on people and countries, especially in the global south.

Education has been given an important role in strategies for change, with UNESCO as the lead organization in developing what is called 'education for sustainable development'. This report has critically explored the connections between education for sustainable development and the concept of 'sustainable education'.

This research project

The current research project focused on how 'sustainable education' is being conceptualized and translated into practice in higher education. It did this through a literature review that mapped out the different arguments around sustainable education and by holding 22 interviews with members of relevant international or national organizations, university leaders, academics and students. The wider aim is to create a conceptual basis for the work of Circle U.'s Think and Do Tank on the Future of Higher Education in connecting sustainable education and education for a sustainable world.

Concepts

Sustainable education is the combination of:

a. *Education for a sustainable world*. Here, the focus is on the subject knowledge, especially from scientific, environmental or digital disciplines, needed to address specific problems, e.g. climate change or social or economic inequalities. While there is widespread recognition that economic, social, environmental and political issues are intertwined, the focus is often on finding either scientific or social solutions to specific problems and less on interdisciplinary perspectives.
b. *Education that sustains students for their lifetime*. Here, the focus is on universities equipping students with the personal abilities to understand and act on an increasingly unpredictable and conflictual world and emphasising the importance of students not only being 'involved', but active partners, co-researchers and co-creators in their education. While some of the literature and interviewees had a clear idea of the individual and collective transformations they were trying to achieve, there was also a tendency to reproduce neoliberal ideas about creating self-marketing subjects and life-long learning.

Sustainable education needs sustainable institutions, which means:

c. Student-led initiatives, and student–teacher collaboration initiatives must be supported by commitments from university leadership, management, and governance structures. In some cases, initiatives might also need the support of policymakers at the national or European level to be successful.

Practices

There were three main ways that the above concepts were translated into educational practice:

a. Some interviewees focused on developing a pedagogy around one or other of the above ideas and did not connect education for a sustainable world with educating individual capacities for dealing with a volatile world.
b. Some academics had carefully researched how to connect the development of individual and collective capacities to analyse and act on the interconnected problems of a fast-changing world. They had developed clear notions and innovative practices and used the language of 'sustainability'.
c. Other interviewees with well-developed ideas about how to equip students to analyse and act on the word, and how they had translated their ideas into innovative practices, rejected the term 'sustainability' because of its connotations with preserving and maintaining the status quo. Instead, they spoke of transforming the way people paid attention to how their lives, cities and organisations function, and of developing their capacities to act together to make radical changes, locally or globally, to the way the world works.

Sustainable universities

The literature review identified clear arguments that higher education is not yet sustainable. The competition for funding and ever-increasing revenues, metrics for measuring predetermined learning outputs and research performance, and the rise of managerialism and decline of shared governance all locate universities within the growth paradigm that is arguably at the heart of current global problems.

Interviews with academics and students showed how current university governance both supported and constrained their education initiatives. Academics were often engaged in isolated teaching experiments and educational innovations, yet some believed their institution would not sustain the initiatives they were developing. Both students and academics had a clear vision of a sustainable university. It would be one where bottom-up initiatives would be supported and matched by transformations from the top down. None of the academics interviewed had found ways to get their university administration to change their system of management so as to respond to and foster bottom-up initiatives. However, there were some important examples of students' managing to combine bottom-up educational initiatives with top-down changes to policy and management.

Future action

The research identifies three practical actions.

a. There need to be widespread debates and sharing of examples of innovative educational practices based on clear conceptualisations of the abilities students need, individually and collectively, to analyse and work out how to act on intertwined economic, social, environmental and political transformations in the world, involving students as active participants.
b. There need to be changes to the governance and management of universities to make them into sustainable institutions in two senses. First, to step out of the unsustainable growth paradigm. Second, for the leadership to be able to respond positively and sustain the above educational initiatives that are currently taken by individuals or small groups of academics.
c. There is a need to develop a programme of educational research and development that takes forward constitutive aspects of sustainable education and their translation into educational research, practice and policy. Such a programme should include research projects comprising appropriate conceptual designs, appropriate methodological framing and choice of methods, data collection and analysis, and dissemination in line with appropriate scholarly practice.

1 Introduction to Sustainable Education

This part introduces the background and context for this project on sustainable education. First, we briefly present the aims (section 1.1) and methods (section 1.2) before going into some detail about the criteria for the literature review (section 1.3) and the empirical interviews (section 1.4).

Photo: Unsplash

1 Introduction to sustainable education

What does Sustainable Education mean, and how is it translated into educational praxis? This project sought to explore, map, unpack, and articulate answers to this question by identifying the relevant bodies of literature, teasing out implicit assumptions through interviews with academics, students and other experts on sustainability, and mapping the different arguments around sustainable education.

1.1 Aims

The research aims to make a central contribution to Circle U.'s overall effort to create and promote education for a sustainable world by creating a conceptual basis for the work of the *Circle U. Think and Do Tank on the Future of Higher Education* on sustainable education, and by opening a dialogue with the Circle U. Knowledge Hubs' ideas of education for sustainability.

By identifying constitutive aspects of sustainable education, we aim to develop collaborative research and educational development projects that take forward these aspects, as well as their translation into educational research, practice and policy. Such a programme of research and scholarship will comprise a number of research projects, each consisting of appropriate conceptual designs, appropriate methodological framing and choice of methods, collection and analysis of data, and dissemination in line with academic practice.

In this insight paper we identify the meanings and practices of sustainable education and the changes needed to make higher education institutions sustainable in a changing world. In the literature review (Chapters 2 and 3), we identify the features of these two approaches to education and ask whether and how they are connected; how the radical ambitions of UNESCO are being translated into action; and what barriers there are for academics and students to make systematic changes at their universities. From our interviews, it is clear that while some academics address education for a sustainable world, others are concerned about the kind of education that students need for their lifetime (see Chapter 4).

This insight paper focuses on a few central questions, which will be explored throughout:

1. What is education for a sustainable world?
2. What education is needed for students to have the competences to act towards a sustainable world throughout their lifetime?
3. Is there a connection between these, and if so, what is the nature of that connection?
4. What needs to change about universities to enable them to become more sustainable, educate for a sustainable world, and educate in ways that sustain students over their lifetimes?

1.2 Methods

The project was organised with two concurrent strands of work: one to conduct a literature review on the concept of sustainable education; and the other to interview academics, students and other experts about their perspectives on the concept. Periodic meetings were held between the two strands. Six Academic Chairs of the Circle U. Think and Do Tank for the Future of Higher Education appointed seven postgraduate students as co-researchers to conduct this work. The project involved considerable learning and skills development and an example of co-researchers' engagement in an ongoing research project during their education (cf. Brevik et al., 2022; Eriksen & Brevik, 2022).

1.3 Literature Review

The literature review was conducted in English, and aimed to create an electronic bibliography (with titles and abstracts) and a report identifying definitions of sustainable education and the diverse arguments and approaches found in different fields of research. No previous review of sustainable education has been carried out. At a time when sustainability is addressed within various fields, it is important to get as complete a picture as possible of the different ways it is conceptualised.

As its primary question, the literature review asked the following question: *What is sustainable education and its cognates?*

We explored how sustainable education was conceptualised and which other terms or concepts were used as synonyms or contrasts. The main steps in the process included extensive searching for relevant studies, the application of inclusion criteria to the references we identified, and the production of a descriptive overview of included studies. At least two reviewers independently carried out each step of the work, and quality assurance was provided by two Circle U. Chairs going through the findings. To be included in the overview, studies needed to be as follows:

Inclusion criteria:

- written in English
- using the terms 'sustainable', 'sustainability', 'sustainable development', 'universities', 'higher education'
- of primary, empirical research or
- of theoretical studies or
- of empirical and theoretical research
- carried out since 1996

Studies were included in the review if they met all the inclusion criteria and were also classified by themes (sustainable development, sustainability and higher education, education for sustainability). During 2022, electronic databases were searched for studies dating back to 1987, when the concept of sustainable development was defined by the Brundtland Commission, using the above terms for 'sustainability' or 'sustainable', in combination with terms for learning or teaching in higher education.

To produce an overview, studies were screened using the inclusion criteria described above. Relevant studies were classified according to a standardised 'core' keywording system developed by the Circle U. Chairs and co-researchers. Review-specific keywording, drawn up by the review group, was also applied to describe studies further in terms of the type of 'sustainable' conceptualisations provided. Key elements, such as terminology, definitions, and abstracts, were described and categorised by theme. A narrative synthesis was drawn up, with each study described alongside others focusing on similar areas of sustainable education or cognates.

A total of 60 potentially relevant references were found, and following an application of the inclusion criteria, 37 studies were finally included in the overview. All the studies involved higher education. Of the 37 studies in the overview, 14 were empirical studies, and 23 were theoretical contributions. Overall, all the selected studies were carried out in European countries. No studies around sustainable education carried out in other parts of the world were selected, a limitation of this research.

1.4 Interviews

The interview study consisted of 22 interviews. We used purposive sampling (Cohen et al., 2011) and conducted interviewees among academics and students at the Circle U. partner universities and external experts. The interviews were conducted with Circle U. Chairs (5), administrators (2), and postgraduate students (3), as well as experts concerned with sustainable education, including the United Nations Educational, Scientific and Cultural Organization (UNESCO) — mainly in Europe (10), but also Canada (1) and India (1). In characterising differences among the interviewees, one dimension is the size of the arena in which they were acting, as shown in Table 1.

