





# Provision of Capacity Building on Green and Entrepreneurial Learning

A TOOLBOX FOR TEACHERS AND TRAINERS

















www.unido.org

#### **ACKNOWLEDGMENTS**

This document is published by the United Nations Industrial Development Organization (UNIDO) and is supported by the UNESCO-UNEVOC global initiative "Building resilience in TVET for a just and green transition" funded by GIZ and implemented by UNIDO through the Learning and Knowledge Development Facility (LKDF).

The content of this document has been developed by the National Centre for Development of Innovation and Entrepreneurial Learning (NCDIEL) and FH Joanneum University of Applied Sciences under the overall leadership of UNIDO. The pilot institution is the Selam Technical and Vocational College (STVC) in Addis Ababa, Ethiopia.



#### © 2023 United Nations Industrial Development Organization

This document has been produced without formal United Nations editing. The designations and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as "developed", industrialized" and "developing" are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of company names or commercial products does not constitute an endorsement by UNIDO. Although great care has been taken to maintain the accuracy of the information presented, neither UNIDO nor its member states assume any responsibility for consequences, which may arise from the use of the material. This document may be freely quoted or reprinted, but acknowledgment is requested. For reference and citation please use: United Nations Industrial Development Organization. *Provision of Capacity Building on Green and Entrepreneurial Learning: A Toolbox for Teachers and Trainers*. Vienna, Austria.

This document has been printed on recycled paper in limited number to minimize its environmental impact

Copyright © 2023 - United Nations Industrial Development Organization - www.unido.org

Images © 2023 - www.unido.org, http://stock.adobe.com, www.flaticon.com

Design © 2023 - Excelcis SARL - www.excelcis.com

## Provision of Capacity Building on Green and Entrepreneurial Learning

A TOOLBOX FOR TEACHERS AND TRAINERS

Vienna, Austria March 2023





### **CONTENT AND FIGURES**

Abl	previations and acronyms	6
Toc	olboxes	7
l.	Background and context	8
II.	Knowing the essence of entrepreneurial and green related education	9
	II.1 Goals and methodological background	9
	II.2 Selecting effective practices: workshop findings	10
III.	Toolbox for delivering green and entrepreneurial learning	13
Ref	rerences	38
Figu	re 1 Expert-led workshop on «Green Skills for Teachers in TVET» at Selam Technical and Vocational College, Ethiopia	10
Figu	re 2 Expert-led workshop on «Green Skills for Teachers in TVET» at Selam Technical and	10

### **ABBREVIATIONS AND ACRONYMS**

**UNIDO** 

FHJ FH Joanneum University of Applied Sciences GIZ German Agency for International Cooperation **GTVET Greening TVET LKDF** Learning and Knowledge Development Facility **NCDIEL** National Centre for Development of Innovation and Entrepreneurial Learning **TVET** Technical and Vocational Education and Training UN **United Nations UNESCO** United Nations Educational, Scientific and Cultural Organization International Centre for Technical and Vocational Education and Training of the **UNESCO-**United Nations Educational, Scientific and Cultural Organization **UNEVOC** 

United Nations Industrial Development Organization

### **TOOLBOXES**

Toolbox Task 1	DA VINCI SCRIBBLES	14
Toolbox Task 2	LEARNING COMPASS 2030	15
Toolbox Task 3	GREENING TVET	14
Toolbox Task 4	ENTRECOMP & GREENCOMP	17
Toolbox Task 5	HOW DO YOU PERCEIVE THE PLANNING IN YOUR PROFESSION?	18
Toolbox Task 6	ATTRACT ATTENTION	19
Toolbox Task 7	LEARNING ENVIRONMENTS BEYOND THE CLASSROOM	20
Toolbox Task 8	ASK YOUR STUDENTS HOW TO USE AVAILABLE RESOURCES	2
Toolbox Task 9	ASK YOUR COLLEAGUES HOW TO USE AVAILABLE RESOURCES	22
Toolbox Task 10	THINK ABOUT YOUR TEACHING ACTIVITIES	23
Toolbox Task 11	RANDOM WORD	24
Toolbox Task 12	ENGAGE STUDENTS AND EXPLORE	2!
Toolbox Task 13	GAMIFY YOUR CLASSROOM	26
Toolbox Task 14	STUDENTS ACTIVITY	27
Toolbox Task 15	SUSTAINABLE BUILDING DESIGN	28
Toolbox Task 16	SUSTAINABLE AGRICULTURE BUSINESS PLAN	29
Toolbox Task 17	MAIN REASONS FOR ASSESSMENT	30
Toolbox Task 18	ASSESS TO ASSIST	3
Toolbox Task 19	CONSIDER A PROJECT ASSIGNMENT AS AN ASSESSMENT PRACTICE	33
Toolbox Task 20	ACT!	34
Toolbox Task 21	THINK ABOUT THIS	3!
Toolbox Task 22	ENTREPRENEURIAL NETWORKS	36

