



Learning and Teaching Package 7

Sustainable Entrepreneurship Education

UNIT 4: IMPLEMENT “SUSTAINABLE ENTREPRENEURSHIP MINDSET”

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Overview

The present Learning and Teaching Package follows a holistic approach by providing background information and methodologies to foster the sustainable entrepreneurship competences of in-service and pre-service teachers. Based on the knowledge, skills and competences acquired by completing this LTP, teachers will be able to develop new teaching materials or adapt already existing ones with aspects of sustainable entrepreneurship education (SEE).

Entrepreneurship education plays a key role in supporting young people to adopt a positive mindset. The entrepreneurial mindset is referred to a certain way of thinking by which young people confront difficulties and problems in life. The entrepreneurial mindset enables young people to overcome those challenges, be decisive and take on responsibilities for any of their behaviours and activities.

The focus of Unit 1 is knowledge-basis around entrepreneurship and sustainability competences supported by focusing questions. Unit 1 materials are recommended for educators who are educating pre-service and/or in-service teachers. This unit aims to reflect on the level of the entrepreneurial mindset of the teachers in a creative and trustful atmosphere.

The aims of Unit 2 is self-reflection on values and attitudes towards sustainability and entrepreneurship. This unit raises the awareness of the teachers for fostering their own sustainable and entrepreneurship competences. Through different reflective phases teachers get aware of their motivation to work with these topics and also with the possibilities of interdisciplinary linking the theory (GreenComp, EntreComp) with the practice (own living and teaching environment).

Unit 3 supports teachers by the transfer of their know-how, values, attitudes and motivation into the teaching practice. The key focus is to get into action while elaborating ideas on how to connect the sustainable entrepreneurship approach with own teaching subject.

In this unit the participants develop their own teaching and learning materials by aligning the learning objectives of their subject(s) with the sustainable entrepreneurship competencies. Furthermore, the participants also elaborate hands-on working materials for students and set the assessment methods and tools for the assessment of the learning outcomes.

Unit 5 is more practice-based, and would be of interest for student teachers and teachers to implement directly in the classroom. It aims to inspire to develop sustainable entrepreneurship competences among students in an engaging and fun way, while at the same time giving knowledge-basis around key concepts. Students will set on a journey to improve their local surroundings by critically exploring what could be improved and how in their own cities or towns.

Pedagogical Approach

The pedagogical approach is based on [the TAP-TS Roadmap](#) to develop teaching and learning materials, and aims to enable learners and teachers to think and act sustainably. The elaborated four units within the 7 Learning and Teaching Package (LTP) “Sustainable Entrepreneurship Education” include methodologies and tools to foster the active participation of the pre-service and in-service teachers in the discourse on sustainability and follow a whole-



school-approach when it comes to the transfer of the sustainable entrepreneurship approach into their own teaching. The five units furthermore follows a holistic approach while focusing on the competences defined in the [Green Comp Framework](#).

This LTP incorporates activities which are focusing on real life challenges (Unit 1), action-oriented, hands-on and action-oriented (Unit 2, Unit 3, and Unit 5) activities, and stimulate creative collaboration between the teachers (Unit 4).

Sustainable Entrepreneurship Education: Background information

Sustainable entrepreneurship education teaches young people on the one side how to successfully use current resources to achieve sustainable growth while not risking future generations' ability to access resources. On the other side sustainable entrepreneurship competences enable young people to value sustainability; to support equity and justice for current and future generations; to approach a sustainability problem from all sides, to formulate current and potential challenges to identify sustainable approaches to anticipating and preventing problems, and to mitigating and adapting already existing problems. Furthermore, to adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas and methods and to act for change in collaboration with others round up the sustainability competences.

Piloting of the materials within TAP-TS

This LTP was piloted within the online Workshop in 2023 and one module was tested as a face-to-face workshop in November 2023 in Dresden. The online workshop is available on [the TAP-TS Platform](#).



