EDUS

Educating for sustainability

A competence framework for vocational education and training

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them. Project code: 2023-1-DK01-KA220-VET-000165508

Authors:
Rikke Dorothea Huulgaard
Heidi Simone Kristensen
Alberte Rørbæk Kokholm Sørensen, Aalborg University
Alessia Tripaldi, Sineglossa
Stefanía Guðrún Kristinsdóttir, Einurð

Editor:
Ernestina Álvarez, Fundación Cibervoluntarios

EDUS: Creating a training methodology for sustainable development in education

The project EDUS is funded by the European Union and has the objective of creating a training methodology for sustainable development in education. It will educate students at Vocational Education and Training (VET) centers in Europe on sustainable entrepreneurship, preparing vocational education teachers in education for sustainability, aligning with the Agenda 2030 and the Sustainable Development Goals. This project also seeks to address the challenge of the knowledge gap in sustainability between educators and students by providing digital tools and educational resources that enrich current programs and promote student talent towards sustainable careers. EDUS responds to the goals of the European Green Deal, focusing on contributing to a greener and more sustainable Europe. It is developed in collaboration with five entities from various sectors, including social, educational, and artistic organizations, led by Aalborg University (AAU) in Denmark.

What will EDUS facilitate?

- To investigate the level of knowledge that teachers have about sustainable development, with the aim of providing them with appropriate training.
- To develop accessible and technologically advanced educational tools intended for use in various countries to educate teachers on sustainability. These tools will be made available for free to ensure that any educator can incorporate them into their curriculum. Moreover, a crucial aspect of these tools is that they will also assist students in developing skills relevant to the current job market.
- To disseminate the project with the aim of expanding its reach to more sectors and professionals, ensuring that the resources and tools developed are distributed beyond the educational field. At the same time, the goal is to educate about the true meaning and importance of sustainability.

The EDUS consortium

- **Aalbog University:** With Aalborg University's problem-based approach to research, researchers help solve challenges and achieve new insights across traditional disciplines with the common objective of creating a sustainable world.
- **Sineglossa:** A cultural organization that fosters new sustainable development models in response to global challenges by applying the processes of contemporary art work within hybrid ecosystems involving artists, scientists, entrepreneurs and humanists – but also universities, public administrations and local communities.
- **EINURD:** Einurð advises companies, non-profit organizations and entrepreneurs on concept work, project development, international cooperation and financing related to social innovation and educational work. They provide consulting, strategic planning, editorial and project management.
- **IC GEOSS:** They offer formal and non-formal programmes for adults. They have an elementary school for adults, 11 secondary school programmes and 6 higher education programmes in the fields of mechanics, logistics, computer science, preschool education, marketing, economics, business studies etc.
- **Fundación Cibervoluntarios:** Fundación Cibervoluntarios is a Spanish NGO of international scope focused on promoting an inclusive digital transition and eliminating the digital divide. Through a technology volunteer network, they provide free training in digital skills to thousands of people a year, promote social innovation and empower citizens through the use of technology.

EDUS Objectives

Identify and assess knowledge and competences related to sustainable development. Resulting in competence framework.

Equip trainers with a methodology and a set of tools for educating on sustainable development adaptable to their needs. Resulting in a training program and toolkit.

Mainstreaming education for sustainable development in the VET system. Resulting in digital multimedia products and outreach events.

Contents.

1. Introduction

The main purpose of the EDUS framework is to develop educational material for sustainable development to be integrated into Vocational Education and Training (VET) programs. This is done through a competence framework that combines the UN Sustainable Development Goals (SDGs)[1], the New European Bauhaus (NEB)[2], and GreenComp[3].

The framework has been developed by the Department of Sustainability and Planning, Aalborg University (Denmark), Sineglossa (Italy), Einurð (Iceland), Izobraževalni center Geoss (Slovenia), and Foundation Cibervoluntarios (Spain).

The purpose of the EDUS project is to provide VET trainers with a training methodology consisting of a competence framework, a training program and a toolkit that can be used in their teaching to enhance sustainability competences. The framework is designed to teach about sustainable development through a problem-based learning approach that aspires to educate innovative and critical thinkers. EDUS provides VET trainers with competences and knowledge related to sustainable development and provides them with a set of educational tools through a designed training program. The goal is to make sustainable development and transition an integrated part and a priority in training and educational programs and by spreading awareness, EDUS will help build more sustainable and responsible citizens and workforce. When the VET students enter the labor market, sustainability competences enable them to be change agents and create sustainable solutions[4].

[1] United Nations, 2015, Transforming our world: The 2030 Agenda for Sustainable Development, **21252030 Agenda for Sustainable Development web.pdf (un.org)**

[2] New European Bauhaus, 2022, New European Bauhaus Compass, **405245f4-6859-4090-b145-1db-88f91596d_en (europa.eu)**

[3] Bianchi et al., 2021, GreenComp – The European Sustainability Competence Framework, **https://publications.jrc.ec.europa.eu/repository/handle/JRC128040**

[4] Ungdomsbyen, 2020, Årsrapport for ungdomsbyen 2019, **aarsrapport-2019-for-ungdomsbyen.pdf**

EDUS Facts

Collaboration of **5 countries** (Denmark, Italy, Iceland, Spain, and Slovenia)

30 months (from 01/12 2023 to 31/05 2026)

Local and transnational pilots and focus groups.

40 trainers will become **certified "EDUS trainers."**

500 VET learners per year are trained via EDUS

Defining Sustainability

The EDUS framework follows the definition of sustainability used in the Brundtland report:

"A development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[5]

The EDUS framework also uses the division of social, environmental, and economic sustainability as well as the 17 Sustainable Development Goals (SDGs) to operationalize the concept of sustainability. The SDGs are seen as the common goal for sustainable development until 2030 as each of these 17 goals express a global need for change[1].

Defining a sustainability competence

The EDUS framework has adopted the following definition of a sustainability competence:

A sustainability competence empowers learners to effectively address environmental, social, and economic challenges, to take action that positively contributes to a sustainable development.

---

[1] United Nations, 2015, Transforming our world: The 2030 Agenda for Sustainable Development, **21252030 Agenda for Sustainable Development web.pdf (un.org)**

[5] World Commission on Environment and Development, 1987, Our Common Future.

This definition focuses on developing sustainability knowledge, skills, and attitudes, which enables learners to think, plan and act for a sustainable future. According to the Council of the European Union in the Council Recommendations of May 2018 on key competences for lifelong learning, knowledge, skills, and attitudes are defined as[6]:

- **Knowledge** is composed of the facts and figures, concepts, ideas and theories which are already established and support the understanding of a certain area or subject;
- **Skills** are defined as the ability and capacity to carry out processes and use the existing knowledge to achieve results;
- **Attitudes** describe the disposition and mind-sets to act or react to ideas, persons or situations.

1.1 The need for the EDUS Framework

Sustainable Development Goal 4 is about Quality Education and target 4.7 states that: "By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development". Through the EDUS methodology, this project helps reach this pivotal target from the 2030 Agenda by developing a competence framework (the EDUS framework), a training program and a toolkit. Furthermore, the EDUS framework contributes to the overall European sustainability agenda by including aspects from all 17 SDGs, the New European Bauhaus (NEB) and GreenComp, all of which contribute to achieving the European Green Deal.

It is necessary to bring sustainability into our educational system for the future generations to possess the needed competences to make continual change and be able to contribute to a more sustainable world. This entails giving the students the possibility to reflect, investigate, recognize and act in relation to

[6] The Council of the European Union, 2018, COUNCIL RECOMMENDATION on key competences for lifelong learning. Official Journal of the European Union, **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2018.189.01.0001.01.ENG&toc=OJ:C:2018:189:TOC**

the world they live in, and support them in being able to see themselves as part of the solution. The below quotes from participants at the focus group interviews held as part of the EDUS project underline the need for teaching sustainability.