PAGE 6 PAGE 7

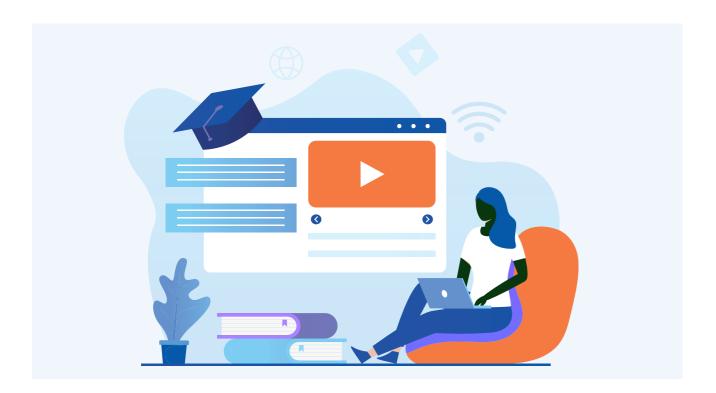
### I. BACKGROUND AND CONTEXT

The International Centre for Technical and Vocational Education and Training of the United Nations Educational, Scientific and Cultural Organization (UNESCO-UNEVOC), undertakes a global initiative for strengthening the resilience of education and training stakeholders for a just and sustainable transition, which is implemented with the support of the German Agency for International Cooperation (GIZ). The project focuses on low- to lower-middle-income countries, paying special attention to countries in Africa and Small Island Developing States.

For that purpose, the United Nations Industrial Development Organization (UNIDO) through the Learning and Knowledge Development Facility (LKDF) aims to implement a series of activities to enhance the capacity of Technical and Vocational Education and Training (TVET) institutions for a just and green transition through a technical assistance package.

For this purpose, UNIDO contracted the National Centre for Development of Innovation and Entrepreneurial Learning (NCDIEL) and FH Joanneum University of Applied Sciences to develop a "Toolbox for the Provision of Capacity Building for TVET Teachers and Trainers" with a pilot intervention at the Selam Technical and Vocational College in Ethiopia, an accredited college by Addis Ababa TVET Agency.

UNIDO, through the LKDF, aims to implement a series of activities to enhance the capacity of TVET institutions for a just and green transition through a technical assistance package.

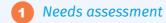


### II. KNOWING THE ESSENCE OF ENTREPRENEURIAL AND GREEN RELATED EDUCATION

### **II.1 Goals and Methodological Background**

This document presents a **toolbox for TVET teaching staff** with selected practical resources from a developed learning module on green and entrepreneurial learning. The aim of the toolbox is to promote enhancement of resilience in young people, with a focus on fostering inclusive and sustainable development.

Prior to the development of the learning materials, a needs assessment was conducted within the Selam TVET as a selected institution for pilot intervention in Ethiopia. The methodological steps that led to this toolbox and could be applied in various institutions are listed below.



- i. Desk review on green and entrepreneurial learning
- ii. Self-assessment questionnaire for teaching staff (piloted in Selam TVET)
- iii. Meeting/interview with top management (piloted in Selam TVET)
- iv. Evaluation and recommendations for intervention
- 2 Development of practical resources
  - i. Desk review of relevant literature and on-going courses/study programmes (focus on Selam TVFT)
  - ii. Learning module: Green and entrepreneurial learning
  - iii. Toolbox: Practical staff development resources

The assessment highlighted the need for training and a comprehensive learning module tailored to address the requirements of the TVET teaching personnel.

Based on the results of the assessment, as well as the conducted desk review, several topics were identified that

will contribute to build capacities of the teaching staff, thus enabling them to foster entrepreneurial, innovative and sustainable mindset among their students.

### **II.2** Selecting Effective Practices: Workshop Findings

To gain a comprehensive understanding of the requirements of the teaching staff and determine which topics would be the most impactful, representatives of

the implementation team conducted an on-site workshop with the Selam's teaching staff.





The participants were acquainted to the identified areas for delivering green and entrepreneurial learning according to the needs assessment. Afterwards, they were divided into three groups, with each group assigned to

discuss four main topics related to those areas and their relevance for development of an effective and highly needed learning module.

During the workshop, the teachers were encouraged to share their opinions on the following suggested areas for improvement:

- Green & Entrepreneurial knowledge and understanding
- Entrepreneurial and Green Competences
- Planning green & entrepreneurial learning environments
- Teaching and training methods
- Assessment and self-assessment
- Collaboration with other educators and stakeholders

The key comments and conclusions from the workshop are presented below and structured according to the questions for discussion.



### Which of the proposed topics you find most useful?

**Group 1:** All of them are equally important.

Group 2: (1, 2) Learning about the green skills and understanding them is key for their utilisation. (3) Planning green and entrepreneurial learning environment. (4) Teaching and training methods are really needed for teachers to develop and implement high level teaching. (5) It is very important to understand the efficiency and the impact.