Table 1. Characteristics of Interview Participants

Scale	Employees	Students
National and International Forums (UNESCO, Learning Planet Institute, Danish Ministry's panel on sustainable education)	5	1
Higher Education Institution's Leadership	4	1
Other academics and students	10	1

Another difference among interviewees was by discipline, indicating that we captured a variety of disciplines within and across countries. The interviewees' disciplines ranged from digital humanities to engineering, three very distinctive perspectives. First, scientists (biology, ecology) tended to be concerned with very practical changes, especially institutional changes within the university; second, educationalists focused on the student and their learning, and how this was influenced by the way students were positioned within their university; third, anthropologists considered perspectives from multiple standpoints, combining the ways students and academics were positioned within the workings of the university and how this enabled or limited them from acting on society.

The interviews were semi-structured and based on a shared guide (see Appendix 1), which focused on three main areas:

1. The interviewee's interpretations of sustainable education/education for sustainability
2. Their educational practices, how they used their ideas in practice, and the roles of teacher and student
3. The institutional opportunities and barriers in implementing sustainable education.

The interview guide was developed by the Circle U. co-researchers and in training sessions with a Circle U. Chair and revised after testing in a pilot interview. The co-researchers also initially conducted interviews in pairs to develop shared ways of using the guide in practice. They adjusted the interview guide to accommodate the interests and expertise of each interviewee, whilst maintaining consistency in the data collected on the above three main areas. Interviews were conducted either on Zoom or face-to-face. Each interview was video recorded so that all team members could view them. Using a shared format, the interviewers wrote a summary of each interview as the first step in analysing the material.

The co-researchers met regularly among themselves to compare notes on their interviews and also met regularly with the Circle U. Chairs to share the main ideas emerging from the data. A method for coding the data on interviewees' ideas of sustainable education versus education for sustainability was developed by the co-researchers and Circle U. Chairs in collaboration. In a further series of online meetings, connections between the results of the interviews were identified and a report of the results were discussed and drafted. Circle U. Chairs compiled reports from the two strands into a draft text that was further discussed by the whole group in a thoroughly collaborative effort.

2 Context

In this part, we present the context, in terms of the dominant discourse on sustainable development (section 2.1), three principles of sustainable development (section 2.2), the EU Green deal and the future of universities (section 2.3), and institutional conditions for achieving the UN's and EU's goals (section 2.4).

How is sustainable education connected to Sustainable Development Goal 4: Quality Education?
Photo: Unsplash

2 Context

> Accelerating climate change, rising inequalities and growing displacements are just some among the many challenges that our societies face. Rising sea levels and biodiversity loss remind us every day that the survival of our planet hangs in the balance. Universities have a vital role in leading forward looking knowledge and research to find solutions to these challenges and equip learners with the transformative education and skills in favour of sustainable development.
>
> Stefania Giannini, Assistant Director-General for Education, UNESCO, Opening remarks Higher Education Conversation Series: Universities and Sustainable Development Goals (2022)

2.1 The dominant discourse on sustainable development

There is widespread recognition that the current global order, both socially and economically, is not sustainable in the long term. Increasingly frequent crises have been discussed internationally for decades, and in the process, the word *sustainability* has accumulated a vast array of meanings.

There are two commonly cited meanings of *sustainability* within higher education: one that focuses on the subject knowledge needed to create a sustainable world (often reduced to a discussion of sustainable development); and the other focusing on the educational abilities and competences students need to survive throughout their lives in an unpredictable and dynamic world. Both meanings imply a role for universities, not least because they have a role to educate for the world of tomorrow. However, there are more significant implications for universities in creating a more sustainable world. Western universities were designed for and are embedded within a world built on colonialist and enlightenment knowledge structures, and perpetual economic growth and exploitation. Thus, while universities must continue to educate, conduct research, and engage in scholarship for sustainability, the institutions themselves (and those of us who make up the academy) must also change in order to meet the challenges of creating a sustainable future.

The discussion on an international scale around *Education for Sustainable Development* (ESD) and its role in achieving *Sustainable Development* (SD) started two decades ago during the United Nations' conference on the environment in Rio de Janeiro, Brazil, in 1992. The conference resulted in the Agenda 21 that invited civil society and other local organisations to engage in action plans directed at a more sustainable environment and economy. The conference also established a framework for Education for Sustainable Development:

> Within the UNDESD 1992 conference framework, education was considered "critical for promoting sustainable development and improving the capacity of the people to address environment and development issues… It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making"
>
> (United Nations Decade of Education for Sustainable Development, UNDESD, 1992, chapter 36, p. 2)

Chapter 36 of the Rio agreement highlighted the importance of education in achieving Agenda 21 and UNESCO was given the role of leading this initiative. This marked a significant shift in thinking about environmental education and the process of combining various forms of education (environment, population, development, etc.) into the concept of Education for Sustainable Development (ESD). Since then, the role of education in sustainable development has been further acknowledged by the United Nations (UN) through global consultations organized around several specific themes to evaluate the implementation of the Millennium Development Goals and later the *Sustainable Development Goals* (SDGs). One of these consultations discussed environmental sustainability as well as a variety of environmental challenges. Although participants in this consultation were mainly from the environment instead of the education sector, education was defined as one of the most important agents of change.

However, ten years after the Rio Summit, few countries had made significant progress toward sustainable development (Tilbury, 2004). In 2002, world leaders gathered again in Johannesburg, South Africa, for the World Summit on Sustainable Development during which it was agreed to hold a UN Decade of Education for Sustainable Development (2005-2014). This aimed to provide the impetus for addressing the emerging issues in ESD 'to mobilize the educational resources of the world to help create a more sustainable future' (UNESCO, 2017). During the UN Sustainable Development Summit in 2015, world leaders agreed on a 2030 Agenda for Sustainable Development to ensure a more sustainable world. It detailed 17 SDGs. The objectives of this agenda are to eradicate poverty, injustice, inequality, and act on climate change by 2030.

2.2 Three principles of sustainable development

The three principles of sustainable development (SD), are (1) social, (2) environmental, and (3) economic, and each pillar overlaps with the others. Following the UN Decade on ESD 2005-2014 and The Global Action Program on ESD 2015-2019,[1] UNESCO was designated as the UN leading agency responsible for the implementation of ESD in the 2030 agenda. Under the fourth sustainable development goal SDG.4, Quality Education, UNESCO focuses on five priority action areas: advancing policy, transforming learning environments, building capacities of educators, empowering, and mobilizing youth and accelerating local level action. As a result, UNESCO defines ESD as follows:

[1] The Global Action Program (GAP) aimed to reorient and strengthen education and learning to contribute to all activities that promote sustainable development. It places a stronger focus on education's central contribution to the achievement of the SDGs.

> ESD gives learners of all ages the knowledge, skills, values and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet. ESD is a lifelong learning process and an integral part of quality education. It enhances the cognitive, socio-emotional and behavioural dimensions of learning and encompasses learning content and outcomes, pedagogy and the learning environment itself.
>
> (UNESCO, 2021)

As suggested by the above quote, UNESCO's idea of education combines scientific knowledge with the skills needed for people to use it to take action. UNESCO's vision on ESD is driven by a humanistic approach and calls for rethinking education radically as a source of empowerment, and as a crucial factor in changing society and safeguarding the planet. UNESCO's vision is positively to shift the quality, relevance and content of education (UNESCO, 2017). Higher Education institutions are perceived as uniquely situated to participate in the necessary social, economic, and environmental transformations and address the world's most pressing issues. An Independent Expert Group on the Universities and the 2030 Agenda was formed to develop a critical report, *Knowledge-driven actions: Transforming higher education for global sustainability,* on the role of Higher Education institutions in achieving the 2030 agenda (Parr et al., 2022).

2.3 EU Green deal and the future of universities

In parallel to the work of UNESCO and its Independent Expert Group on Universities, the European Commission (EC) launched the EU Green deal in 2019. It was an integral part of the EC strategy to achieve the UN 2030 Agenda and the SDGs and to reset the EC commitments to tackle climate and environmental-related challenges through a new growth strategy:

> [The New Growth strategy] aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2030 and where economic growth is decoupled from resource use.
>
> (Communication from the Commission, the EU Green Deal, 2019).

The Communication strategy offers a roadmap of the key policies and measures that are needed to achieve the objectives, by acknowledging the complex and interlinked challenges they face, and the need for comprehensive coordination across all policy areas. However, as the above quotation indicates, the Green Deal focused on technical solutions rather than education and universities are only mentioned about four times in the 2019 Communication of the EU Green Deal.

The European University Association (EUA) therefore decided to produce a position paper, *A university vision for the European Green Deal*, which explained how the role of higher education institutions is fundamental to the achievement of the EU Green Deal. The position paper argued that the expertise of universities is essential to open up routes to success, and to produce new insights into values, norms

and processes that ensure justice and fairness in achieving sustainability. The position paper pointed out that the way universities bring together expertise from different areas can be used as a model for a systematic approach throughout the EU. In addition, the social sciences and humanities can help attune policies to necessary changes in behaviour, values and belief systems. The EUA's position paper also addresses how the EU Green Deal's political ambitions are informed by scientific data. It argues that collecting and analysing data will not be impactful if done in isolation and that universities have a key role to play in the innovation pipeline from research to industry, and in connecting academia and society through education. In its response to the EU Green Deal, the EUA articulated its position on how to enhance the policy response using universities' core areas of expertise; namely, research, education and innovation. They offered several ways of moving forward, focusing on the need for policymakers to recognize the critical role of universities in policies, funding programs and interdisciplinary research.

In the process of ideas and goals for sustainable development carrying across from UN's SDGs, to UNESCO, and finally to the EU Green Deal, a shift in the political ambitions is evident. The original goal of considering sustainability to be a question of interconnected environmental and social and economic change, has been reduced to a question of environmental sustainability. As the focus turned to technical solutions, the connection between scientific research and education also weakened. As the educationalist, Sterling (1996) points out, in this limited understanding of sustainability, there is the risk that we may alter human activities and consumption habits, without challenging the dominant economic and market-oriented system of which they are a part.