Students don't really understand what sustainability means. They are often taught to recycle or save electricity, but the broader concepts and implications are not well covered. (Participant at focus group interview, Iceland, August 2024)

There are students studying the environment and natural resources who don't know how to apply this knowledge in practical, real-world contexts. There is a clear need for education that fosters practical skills and a deeper understanding of sustainability. (Participant at focus group interview, Iceland, August 2024)

This (initiative action, ed.) is an important competence to teach the student to be expressive, in that they put these things forward. That is to say, writing sustainability reports, writing some initiatives, being able to justify it, to articulate it, to be heard. Not just to go there and shout something in front of Parliament, but to be able to articulate their demands in a way that they are heard by other generations. (Participant at focus group interview, Slovenia, June 2024)

1.2 Target group

The target group for the EDUS framework is VET trainers who will reach the students of VET programs through their teaching. The VET system includes a broad spectrum of diverse individuals in terms of educational level, gender, ethnic background, and age, making it a suitable platform to increase awareness on, and enable individuals to act towards sustainable development.

The VET system is characterized by educational programs that develop skills and prepare individuals for work and to stay employable. In 2020, an EU council made recommendations for VET to be resilient, socially fair, and sustainably competitive[7]. Over 100 different VET programs are available across a wide range of sectors and themes, and they are categorized differently across the EU countries. The main categories are[8]: 1) Food, Agriculture, and Leisure, 2) Technology, Construction, and Transportation, 3) Administrative training, Commerce, and Business, and 4) Care, Health, and Pedagogy, and many more subcategories exist depending on the country.

1.3 The basis and methodology for developing the EDUS Framework

The EDUS framework contributes to reaching the EU Green Deal by integrating and spreading knowledge on the 17 Sustainable Development Goals (SDGs), the New European Bauhaus (NEB) and the GreenComp framework. Objectives and concepts from these three frameworks have been combined into the EDUS framework, which is a scalable and flexible methodology tailored specifically to the VET educational system.

The EDUS framework has been developed by the project consortium through a process of desk analysis, literature review and focus group interviews with stakeholders, such as sustainability and teaching experts relevant to the VET systems in Iceland, Slovenia, Spain, and Denmark. The focus group interviews were conducted in the summer of 2024, and the output has been incorporated into the framework.

[7] European Union, 2024, Vocational education and training initiatives, **https://education.ec.europa.eu/education-levels/vocational-education-and-training/about-vocational-education-and-training**

[8] Ministry of Children and Education, Denmark. **https://www.uvm.dk/erhvervsuddannelser/uddannelser/eud/overblik-over-grundforloeb**

Participants expressed the need for a single, universally accepted definition of "sustainability", as the term lacks clarity. The EDUS framework encompasses the complexity of sustainability by incorporating both the social, economic and environmental dimension of sustainability and defines specific competences and enablers within these. Stakeholders in the VET field agree on the necessity of enhancing teachers' knowledge of sustainability, and their skills and competences to effectively integrate the complex topics of sustainability into the VET curriculum. To do so, the traditional teaching methods need to be challenged and focus should be on creativity and critical thinking through hands-on work with sustainability in a real-world context, such as case studies, collaborations, internships etc. The EDUS framework supports VET teachers incorporating sustainability into vocational education by pinpointing competences that are important across various VET settings. It also outlines learning objectives for knowledge and skills at three different levels (basic, intermediate, and advanced), giving VET teachers the flexibility to customize the framework to suit their students.

In the following section, we provide a high-level summary of the three frameworks that the EDUS framework is built upon and explain how they influence its development.

1.3.1 New European Bauhaus

The New European Bauhaus (NEB) is an initiative that aspires to transform the European society and economy towards a more sustainable future. The NEB is innovative through providing a creative and cultural dimension to the goal of the EU Green Deal to enhance sustainable technology, innovation, and economy. NEB aims at transfor-

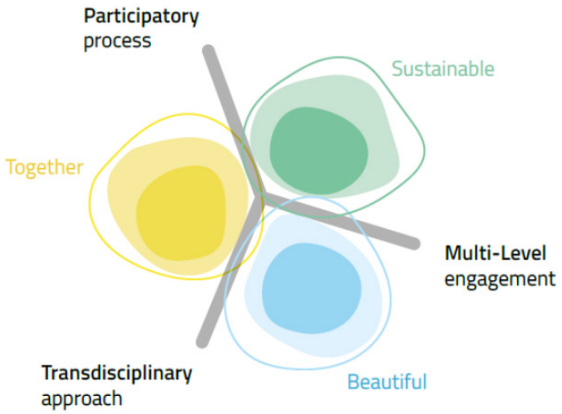


Figure 1: The New European Bauhaus Compass2

ming multiple sectors of the economy and has a specific focus on the built environment by calling on all Europeans to build and imagine a sustainable future together. The New European Bauhaus calls for a wide range of actors across society, from companies of all sizes to government institutions and citizens.

The purpose of NEB is to enable an assessment of whether projects contribute to the values and intentions of NEB by assessing the alignment of the project in accordance with three core values of NEB and three key principles.

The core values provide space for experimentation and creativity[2]:

- **Sustainability (Sustainable):** Climate goals, biodiversity, circular economy, and zero pollution
- **Aesthetics (Beautiful):** the quality of experience and style beyond functionality
- **Inclusion (Together):** Valuing diversity and equality for all and securing affordability and accessibility

Besides the three core values, NEB is structured with three key principles[2]:

- **Multi-Level engagement:** Cooperation, Networks, Authorities, Multi-scale impact, Cross-sectoral cooperation, Global relations
- **Participatory process:** Dialogue, Consultation, Exchange, Co-creation, Partnership, Joint action, and Community
- **Transdisciplinary:** Diverse educational backgrounds, common problem definition, knowledge creation, community, non-academic partnerships, public engagement, collaborative process, levels of interaction

Each of these core values and principles are divided into three levels of ambition. Where ambition 1 is the minimum of what is expected for a project to be in line with NEB and with ambition 2 and 3 the ambition level increases.

In 2021, the European Commission announced that to operationalize the NEB, a tool would be developed to help identify how the principles and values of the NEB can be translated into specific projects which has resulted in the New European Bauhaus Compass and a self-assessment tool.

Within the EDUS framework, the NEB inspires the overarching structure of the framework, which is based on an adapted version of the NEB core values and key principles to develop key sustainability competences for VET programs along with enablers of the sustainability dimensions. Furthermore, the ambition levels provide guidance for developing competences for different levels within the EDUS framework: Basic, Intermediate, and Advanced.

1.3.2 UN Sustainable Development Goals

In 2015, 193 countries agreed on the comprehensive 2030 Agenda with 17 Sustainable Development Goals (SDGs) that strive towards sustainable development and the aim is "to leave no one behind". The SDGs are based on the five Ps: People, Planet, Prosperity, Peace, and Partnerships[1], making them range across a broad area, encompassing multiple, complex, global themes. Thus, the SDGs are a blueprint for a better future by addressing these pivotal, global issues. The 17 SDGs include 169 specific targets, and all the goals are interconnected, which makes it important to consider them all for the 2030 Agenda to be achieved. From 2015, when the SDGs were adopted and until now, some progress has been achieved, yet still insufficient. During and following the Covid pandemic, the progress stalled in many areas. Still, with a few more years to go until 2030, there are still major gaps that need to be addressed for all countries to achieve the SDGs. And for many of the SDGs, major challenges still exist. Especially very limited progress has been made within the environmental and biodiversity related goals (12, 13, 14, and 15). In the Sustainable Development Report from 2023, the UN argues that all member countries ought to review the progress made or missing since 2015 and to revise national strategies and strengthen the focus on sustainability.