Group 3: (3) Planning green and entrepreneurial learning environment is very important for high quality teaching.



### Do you believe that some of the proposed topics should be left out? Why?

None of the participants believes that some topic is not important. Although, in group 3 it was emphasised that as teachers and educators, they already are familiar with the teaching methods.



Which competences should be developed and/or strengthened for you to be able to deliver quality green & entrepreneurship education?

**Group 1:** The equal relevance of all topics was mentioned.

Group 2: (4) Teaching and training methods and (5) assessment and self-assessment are the most needed for teachers.

Group 3: (1, 2, 3) Teachers need more understanding in these topics to be able to teach them.



### Please propose up to 5 additional topics that you find useful.

In general, the proposed topics are related to: benefits and importance of TVET benefits for the learners and the society, time management, team communication, basic computer skills and life skills. This question might have been considered generally, not only for green and entrepreneurial learning.

PAGE 10 PAGE 11

By gathering feedback directly from the teachers, the implementation team could refine the contents of the learning module and ensure that this toolbox meets the needs of the teaching staff.

The general conclusion is that the teachers recognise the importance of green and entrepreneurial learning and are willing to expand their knowledge in these areas. They consider that all topics are highly relevant, but they need to understand better the concept of green and entrepreneurial learning and to plan the learning environment in order to effectively transfer this knowledge to their students. Therefore, this toolbox contains several practical resources that will help

teachers to upgrade their own knowledge and build their capacities. Moreover, it offers examples of key methods and tools that can be used to teach and assess green and entrepreneurial learning effectively.

By providing these resources and tools, the toolbox aims to equip teachers with the necessary knowledge and skills to integrate green and entrepreneurial learning into their teaching practices which will empower students to become responsible and environmentally conscious citizens, contributing to the growth of the economy.



### III. TOOLBOX FOR DELIVERING GREEN AND ENTREPRENEURIAL LEARNING

This toolbox will help TVET teachers to understand better the concept of green and entrepreneurial learning and to implement its key elements into their teaching.

The practices presented in the toolbox have been selected according to the needs of the teaching staff at Selam TVET, but they could be applied to various range of institutions.

It is worth mentioning that this toolbox contains only selected tasks and exercises, and therefore it is highly recommended that TVET teachers follow the learning module on green and entrepreneurial learning, which has been developed to build their capacities in these areas.

By utilising the learning module in combination with this toolbox, teachers can gain a deeper understanding of the concepts and best practices related to green and entrepreneurial learning. Eventually, this will enable them to provide a higher quality of education to their students, by incorporating innovative and sustainable practices into their teaching practices.



PAGE 12 PAGE 13

### TOOLBOX TASK 1 DA VINCI SCRIBBLES



#### Preparation

None.

- Sit down at pad with a soft pencil in your hand.
- Close your eyes and start to scribble. Not the scratchy scribble of a child imagine that you are an artist, sketching in an outline of something. Only don't direct the pencil, just let it flow across the page.
- 3 When you feel you've scribbled enough, open your eyes.
- 4 Look at the image you have generated.
- What does it make you think of?
- What does it remind you of?
- How might you use it in your problem?
- **What characteristics of it are appropriate to a solution?**
- What sort of new product does it imply (or could you use to deal with it).
- Be imaginative let your mind wander over just what this scribble might.

#### **Feedback**

Leonardo used this method to come up with new inventions, which considering his track record makes it quite a promising technique. If you have problems seeing anything in your picture, think of modern art - what title might you give your artwork in a gallery? Look for suggestions in the shapes and sub-patterns.

#### Outcome

This technique is marginally better for coming up with new ideas than solving problems, but it is quite often a source of a solution.

#### **Variations**

In a group you could each generate your own picture, or have a single person draw on a flipchart, then all of the group can individually think about what it implies before sharing their thoughts. Other old techniques this is reminiscent of are seeing pictures in cloud formations and in an open fire. Given appropriate surroundings, either of these will make an effective variant.

### **TOOLBOX TASK 2**WATCH A VIDEO ABOUT THE LEARNING COMPASS 2030



### **Preparation**

None.

To get a sense of where entrepreneurial learning fits into the bigger educational picture, watch this brief video on the Learning Compass 2030 produced by the Organization for Economic Cooperation and Development.



**Watch video:** Learning Compass 2030



Then reflect on the following question:

What importance is a entrepreneurial learn	attached to creating value, which is at the heart of ning?

### **TOOLBOX TASK 3 GREENING TVET**



### Preparation

None.

Watch a video about Greening TVET developed by UNESCO



Watch video: Greening TVET



Then reflect on the following question:



What are the key messages you take from the video that makes you think differently about your practice?