2.4 Institutional conditions for achieving the UN's and EU's goals

It is far from evident how the UN's and EU's approaches to education and the SDGs would be aligned with the dominant market-logics in higher education. A market-oriented approach to education is characterized by two features: firstly, it should be subservient to the emerging global economy's labour power and consumption needs, and secondly, it should transform education into a commodity for commercial gain (Singh, 2015). This market-orientation is reflected in the overall organisation of contemporary universities and knowledge production. Indeed, driven by the Organisation for Economic Co-operation and Development (OECD) and the EU, higher education reforms throughout the 1990s and 2000s have coupled public universities tightly to the needs of the market and the state. This coupling is ensured by external accountabilities, measures and rankings, along with practices of managerialism, marketization and commercialisation, that all contribute to undermining academic freedom.

Universities have to compete in an education market dominated by multinational corporations and consultancy firms, in terms of knowledge and data ownership and distribution. While these profit-driven corporations inform governmental and EU policies, they are simultaneously beyond state-based epistemic governance and regulation. They are not democratically accountable. The positioning of public universities within a market logic and economy is seriously challenging their role as the critic and conscience of state and society, and as the primary producer, transmitter and legitimator of scientific knowledge within a democratic society (Lund et al., 2022; Wright 2016; Wright & Shore, 2017).

Responding systemically to the unfolding global crisis requires acknowledging that there is a connection between the knowledge content, form and conditions of education and knowledge production. To achieve this systemic effect, requires sustainable universities (see section 3.5). Thus, while education is being widely proclaimed as the key to a more coherent and sustainable society, economy and environment, this seems difficult to achieve within unsustainable social and economic institutional conditions (Sterling, 1996). We believe that the connection between funding, organising and governing universities in ways that exemplify the values of a sustainable world, and their ability to generate the knowledge and education needed to achieve a sustainable world must be strengthened.

3 Insights from the Literature Review

This part presents the meanings of sustainable education and education for sustainability that were identified through a literature review. First, we argue that a variety of terminology is used simultaneously in the literature addressing the concept of sustainable education (Section 3.1). We then delve into two main conceptualisations of sustainable education; the notion of Education for a Sustainable World – also referred to as Education for Sustainable Development, ESD (section 3.2); and the notion of Education that sustains a person for Life – also referred to as Education for Sustainability, EFS (section 3.3). Next, we discuss connections between the two concepts (section 3.4), and link ESD and Sustainable Development, SD (section 3.4), with some example cases concerning digitisation and education practices (section 3.5). Finally, we present structural and institutional conditions for sustainable education and pedagogy (section 3.6), before we end with a theoretical framing for sustainable education (section 3.7).

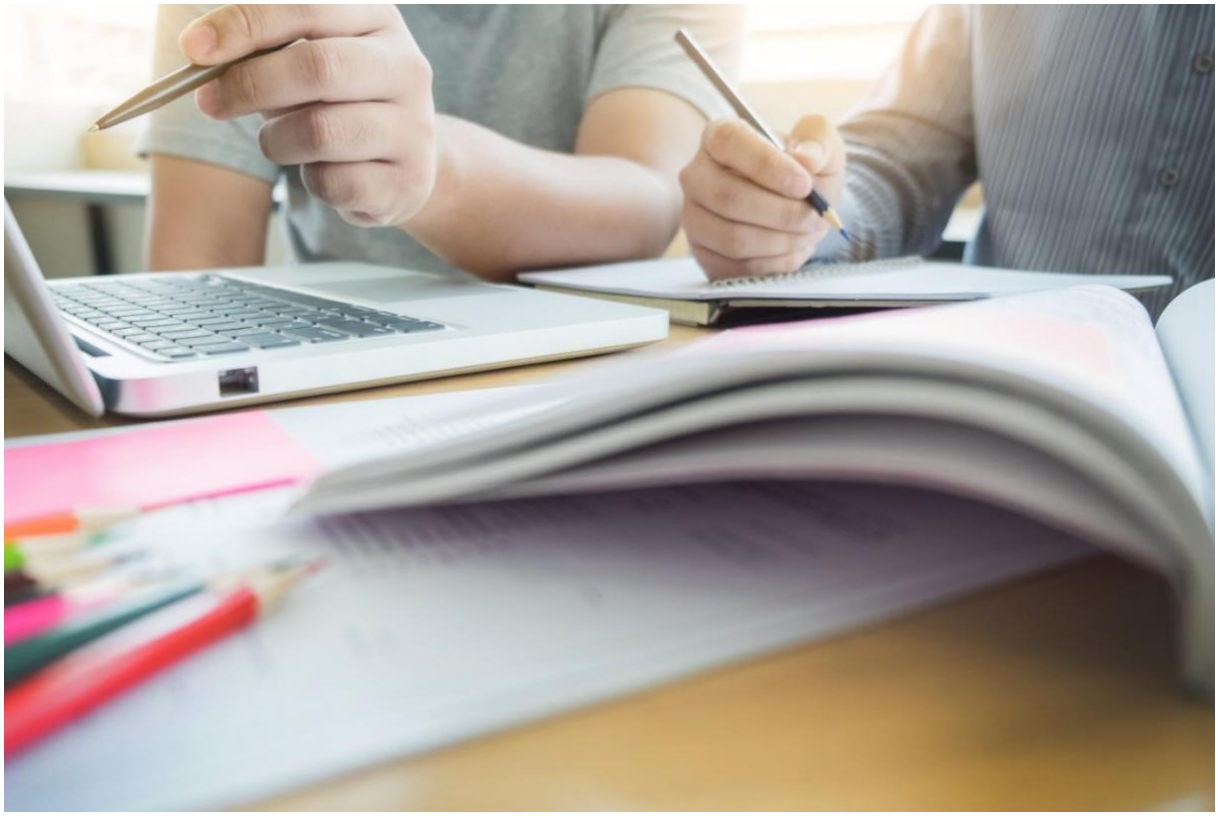

Photo: Colourbox

3 Insights from literature review

In the literature review, we found that a variety of terminology is used simultaneously, often referring to the same or very similar concepts. Research indicates that we have not yet reached a clarity in terminology.

Terms used synonymously in the literature:

- Sustainable Education
- Sustainability Education (SE)
- Education for Sustainability (EFS)
- Education for Sustainable Development (ESD)
- Environmental and Sustainability Education (ESE)
- Learning for Sustainability (LfS)
- Earth Education (EarthEd)

(Dawson, 2017)

Different terms imply a shift in focus, for example, addressing ongoing development (ESD-related literature) or environmental matters (ESE-related literature). However, small variations in terminology also seem to reflect diverging national and regional foci. Furthermore, the choice of concepts and terminology appears to reflect whether the focus is on the education process or on the educational outcomes or goals. What unites the publications, is an agreement that educational institutions have both the leverage and the responsibility to shape and support individual and collective developments towards a liveable future as defined by UNESCO. One of the challenges, however, is that many of the articles, contrary to UNESCOs agenda, tend to focus on sustainable education on a national scale, rather than on a global scale.

There are, according to Sterling et al. (2017), two sets of challenges to be tackled in that regard:

1. Providing direct education for a specific set of learners
2. Facilitating a long-term global change of mainstream education and policy making

(Sterling et al., 2017)

Over the past two decades, universities have increased their provision of educational programmes on sustainability in the connected areas of climate change, poverty, social justice, and sustainable consumption. However, they have tended to focus on subject knowledge and the competences of the educators rather than the learners. They do not necessarily address the role of interactive, learner-centred educational environments or how they can improve students' skills and competencies.

In the literature the development process of the education system is described through numerous educational forms, from *push schooling* to *sustainable education*:

- *Push schooling* reflects education in which academic institutions have strict indoctrination and aim to educate students with an attitude to apply education only to help students achieve their goals; they are more concerned with internal procedures to keep the organization running.
- *Pull schooling* focuses on student satisfaction and follows the same paradigm, but it collects feedback from learners and places more emphasis on the learning lifestyle rather than innovation. Most academic institutions are located on either the Push in low-income developing countries or the Pull in low-middle income developing countries.
- *The Coupling paradigm* focuses on the bidirectional interaction of Push and Pull schooling to provide education services to learners, and learners are viewed as customers or end-users. As a result, they develop their strategies either alone or in collaboration with partners, focusing on accumulation, in which learners take a series of courses with specific outcomes to achieve accumulated knowledge and skills to meet market demands. As a result, they collect learner and industry feedback to update the delivery contents; this model is used in high-income developed countries.
- *Integrated education* is more concerned with optimizing their performance and assessing the quality of the education system by measuring the competencies of their graduates. They emphasize industry collaboration and provide learners with industry skills and certifications via integrated courses with industry partnerships. They also involve external entities to form course or program learning outcomes in collaboration; this model is used in high-income developed countries.
- *Sustainable education* is another breakthrough in education systems that has not yet been followed up and fits the 4th industrial revolution technologies about augmented reality, virtualization, and gamification to be incorporated into the educational process. The main goal is to maximize graduates' competencies and skills in order for them to be innovative and produce entrepreneurship.

(Embarak, 2021, p. 447)

3.1 Connections between Sustainable Development and Education for Sustainable Development

To be able to define the concept of *Education for Sustainable Development* (ESD), it is important first to make clear what the term *Sustainable Development* (SD) or *sustainability* means and how it relates to education (Sandell et al., 2005). It is apparent through the literature that there is no straightforward answer to that inquiry, leaving room for interpretation. The term SD was first introduced in 1987 in the Brundtland Report:

> Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
>
> It contains two key concepts:
>
> - the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
> - the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.
>
> (World Commission on Environment and Development, 1987, chapter 2).