UNIT 4 Implementation “Sustainable Entrepreneurship”

Main Topic	Target Group	Duration	Knowledge Area/ Subjects in School	Activities	Possible assessment
Developing teaching and learning materials	Pre- and in-service teachers	360 min	Applicable multidisciplinary across different subjects and knowledge areas	In retrospect Development Feedback Follow-up	Ready teaching materials, assessment methods and tools
Intended Learning Outcomes	Having worked through the activities and materials, students will be able to: ✓ develop at least one teaching unit based on the learning objectives elaborated in Unit 3. ✓ develop related working materials for students. ✓ develop assessment tools for assessing the acquired competences of the students after implementing the teaching unit.				
Prior Competencies	obligatory: Successfully completing Uni 1, 2 and Unit 3 of this LTP optional/ideal: In case of non-attendance of Unit 1, 2, 3 the participant should have elaborated learning objectives with the focus on own teaching subject(s) and				
Required materials	Flipchart paper, pen				
Cooperation/ Networking	Not applicable				
Practical Notes for Teachers	In this unit the participants develop their own teaching unit by aligning the learning objectives of their subject(s) with the sustainable entrepreneurship competencies. Furthermore, the participants also elaborate hands on working materials for students and set the assessment methods and tools for the assessment of the learning outcomes.				
Addressing GreenComp	Embodying sustainability values				
	x	1.1 Valuing sustainability	To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.		
	x	1.2 Supporting fairness	To support equity and justice for current and future generations and learn from previous generations for sustainability.		
	x	1.3 Promoting nature	To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.		
	Embracing complexity in sustainability				
	x	2.1 Systems thinking	To approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems.		
	x	2.2 Critical thinking	To assess information and arguments*, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.		
	x	2.3 Problem framing	To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems.		
	Envisioning sustainable futures				
	x	3.1 Futures literacy	To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future		
	x	3.2 Adaptability	To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk.		
	x	3.3 Exploratory thinking	To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.		
	Acting for sustainability				
	x	4.1 Political agency	To navigate the political system, identify political responsibility and accountability for unsustainable behaviour, and demand effective policies for sustainability.		
	x	4.2 Collective action	To act for change in collaboration with others.		
	x	4.3 Individual initiative	To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.		



UNIT DESCRIPTION

Start-Up

The key aim of the activity is to visualize the learning outcomes of the previous three Units and make the learning progress visible to the participants. In this way participants should be motivated, and their learning progress valued in an appropriate way.


Estimated
Duration


Activity 1. In retrospect

The focus of this activity is on summarizing the learning outcomes of the previous three Units.

Preparation for Activities: The summary of the outcomes of each unit should be visually available to the participants (in the form of presentation or handout). 30 min

Description




 The trainer presents the learning outcomes of the previous three Units on the flipchart paper and shortly recapitulate the outcomes of each unit (these are found in the units descriptions).

 Afterwards, the teacher asks the participants to write their initials after each learning outcome where they think they have personally achieved that learning outcome. The trainer may foster the conversation about the reached and not reached learning outcomes alongside the following questions:

- Which of the learning outcomes was the easiest to reach?
- Which of the learning outcomes was the most difficult to reach?
- Which of the learning outcomes was your favorite one and why?
- Which of the learning outcomes you think want to deepen after the workshop?
-



Development

		Estimated Duration
<i>The key aim of the activity is the development of a concrete teaching unit and material based on the particular teaching subject of the participants.</i>		
Activity 2. Development of materials The focus of this activity is on starting the development of the concrete teaching material(s) related to the subject and need of each participant.	<p>Preparation for Activities: No specific preparation is needed.</p> <p>Description</p> <p> The participants start to develop their own teaching materials based on the acquired knowledge, skills and competences. The retrospective view on the reached learning outcomes in the start-up phase should motivate the teachers to create their materials and support the transfer of the content imparted in the workshop into their teaching.</p> <p>In this phase the trainer is taking the role of an observer, and he/she is not actively involved in the development of the teaching materials. In case the participants need support or further clarification, the trainer supports them.</p> <p> For the elaboration of teaching materials at least following information should be included:</p> <ul style="list-style-type: none">- Objectives of the teaching material- Envisaged learning outcomes- Short description of the methodology and tools used- Time needed for the implementation of the teaching material- Supportive materials/background information <p> There is also a template to develop teaching and learning activities available.</p>	90 min



Consolidation

The key aim of the activity is to present the interim results of the participants and get first feedback from other participants. In this way the participants can adapt or add further ideas based on the participants' feedback.

**Estimated
Duration**

Activity 3. Feedback

The focus of this activity is to present the first results to the plenum and get first feedback.

Preparation for Activities: No specific preparation is needed.

120 min

Description



The participants work 60 minutes on their [templates](#).



Afterwards presents their work progress status in the plenum. Other participants reflect on the presentations, ask supportive questions or comment constructively.



After this session another 60 minutes are provided for further work/to complete the teaching materials.



Following questions can support the feedback on the teaching materials:

- Are the objectives clear and the new aspects on sustainable entrepreneurship clearly visible?
- Are the learning outcomes realistic and manageable?
- Are the methodologies and tools appropriate to deliver the envisaged content?
- Is the duration of the implementation of the teaching material(s) realistic?
- Are the teaching materials interactive, participative and competence oriented?