 .s, your subject,	your colleague	es, your exper	iences, your w	orking method

### **TOOLBOX TASK 4 ENTRECOMP & GREENCOMP**



### Preparation

Go through the second section of the learning module "Green and Entrepreneurial Learning: Learning module for TVET teachers" titled "EntreComp & GreenComp: Key to green and entrepreneurial learning", where the key elements of entrepreneurial and green competences are explained. For deeper understanding visit: EntreComp: The Entrepreneurship Competence Framework and GreenComp: The European Sustainability Competence Framework.

Take a few minute	s to reflect on your knowledge	of these competences.	
Write down your t competences.	noughts on whether you believ	e you are familiar or unfami	liar with these
Compare the Gree	n Competences and EntreComp	frameworks to identify any	similarities.
	oservations and consider how		
Write down your o	oservations and consider how		
Write down your o	oservations and consider how		
Write down your o	oservations and consider how		
Write down your o	oservations and consider how		
Write down your o	oservations and consider how		
Write down your o	oservations and consider how		

PAGE 16 PAGE 17

### **TOOLBOX TASK 5** HOW DO YOU PERCEIVE THE PLANNING IN YOUR PROFESSION?



Preparation	
None.	
Write down t	he first words that come to your mind when you read the questions:
	f your lesson plans in the next week or couple of weeks, are there opportunities for ir students and encouraging them to show initiative?
Do you follow teaching acti	v the interests and progress of your students when you plan the upcoming lessons and vities?
or you mos	tly follow the given curriculum?

### **TOOLBOX TASK 6 ATTRACT ATTENTION**



### Preparation

None.

The instinct to believe that students will listen when something important is to be shared is usually wrong. For example, it can be confirmed without any doubt that the pre-flight safety announcements are of a high importance, but many of the passengers do not listen carefully to the instructions.

### Plan to attract attention

- Share local news stories
- Raise a topical question or issue in the community
- Share an extract from a letter about a product/service that needs improving
- Bring some objects with you that are relevant for your course
- Bring recycled or reused materials
- Include video or audio materials
- Share a short story or a poem to foster green & entrepreneurial learning
- Set a scenario ""What would you do if...?"

Take a few minutes to think if you implement some methods in your teaching that make the lessons interesting and creative.



Do you practice some ways to make sure that your students will be aware of the importance of the topic and will be interested to follow you?

- Get inspired by the contents in the learning module
- Expand the list
- Share good practices with your colleagues.

PAGE 18 PAGE 19

### **TOOLBOX TASK 7**LEARNING ENVIRONMENTS BEYOND THE CLASSROOM

PAGE 20



one.			
cluding museums,		nd virtual environment	es a diverse range of public spaces es, which significantly contributes to
<b>/rite down ideas</b> or	the following topics:		
_	classroom environment to ents to facilitate teamwo		he learning, such as: modifying g, or practical tasks.
	classroom environment to ents to facilitate teamwo		he learning, such as: modifying g, or practical tasks.

### **TOOLBOX TASK 8**ASK YOUR STUDENTS HOW TO USE AVAILABLE RESOURCES



PAGE 21

### Preparation

None.

Make an exercise with your students and ask them to assess the current usage of the learning space, whether it is your classroom or the whole TVET, specifically looking for areas that could be better utilized for the purposes of the subject that you are teaching.

### General guideline how to conduct the exercise

- Introduce the exercise to the students explaining that the goal is to identify areas that could be improved with the available resources. (5 minutes)
- Divide students into groups of 4-5 and ask them to write down 3 ideas per group (15-20 minutes).
- **3** Each group presents the ideas briefly, while you are writing them on a whiteboard (15-20 minutes).
- Ask each student to vote for the best idea while you note them down on the whiteboard (10-15 minutes)

#### **Additional suggestions**

- Be creative and organise the exercise to suit your subject, i.e., what students need to understand the subject better.
- The duration of each sub-activity depends on the size of the class, involvement and your teaching plan.
- Try to set some budget constraints to motivate students to take the financial aspect into account, but also to try to make the most out of the existing capacities.

Provision of Capacity Building on Green and Entrepreneurial Learning

### **TOOLBOX TASK 9**ASK YOUR COLLEAGUES HOW TO USE AVAILABLE RESOURCES



4 we	l-designed environment inspires and empowers students to learn and reach their full potential.
	<b>te a simple brainstorming activity</b> with your colleagues on how to improve your teaching and ing environment.
Nrite	down your initial ideas:
	cabout and exchange opinions on how to use different physical spaces or online learning spaces/and how to use time differently?
_	et about: "I don't have money to do anything about my learning spaces"

### **TOOLBOX TASK 10**THINK ABOUT YOUR TEACHING ACTIVITIES

Preparation

or GreenComp.



If needed, remind yourself of the EntreComp and GreenComp.
Can you show that green and entrepreneurial learning is already part of your teaching?