Similar to ideas like *liberty*, *justice*, and *democracy*, there's no single agreement on the meaning of *sustainability* or SD; these concepts are contested and interpreted differently by political ideologies, kinds of knowledge, values and philosophy (Huckle & Sterling, 1996; Sandell, et al., 2005). The ethics and politics of sustainability are discussed and supported differently depending on where we stand on the spectrum of political ideology: liberal political ideology, socialist political ideology, libertarian socialist, and green politics (Huckle & Sterling, 1996).

The dominant view (underpinned by liberal political ideology) tackles sustainability as a matter of making changes to the current human activities without challenging the dominant economic and market-oriented system, maintaining *business as usual* (Sterling, 1996). The three other ideologies view sustainability as a chance to fundamentally rethink human activity and feel the need for a radical structural and cultural shift, linking sustainability to social justice (Sterling, 1996). The contemporary world and the discussions around sustainability are largely driven by the liberal capitalist and market-oriented approach, with governments lacking the ability to balance between economic growth and social reproduction in ways that preserve the ecology and maintain a socially sustainable world (Huckle & Sterling, 1996).

Given this complex background and contested interests and values, an important characteristic of ESD is to help learners to critically reflect on those different meanings and imagine alternative futures in a more informed and democratic way (Huckle & Sterling, 1996). Consequently, how is ESD defined today and what can be considered its main characteristics?

3.2 Higher Education Institutions for a sustainable world and Education for Sustainable Development (ESD)

This section aims to outline the concept of Education for a sustainable world in terms of the cognate Education for Sustainable Development (ESD) and the dominant discourse that is prevailing in that field. It aims to map out the historical roots of ESD on an international scale and discuss its dominant market-oriented approach that works to reinforce *business as usual*. Within that framework, UNESCO formed an Independent Expert Group on the Universities and the 2030 Agenda to develop a critical report on the specific role of higher education institutions in achieving the 2030 agenda. This report is entitled *Knowledge-driven actions. Transforming higher education for global sustainability* (UNESCO, 2022) and aims to address the following key questions:

> - How can universities and other higher education institutions gear up their activities (teaching, research, community engagement, etc.) to tackle global challenges? What should their focus be?
> - What new knowledge, research, and education strategies are needed to generate the necessary transformations for the 2030 Agenda?
> - What are the necessary transformations required within universities in order to contribute to the achievement of the SDGs? What barriers stand in the way of these transformations?
> - What can universities and other higher education institutions do to ensure more inclusive and sustainable futures for all, both within their institutions and within broader society?
>
> (UNESCO, 2022)

The report calls on universities and higher education institutions to have a vital role in the 2030 Agenda. After all, the Agenda was signed by 193 countries and aims to deal with some of the world's pressing issues, as stated in the 17 SDGs. Transformation, it was recognised, required identifying barriers and making the necessary structural and cultural transformations within higher education institutions.

> The report identified three key focus areas:
>
> - The imperative need for institutions to become more open, as well as the need to move toward inter- and transdisciplinarity in education and research
> - Fostering epistemic dialogue and integrating other ways of knowing
> - The need for a much greater presence in society through proactive community outreach and collaboration with other societal actors to raise awareness of environmental degradation and the SDGs in general, as well as to influence policy.'
>
> *Knowledge-driven actions: Transforming higher education for global sustainability*
> (UNESCO, 2022, p. 14)

3.3 Education that sustains a person for life and Education for Sustainability (EFS)

Sterling (1996) develops a concept of providing people with the competences to create a sustainable world, which he calls Education for Sustainability (EFS). An important characteristic of EFS is to help learners to critically reflect on the different meanings of sustainability and education and imagine alternative futures in a more informed and democratic way (Huckle & Sterling, 1996). According to Sterling (1996), EFS has the following key characteristics:

> - EFS is contextual, innovative and constructive, holistic and human in scale, integrative with greater emphasis on interdisciplinary and transdisciplinary enquiry
> - EFS is process-oriented and empowering rather than product-oriented (engaged and participative rather than passive)
> - EFS is critical (ideologically aware and socially critical), balancing, systemic and connective, ethical, purposive, inclusive and lifelong
>
> (Sterling, 1996)

Although education is widely proclaimed as the key to a sustainable society, according to Sterling (1996), it can also be part of the problem in contributing to the reproduction of an unsustainable society:

> EFS addresses several challenges in achieving sustainability:
>
> - examining and clarifying the meaning(s) of sustainability
> - offering a critique of education for un-sustainability
> - explaining the philosophical foundations and issues underlying desired change in educational theory and practice
> - proposing alternative pedagogical, curriculum, and structural modes
>
> (Sterling, 1996, p.18)

According to Sterling (2001), EFS represents a change of educational culture towards the realisation of human potential and the interdependence of social, economic and ecological wellbeing that can lead to transformative learning and agency. Transformative learning is defined as ways that humans change their perceptions of what they know about the world (Chen & Wu, 2022), whereas transformative agency captures students' competence in taking initiatives and transforming their practices, which arises as a necessity when students "are placed in demanding situations involving challenges or a conflict of motifs, thus creating a wish or need to break out of the current situation" (Brevik et al., 2019). This involves moving beyond transmission of information from educator to learner; emphasising educator–learner interdependence, critical reflection, collaboration, agency and problem solving (Brevik et al., 2022). Faculty should facilitate change and encourage students to take ownership of the environment in which they live (Nicolaides, 2006).

3.4 Connection between education that sustains a person's life, ESD and EFS

This section aims to identify any existing connections between ESD and an education that sustains a person for life: *How can an education that empowers individuals to make informed and critical decisions about their future lead to a more sustainable world? What is the link between the two?*

If sustainability is to be used in a meaningful way and to change the world for the better, education in all forms and sectors must play a critical role. It is becoming increasingly clear that an education that unquestioningly reproduces a modernist, market-oriented society is no longer tenable, and that we urgently need to find new models and approaches from which to build while remaining consistent with existing practices. This necessitates a fundamental shift in education by broadening and reinventing a new purposeful and holistic view of education and society (Kosko & Toms, 1994; Sterling, 1996; Meadows et al, 1992). This section suggests going beyond the concept of *sustainability* that is being used to serve a market-oriented ideology:

> - *Intellectual Flexibility* can be linked to the interdisciplinary characteristic of education for sustainability (EFS) and to the student-centred and process-oriented approach of teaching and learning
> - *A holistic view of the role of higher education institutions*, addressing the need for a structural change in educational institutions, how universities use their resources on campus and beyond and their position in the world.
>
> (Sterling, 1996)

Like ESD, any discussion around EFS should be situated within a cultural, social and political context (Sterling, 1996). We need, Sterling (1996) argues, to rethink and revise the modernist and market-economic assumptions underlying the contemporary education theory and practices, in the light of challenges to sustainability. Furthermore, this rethinking should make educational theory and practice more contextual, innovative, holistic and constructive. EFS emphasises interdisciplinary and transdisciplinary enquiry; process-oriented, critical, inclusive, lifelong and empowering educational practices. However, EFS also faces pressing questions: What is implied and meant by sustainability? What counts as "unsustainable education" (Sterling, 1996) and how can we critique it? How might we develop the philosophical foundations of EFS? What issues and challenges are related to changing educational practices, including pedagogy and curriculum? In short, we must develop a new purposeful and holistic view of education and society as a whole (Sterling, 1996; Meadows et al., 1992; Kosko, 1994).

3.5 Structural and institutional conditions for sustainable education and pedagogy

For sustainable education to be more than empty words and make a felt difference in the everyday lives of students and academics, structural change is required to restore democratic control of universities and knowledge, and support academic freedom and epistemic diversity (see also Nussbaum, 2017). As already indicated in section 3.3, Education for Sustainability (EFS) entails changes in human perceptions of what they know about the world, which aligns with what Sterling (2001) and Chen and Wu (2002) call transformative learning and what Brevik et al. (2019) define as transformative agency. This notion involves nurturing democratic processes of learning rather than knowledge accumulation, and emphasising *how* to think rather than *what* to think (Thomas, 2009), in order to develop student capacities to think critically, creatively and constructively through complex problems.

The social, ethical and ecological agendas and ambitions embedded in transformative learning and agency are manifold. For instance, Williams (2018) as well as Wane and Todd (2018) link transformative learning to decolonization, Kailin (2002) links it to anti-racism education, Brevik et al. (2019) connect transformative agency to professional digital competence in higher education, and scholars such as Houde and Bullis (1999) and Hernandez (1997) suggest that (eco)feminist teaching holds a particular transformative potential. For a university to deal with these diverse and sometimes contradictory calls for justice and equality requires structures that facilitate participation by all members of the university community – managers, administrators, academics and students — contributing actively to democratic processes. This in turn requires nurturing self-critical reflexive and agentive capacities: openness and curiosity towards the experience of others, mutual respect and appreciation that others are positioned differently on contentious issues, and a virtue of trustworthiness (Daukas, 2011).

An alarming challenge to the democratic processes for furthering sustainable education, is the ways the public sphere is being eroded by socio-political polarisation. This is seen for example in fraught issues around racism, trans gender and post-colonialism, where opposing sides in an argument treat each other as enemies rather than representing different perspectives that need to be explored, understood and critiqued in an open and curiosity-driven dialogue. For black feminist educator, bell hooks (1994), such a pedagogy depended on creating a *transgressive learning environment*,

> The classroom is a "space of possibility… an opportunity to labour for freedom, to demand of ourselves and our comrades, an openness of mind and heart that allows us to face reality even as we collectively imagine ways to move beyond boundaries, to transgress. This is education as the practice of freedom".
>
> (hooks, 1994, p. 207)

Processual, curiosity-driven and open education runs counter to the market-economic logics underpinning contemporary higher education. These logics not only inform learning practices and theories focused instrumentally on employability, efficiency, profitability and productivity, but also the management and structures of the institutions themselves.