Figure 2: The UN Sustainable Development Goals[1]

Within the EDUS framework, the SDGs provide the overarching sustainability underpinnings, where especially three of the Ps are used directly to define the primary sustainability dimensions of Planet, People, and Prosperity. This is further supported by the division of SDGs, proposed in connection to the World in 2050 (TWI2050) project, which provides six groups of the SDGs[9]. These six groups have inspired the themes of the sustainability competences presented in the EDUS framework.

1.3.3 GreenComp

GreenComp is a competence framework aimed specifically at including sustainable development in the educational sector. GreenComp mainly focuses on the environmental dimension of sustainability and provides a common definition of environmental sustainability as a competence. GreenComp is a new competence framework put forth through the EU Green Deal to: "*help develop and assess knowledge, skills and attitudes on climate*

[9] IIASA, 2017, The World in 2050 (TWI2050): Pathways toward sustainable future, Annual Meeting. **https://iiasa.ac.at/web/home/research/researchPrograms/TransitionstoNewTechnologies/170403-TWI2050.html**

change and sustainable development."[10]. GreenComp can be used whenever initiatives on sustainability should be rolled out in any educational context and can help make learners more critical and systematic thinkers[3].

The GreenComp compass includes **12 competences** divided into four competence areas:

- **Embodying sustainability values:** Reflection of personal values and other people's values over time in relation to sustainability, supporting equity and justice, and acknowledging that humans are a part of nature.
- **Embracing complexity in sustainability:** system thinking, critical thinking, and being able to frame and formulate problems regarding current and potential sustainability problems.
- **Envisioning sustainable futures:** envisioning and identifying the necessary steps towards a sustainable future, adaptability, and exploratory thinking.
- **Acting for sustainability:** political agency, collective action and individual initiative.

For each of these competences are a set of knowledge, skills, and attitudes[3].

Figure 3: The GreenComp Framework[3]

Within the EDUS framework, the GreenComp framework has inspired the concept of environmental sustainability and overall competences needed for sustainable development. The EDUS framework builds upon these competences and adapts into wider sustainability competences.

[10] European Commission. (2019). The European Green Deal

2. The EDUS Framework

The EDUS framework is designed to support teachers and learners to develop sustainability competences, knowledge, skills, and attitudes. It aims to inspire teachers to incorporate new teaching methods and approaches, powered by the complete EDUS Methodology, which includes the EDUS framework, the EDUS training program, and the EDUS toolkit. A key component of the framework is the self-assessment grid, which can be used to assess learners' competences at the start and conclusion of a teaching project focused on sustainability or a complete VET program.

The EDUS framework is based on an adapted version of the NEB Compass, combined with the Sustainable Development Goals and the GreenComp skills framework, and thus consists of three core sustainability dimensions (People, Profit, Planet), which are supported by three key enablers (Creativity, Connectivity, Technology). The three enablers are means to reach sustainability within each of the sustainability dimensions and are visualized by the three black lines in the EDUS framework illustrated in Figure 4.

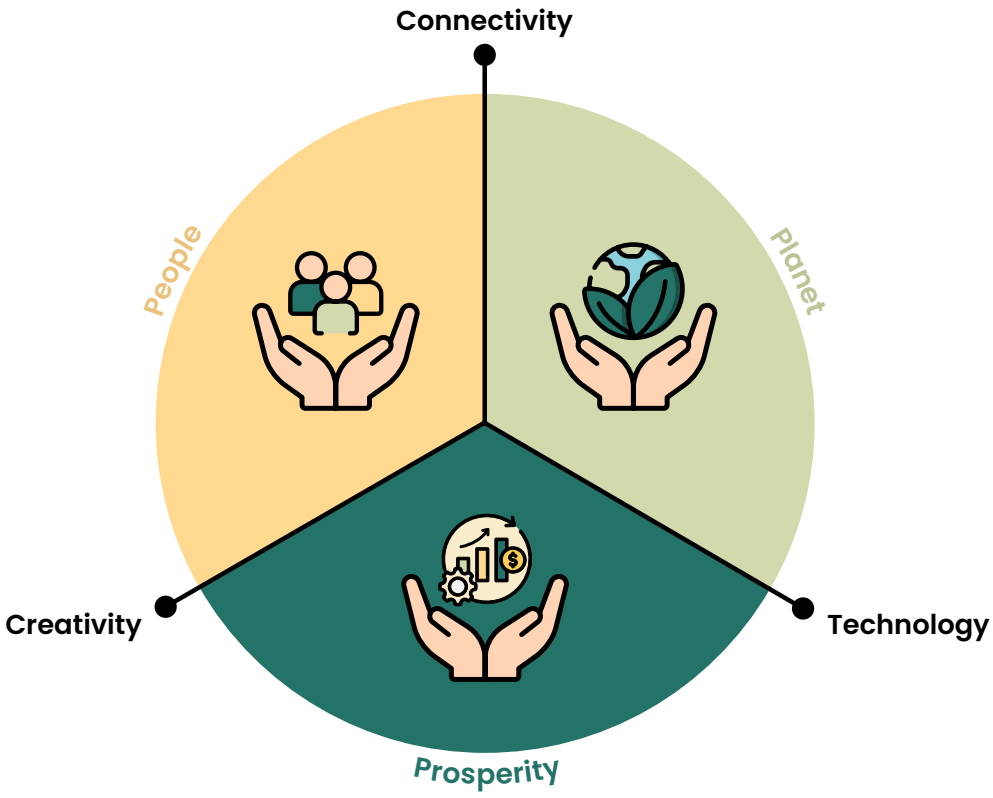


Figure 4: The EDUS Framework

Each sustainability dimension (Planet, People, Prosperity) of the EDUS framework is elaborated through two different competences to encompass the complexity of each sustainability dimension, see Figure 5. For each competence, learning goals are developed within skills and knowledge, while attitude learning goals are developed at an overall level, illustrated in Figure 5. It is important to include attitude as overall learning goals because attitude is essential for creating change, and it is important to support students in engaging with sustainability through their education, future jobs, and private lives.

Figure 5: Overview of the sustainability dimensions and competences of the EDUS Framework.

To further nuance the framework, three distinct competence levels are defined for each competence to allow VET trainers and students to develop new competences over time and to adapt the framework to their specific VET program and existing knowledge base. The competence levels are:

- **Basic:** For a VET program to follow the EDUS framework, they will have to comply with the basic level of all dimensions and enablers as a minimum. The basic level is characterized by its focus on **knowledge and understanding of sustainability.**

- **Intermediate:** The next competence level takes the competences a step further and involves understanding of how the specific sustainability

dimensions are influenced by and influences their specific education, thus translating it into their specific context, enabling them to **work with sustainability.**

- **Advanced:** This is the highest level of the EDUS framework and it includes more action-based competences where the individual student should be able to identify improvement potentials and know what it would take to realize these, thus enabling them to **act for sustainability**.

The EDUS framework does not dictate what competence level a VET program should strive for, but it supports the VET programs in achieving their desired level of competence. In some VET programs, certain dimensions or enablers may be more relevant than others. It is crucial for each VET to choose the level

2.1 EDUS sustainability dimensions

The three core sustainability dimensions of the EDUS framework are based on the dimensions of Planet, People and Prosperity from the Sustainable Development Goals, which provide the theoretical underpinnings of sustainable development.