Follow-Up

The key aim of the activity is to give the participants ready-to-use materials for their own teaching. The presentation of the work done so far and the feedback on the results should motivate the participants to work further on the materials or create new one after the workshop and use the resources (contact) to the other teachers to work collaboratively.

Estimated
Duration

Activity 4. Presentation

The focus of this activity is to present the results so far and discuss together next steps to finish or implement the elaborated teaching units and materials.

Preparation for Activities: No specific preparation is needed.

Description



After 120 minutes work the participants present their work progress. In case the participants do not manage to finish their work in 120 minutes they will continue at home. Before leaving, they get another 15 minutes to write all their questions, thoughts and concerns related to the final work has to be done after the workshop. Each participant presents shortly those questions, thoughts, and concerns on a flipchart paper. The trainer and the participants finally give guidance, support, share ideas.

120 min



Glossary

Learning outcomes – are statements of what an individual should know, understand and/or be able to do at the end of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy.

Cedefop: [Learning outcomes](#).

Sustainability - means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries.

GreenComp: [Green Competence Framework](#)

Entrepreneurship - is the capacity to act upon opportunities and ideas, and transform them into value for others. The value that is created can be financial, cultural or social.

EntreComp: [Entrepreneurship Competence Framework](#)

GreenComp - comprises four interrelated competence areas: 'embodying sustainability values', 'embracing complexity in sustainability', 'envisioning sustainable futures' and 'acting for sustainability'. Each area comprises three competences that are interlinked and equally important. GreenComp is designed to be a non-prescriptive reference for learning schemes fostering sustainability as a competence.

GreenComp: [Green Competence Framework](#)

EntreComp - is the European Entrepreneurship Competence Framework for people interested in learning, teaching and fostering the knowledge, skills and attitudes that make up an entrepreneurial mindset.

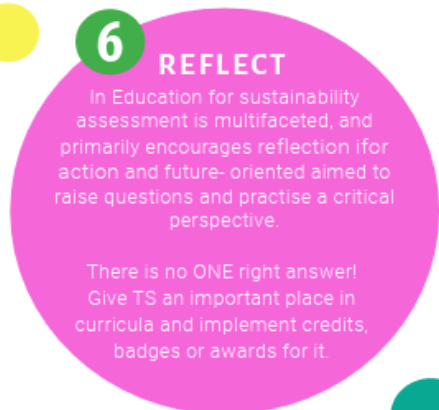
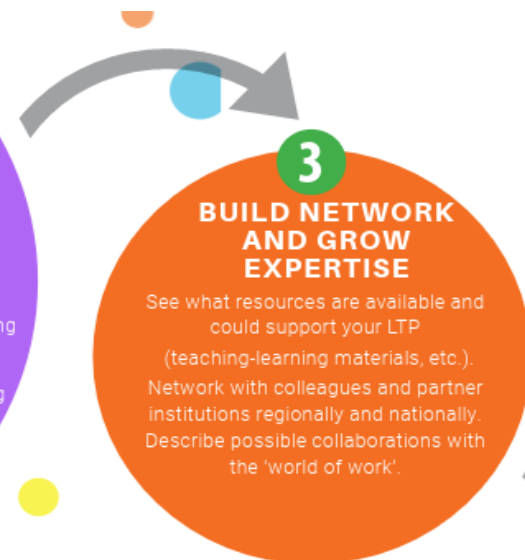
EntreComp: [Entrepreneurship Competence Framework](#)

TAP-TS Roadmap

TAP-TS Roadmap has three main goals: (1) for the TAP-TS partners as a roadmap to design LTPs; (2) for teachers and student teachers to design materials for teaching sustainability; (3) evaluation of LTPs. Explore the visualisation on the next page.