Universities in Europe have undergone significant reform during the past 30–40 years (Wright & Shore, 2017). The competitive environment that Slaughter and Rhoades (2004) call “academic capitalism” has produced toxic stress, anxiety and bullying cultures (cf. Carpintero, 2017; Ryan-Flood & Gill, 2010). Governance through metrics has rewarded certain ways of being and knowing (those that can be measured and compared) and facilitated an epistemic monoculture with gendered, classed and raced consequences (cf. Aarseth, 2022; Blackmore, 2022; Lund & Tienari, 2019; Rowlands & Wright, 2022).

In short, sustainable education does not only involve a pedagogy that combines an awareness of the problems that need solving in the world with the personal capacities to bring about change, but also the creation of sustainable universities. This means moving beyond ‘business as usual’ and ensuring the cultural, organizational and structural transformations necessary for institutions to facilitate respectful democratic dialogues geared towards creating sustainable futures.

3.6 Summary

Based on the literature review it seems that Education for Sustainable Development (ESD), is concerned with supporting learners to engage in democratic dialogue about what constitutes a sustainable future, not least by aiming to reach the UN Sustainable Development Goals (SDG’s). UNESCO’s Agenda 2030 involves bringing about the cultural and structural transformations of higher education necessary for nurturing such democratic dialogue. In responding to this challenge, scholars suggest different paths. Some scholars connect Education for Sustainability (EFS) to transformative learning pedagogies that challenge traditional educator–learner power relations, and develop critical capacities for reflexivity and imagination. Transformative learning and agency also involves holistic, interdisciplinary, process oriented and empowering educational practices. Shifting from a goal-oriented to a process-oriented and agentic learning culture, that can embrace social and epistemic justice, requires democratic leadership and governance.

4 Insights from Interviews

This part presents the voices of academics and students that we have interviewed about the connections between sustainable education and education for sustainability. First, we discuss the interviewees' views that the complexities of defining sustainable education (section 4.1). We then delve into different conceptualisations of sustainable education, from rejecting the term 'sustainability' (section 4.2), via the notion of education for a sustainable world (section 4.3), education to sustain students for their lifetime (section 4.4), connections between sustainable education and education for a sustainable world (section 4.5), ideas of sustainability in practice (section 4.6) towards institutional opportunities and barriers in implementing sustainable education (section 4.7), including opportunities and disadvantages of digitisation.

Insight from interviews revealed academics' and students' perspectives on the connection between sustainable education and education for sustainability. Photo: Colourbox

4 Insights from the Interviews

4.1 Definitions of sustainable education

In the interviews, there was general agreement that the term *sustainable education* and cognates (*education for sustainability* or *for sustainable development*) are hard to pin down and define. Some interviewees thought this blurring, vagueness or flexibility was an advantage. An institutional leader thought a careful and critical discussion of its meaning and practice could be constructive, but cautioned that:

> There is a danger that in 'sustainability' we end up with a very narrow definition of what is sustainable education. That can be damaging. We should be a bit critical when it comes to 'sustainability', if it covers everything, is it a good concept? (University leader of Education, Norway)

An academic was similarly nuanced. He thought the impossibility of defining *sustainable education* made it a very powerful concept as it could be made to 'contain both lifelong learning but also education that happens within the planetary boundaries and has to do with the environment':

> Sustainability can, on the one hand, be used in order to inspire solidarity […] but it can also be used for the opposite purpose, inspiring neoliberal ideas that people should do with fewer resources and take care of themselves. So it's a very elastic concept. (Academic, Medicine, Norway)

As indicated, he recognised the danger that the elasticity of the concept meant it could be used for very different ideological purposes.

As hard as it may be to define 'sustainable education', academics generally took a stance on their position towards the concept. Some academics more strongly rejected use of the term 'sustainable education' because the competences students were said to need for sustainability elided with neoliberal ideas about individuals taking responsibility for themselves, being adaptable, and able to take on new competences. Three academics rejected the term on the grounds that through their education they were *not* trying to sustain the status quo. One said that, to sustain is to keep things going, and argued that we are not trying to preserve or conserve, but instead to develop relations as a species among other species that will make the world viable through generations. The other two were similarly focused on change rather than sustainability. They were actively trying to get students to think about the world they want to live in and how they can bring it about, either through their own lives or through international development. These academics largely preferred to use other terminologies, e.g. 'education for sustainability', or 'learning for sustainability'.

Conversely, other academics resonated with the concept and used it without hesitation. Among the interviewees who did use the term 'sustainable' (or variants) in association with education, there were different meanings. The first two terms were 'education for a sustainable world' and 'education to sustain students through their lifetimes'. Another question was whether and how interviewees made connections between these two ideas – some did not, and others did but in a variety of ways and they operationalised their ideas of sustainability in a range of different practices. A number of interviewees also referred to a third meaning of sustainable education, institutional opportunities and barriers in implementing sustainable education, including opportunities and disadvantages of digitisation. These points will be discussed in turn below.

4.2 Education for a sustainable world

Several interviewees conceptualised *sustainable education* as *education for a sustainable world*, using various terms in explaining their conceptualisations. Two interviewees related the idea of sustainability to teaching about the SDGs. A third taught international development, but argued the SDGs or the concept of sustainable development did not provide solutions; students needed both a more critical approach to the problems and creative ways of exploring alternatives.

Many interviewees, while not referring to the SDGs, emphasised the importance of understanding how economic, social and environment issues are intertwined. One thought the flexibility of the term sustainability was an advantage and referred to the widespread image of different spheres inside each other – the environmental, economic, and social and raised the question, how do they interact with each other?

Another perspective came from those who associated sustainable education with 'holism' in the sense of connecting activities inside the university with the world outside. One academic explained that teaching sustainability was to embed academic education into society and show students that sustainable education is real and important, and not 'artificial'. He noted that universities have a new responsibility to keep the objectives, vision and values of higher education while being aware of the context and society they are working within.

In line with this view, a student interviewee described sustainable education as a very accessible, open-minded, and outward-reaching education where the university does not live in a bubble. Universities take on a responsibility in society to contribute and share knowledge and let people that are not part of educational systems be aware of how knowledge is produced.

Some interviewees associated this line of thinking with the concept of a civic university. In explaining this concept, they emphasised the importance of universities looking 'outside' and engaging with a 'real world'. One academic put it succinctly, 'Education for sustainability is looking outside of the frames of the University'. Another explained that 'In civic universities, the learning process is not limited to the classrooms. There are things to learn outside schools or universities'. Another academic explained at greater length:

> The goal is to give other competencies, other than academic ones; bringing students closer to real society, making them aware of problems. Upon graduation, students should have the confidence that they can do something for the society… Our goal is to have civic universities. It means to have a university which can bridge the society and the academic world. To come back to Earth without putting aside the academic mission that is common to all universities, being conscious of the universities' impact on the society. (Academic, Physiology and Neuroscience, Belgium)

Of note, a university leader focused on the university's role in equipping students to deal with issues of climate and sustainability:

> Our ability [is] to provide study offerings and good conditions for student learning. Educational offerings should prepare students for working life and equip them with digital competences and things related to climate and sustainability. (University leader of Education, Norway)

These different discourses had in common a focus on universities' orientating themselves to focus on students' learning about the 'real' world 'outside' the university, whether depicted in terms of the SDGs or a complicated interaction between environmental, economic, and social spheres.

4.3 Education to sustain students for their lifetime

A second conceptualisation of sustainable education is related to education to sustain students for their lifetime, by equipping learners with agency, and the competencies needed, to shape their own lives and contribute to the creation of a more sustainable world. One Circle U. Chair distinguished sustainable education from education for sustainability by calling the former 'education that lasts for life'. Then cautiously, he offered to 'even go further' and said:

> It might be transformative in a way that it possibly changes ways of thinking… it might open new doors. And what I think [is] most important is that it may trigger curiosity and a thirst for learning. I think a really sustainable education leads to the learner wanting more and more and more. Or at least that's what I would say it had on me… Sustainable – if you just look at the word – it means that something is sustained (in theory) forever, so this might even be beyond the lifetime of any given learner to pass something onto others. (Circle U. Chair, Agricultural Ecology, Germany)

Others referred to sustainable education as continuing education or life-long learning, concepts with long histories that pre-date the emergence of sustainable education. Others again focused on the transformative effect of education not only on the individual, but on the world. One academic endorsed this aim for education, although he cautioned that the history of education shows there is no causal link between knowledge and action. Others had less hesitation. The Circle U. Think and Do Tank's project officer clearly expressed the idea of improving life along three dimensions:

> Regarding the content of sustainable education for me, the main mission is how we can learn to live a better life… how we can help our students to live a better life… how we can help our students to have a positive impact on the life of other people; and… how we can help students to have a less negative impact on the world, on the planet. (Circle U. Think and Do Tank's project officer, France)

The project officer explained that these three aims required changes in the way of teaching sustainable education across the four dimensions highlighted by the Think and Do Tank: the involvement of students, the integration of external stakeholders, internationalization and interdisciplinarity. She argued the involvement of students and external stakeholders was important because, 'if you don't do anything which is meaningful for [students], when they finish university, they wouldn't care about it'. In a global world, it also made no sense to contain ourselves within national borders because the challenges that we are facing are interconnected. An interviewee from the Learning Planet Institute also reinforced the need for interdisciplinarity, saying that, 'The world is not in disciplines. If you spend too much time within a discipline, you speak a language no one else understands', whereas the opposite is needed to deal with today's challenges.