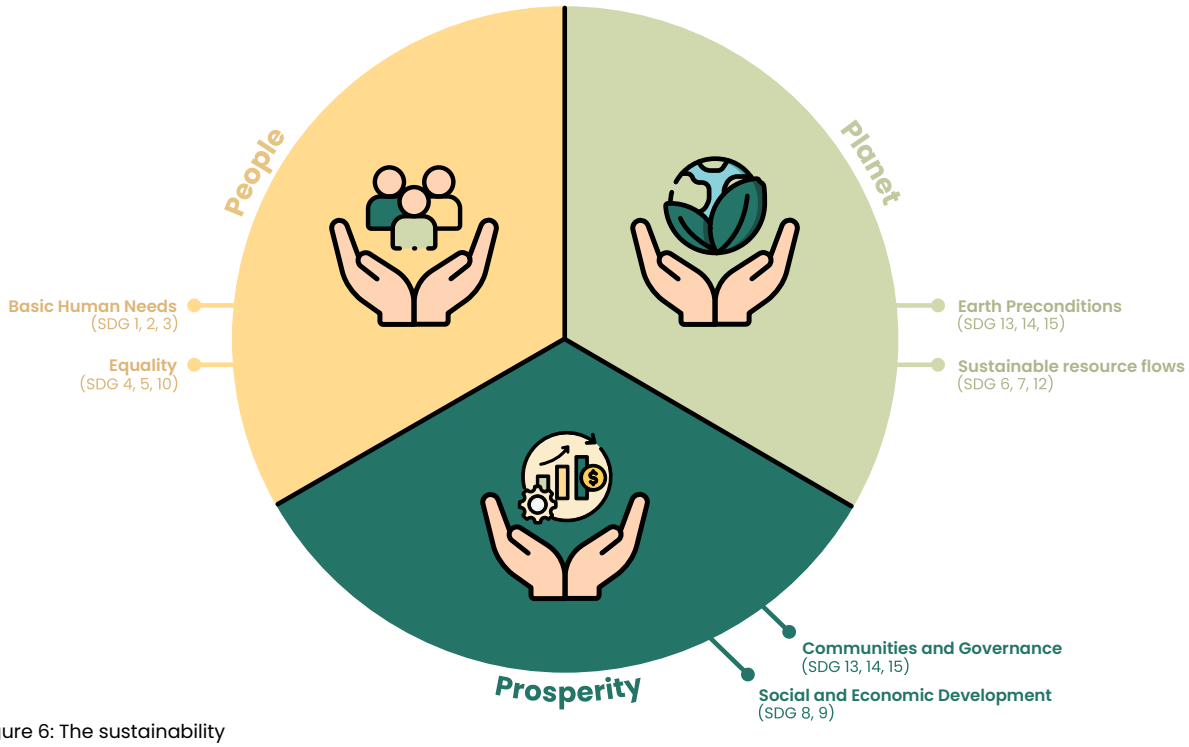


Figure 6: The sustainability dimensions of the EDUS Framework

Planet: Relates to the environmental sustainability which is divided into two Planet competences. The first competence (Planet Competence 1 – Earth preconditions) evolves around ecosystems, biodiversity, nature systems. The second competence (Planet Competence 2 – Sustainable resource flows) focuses on how human activity influences natural systems, including topics of raw material extraction and circular economy.

People: Relates to social sustainability and is divided into two People competences. The first competence (People Competence 1 – Basic human needs) focuses on a good quality life through mental and physical health. The second competence (People Competence 2 – Equality) is about fairness and equal rights regardless of gender, ethical background, age, religion, or income.

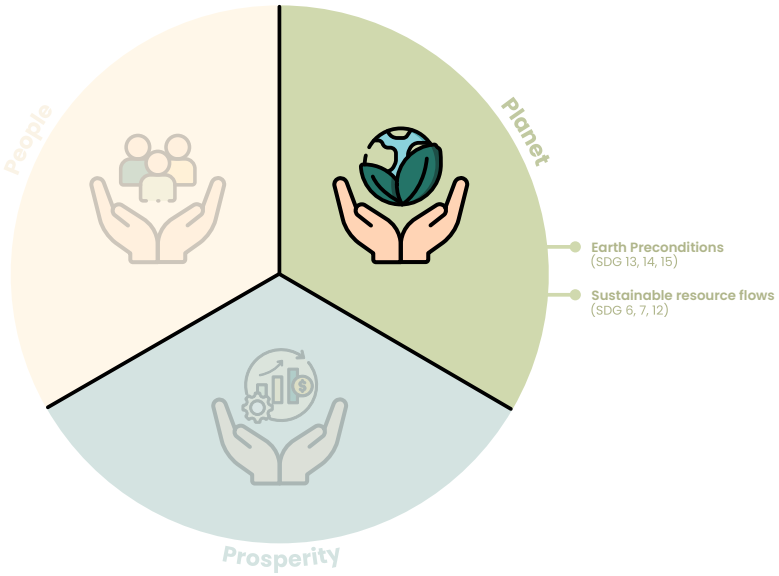
Prosperity: Relates to economic sustainability and focuses on the importance of directing the economy towards more sustainable investments. It is divided into two competences. The first competence (Prosperity Competence 1 – Social and Economic development) focuses on the transition from traditional economic viewpoints to a more sufficiency-based and regenerative economy. The second competence (Prosperity Competence 2 – Communities and governance) is about allocating our money towards sustainability as well as being aware of the impact of our consumer behavior.

Competences for Planet

The Planet dimension of sustainability encompasses environmental sustainability with focus on natural systems and human interactions with the planet in a responsible manner. Each year we use more natural resources than nature can regenerate that year, resulting in World Overshoot Day (the day of the year where we collectively have used all the resources available this year) being earlier each year[11]. The purpose of providing VET students with Planet competences is to enable them to identify and change the unsustainable consumption and production pattern in modern society.

[11]Earth Overshoot Day, 2024, Power of Responsibility. Earth Overshoot Day, **https://overshoot.footprintnetwork.org/**

The Planet dimension is divided into two competences. The first competence focuses on the nature systems including biodiversity and ecosystems (Planet Competence 1 – Earth preconditions). The other competence focuses on the human aspects and the man-made impacts on resource consumption and degradation of natural systems (Planet Competence 2 – Sustainable resource flows).



Planet attitude

The purpose of this competence is to create an attitude amongst VET students of consciousness and empathy for all forms of life in ecosystems and foster students' commitment to reduce the negative impacts of their daily lives and education as well as being committed to promoting a harmonious relationship between human beings and nature.

Planet Competence 1 : Earth preconditions

Natural resource competences include an understanding of the ecosystems and biodiversity in nature both Life Below Water (SDG 14) and Life on Land (SDG 15). This competence investigates the planetary boundaries to understand the safe operating space for humanity before these natural resource systems are destroyed or damaged. The degradation of natural systems has also led to increased CO2 emissions and global climate change, which means that action

must be taken (SDG 13). Ecosystem services are the core of supporting important needs in society and some are directly linked to specific VET programs. This competence does not only focus on minimizing the negative impact on natural systems but also focuses on how to create a positive impact through regenerative natural systems.