Write down how a simple activity you have used before contributes to development of EntreComp and/

**Share experience** with your colleagues.

You might even encourage your students to design a creative poster to share the good practice.

- For example, you might have encouraged discussion on current challenges and environmental issues among your students.
- Or you have shared a recent success story on green and entrepreneurial endeavour.
- Also, you might have assigned a challenge-based task to foster creativity, teamwork and systems thinking.

PAGE 23
PAGE 23

### TOOLBOX TASK 11 RANDOM WORD



#### **Preparation**

None.

1 Choose a word at random.

Make as many associations with that word as you are able.

3 Relate the associations back to your problem.

To choose the word you can use a book or a dictionary and allow them to fall open at random.

The word that you choose will usually be a noun, but need not be. It will usually be emotive, but need not be. It will certainly bring to mind a range of images and associations.

#### Feedback

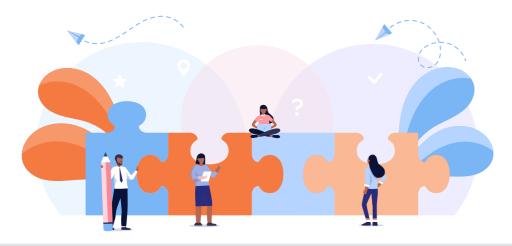
Random word becomes a favourite for a reason. It works and works well. It is easy to explain to others and we would almost always use it as an early demonstrator of a creativity technique. Some people want to choose a word that is relevant to their problem. Don't do this. Use a random word - it will turn out to be appropriate.

#### Outcome

You will find that alone or in groups you have no trouble engaging with this technique. It will produce results.

#### **Variations**

If working with a group you can make a show of the randomness by getting someone else to choose the word or call out a number to select from a list. An alternative source of a random word is to input word-like nonsense into a PC spell checker, then see what emerges.



### TOOLBOX TASK 12 ENGAGE STUDENTS AND EXPLORE



### **Preparation**

None.

#### General guideline how to conduct the exercise:

- Spend a few minutes sitting outdoors observing the world (you can do it within your classroom/ learning facility or to use your breaktime).
- 2 Try to do this each day for a week at the same time.
- 3 Take a different theme each day (e.g., colour, light, noise, temperature, happy, sad, wonder).
- Keep a note of what you see both you and your students.
- What entrepreneurial opportunities did you spot?
- After a week, initiate discussion among students on the opportunities they have spot and which one of them they find worth taking.



### **TOOLBOX TASK 13**GAMIFY YOUR CLASSROOM



#### **Preparation**

None.

An Erasmus+ project titled Promoting Green Skills Through Games (November 2017 – December 2019) aimed to utilize digital technologies as a means of non-formal learning about the climate crisis. Within the project, a report was compiled with the aim to identify available formal and non-formal education and training opportunities, challenges, educational needs, and recommendations.

The report contains inspirative practices on game-based learning approaches and methodologies for teaching sustainability.

- Go through the report "Promoting Green Skills Through Games: State of the Art".
- Reflect on the findings and think if there are any insights or ideas that you find particularly inspiring or relevant to your context.
- Brainstorm ways to incorporate games and game-based learning into your teaching of environmental and sustainability issues.
- 4 Write your ideas, share them with your colleagues and ask for feedback and suggestions.

### TOOLBOX TASK 14 STUDENTS ACTIVITY

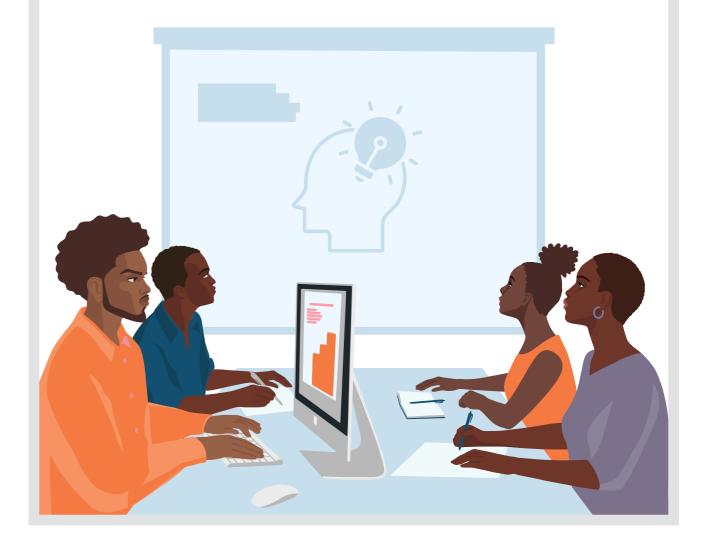


### Preparation

None.