One of the student interviewees took a different approach, defining sustainable education as accessible to a population. The student focused on how the university equips students for the rest of their lives, beyond just providing a degree certificate. To ensure universities are thinking about how they offer that wider experience, they need to have platforms that include students in higher education institutions. Other interviewees focused on human values, with one director of a learning centre arguing that love and compassion are at the core of sustainability.

These discourses had in common a focus on education as a process that would last a lifetime, and in various ways were interested in the transformative effects of education on the individual to create a better, kinder, and more engaged life for themselves and in society.

4.4 Connecting sustainable education and education for a sustainable world

The idea of sustainable education was rarely explicitly connected to the first discourse about education for a sustainable world – however, there were some interviewees who did so, as set out in this section. A director of the Learning Planet Institute made a direct link to the kind of education needed to equip students for the challenges facing the planet:

> How to engage learners (from babies, to life-long learning) to understand current human challenges all the while considering the SDGs'. (Co-Director of the Learning Planet Institute, France)

An academic also directly connected his educational aims for students to their capacity to address issues about environmental sustainability. He referred to Education for Sustainability or Environmental and Sustainability Education (see literature review, chapter 3), which he defined as follows:

> Education that seeks to transform and transgress and work in transdisciplinary ways to address global challenges that are at once engaged in social, environmental and economic systems that have been locked into unsustainable pathways. Education that engages with us on a personal sphere… and our own sense of self; at a practical sphere with the skills we have, the skills we need and need [to be able to] deploy; and the systematic sphere, the systems we build and work in. We want to transform these spheres of action in the face of socio-ecological economic systems working on all directions. (Academic, Education, Canada)

Other academics expressed a similar commitment, but with more hesitation about whether it is possible to make the connection between education as transformative for the individual and any transformative effects on the world. As one put it:

> One of the key things for me, is I'm interested in forms of education that lead to more liveable worlds. But I'm not sure what that actually is, because anything we do it's really, really hard to know what all of the effects are. So, I sort of feel like one just has to experiment and try out different practices and then sort of hope for the best without really knowing if one is contributing to more liveable worlds or not. But doing one's best, taking one's best guess and doing something – that seems worthwhile. (Academic, Environmental Anthropology, Denmark)

Another academic expressed similar uncertainty in terms of historical debates in education. He raised the additional point that we do not know what environmental or other issues will emerge in the future and how to equip students for them, apart from an ability to critique them:

> Then of course, good colleagues during the 90s started working on a different position… characterised by a critique of the understanding between knowledge and behaviour. And the argument is that trying to work with simple behaviour modification, or simply pouring in knowledge and then expecting a specific action on the other hand is a flawed one. For one, because it seems to only work… on a short-term perspective, but also because we do not have access to future sustainability issues. I do not know what kind of issues will pop up in 10 years, in 20 years, and in 50 years. So, simply telling what is right, is not the way to deal with the future sustainability challenges in educational perspectives, because in educational

> perspectives it's never about the now. It's always about the continued development throughout life of any given student or pupil. So, this approach is more critical. The idea is to be able to engage with different notions of sustainability, of climate change, of the challenges that we face – critique them. (Academic, Education Science, Denmark)

These interviewees explicitly connected the first two concepts of sustainable education. They did so by addressing the kind of education they are trying to provide for students, in order for them to deal with the challenges faced by the planet. They argued this is important, even though there are uncertainties about how educational ideas do or don't translate into making a more liveable world, and what the planet's future environmental and other challenges will be.

4.5 Operationalising ideas of sustainability in practice

Several academic interviewees conveyed very vividly how they were finding local spaces to experiment with new educational practices. They often did this within institutional constraints and many of these experiments were limited to individual classrooms or centres and would not be more widely adopted or institutionally sustained.

Interviewees varied in what they were trying to teach. One took a pragmatic approach to operationalising UNESCO's skill set of competences for sustainable development – anticipatory critical and normative competencies, and system thinking. Others questioned or rejected the language of sustainability, but focused on how students could develop the critical thinking skills and democratic values that would equip them for a life reflecting carefully on how to have an impact on the world. Despite these differences, the description of their educational practices had a number of features in common.

First, several interviewees referred to a change in relationships between teachers and students (also addressed by Stirling et al., 2017). One explained this as a change from the 'vertical transmission' of knowledge from one generation to another more junior generation. Another referred to a move away from 'the classical mode' where 'you respect the teacher and you do what you're supposed to do. You don't question the teacher; you don't question anything'. Instead, there was a more mutual construction of knowledge, which means a different dynamic between teachers and students.

For example, an academic who taught in a centre focused on the SDGs, pointed out that whereas the SDGs were defined by some people on behalf of others, education for sustainability requires a different kind of politics. In designing cases through which to address how to tackle environmental, social and economic challenges, they involved students as partners (Eriksen & Brevik, 2022). As these challenges are for the next generation to solve, students must take part in defining them. He emphasized the important distinction that students were not just 'involved' but were 'partners' in what another interviewee called an 'inter-generational exchange'.

A student interviewee also addressed the need to change staff–student relationships:

> To me, education is about the academic staff creating a culture, where the student and the teacher belong to each other and to the same institution. In many ways, I feel like the student and the teacher live in parallel worlds, and they only meet when the academic staff is teaching something to the students. I think we have much more to learn from each other than just the teaching of a subject. If we manage to come together and discuss what we can learn from each other, that is a sustainable way of thinking about a higher educational institution. (Student, Leader of the Student Parliament, Medicine, Norway)

The second common feature in the academics' descriptions of their educational practices was that a relation of co-creation between academics and students lead to a different style of teaching, based on a mentor relationship. Instead of the teacher explaining in a monologue, students are invited to participate in a dialogue, for example using the Socratic method:

> The mentor and the Socratic method is inviting questions and the development of the learner, as an independent learner. (Director of the Learning Planet Institute, France)

One academic interviewee explained how she uses a Socratic method in practice:

> I think my style as a teacher is much more to pose questions and to ask, you know, what are the different ways we could see this? What are the different ways we can analyse? What are the different possibilities that are going on here? What are the different ways of thinking about things? And so, I hope to generate spaces of reflection, but without determining what reflections people make. So, my goal as a teacher is to create a community space for reflection. And that also includes my own, right? A good class makes me think more deeply about issues as well. (Academic, Environmental Anthropology, Denmark)

A third common feature was that many interviewees focused on critical analysis about how students are positioned in the world and what capacity they can develop for action or for creating alternative worlds. They described their educational philosophy and how they translated this into educational practices. One academic explained:

> I'm deeply committed to the really radical power and potential of education. And I believe that education […] is profoundly transformative in so many ways […] And universities can be such an exciting setting for learning and thinking and doing, but I do worry about the ways that university education is becoming so strongly oriented towards producing employees […] and/or innovators, particularly for economic growth. And the question becomes what else

> can the university be doing? And you know, it's also a tough time, because sustainability itself is increasingly positioned as an economic growth engine through a lot of mainstream definitions of sustainability that link to green growth. And how to offer other visions and possibilities for what sustainability might mean, how to reclaim the concepts in different ways? These are all things I struggle with on a practical basis. How to be both responsive to the life worlds of students who are inside that machinery while also trying to create spaces to think beyond the frames that that machinery gives us. (Academic, Environmental Anthropology, Denmark)

A student expressed similar ideas, but with more attention to democracy:

> For me, education is not only about teaching students things so they can get a job afterwards. Education is about spending time in an institution where you learn a subject, but you also learn how knowledge is produced and you learn the ability to think critically and to develop yourself as a person so that when you are ready to go into the world and get a job, you also have the ability to think critically and participate in democracy. We can think of education as being very narrow: students are going to learn this so they can go out and do a job. But for me, that is very limiting. Education is much more, it's about educating people to be active participants in the democratic society where we also know what is important for the future, and that is a value that you hopefully learn through sustainable education. (Student, Leader of the Student Parliament, medicine, Norway)

4.6 Embodied engagement as sustainability in practice

A fourth idea that can In describing how they actually teach, interviewees emphasised activities that were more than cerebral, and that involved embodiment and movement. One asked:

> How does education cultivate an extreme lack of knowledge about the world and extreme incuriosity to know more about it? We focus on buzzwords like sustainability but know nothing about the local sewage system. Cities cover it up, as they cover up brooks and rivers. They spray to make animals go away. They're sanitising to make the hygienic sterility of the world we're living in, and then we forget, or imagine these things are not there. You walk in a street in Paris and don't listen to rumbling beneath your feet, how can we peel back the layers of activity beneath the asphalt? We are a long way from the actual workings of a city because we have hidden them away. (Academic, Educational Anthropology, Denmark)

She described an international and interdisciplinary project that is trying to engage students in embodied engagement with what is going on in their own locality.

> After we've made wonderful high-resolution maps with satellites, how do we get them off the screen and onto the floor? How do we embody them? The floor map project involves making enormous maps, 7 feet by 5 feet. We have people dialogue with each other about their own local areas, and with politicians. They get excited about walking around on the maps, even though they have to take their shoes off. They are pointing with their toes, bending down, in each other's way. 'Could you please move your butt? I want to see if there's a river there'. There can be QR codes on the rivers and other things so people can learn more about them. (Academic, Educational Anthropology, Denmark)

She pointed to three aspects of this education practice. First, this was education through walking in the world. It no longer treated education as if it was just in the head, 'education that had no feet', or, as in online teaching, 'education above the shoulders'. Second, people interacted differently when nobody could control a screen or a mouse, and people could move around and talk. Third, it engaged humans with their natural surroundings. She argued that sustainability is essentially still humans doing something in the world, as if there was a separation between the human species and the ecosystem; this education aims to generate a sense of the mutuality of life in nature.