	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Earth preconditions competence			
Competence	**Understanding natural systems** Understanding ecosystems like water flows, biodiversity, flora & fauna, planetary boundaries	**Working with natural systems** Understanding natural systems relevant for specific VET, and how it is possible to reduce the negative impact on these natural systems	**Regenerative natural systems** Ensure positive impact on natural systems, for example through regenerative ecosystems, i.e ecosystems that renew, revitalize or restore their sources of energy and materials
Knowledge, skill, and attitude			
Knowledge	Has knowledge of natural systems relevant for the specific VETfield	Has knowledge of how natural systems are affected by and affects the specific VET field	Has knowledge of how the specific VET field can ensure a positive impact on relevant natural systems
Skill	Can describe relevant natural systems and their relation to the specific VET field	Can assess and reduce negative impact on relevant natural systems	Can identify and improve own practice to make positive impact on relevant natural systems
Attitude	Has empathy for all forms of life and is committed to reduce negative impact and can promote a harmonious relationship between human beings and nature		

Table 1: Planet Competence 1: Earth preconditions

Planet Competence 2 : Sustainable resource flows

The second competence within the planet dimension focuses on the human impact on natural systems as well as the resource flows controlled by humans, which have created unsustainable consumption and production patterns. Humans have affected the natural systems for many decades, and we have a responsibility to use the natural resources in a sustainable manner.

Natural systems include ensuring water availability and sanitation (SDG 6) and sustainable and clean energy (SDG 7). Since industrialization, overproduction and overconsumption have become an increasing challenge, resulting in unsustainable use of materials and resource flows (SDG 12).

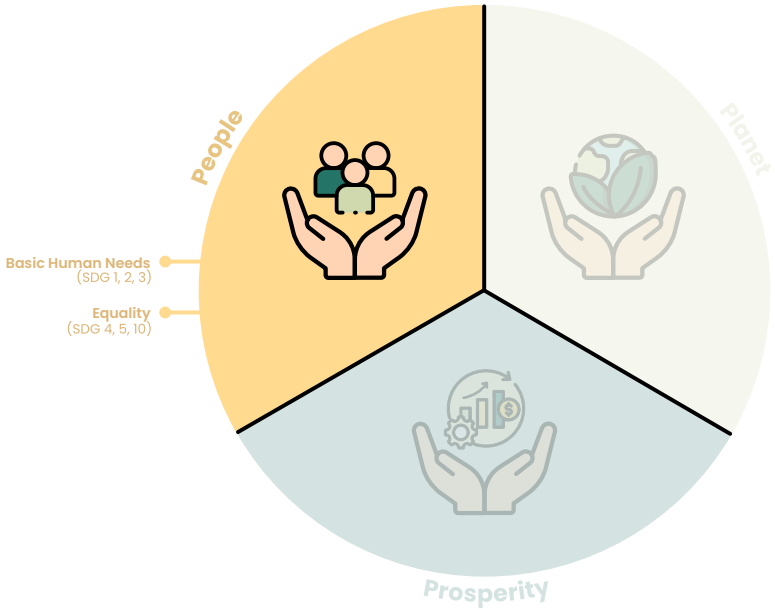
	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Sustainable resource flows competence			
Competence	**Understanding resource flows** Knowledge of resource flows, such as energy and materials within the specific VET and how products are made	**Working with resource flows in value chains** Understanding resource flows, such as energy and materials relevant for specific VET, up- and downstream value chains and initiate more environmentally friendly flows. Closing and narrowing the resource loops to avoid negative impacts	**Promoting regenerative resource flows** Apply circular strategies to ensure positive impact by slowing and regenerating resource loops, e.g. ensuring that the materials in circulation are toxic free and possible to reuse for as long as possible
Knowledge, skill, and attitude			
Knowledge	**Has knowledge of resource flows, such as energy and materials and which resource flows are relevant for the specific VET program**	**Has knowledge of how to work with and influence resource flows, such as energy and materials through their education**	**Has knowledge of regenerative resource flows, such as energy and materials and how to create a net positive impact on these**
Skill	**Can describe how and which resource flows, such as energy and materials are affected by human activity**	**Can apply circular economy principles like closing and narrowing the resource loops, applying a value chain perspective**	**Has the ability to make changes in the current production and consumptions patterns to create regenerative resource flows, e.g. ensure that materials are reused and toxic free**
Attitude	**Has empathy for all forms of life and is committed to reduce negative impact and promote a harmonious relationship between human beings and nature**		

Table 2: Planet Competence 2: Sustainable resource flows

Competences for People

The People dimension of sustainability involves ensuring that all individuals have good mental and physical health and are treated equally. For many years there has been a focus on ensuring equality and equity. We are however far from reaching an equal world, and many still experience inequalities, which impacts their health and well-being. According to the United Nations, inequality affects over two-thirds of the world's population. This occurs both on a global, national, and local scale. Many communities are experiencing increasing physical and mental health issues, and the two are often connected and affect each other. WHO[12] are calling for change within the mental and physical health care.

Many VET programs directly impact the welfare systems and can thereby help ensure a good quality of life for all. Furthermore, the VET system can have a profound impact on ensuring quality education. The People dimension is divided into two competences. The first competence relates to mental and physical health (People Competence 1 – Basic human needs). The other competence focuses on ensuring good quality of life for all regardless of age, gender, geographical origin, or income (People Competence 2 – Equality).



[12]WHO, 2022, World Health Organization, WHO highlights urgent need to transform mental health and mental health care: **https://www.who.int/news/item/17-06-2022-who-highlights-urgent-need-to-transformmental-health-and-mental-health-care**

People attitude

The purpose of this competence is to create an attitude amongst VET students of caring and being concerned about their own and others' health and well-being through their education as well as being committed to reduce negative impacts and promote equality and equity amongst all.

People Competence 1 : Basic human needs

This competence within the People dimension of sustainability is related to a good quality of life for all by ensuring and protecting basic human needs. This includes a physical dimension focusing on having access to what is needed to live a healthy life, such as access to affordable nutritious food (SDG 1 and 2) as well as having access to a welfare system that can help people in need of any medical assistance or guidance is living an active lifestyle (SDG 3). This competence further includes a mental dimension of wellbeing. We live in a society today where people and especially the youth in the educational systems are experiencing extreme mental pressure, resulting in loneliness, stress, anxiety, and other mental conditions.

	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Basic human needs competence			
Competence	Understanding what determines good health and wellbeing, both physical and mental health	Working with good health and well-being within the specific VET	Promoting good health and wellbeing for all
Knowledge, skill, and attitude			
Knowledge	Has knowledge of basic factors influencing good health and wellbeing	Has knowledge of the relation between good health and wellbeing and the specific VET fields	Has knowledge of how specific VET fields can enhance good health and wellbeing for all
Skill	Can describe relevant factors influencing good health and wellbeing in relation to specific VET fields	Can assess and reduce negative impact on health and wellbeing	Can identify and improve own practice to make positive impact on health and wellbeing
Attitude	Cares about own and others' health and well-being as well as commits to reducing negative impacts and promote equality and equity amongst all		

Table 3: People Competence 1: Basic human needs

People Competence 2 : Equality

This competence relates to the new sufficiency paradigm, which focuses on ensuring that all resources and goods are divided more equally between and within countries, to ensure that some people do not overuse while others do not have enough to live a good quality life (SDG 10). The equality also relates to gender equality (SDG 5), where rights, possibilities, opportunities, employment, and pay-rates etc., should be equal between genders. This competence also focuses on a quality educational system (SDG 4) which is essential for establishing good quality life in the future and spreading knowledge of sustainability. and other mental conditions.