### General guideline how to conduct the exercise:

- Find some simple everyday objects that you could use to engage students to think innovatively.
- Make a collection of these objects and, once a week, ask your students to brainstorm their ideas as to alternative uses e.g., a water bottle, plastic lid, peg, sticky note.
- Write down students' ideas on a board or flipchart.
- Repeat the activity each week with different objects to keep students engaged.



PAGE 26 PAGE 27

### **TOOLBOX TASK 15**SUSTAINABLE BUILDING DESIGN



#### **Preparation**

None.

Teach students about sustainable building design and how to apply green principles in their building designs.

- Introduce the concept of sustainable building design and the necessity to create eco-friendly, energy-efficient buildings.
- Provide a list of sustainable building design principles to your students (e.g., using renewable energy sources, using recycled materials)
- Ask students to research a building they admire and find out as much information as possible about the building (location, design, construction materials).
- Instruct students to apply the sustainable building design principles they learned to that building resulting with a final drawing or model.
- Ask students to calculate the estimated cost of constructing the sustainable building design they created, taking into account the cost of materials, labour, etc.
- 6 Final presentation in front of the class.

To implement this exercise, you will need:

- Access to the internet
- Drawing paper and pencils
- Ruler and calculator
- A list of sustainable building design principles

By implementing this practice, students will learn about sustainable building design principles and how to apply them in their building designs. They will also develop critical thinking and problem-solving skills by calculating the estimated cost of their designs, and will improve their communication and collaboration skills.

Modify the exercise to fit your needs and the elements of the subject(s) that you teach.

### **TOOLBOX TASK 16**SUSTAINABLE AGRICULTURE BUSINESS PLAN



#### **Preparation**

None.

Teach students how to develop a business plan for sustainable agriculture venture.

- Introduce the concept of sustainable agriculture to your students.
- Provide a list of sustainable agriculture practices to your students (e.g., water conservation, organic farming)
- Ask students to research a crop they would like to grow using sustainable agriculture practices (growing requirements, potential market demand, etc.).
- Instruct students to develop a business plan for their sustainable agriculture venture.
- 5 Final presentation in front of the class.

To implement this exercise, you will need:

- Access to the internet
- Drawing paper and pencils
- Ruler and calculator
- A list of sustainable agriculture practices
- A list of business plan components

By implementing this practice, students will learn about sustainable agriculture practices and how to develop a business plan for a sustainable agriculture venture. They will also develop critical thinking and problem-solving skills and will improve their communication and collaboration skills.

Modify the exercise to fit your needs and the elements of the subject(s) that you teach.

### **TOOLBOX TASK 17**MAIN REASONS FOR ASSESSMENT



_				
Pre	na	ra	tio	r
FIE	υa	ια	LIU	48

Go through the fifth section of the learning module "Green and Entrepreneurial Learning: Learning module for TVET teachers" titled "Assessment practices and tools".

As a teacher you surely are familiar with the main reasons for assessment.

But, do you consider all three reasons for assessment – assessment **of, for** and **as** learning – when preparing and conducting the assessment?

ou encourage studer	ils to assess their o	own progress?	

### **TOOLBOX TASK 18**ASSESS TO ASSIST



### Preparation

Go through the fifth section of the learning module "Green and Entrepreneurial Learning: Learning module for TVET teachers" titled "Assessment practices and tools".

**Review this list** which is offered as guidance and think of ways how to implement it into your assessment.

Implementation: assessment types	Innovation: assessment types
Can the student write and follow a business plan as direct by the teacher?	Can the student respond positively to short term and ever-changing venture environments / do they come up with new ideas in response?
Can the student come up with a good idea using the theories they have been taught?	Can the student come up with many varied ideas that respond to changing circumstances?
Does the student's solution match the expectation of the test or exam?	Does the student's solution surprise through new insights and alternatives?
Does the student respond to the problem identified by the educator?	Does the student identify new problems and opportunities for themselves?
Is the solution correct, finite and complete in the view of the educator / evaluator?	Is the solution part of an on-going process of prototyping that responds to stakeholder feedback, maybe from outside experts?
Can the solution be easily compared and contrasted to previous work and understandings?	Does the solution offer new insights and potentially challenge accepted understandings?
Can the student adhere to the use of accepted theories and practices when undertaking an assignment?	Can the student experiment and self-define theories and practices that they have discovered, which may support or argue against their findings?
Does the student follow the rules carefully when developing a solution?	Does the student compare their solutions to rules an adapt accordingly? Ideas first, rules later?
Does the solution require significant resource? A bank loan for example?	Is the solution based on what the student has to han in terms of resources and contacts?
Is the assessment based on past understandings and texts?	Does the assessment look to support new understandings – links and connections that the student has made for themselves?
Does the assessment look to past events for guidance?	Does the assessment consider future and unknown contexts that are 'best guesses?
Does the leadership style in the task (teamwork) require decision-making by the manager?	Does the leadership style (teamwork) require the management of an inclusive decision-making process