An anthropologist who teaches international development had a similar focus on students' engaging in an embodied way with their surroundings. She uses the campus as a resource and site of learning, with students' walking and mapping infrastructures and analysing their sustainability. Similarly, she uses the local town as a site for the students to explore urban futures. Based on research and observation of her colleagues' teaching, her book sets out a 'critical and creative' pedagogy (cf. Schwittay, 2021). She explores ethical and political issues around social interventions and using techniques of playing, mapping and creating for the students to explore alternative ways of living and of bringing alternative worlds into being.

> In the interview, she described a colleague's course on disaster and development which, alongside lectures and seminars, engaged students in designing serious games. She explained how this involved experiential learning that was both fun and demanding and was an excellent way for students to learn about complexity and systems thinking. It was also a creative way for students to understand uncertainty – how people deal with not knowing what will happen with weather patterns and climate change. (Academic, International Development, UK)

In a similar vein, an academic interviewee described her educational practice which uses the university as a site for engaging the students, in an exploration of how they are positioned within institutions. They analyse how they are being shaped by the institution, but also what capacity *they* have to shape the institution. This is fundamental for students to learn how to negotiate institutional constraints in order to be 'active learners' whilst at university. What she calls being politically reflexive practitioners is also a capacity they can take into the workplace or community, to think about the world they want to live in and how they can help make that come about.

4.7 Institutional opportunities and barriers in implementing sustainable education

Interviewees also discussed whether educational approaches and programmes were themselves sustainable and durable within existing university policies and structures. Both institutional leaders and academics discussed the question of whether higher education institutions created barriers or afforded opportunities for the kinds of education they advocated.

There was considerable criticism that the ways universities are governed and organised run counter to educational aims. For example, one Director of a Learning Centre commented that, just as capitalist agriculture and rapid food production were obstacles to methods of sustainable farming, so the integration of universities into a 'capitalist logic' with a focus on market success is a barrier to a self-reliant, small-scale learning process:

> Education is designed to make us insecure. If I feel secure and complete, I do not need the system… I cannot sell my commodities. (Director of a Learning Centre, India)

Interviewees elaborated on details of this institutional logic and how they impeded their ability to develop sustainable education. Several interviewees focused on the division of universities into disciplinary units, or as a university leader put it 'the world has problems, but the university has departments'. Although disciplines are not frozen and are constantly developing, the problem is to find new ways for departments to collaborate so that the student's journey is not monodisciplinary but addresses grand challenges that are multidisciplinary and multidimensional. A Director of Teaching was less sanguine:

> These disciplinary units format the way of thinking. After receiving fragmented teaching, we end up thinking in boxes, e.g., physics, chemistry. We do not see the global image. (Director of Teaching, Belgium)

This fragmentation is exacerbated when each unit is a cost centre in competition with each other, what Levin and Greenwood (2016) call the neo-Taylorist university, and when each academic is also treated as a unit of resource, with systems to allocate hours for each individual's teaching and standard metrics to measure the efficiency of their outputs and the quality of their performance. As one Director of Teaching pointed out, when each professor is allocated several hours for teaching and receives the timing of their individual classes divided on an hourly basis, this does not facilitate teamwork:

> It needs changes to administrative rules to authorise professors to conceptualise courses together, passing time in teams. Otherwise, it becomes a personal choice, requiring an investment on the part of the individual professor, if they want to try to do things differently. (Director of Teaching, Belgium)

An academic echoed this, as practice-based projects or groups of academics and students working together on aspects of sustainability are developed outside of the curriculum. One academic summed up by saying that universities cannot claim they seek to give their students a sustainable education if they do not give their staff a sustainable way of working. When staff are under pressure to deliver results and attain objectives, they do not have time to think about making changes to the way they work. Several interviewees also elaborated on the institutional pressures on students. As one academic put it, students are under pressure to finish on time and achieve a career at a young age, otherwise they are losing time:

> This is a pity because they see education only as a period of their lives that needs to be shorter and shorter. (Circle U. Think and Do Tank's project officer, France)

Instead, it is important for students to have some space and time to define what they want to work on, to work together with students and professors from different disciplines on the same topic and learn how to think and why (Eriksen & Brevik, 2022). A student echoed this. She expressed that the pressure to graduate on time often results in students working more than a full-time job (37.5 hours per week), leaving little time for other hobbies, and self-care. The expectation of graduating within a specific time frame is very standardising, whereas she pointed out that people learn at different speeds and lead different lives. She contrasted this pressure to graduate on time with a medical school she heard about at a conference:

> [A medical school] where the students can take three to five modules and they have to take 12 in total to graduate, but they can do it in their own time. They can choose how many modules they want to take each year because the school wants to let it be up to students to know how much they can learn in a year… Then the students can choose: do I want to spend all my time and resources on learning academically, or do I want to take a few modules and also have time [for] a part-time job because that also gives me something that's valuable to my life, but I also […] have to be social and […] have time in my life […] for hobbies, which we know is very important for the mental well-being of people. (Student, Leader of the Student Parliament, Medicine, Norway)

One academic vividly explained the effects of social acceleration, how the institutional pressures of intensification and speeding up for both students and academics changed the very notion of education:

> Education itself should be an act of community. And it's not here. It's an act of professionalization. It's an act of employment readiness. It's an act of coming for a few hours and maybe fulfilling what seems to be a paper-based contractual obligation […] the course plan [is like a] contractual relationship [...] and in certain ways that's important, because it offers certain protection and certain rights, but that also needs to be embedded in a broader world of community.

> I'm managing a much greater amount of things than staff a generation ago. The sheer number of connections we have is problematic. We have to manage so many more grants and more administrative responsibilities, to be present in the classroom, in a supervision, to a colleague, in a meeting, to a current situation, to people and on email. How can you respond to all these things at once? It makes it difficult to do the work of building a community, because that requires generosity and generosity, requires surplus energy. And one is invested in a system where one is already rendered so tired, spread in so many directions and so depleted, one doesn't have the surplus to do the work of generosity. (Academic, Environmental Anthropology, Denmark)

Although interviewees felt that the current organisation of their universities militated against the development of their ideas of sustainable education, they did point to examples where institutions were changing. One referred to Stanford University investing in interdisciplinary work and sustainability. Others mentioned Uppsala University, where students can administer courses in collaboration with invited lecturers, and Ghent University where courses are developed across all faculties and include external stakeholders. One interviewee also referred to Circle U.'s summer schools providing new opportunities for students and links between the university and the outside world.

A Circle U. Chair emphasised the importance of student involvement at the University of Oslo, offering opportunities for students to serve as student leaders in courses and active partners or co-researchers in ongoing projects (cf. Eriksen & Brevik, 2022):

> We have students as active partners in the project that we are running in courses. We have a group of students leading as student leaders in our centre. I think that's key, the collaboration with students. Engagement with students should not be student involvement, but it should be a partnership. (Circle U. Chair, Medicine, Norway)

There were also examples of the ways students had taken initiatives to make institutional and policy change. For example, one student interviewee, as part of a green student movement, had written an open letter demanding that their university be more sustainable. This led to the formation of the university's climate strategy, written by faculty and two student representatives. The student had pushed for a broad strategy within education, but the university's governing board went for a narrower focus on energy and resources. The student movement continued its campaign and used social media to gain political attention. This resulted in the Ministry of Education and Science establishing working groups to explore how to introduce sustainable education at every level from pre-school to higher education. The student interviewee chairs the higher education working group with representatives from the university leaderships. Whereas the first university strategy focused on 'symptomatic solutions', the working group's national action plan aims to tackle climate issues more holistically through education.

Students at another university have a history of activism over 15 years, which had led to the Rector and Senate agreeing to the students' demand that the university be carbon neutral by 2030. The students were then involved in the university's sustainability commission, investigating and proposing ways to change institutional and academic practices to achieve this target. The students also organise one of the

university-wide courses, a ‘studium oekologikum’, which not only runs lectures and projects on sustainability, but also introduces a pedagogy based on peer-to-peer learning, and develops the competences needed for continuing student activism.

Whereas most interviewees emphasised how the current organisation of universities impeded the translation of their visions for education into enduring change in practice, the students provided rare examples of what is needed to achieve institutional sustainability. By this they meant student-led, bottom-up initiatives that have been built up over several cohorts with the support of university structures and top-down commitment.

4.8 Opportunities and disadvantages of digitisation

Following the experience of teaching online during the pandemic, some interviewees were reviewing the benefits and limitations of digitisation and whether and how information technology assisted in achieving their educational aims. Several interviewees emphasised the benefits of connecting people in new ways and sharing knowledge. One director of learning said that digital media can be used to spread awareness and enable people to learn at their own pace. It has advantages in communication and should be used creatively to increase connections between people. This is important where students are reducing travel for environmental reasons and are seeking alternative ways to gain international experiences.

While most interviewees thought digital teaching was a good supplement to face-to-face teaching, it was not a substitute. A student interviewee explained how a project she was involved in was developing digital educational resources for use in a flipped classroom. Outside of the classroom setting, students watched a video provided by their teacher to transfer knowledge, and they answered questions to check if they had understood the material. Then the teacher could use the time in the classroom for students to be active and discuss, develop and explore ideas of a subject in wider ways. The student was excited about the university developing its own platforms and warned against hiring a company to do so, as they would have less impact on how it is developed and its future. A university leader echoed this caution about keeping control of technology, especially with so much technological development taking place outside the university:

> Multinational and powerful corporations are offering these platforms and portals. But standardised platforms limit our ability to take control of this and integrate it into our own academic design. It is a bit alarming that some of these platforms are not only platforms for communication, but they are also suggesting particular pedagogical designs, which impact the content, the disciplines, and the knowledge. There is a danger that some of these platforms [or] tools can force us into a specific type of student learning that is not really where we want to go. Universities must critically evaluate digital platforms. (University leader of Education, Norway)

He added that some educational programmes at his university were teaching students simple programming, so they could develop their own digital tools and interactions and take control, instead of adapting to the standardised offerings.