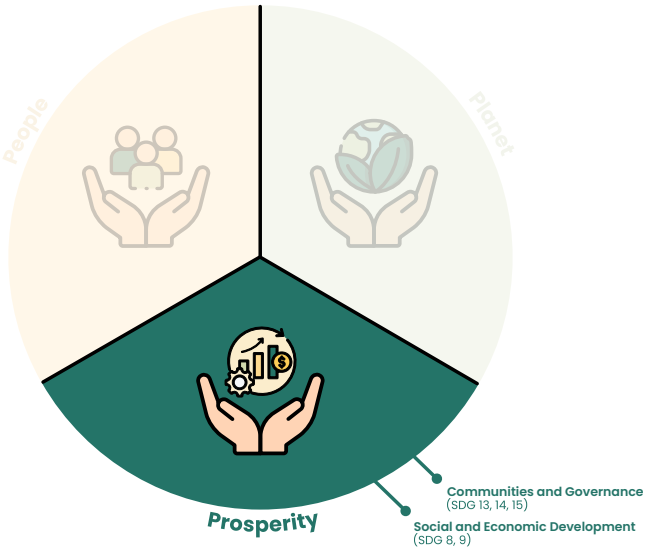
	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Equality competence			
Competence	Caring for others Including disadvantaged people in practices, being fair and emphatic	Embracing others Embracing diversity, promoting equality for all	Enabling others Support and enable others to live happy fulfilling lives
Knowledge, skill, and attitude			
Knowledge	Has knowledge on different types of diversity and the current state of equality nationally and globally	Has knowledge of what it takes to be more inclusive and how they can limit inequality through their education	Knowing which individuals in society and countries globally that need to be enabled to level out inequality
Skill	Can describe and identify challenges within equality and equity in modern society and globally across countries	Can embrace multicultural and diverse societies and being able to promote equality nationally and globally	Can act on and support others to create sufficiency and equality for all nationally and globally
Attitude	Cares about own and others' health and well-being as well as commits to reducing negative impacts and promote equality and equity amongst all		

Table 4: People Competence 2: Equality

Competences for Prosperity

The Prosperity dimension of sustainability includes the economic part of sustainability and is about creating a fulfilling and prosperous life for all. To achieve this, it is important that social, economic, and technological development is in harmony with nature. For nature and economy to keep thriving, decoupling is necessary. Historically, the amount of CO2 emissions has increased along with economic activity, and decoupling means finding a way to keep a certain level of economic growth whilst decreasing the negative environmental impacts. The VET systems can play a vital role in continuing creating decent work and economic growth in a sustainable manner.

The Prosperity dimension is divided into two competences. One in relation to understanding what responsible and regenerative economic flows encompass (Prosperity Competence 1 – Social and economic development), where the other competence focuses on how students through their VET programs can promote procurements practices that ensure a sustainable economy (Prosperity Competence 2 – Communities and governance).



Prosperity attitude

The purpose of this competence is to create an attitude among VET students of having a sustainable economic behavior as well as being committed to promote a regenerative economic flow and promoting sustainability in local communities and governance institutions.

Prosperity Competence 1 : Social and economic development

This competence focuses on understanding the economic flows of society and how they can ensure decent work and economic growth (SDG 8). It is about understanding what influences the economic flows both on national and international levels as well as gaining an understanding of which stakeholders are relevant and how they influence each other. Furthermore, this competence takes a more critical view on the classical economic systems. The competence introduces concepts such as decoupling and other newer economic viewpoints that challenges the traditional economic systems, such as the doughnut economy. The doughnut economy presents the principles of planetary boundaries that we cannot exceed but also a social foundation needed to ensure a good quality life. This competence also includes societal aspects by looking at which role industries, innovation, and infrastructure (SDG 9) have on our social and economic development.

	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Social and economic development			
Competence	**Economic flows** Knowledge of resource flows, such as energy and materials within the specific VET and how products are made	**Responsible economy** Understanding resource flows, such as energy and materials relevant for specific VET, up- and downstream value chains and initiate more environmentally friendly flows. Closing and narrowing the resource loops to avoid negative impacts	**Doughnut economy/ regenerative economy/ other economic thinking that challenges the classical economic thinking and includes social and environmental aspects** Understanding the social foundation and planetary boundaries as framework for doughnut economy and promoting the concepts through the specific VETculation are toxic free and possible to reuse for as long as possible
Knowledge, skill, and attitude			
Knowledge	**Has knowledge of the basic mechanisms of economic flows**	**Has knowledge of how to challenge the classic economic flows through relative and absolute decoupling**	**Has knowledge of new economic models that helps create a social foundation and sets standards for a quality life**

Skill	Can identify different types of economic flows as well as the actors of influence	Can apply critical thinking to economic growth to identify challenges within prosperity related to the specific VET program	Can act on how the specific VET can promote a doughnut/regenerative economy
Attitude	Having a sustainable economic behavior as well as being committed to promote a regenerative economic flow and promoting sustainability in local communities and governance institutions		

Table 5: Prosperity Competence 1: Social and economic development

Prosperity Competence 2 : Communities and governance

This competence focuses on understanding the role of cities, communities and governance institutions and how to engage with them to promote the sustainability agenda. Cities and communities play a big role in transitioning towards a more resilient, green, and sustainable future (SDG 11), while peaceful and inclusive societies are key to provide access to justice for all and for building effective, accountable and inclusive institutions at all levels of society (SDG16). Today, the youth is underrepresented in politics, which is a barrier for their participation in decision-making processes[14]. This competence underlines the importance of understanding dynamics in the local communities, cities and governance institutions, to be able to engage with and facilitate change towards a more sustainable future.

	Basic (Knowledge about)	**Intermediate** (Working with)	**Advanced** (Acting on)
Communities and governance competence			
Competence	Understanding the role of and dynamics in local communities and governance institutions	Engaging in local communities and governance institutions	Promoting the sustainability agenda in local communities and governance institutions
Knowledge, skill, and attitude			
Knowledge	Understanding the importance of local communities in a wider societal perspective	Knowledge of what is important for a specific local community	Knowledge about how it is possible to change the agenda in society and local communities

[14]United Nations, Department of Economic and Social Affairs, 2024, SDG 16, **Goal 16 | Department of Economic and Social Affairs (un.org)**

Skill	Being able to identify the political agendas	Engaging in and working with the political agendas	Taking action to promote the sustainability agenda in local communities and in society
Attitude	Having a sustainable economic behavior as well as being committed to promote a regenerative economic flow and promoting sustainability in local communities and governance institutions		

Table 6: Prosperity Competence 2: Communities and governance

EDUS enablers

With the three core dimensions of sustainability defined through PLANET, PEOPLE, and PROSPERITY, the purpose of the EDUS enablers is to provide VET trainers and students with means to achieve the competences within the three sustainability dimensions. The three enablers are shown in Figure 10.

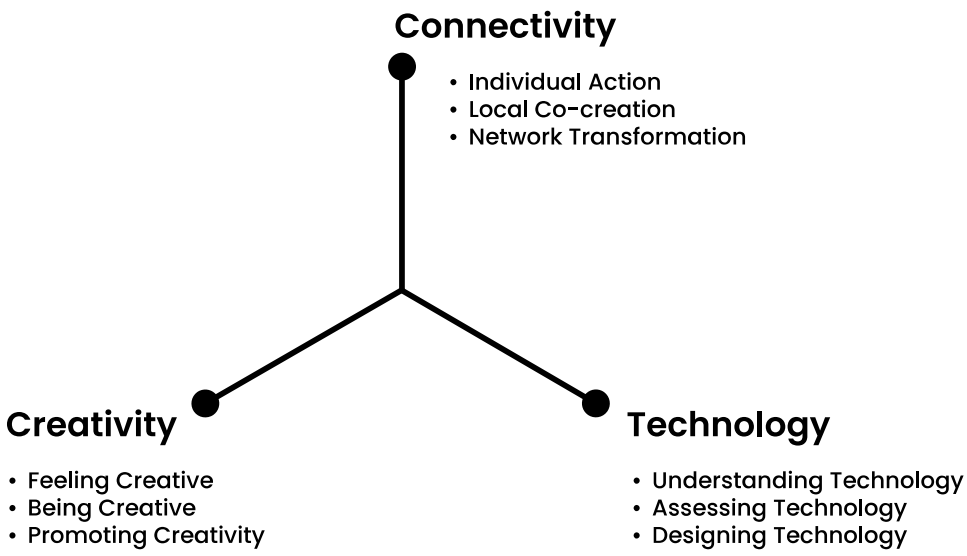


Figure 10: Enablers of the EDUS Framework

The enablers aim to provide guidance and inspiration for different levels that can support development of sustainability competences in VET programs.