PAGE 30 PAGE 31

### **TOOLBOX TASK 18**ASSESS TO ASSIST



Try to <b>extend</b> the list or <b>make up your own</b> .		
Share with your colleagues.		
Implementation: assessment types	Innovation: assessment types	

### **TOOLBOX TASK 19**CONSIDER A PROJECT ASSIGNMENT AS AN ASSESSMENT PRACTICE



### Preparation

#### None.

- Ask your students to develop a new product and during the process of developing their idea, you or others might provide feedback based on the following questions:
  - What are the strengths and weaknesses of the idea?
  - If we ask other students to make a suggestion to improve the idea, what might they say?
  - How many possible barriers are there to overcome? How much maintenance is needed?
  - How will you test the price?
  - Will you have a particular event to launch the product or service?
- Finalise the project assignment with a presentation of the new product/service and focus on skills in communicating the idea, engagement with the audience, time management and so on.
- Give feedback on the teamwork skills, in areas such as cooperation, planning, and management of resources. Comment the involvement of students.
- If the final presentation is not on a satisfactory level, you might decide to ask students to resubmit. However, this is why it is important to follow the progress of students' ideas and provide formative assessment



PAGE 32 PAGE 33

### TOOLBOX TASK 20 ACT!



#### **Preparation**

Go through the fifth section of the learning module "Green and Entrepreneurial Learning: Learning module for TVET teachers" titled "Assessment practices and tools".

**Implement one new assessment approach** in your teaching – either face to face or online – something you have not used before.

**Reflect** on the following questions:

	Which	competences	did	you	assess
--	-------	-------------	-----	-----	--------







Get familiar with the tools through the learning module and find the most suitable for you:

- EntreAssess tool
- MTEE tool
- HEInnovate tool
- Greenovet tool

### **TOOLBOX TASK 21**THINK ABOUT THIS



#### Preparation

None.







Take a few moments and think carefully about these questions:

• Which of the figures best sum up the kind of feedback that happens in your classroom (A, B or C)?

• Which do you think best suits green and entrepreneurial learning?

• Which element is most difficult to include in the assessment? Why?

Write down your opinions and answers on the questions. Make sure that you consider the current situation in your classroom, not the desired one.

Make a brief exercise with your students and ask them to provide their opinion on the kind of feedback they receive in your classroom.

4 Compare your own and your students' opinions.

Gather together with your colleagues and discuss the topic. You can get many valuable suggestions to improve your teaching, but also to share your experience with your peers.

### **TOOLBOX TASK 22**ENTREPRENEURIAL NETWORKS



### Preparation

Go through the last sixth section of the learning module "Green and Entrepreneurial Learning: Learning module for TVET teachers" titled "Professional Learning and Development".

Are you associated with any organisation or professional bodies which provide guidance to support your work?

Examples from the learning module:

- Piete (Partnership for Initial Entrepreneurship Teacher Education)
- Network for Teaching Entrepreneurship

**Share your reflections** with your colleagues.

European Entrepreneurship Education Network

**Yes?** Reflect on the benefits that this has already brought and how you might share these within your context.

**Not yet?** Take the initiative and join one or more of these organisations and begin to build up your own network.





Provision of Capacity Building on Green and Entrepreneurial Learning

References

"EntreCompEdu" [Online]. Available: https://entrecompedu.eu/ E. McCallum, R. Weicht, L. McMullan and A. Price, "EntreComp into Action: get inspired, make it happen". Publications Office of the European Union, Luxembourg, 2018 M. Bacigalupo, P. Kampylis, Y. Punie and G. Van den Brande, "EntreComp: The Entrepreneurship Competence Framework". Publication Office of the European Union, Luxembourg, 2016. [Online]. Available: https://publications.jrc.ec.europa.eu/repository/handle/JRC101581 [4] G. Bianchi, U. Pisiotis and M. Cabrera, "GreenComp: The European sustainability competence framework". Publications Office of the European Union, Luxembourg, 2022. [Online]. Available: https://publications.jrc.ec.europa.eu/repository/handle/JRC128040 [5] A. Penaluna, K. Penaluna, E. McCallum, C. Brentnall, C. Jones, S. Brown, R. Polenakovikj, D. Sutevski, I. Stankovska, L. Polenakoviki, B. Jovanovski and T. Velkovski, "How to teach entrepreneurship? WHAT, WHY, WHEN and WHO". National Centre for Development of Innovation and Entrepreneurial Learning, Skopje, 2015. Available: http://ncdiel.mk/wp-content/uploads/2016/05/How-to-teach-entrepreneurship-MKENG-web.pdf United Nations, "Education For All". [Online, accessed 01-2023]. Available: https://www.un.org/en/academic-impact/education-all [7] CEDEFOP, Terminology of European education and training policy. Luxembourg. Publications Office of the European Union, 2014 UNEVOC, "Greening Technical and Vocational Education and Training: A practical guide for institutions". UNESCO-UNEVOC International Centre, Bonn, 2017 E. Eilam and T. Trop, "ESD Pedagogy: A Guide for the Perplexed". The Journal of Environmental Education, pp. 43-64, 2010 [10] M. Maxwell, R. Stobaugh and J. L. Tassell. "Real World Learning Framework for Secondary Schools: Digital Tools and Practical Strategies for Successful Implementation". Solution Tree Pres, 2015 G. Camp, A. v. h. Kaar, H. v. d. Molen and H. Schmidt, "PBL: step by step". Rotterdam, 2014. "TVETipedia Glossary". [Online]. Available: https://unevoc.unesco.org/home/TVETipedia+Glossary&context= [13] J. Knight, "High-impact instruction: A framework for great teaching". Corwin Press, 2012 [14] F. Sirelkhatim & Y. Gangi, "Entrepreneurship education: A systematic literature review of curricula contents and teaching Cogent Business & Management, 2015 OECD, "OECD Future of Education and Skills 2030". [Online]. Available: https://www.oecd.org/education/2030-project Government of the United Kingdom, "Skills for a green economy: A report on the evidence". 2011. [Online]. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/32373/11-1315-skills-for-a-green-economy.pdf European Commission, "Key competences for lifelong learning". Publications Office of the European Union, Luxembourg, 2019.