TAP-TS Roadmap: the Steps / stages in the TAP-TS LTPs Design Journey

1: Clarify the Goal	Our overarching goal is to enable learners and teachers to think and act sustainably. To actively participate in the discourse on sustainability, the topics must also be addressed - sustainably - in schools and universities. The goal of TAP-TS is to create learning and teaching packages for this purpose in the following areas: 2.1 A Sustainable Europe. 2.2 Sustainability and Digitality. 2.3. Sustainability and Environmental Education. 2.4 Climate Crisis Resilience. 2.5 Dealing with Climate Disinformation. 2.6 Green Citizenship in/for Europe. 2.7 Sustainable Entrepreneurship Education.
2: Competency Areas	The LTPS should be aligned with the interconnected four competences defined in the Green Comp Framework: • Embodying sustainability values • Embracing complexity in sustainability • Envisioning sustainable futures • Acting for sustainability
3: Networking & Bundle Expertise	There are many exciting topics. 1. Find a focus: what driving question is at the centre of your LTP. 2. See what resources are available (competencies, teaching-learning materials, etc.). 3. Network with colleagues and partner institutions regionally and nationally.
4: Working through the design process	Teaching Sustainability should be: action-oriented learning; hands-on; focussing on real life challenges; stimulate creative collaboration between teachers and learners; visions-oriented; participatory and action oriented . Approaches to teaching sustainability may be inquiry-based learning; explorative learning; networked learning; participation learning aimed at problem framing. Teaching Sustainability may incorporate the following activities: collaborative projects, future framing workshops, research and analysis, discussion.
5: ASSESSMENT DESIGN	In Education for Sustainability assessment can be multifaceted and primarily encourage reflection and be evidence based. There is not always ONE right answer. The goal should be to RAISE QUESTIONS. TS is not about teaching the „right“ behaviour, but about practising a critical perspective. Give TS an important place in curricula and implement credits, badges, or awards for it.
6: PUBLISH TO TAP-TS PLATFORM	Can you and where can you publish your materials under a Creative Commons license as free as possible. Because that is sustainable!



ROADMAP Developing TAP-TS Materials



Teaching Sustainability: Learning activity Template

1. Introduce yourself!

My name:
My country:
My role:
My school:
My class:

2. OVERVIEW

Provide a brief description of the learning activity, including information about the targeted age group and duration. Clearly state the motivation behind your learning activity and explain which elements of the curriculum your learning activity is related to.

Age Group:

Duration:

Related Themes of Sustainability:

Description:

3. LEARNING OUTCOMES

What are the learning outcomes of this learning activity, and which key GreenComp competences does it promote?

4. LEARNING APPROACH

Having in mind the learning outcomes, what active learning approaches will be applied?

Specify the engagement strategies and sequence of learning tasks that students will develop in the context of the activity. Explain how GreenComp competences will be promoted.

What will be the role of the teacher, and what will be the students' role? How will the students work—individually or in groups?

5. DIGITAL RESOURCES

Which digital technologies, including tools, services, and resources, will be utilized in the activity? Additionally, how will these digital technologies be effectively integrated to enhance lesson outcomes and student understanding?

6. ASSESSMENT

What assessment strategies and instruments will be employed to evaluate student learning?



GreenComp Framework: the European Sustainability Competence Framework

Within the TAP-TS Project, *GreenComp* (Bianchi et al., 2022) serves the following purposes: design of learning and teaching packages; development of TAP-TS professional development activities, (self)-reflection, and evaluation. The aim of GreenComp is to foster a sustainability mindset by helping teachers and students develop the knowledge, skills and attitudes to think, plan and act with empathy, responsibility, and care for our planet.

Visual representation of *GreenComp*:



GreenComp consists of 12 competences (in bold) organised into the four areas (in italics) below:

- *Embodying sustainability values, including the competences*

- **valuing sustainability**
- **supporting fairness**
- **promoting nature**

- *Embracing complexity in sustainability, including the competences*

- **systems thinking**
- **critical thinking**
- **problem framing**

- *Envisioning sustainable futures, including the competences*

- **futures literacy**
- **adaptability**
- **exploratory thinking**

- *Acting for sustainability, including the competences*

- **political agency**
- **collective action**
- **individual initiative**

Reference: Bianchi, G., Pisiotis, U., Cabrera Giraldez, M. GreenComp – [The European sustainability competence framework](#). Bacigalupo, M., Punie, Y. (editors), EUR 30955 EN, Publications Office of the European Union, Luxembourg, 2022; ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040.



Appendix

Appendix 1 Online course concept

The online course is a one-week asynchronous course with a workload of about 1 hour per day. The concept bases on the above presented LTP. The content, the duration and the methodologies and tools have been adapted to the online format.

Overarching understanding goals

Over this one week you will:

- explore best practices and strategies for teaching sustainable entrepreneurship.
- engage with one another to spark innovative thinking and develop practical ideas for implementation.
- apply ideas to your work by creating a usable product, such as a facilitation guide, or lesson plan.

Structure

This course is designed to offer overarching frameworks and ways of thinking, along with curated resources, that you then can apply to your own context. More specifically, this week you will find the following components:

- an overview and specific learning objectives of each module.
- a presentation of the course content (frameworks, models, etc.).
- one discussion to collaboratively process the content of the course.
- opportunities to give and receive peer feedback.