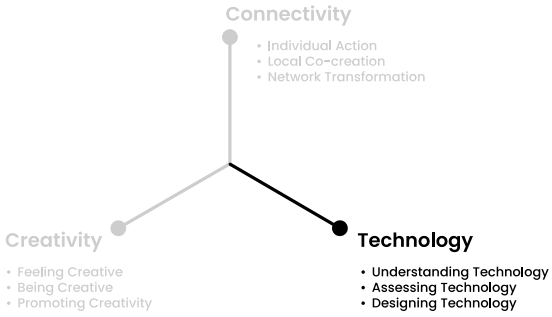
- **Technology:** Technology as an enabler to the three dimensions of sustainability is focused on the role technology plays in a society undertaking sustainable development. This refers to the use of technology to enable and promote sustainable solutions and behavior, but also considerations about the sustainability of technology. Society has increased focus on digitalization and technology which is why this is an important enabler for developing VET programs aimed at the evolving job market.

- **Creativity:** Creativity as an enabler is focused on the ability of learners to be creative and innovative. Creativity is about the ability to think creatively, critically, and reflectively about sustainable development and solutions, skills and actions that support sustainable development. The intention of using creativity as an enabler is to foster new mindsets that promote a sustainable transition.

- **Connectivity:** Connectivity as an enabler acknowledges the importance of the 2030 agenda's core principle of leaving no one and no place behind[1]. Here, especially SDG 17 Partnership for the Goals speaks to the fact that no educational program, organization, or country can reach sustainable development alone. As an enabler, connectivity encompasses the ability to collaborate and involve different types of stakeholders in relation to sustainable development.

Technology enabler

Technology as an enabler is focused on the role technology plays in a society undertaking sustainable development. This enabler acknowledges the dialectic role of technology in relation to sustainability, as both a means to achieve sustainable development, but also the sustainability impact of technologies themselves.



By utilizing technology to promote sustainable development (i.e. as a means), considerations are made with regards to how technology can be designed, implemented, and used to promote sustainability. This could be through new technologies that enable users to promote a more sustainable lifestyle, technologies that improve business practices etc. On the other hand, the sustainability impact of technology is also important to consider, as technologies are not freed from impact – neither in production, use or disposal. Therefore, considerations must be made to ensure that new technologies, redesigns of technologies or new use potentials of technologies are understood, assessed, and designed to reduce negative sustainability impacts and ultimately ensure positive contributions of the technology itself, as well as the utilization of the technology.

Basic: Understanding technology

To understand the role and potentials of technology to promote the three dimensions of sustainability: understanding different relevant technologies, their potential sustainability impacts, and how the technology enables sustainability.

Intermediate: Assessing technology

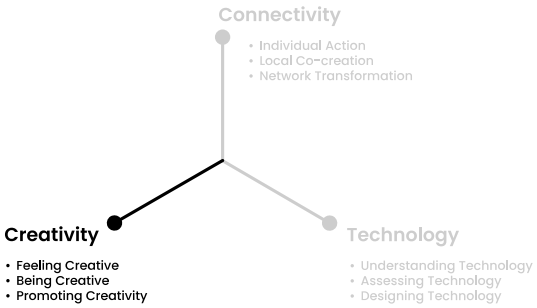
To be able to assess the relevance of different technologies to be able to determine which technology is most appropriate and relevant for a specific practice. Building on an understanding of technology, the purpose of assessing technology is to ensure that you can choose the right technology to enable the sustainability dimension(s) in focus.

Advanced: Designing technology

To be able to provide input for design, development, and/or improvement of technology, relevant to the specific VET field and wider community.

Creativity enabler

This enabler is focused on the ability of learners to be creative and innovative during their studies, subsequent work life as well as in everyday life. Creativity is about the ability to think creatively, critically, and reflectively about sustainable development, incl. existing and new solutions, skills, and actions that support sustainable development.



By using creativity as an enabler, the intention is to foster new mindsets that promote a sustainable transition for all as lifelong learners. This enabler entails notions of art, culture, imagination, critical thinking and problem-solving and decision-making skills, courage, and values.

Basic: Feeling creative

To be curious about creativity as an enabler for sustainability integration in specific VET fields.

Intermediate: Being creative

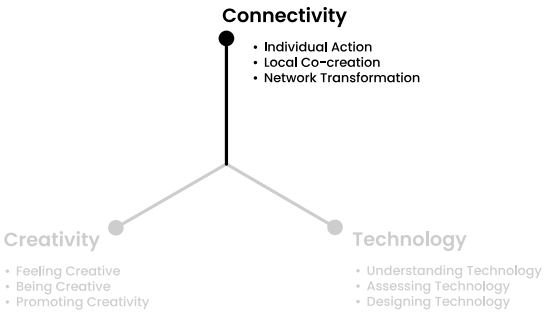
To be able to engage in creative processes in relation to a VET field and initiate new thoughts and ideas for sustainability solutions and practices within the specific VET fields.

Advanced: Promoting creativity

To be able to initiate creative processes and promote creative and innovative thinking in VET activities and everyday life. It is characterized by a sense of agency to proactively engage oneself and others in innovative, critical, and creative ways that bring together different contexts for a common purpose of sustainable development.

Connectivity enabler

The enabler of connectivity acknowledges the importance of collaboration and co-creation for sustainable development, as no country, education, or person can ensure a sustainable development on their own. This is representative of the overarching idea of the SDGs to leave no one and no place behind, emphasizing the need for cross-disciplinary collaboration. This is also the core element of SDG 17 Partnerships for the goals.



Multidisciplinary, interdisciplinary, and transdisciplinary collaboration is an important enabler of sustainable development. As an enabler, connectivity encompasses the ability to collaborate and involve different types of stakeholders in relation to sustainable development.

The purpose of connectivity as an enabler of sustainable development is thus to ensure that learners are willing to engage with others to challenge and change current practices towards a sustainable transition.

Basic: Individual action

To be able to individually act within a specific VET field and everyday life to support and promote one or more sustainability dimensions.

Multidisciplinary (bring knowledge together from different disciplines to solve problems; view the same problem through multiple lenses – everyone keeps their own voice, i.e. individual action first)

Intermediate: Local co-creation

To be able to identify, engage and collaborate with local stakeholders, relevant to the specific VET field and sustainability dimension(s) in focus. The aim is to bring stakeholders together to enable co-creation of new solutions, ideas, and practices in favor of a sustainable transition.

Interdisciplinary (bring together knowledge and skills from different disciplines

to integrate perspectives on the problems – being able to do more together)

Advanced: Network transformation

To be able to inspire different stakeholders to engage in sustainability transformations at societal level, across disciplines, academic and practice to develop exemplary sustainability practices.