4.9 Summary

These interviews indicate how academics and students had educational philosophies that they reflected on or translated into teaching practices. They critiqued, or rejected, the concept of sustainability and worked on ways for students to critically explore how they were positioned within current problems facing the world and how they could create space to envisage and carefully enact alternatives.

Across interviews, we identified four bottom-up student-led, or student-teacher collaboration initiatives being married with the support of university structures and top-down commitment, which are exemplary and could be used as models for universities to address sustainable education:

- King's College, London – co-creation between students and staff, student involvement in SDG curriculum mapping (60 students mapping 1,000 modules), supported by the university
- University of Oslo – SHE (*Sustainable Healthcare Education - Centre of Excellence in Education*) offering opportunities for students to serve as student leaders in courses and active partners or co-researchers in ongoing projects, given national support and funding
- Aarhus University – Student movement for sustainable education met with support from Ministry of Education and Science establishing working groups to explore how to introduce sustainable education at every level from pre-school to higher education.
- Humboldt University – Students with a history of activism over 15 years, which had led to the Rector and Senate agreeing to the students' demand that the university be carbon neutral by 2030.

5 Conclusion

Photo: Colourbox

5 Conclusions

Frequent economic, environmental, and political crises have been discussed internationally for decades and there is widespread recognition that the current global order, both socially and economically, is not sustainable in the long term.

International discussions about E*ducation for Sustainable Development* (ESD) and its role in achieving *Sustainable Development* (SD) started two decades ago. Within the UN system, UNESCO was given the lead role with a focus on the agenda for achieving a more sustainable planet by 2030. UNESCO defines education for sustainable development as follows:

> ESD gives learners of all ages the knowledge, skills, values and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality.
>
> (UNESCO, 2021)

At the same time, the significant role that UNESCO attributes to education is not necessarily reflected in policy. For example, the EU's Green deal, launched in 2019 with the aim of achieving the UN 2030 Agenda and the UN's Sustainable Development Goals, gave a roadmap to tackle climate and environmental-related challenges and develop a new growth strategy. Yet, it rarely mentioned education and universities were only referred to about four times.

Educational practice also lags behind the radical implications of ESD. It is noticeable that the above quotation seeks to give learners abilities that they can use to address the complex and interconnected crises facing the world. However, our literature review and the 22 interviews indicated that not many people had established connections in their educational practice between these two strands of ESD – the knowledge needed to create a sustainable world and the educational abilities and competences students need to survive in an unpredictable and dynamic world.

Some interviewees thought of education for a sustainable world, whereas others thought about education that would sustain the individual student through their life. Only a few made explicit connections to explain how sustainable education for the individual would help to achieve a sustainable world. Other interviewees made connections between the personal abilities needed for students to act on the world, but contested or rejected the idea of sustainability for its connotations with preserving and achieving a stability or stasis.

In addition to this divergence, the literature review plotted out how the word *sustainability* has accumulated a vast array of meanings. This led us to ask the question: *How can an education that empowers individuals to make informed and critical decisions about their future lead to a more sustainable world? What is the link between the two?*

UNESCO also focuses on changes to institutions needed to achieve the UN's goals. Its priority action areas include advancing policy, transforming learning environments, and building the capacities of educators. It advocated a holistic view of the role of higher education institutions that addressed the need for a structural change in educational institutions, and questioned how universities used their resources on campus and beyond, and positioned themselves in the world.

However, driven by the Organisation for Economic Co-operation and Development (OECD) and the EU, higher education reforms throughout the 1990s and 2000s have coupled public universities tightly to the needs of the market and the state. This led to a second question: *How are universities to achieve these changes and become sustainable institutions themselves when they are driven by market logics?*

Some interviewees were clear that many features of the governance and management of universities impeded academics from implementing the kind of education needed to equip students for engaging critically in the world.

Academics gave a range of examples of how they engaged their students in critically reflecting on how they were positioned in a world of marketised and performative institutions – not least universities themselves – and environments marked by intricately connected systems and great uncertainly. They described the experiential, explorative, embodied practices they had developed to enable students to investigate possible alternatives and assess different forms of intervention.

It emerged from the interviews that it was students rather than academics or university leaders who had been able to achieve institutional changes that were sustainable. That is, actions to change universities and their education through bottom-up initiatives that were supported by top-down political commitment and institutional structures and resources.

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Appendix 1

Semi-structured interview guide

Circle U - Conceptualising and Operationalising Sustainable Education

Introduction

Before we start, would you kindly give consent to participating in the recording of this interview?

Thank you for agreeing to participate in the interview, we would like to start off by telling you about the project and introducing ourselves.

We are working on a project that is exploring the various meanings and practices of 'sustainable education' in higher education. The project is for an alliance of nine European universities called Circle U and will contribute to their Think and Do Tank – collaborating to collect data and research on concepts of 'sustainable education'. The project is run by Circle U Chairs and an appointed group of master's students. As a part of the project we are interviewing people with different ideas and perspectives, and we are reaching out to you since the team is very interested in your ideas and work regarding sustainable education.

Make specific to the person

Sustainable education is an emerging concept that can be taken in multiple directions. Therefore, we will have a focus on 3 main areas that we would like to explore with you: (1) Ideas of sustainable education, (2) The role of the teacher and the student, as well as (3) Institutional issues regarding sustainable education.

Introduction questions

a. Who are we:
   We are all students from different Universities (Denmark, Norway and Paris), and studying Educational Anthropology, English didactics and Social Science.

b. What are our roles in this interview?
   (Interviewer, notetaker, observer etc.)

c. We know that you have been thinking of the notion of sustainable education *(or respective compliment)*, and therefore we would like to talk to you about your experiences and thoughts on working with sustainable education in your field.

Ideas of Sustainable Education

Concept question:

a. What is your understanding of sustainable education?

b. Could you tell us how you got interested in sustainable education?
   Prompts: (1) Have you done any previous research on this topic? Academic discipline? (2) How does the current state of the world affect the need for sustainable education, and how can the university play a role in solving that?

If interviewee is inconsistent with the definition: "I noticed you told us a lot about sustainable education, but you've also been using the phrase "...". Do you differ between Sustainable Education or Education for Sustainability? (and the term "sustainability"). Do you use these interchangeably or could you distinguish between the two?"

The role of the teacher and the student

a. How do you use these ideas in your teaching?
   Prompts:(1) How do you incorporate these ideas in your teaching methods or approaches to teaching? (2) Do you focus on curriculum design on Sustainable Education and the significant topics, (3) How to think or what to think?, (4) (be aware of phrasing: SE or Education for Sustainability)

b. What are students' roles in sustainable education?
   Prompt: (1) Do you have a different approach to students: Authoritarian teachers/students as self-directed learners/students as co-authors of lessons, (2) Which abilities should be cultivated in students when working with sustainable education?, (3) What about reflection, introspection and creation?

Digital resources

a. How can we utilise(exploit) digital resources available today to help us on our way to a more sustainable education?
b. Are students given the right kind of platform to cultivate sustainability within education?
   Prompt: (1) Do we have in mind things like attention span, information-finding abilities to cultivate these skills? (2) In some parts of the world, this will not be possible

Education for sustainability and the link between the two

If the interviewee is using the two terms interchangeably, ask this question right away:

a. We noticed you told us about sus. Ed. but you have also been using the phrase education for sustainability. Do you use them interchangeably?
b. Do you differ between Sustainable Education or Education for Sustainability? (and the term "sustainability") How do you differentiate between the two?

Challenges of SE within Universities and Institutional issues

a. Why is there a need for sustainable education in High. Ed?
b. What are the institutional challenges/barriers in implementing SE?

Prompts: (1) Pressures to graduate on time, (2) Pressures of competition among universities for funding, (3) Tension in diffusion of different knowledge e.g. hard science vs sustainable knowledge? (4)Pressures of employability after graduation

c. What would be the consequences of failing to introduce SE in the High Ed. curriculum teaching or failing to institutionalise it?

Sustainable Education outside of the universities

a. How do you link SE to the outside world?
Answer will depend on the interviewee's area of interest

Prompts: (1) How can Sustainable Education be connected to social, environmental and economic issues (nationally/internationally)?, (2) Which domain/field would benefit from the immediate advantages of Sustainable Education? (3) Projects with stakeholders establishing sustainable lifestyles during/as part of the education process and not after they leave.

b. Do you think Sustainable Education will include/exclude some people more than others?
Prompts: (1) Responsibility being that of the universities vs. that of the students, (2) Digital divide?

Summary and concluding questions

a. When can SE be achieved? Is it possible?
Prompt: (1) Wow, this interview covered a lot of ground! (give a resume saying what was said), (2) Is there anything we've missed, or are there any comments that you'd like to add?, (3) Do you have any additional comments that we didn't talk about?

b. Is it possible to come back to you with additional questions by email?

Conclusion

Thank you for being a part of the interview and taking part in this project!

Summary of interview here

We have consulted you in advance with regards to publishing a project report and possible videos on Circle U's homepage. Hopefully, sharing our interesting discussion on sustainable education will inspire others on this subject! That being said, we'd like to send you the interview recording first for you to review before making it public. If you have any preference with regards to editing parts out form the interview, we'd be more than happy to discuss any potential changes before publishing the video.