During the one-week course there is **one** live session at the end of the course. You are welcome to engage with the material at your own place. In order to reach the set learning objectives we recommend to complete the tasks day by day. However, if your learning style is different from this recommendation, please feel free to arrange your learning individually according to your needs and possibilities.

Unit 1 Entrepreneurship in Education

Learning objectives:

At the end of this course module you will be able to:

- describe the core idea behind the entrepreneurship education.
- list at least five competences related to the entrepreneurship education.
- to elaborate one practical example (case) with the reference to your own working field.

Unit 1.1 What is entrepreneurship education?

In the following module there are 16 learning videos available for you. It seems to be a lot, we agree! But each video lasts only for 2 - 3 Minutes and the speakers are very nice people. As the videos focus on the audio content, you can instead of watching too, only listen to them, for example by driving your car, sitting in the public transportation or by doing your weekly shopping. As the videos are practice oriented, we are sure you will enjoy it.

The following 15 videos give you a deeper insight into the particular entrepreneurship competences. You can start with any of the videos as all of the videos are standing alone videos.



Please remember: After watching all videos please reflect on your learnings and post your answers in the forum. Thank you.

Additional task: If you are interested in an additional task to strengthen your learning outcomes, please feel free to read our "Case study Inedible canteen food". The case study is available at the end of the course in a pdf document.

Unit 1.2 Case study "Inedible canteen food"

Dear Participants, if you are still motivated and interested in our course (we hope so 😊) we would like to provide you an additional task to deepen your expertise in the implementation of the Entrepreneurship Education in the practice. The [Case study „Inedible canteen food“](#) provides you an opportunity to apply your knowledge, skills and attitudes gained in this course on *Entrepreneurship Education* in practice.

How to work on this case?

1. Please read the case carefully.
2. Please follow the instructions in the document to start working on the case.
3. In this document YOUR perspective, ideas and visions are asked. In this way you have the chance to test the case by you, before you involve your students in this case.
4. Please feel free to fill in the document and send it to us, if you wish feedback from us. We would be glad to reflect together with you on your work.

If you have any question, please feel free to contact us.

nota bene: We also provide you a filled in document with some ideas (Document: [Solution approaches](#)). But please, only check this document after your tasks are done as it may impact your initial ideas.

Unit 2 Sustainability and Entrepreneurship Education

Dear Participant, after finishing your case study you are ready for our second module. In this module we will work on the topic "**Sustainable** Entrepreneurship Education.

Let's have a look together on the two terms "sustainability" and "entrepreneurship" and let's elaborate the synergies for the education.

[Which competence are targeted when we speak about sustainability?](#)

[Education for Sustainability](#)

[Sustainable meats Entrepreneurship Education](#)

Unit 2.1 Case study "Sustainable canteen food"

Dear Participants, we would like to provide you a second case study which foster your expertise in the implementation of the approaches on the Sustainable Entrepreneurship Education in the practice. The case study „Sustainable canteen food“ provides you an opportunity to apply your knowledge, skills and attitudes gained in this course on Sustainable *Entrepreneurship Education* in practice.

[What does sustainable food means?](#)

[The case](#)

[Case study solution approaches](#)

Unit 3 SEE in light of the "Whole school approach"



The two case studies in the previous chapters are good examples for showing options, how different approaches on Sustainable Entrepreneurship Education can be covered within the school curriculum. These kind of approaches can be embedded in small project related activities, depending on your resources and possibilities in your schools and organisations. But the topic on Sustainable Entrepreneurship Education can also be covered holistically based on the "Whole School Approach".

[SEE in light of the "Whole school approach"](#)

Unit 3.1 Implementation of Whole School Approach in project based work on SEE

In this module we will show you some ways for elaborating ideas for the project related work on "Sustainable Entrepreneurship Education" in your school or organizations.

[The whole school approach in the practice](#)

[The five step investigation plan](#)

[The five step investigation plan in practice](#)

[Case study Whole School Approach with SEE template](#)

Dear Participant, it's your turn. Please find attached the template for your work. You can use this template immediately in your classroom with students. But please feel free too, to work on this template first by you own and make first experiences without involving students in this work. You can send us your filled in template if you wish feedback from us. Thank you!

Unit 4 Recommendations for the implementation of SEE projects

Dear Participant, congratulations! You finished the pilot course on "Sustainable Entrepreneurship Education (SEE)". In the following document you will find some recommendations on how to develop a SEE-Project by focusing on the EntreComp and GreenComp framework. Thank you for your participation and support!

[Recommendations for the implementation of SEE project in your institution](#)



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