Transdisciplinary (activate different domains, theory and practice, to develop new solutions to problems, spanning across disciplines)

Overview of EDUS Framework

	Basic	Intermediate	Advanced
Core sustainability competences	Knowledge about	Working with	Acting on
Planet	**Understanding natural systems** Understanding ecosystems like water flows, biodiversity, flora & fauna, planetary boundaries	**Working with natural systems** Understanding natural systems relevant for specific VET, and how it is possible to reduce the negative impact on these natural systems	**Regenerative natural systems** Ensure positive impact on natural systems, for example through regenerative ecosystems, i.e ecosystems that renew, revitalize or restore their sources of energy and materials
	Understanding resource flows Knowledge of resource flows, such as energy and materials within the specific VET and how products are made	**Working with resource flows in value chains** Understanding resource flows, such as energy and materials relevant for specific VET, up- and downstream value chains and initiating more environmentally friendly flows. Closing and narrowing the resource loops to avoid negative impacts	**Promoting regenerate resource flows** Apply circular strategies to ensure positive impact by slowing and regenerating resource loops, e.g. ensuring that the materials in circulation are toxic free and possible to reuse for as long as possible
People	**Understanding what determines good health and wellbeing, both physical and mental health**	**Working with good health and well-being within the specific VET**	**Promoting good health and wellbeing for all**
	Caring for others Including disadvantaged people in practices, being fair and emphatic	**Embracing others** Embracing diversity, promoting equality for all	**Enabling others** Support and enable others to live happy fulfilling lives

Prosperity	**Economic flows** Understanding global and local economic flows, different actors, including own role, industries and how they impact each other	**Responsible economy** Understanding absolute and relative decoupling, the role of innovation, and being able to apply critical thinking on economic growth	**Doughnut economy/ regenerative economy/ other economic thinking that challenges the classical economic thinking and includes social and environmental aspects** Understanding the social foundation and planetary boundaries as framework for doughnut economy and promoting the concepts through the specific VET
	Understanding the role of and dynamics in local communities and governance institutions	**Engaging in local communities and governance institutions**	**Promoting the sustainability agenda in local communities and governance institutions**
Enablers			
Technology	**Understanding technology**	**Assessing technology**	**Designing technology**
Creativity	**Feeling creative**	**Being creative**	**Promoting creativity**
Connectivity	**Individual action**	**Local co-creation**	**Network transformation**

Table 7: The complete EDUS Framework, including competences and enablers

Self-assessment grid

In Figure 14, a self-assessment grid is presented. The self-assessment grid is to be filled out by the students before and after having completed sustainability training developed in the EDUS project. The aim is to provide the teachers the possibility to assess the entry and exit level of their students and thereby be able to adjust the teaching to fit the students' level.

Happy face

I feel confident about the topic and that I possess the described competence.

Neutral face

I am unsure about the topic, and even though I may have heard about it before, I do not possess the competences to a degree that I am confident about.

Unhappy face

I don't know anything about this topic, and/or it is not a competence that I possess.

Figure 14: Self-assessment grid

	Competence	How confident do you feel about the following competences? Please indicate your answer for each competence below.		
		🙂	😐	☹
Planet				
Earth Preconditions				
Basic Level	I have knowledge about and understand what ecosystems such as water flows, biodiversity, flora & fauna, planetary boundaries are.			
Intermediate Level	I know which natural systems are impacted by (my specific field of study) ....., and how it is possible to limit the negative impact.			
Advanced Level	I can identify and improve my own way of life to make positive impact on relevant natural systems.			
Sustainable Resource Flows				
Basic Level	I have knowledge about the resource flows, such as energy and materials that are relevant within (my specific field of study)..... and can describe how and which resource flows are affected by human activity.			
Intermediate Level	I know how to narrow and close resource loops, by working with resource flows in a value chain perspective.			
Advanced Level	I can apply circular strategies to ensure a positive impact by slowing, i.e. reducing the speed by which we use resources and regenerating resource loops, e.g. ensuring that materials are toxic free.			
People				
Basic Human Needs				
Basic Level	I understand what determines good health and wellbeing, both physically and mentally.			

Intermediate Level	I understand how (my specific field of study)..... can affect good health and well-being and can assess and reduce the negative impacts.			
Advanced Level	I know how (my specific field of stuy) ..... can enhance good health and wellbeing for all and can identify and improve my way of life to make a positive impact on health and wellbeing.			
Equality				
Basic Level	I have knowledge of different types of diversity and can describe and identify challenges related to equality and equity in modern society nationally and globally.			
Intermediate Level	I know what it takes to be more inclusive, and I can promote equality.			
Advanced Level	I can act on and support others to create sufficiency and equality for all nationally and globally.			
Prosperity				
Social and Economic Development				
Basic Level	I understand the basic mechanisms of economic flows and can identify the actors of influence.			
Intermediate Level	I can apply critical thinking and challenge the classic economic flows through relative and absolute decoupling.			
Advanced Level	I can promote a doughnut/regenerative/ other types of economy through (my specific field of stuy).....			
Communities and Governance				
Basic Level	I understand the importance of local communities in a wider societal perspective and can identify the political agendas.			
Intermediate Level	I know what is important for a specific local community and can engage in and work with political agendas.			
Advanced Level	I can promote the sustainability agenda in local communities and in society.			

Self-assessment grid

Below you find a self-assessment grid for you to fill out before and after you have completed sustainability training. Please complete the specific field of study this form is being used in in the spaces dedicated to this. The aim is to provide your teachers the possibility to assess your knowledge base and adjust their teaching to fit your needs. It will not be used to grade your performance in any way.

Happy face
I feel confident about the topic and that I possess the described competence.

Neutral face
I am unsure about the topic, and even though I may have heard about it before, I do not possess the competences to a degree that I am confident about.

Unhappy face
I don't know anything about this topic, and/or it is not a competence that I possess.

Competence	How confident do you feel about the following competences? Please indicate your answer for each competence below.		
	🙂	😐	☹
Planet			
Earth Preconditions			
I have knowledge about and understand what ecosystems such as water flows, biodiversity, flora & fauna, planetary boundaries are.			
I know which natural systems are impacted by (my specific field of study)....., and how it is possible to limit the negative impact.			
I can identify and improve my own way of life to make positive impact on relevant natural systems.			

Sustainable Resource Flows				
I have knowledge about the resource flows, such as energy and materials that are relevant within (my specific field of study)..... and can describe how and which resource flows are affected by human activity.				
I know how to narrow and close resource loops, by working with resource flows in a value chain perspective.				
I can apply circular strategies to ensure a positive impact by slowing, i.e. reducing the speed by which we use resources and regenerating resource loops, e.g. ensuring that materials are toxic free.				
People				
Basic Human Needs				
I understand what determines good health and wellbeing, both physically and mentally.				
I understand how (my specific field of study) ..... can affect good health and well-being and can assess and reduce the negative impacts.				
I know how (my specific field of stuy)..... ..... can enhance good health and wellbeing for all and can identify and improve my way of life to make a positive impact on health and wellbeing.				
Equality				
I have knowledge of different types of diversity and can describe and identify challenges related to equality and equity in modern society nationally and globally.				
Intermediate Level	I know what it takes to be more inclusive, and I can promote equality.			
Advanced Level	I can act on and support others to create sufficiency and equality for all nationally and globally.			
Prosperity				
Social and Economic Development				
I understand the basic mechanisms of economic flows and can identify the actors of influence.				
I can apply critical thinking and challenge the classic economic flows through relative and absolute decoupling.				

I can promote a doughnut/regenerative/other types of economy through (my specific field of stuy).....			
Communities and Governance			
I understand the importance of local communities in a wider societal perspective and can identify the political agendas.			
I know what is important for a specific local community and can engage in and work with political agendas.			
I can promote the sustainability agenda in local communities and in society.			

Educating for sustainability

A competence framework for vocational education and training

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them. Project code: 2023-1-DK01-KA220-VET-000165508

edusproject.eu

edus@plan.aau.dk