PAGE 40

- [18] "Council Recommendation on Key Competences for Lifelong Learning". [Online].

  Available: https://education.ec.europa.eu/focus-topics/improving-quality/key-competences
- [19] R. Vuorikari, Y. Punie, S. Carretero and L. V. d. Brande, "DigComp 2.0: The Digital Competence Framework for Citizens. Update Phase 1: The Conceptual Reference Model". Publication Office of the European Union, Luxembourg, 2016
- [20] R. Polenakoviki, T. Velkovski, B. Jovanovski, L. Polenakoviki, M. Velkovska, J. Kostiki and N. S. Uzunovska, "Green Innovation in VET Status quo and challenges".
  National Centre for Development of Innovation and Entrepreneurial Learning, 2022
- [21] "What is PBL?". [Online].
  Available: https://www.pblworks.org/what-is-pbl
- [22] "Challenge-Based Learning Framework". [Online].
  Available: https://www.challengebasedlearning.org/framework
- [23] "Problem-Based Learning". [Online].

  Available: https://teaching.cornell.edu/teaching-resources/engaging-students/problem-based-learning
- [24] "EntreAssess Tool". [Online].
  Available: https://s.surveyanyplace.com/entreassess
- [25] "Measurement Tool for Entrepreneurship Education". [Online]. Available: https://eumtee.lut.fi/
- [26] "HEInnovate tool". [Online].

  Available: https://www.heinnovate.eu/en/user/sign-in?destination=/en/self-assessment/create
- [27] HEInnovate, "The Entrepreneurial and Innovative Higher Education Institution: A Review of the Concept and its Relevance Today". 2018. [Online].
  Available: https://heinnovate.eu/sites/default/files/heinnovate\_concept\_note.pdf
- [28] European Commission; OECD. "HEInnovate". [Online].
  Available: https://heinnovate.eu/en
- [29] "Greenovet". [Online].
  Available: https://www.greenovet.eu/
- [30] I. Falciani, "Game-Based Learning: What Is It? GBL vs Gamification: Types and Benefits". [Online]. Available: https://www.teacheracademy.eu/blog/game-based-learning/
- [31] European Commission, "Green skills through games".[Online].

  Available: https://erasmus-plus.ec.europa.eu/projects/priorities-2019-2024/european-green-deal/promoting-green-skills-through-games
- [32] ERASMUS+ "Promoting Green Skills Through Games" project, "Promoting Green Skills Through Games: State of the art report". 2018. [Online].
  Available: http://greenskillsgame.eu/wp-content/uploads/2020/02/SoA-Compiled-report.docx.pdf
- Available: http://greenskitsgame.eu/wp/content/aptoads/2020/02/30A/compiled report.dock.pur
- [33] International Labour Organisation, "Greening TVET and skills development: a practical guidance tool". International Labour Office, 2022.
- [34] UNESCO-UNEVOC, "TVET Country Profiles: Ethiopia" 2021. [Online].

  Available: https://unevoc.unesco.org/home/Dynamic+TVET+Country+Profiles/country=ETH
- [35] Paryono, "The importance of TVET and its contribution to sustainable development," 2017
- [36] MMM. Wahba, "Technical and Vocational Education and Training (TVET) Challenges and Priorities in Developing Countries". 2012.





Vienna International Centre Wagramerstr. 5, P.O. Box 300 A-1400 Vienna, Austria



+43 1 26026-0



www.unido.org



unido@unido.org



**UNITED NATIONS** INDUSTRIAL DEVELOPMENT ORGANIZATION