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GREENBRIDGE Methodological guidebook

Green Skills – 1.3 Green Skills for Sustainable Development

1. Introduction

The aim of this methodological guidebook is to provide VET teachers with a clear understanding of the methodologies and approaches used in the course Green Skills – 1.3 Green Skills for Sustainable Development, as well as practical guidance on how to deliver the material to colleagues and learners. The document is intended as a hands-on resource, offering both an overview of the course structure including modules, subtitles, and teaching methods, also a lesson plans that outline learning outcomes, expected duration, content, and practical teaching tips. Additionally, it provides advice on how to adapt the course for different target groups, tailor it to specialized contexts, or incorporate additional activities. Designed to support VET educators in planning, delivering, and adjusting the content effectively, the guidebook serves as both a reference tool and a practical roadmap for implementing the course in diverse educational settings.

2. Teaching approaches

The following chapter provides VET teachers with an overview of the teaching approaches used in the Green Skills – 1.3 Green Skills for Sustainable Development course, helping them understand the course structure and teaching methods. The first part - structure of the Course, presents the modules, explains the logic behind their sequencing, and offers a brief overview of the syllabus content. Followed by teaching methods used in the course, introduces the various approaches used in the course.

2.1. Structure of the course

The course on Green Skills – 1.3 Green Skills for Sustainable Development is organized into three main modules, each designed to build both theoretical knowledge and practical skills for VET educators.

Module 1: Identifying essential green skills across the labour market
The aim of this module is to build educators' understanding of what green skills are and why they matter in today's evolving labour market. Educators will explore the concept of green skills, distinguishing between sector-specific competencies such as those required in renewable energy or eco-construction and cross-cutting skills like resource efficiency and sustainable problem-solving. The module examines how green skills are reshaping professions across industries including energy efficiency, waste management, recycling, renewable energy, and sustainable production, while presenting insights from local labour market studies and employer expectations. Methods for monitoring emerging trends, consulting industry stakeholders, and linking green skills to vocational subjects are introduced. The European Sustainability

Competence Framework (GreenComp) is presented as a key reference for embedding green skills into teaching practices.
Subtitles: Defining green skills; Labor market trends and demands, green skills in the Western Balkans; Educators' role in skill identification

Module 2: Integrating green skills into vocational training
This module provides practical tools for embedding green skills into existing vocational training programs. Educators will learn strategies for integrating green competencies into courses without overloading curricula, emphasizing experiential and active learning methods such as project-based learning, simulations, and problem-solving tasks. The module also highlights the potential of digital tools to support sustainability education in VET. Practical approaches are offered to address common challenges, including limited teaching materials, gaps in teacher training, and student misconceptions. Key thematic areas covered include energy efficiency, waste management, recycling, renewable energy, and sustainable production methods.
Subtitles: Curriculum integration, teaching approaches and methodologies; Synergies between green and digital skills; Overcoming barriers

Module 3: Case studies – successful green skill applications in the workforce
The objective of this module is to demonstrate the real-world relevance of green skills through practical examples and applied learning. Educators will explore emerging jobs in sectors such as energy efficiency, waste management, recycling, renewable energy, and sustainable production, connecting green skills to tangible career opportunities. Sectoral case studies are presented to illustrate successful applications of green competencies in the workforce, highlighting best practices and innovative approaches. The module also encourages educators to design student projects that apply theoretical knowledge to real-world challenges, fostering hands-on experience and problem-solving skills.
Subtitles: Emerging green jobs in energy efficiency, waste management, recycling, renewable energy, and sustainable production; Sectoral case studies in energy efficiency, waste management, recycling, renewable energy, and sustainable production; Student projects for applied learning

2.2. Teaching methods used in the course

The course employs a variety of teaching methods to support diverse learning styles and ensure engagement with the content. Across the modules, short explanatory texts are used to present core ideas, while video scripts help summarise key points and offer an alternative way to understand the material. Reflective activities encourage participants to think critically about their own context and make connections between labour-market demands and the digital skills needed in their sector. Practical examples from businesses are included to illustrate real situations and support problem-solving, and self-paced study through the learning platform allows learners to explore the content independently at their own pace. In addition, a set of supporting resources, including the course presentation and methodological guidebook, provides useful tools and references to assist with lesson planning and delivery. These methods are designed to be flexible, allowing educators to adapt them to their teaching environment and learners' needs while fostering active and meaningful learning.

3. Lessons plan

This chapter provides VET educators with a detailed framework for delivering Green Skills – 1.3 Green Skills for Sustainable Development course, outlining the learning goals, content, and practical guidance for each lesson. By the end of this course, VET educators are expected to identify essential green skills relevant to different sectors of the labour market and explain their importance for sustainable development and the twin transition. They will be equipped to integrate these skills into vocational training programs and classroom practices effectively. Educators will also be able to use case studies to demonstrate successful applications of green skills in the workforce, providing learners with concrete examples of green competencies in action. Additionally, they will develop teaching strategies that enhance students' awareness, motivation, and confidence in applying green skills, ensuring that learners are prepared for emerging green roles across industries. The chapter presents a structured lesson plan for each module and subtitle, detailing the expected duration, content and comments.

3.1. Module 1: Identifying essential green skills across the labour market

Expected duration	Content	Comments
20 min	**Subtitle 1.1: Defining green skills** This subtitle introduces learners to the concept of green skills, highlighting their increasing importance as economies move toward sustainability. Learners explore the European Sustainability Competence Framework (GreenComp), which identifies 12 key competences grouped into four areas: embodying sustainability values, embracing complexity, envisioning sustainable futures, and acting for sustainability. Each competence is examined in practical terms, showing how values, critical thinking, systems thinking, foresight, adaptability, and action-oriented skills can be integrated into vocational curricula. Interactive activities, such as group discussions, scenario analysis, and examples from renewable energy, eco-construction, or waste management, can help learners understand how these competences manifest in real-world contexts. The lesson concludes with reflections on educators' role in embedding these competences in teaching and assessing learners' skills.	Begin with a clear definition of green skills and why they are essential. Use practical examples for each GreenComp competence to aid comprehension. Highlight the transferability of competences across different sectors. Encourage reflection on the educator's role in fostering and assessing competence
20 min	**Subtitle 1.2: Labor market trends and demands, green skills in the Western Balkans** This subtitle focuses on current labour market trends and the growing demand for green skills, particularly in Europe and the Western Balkans. Learners analyse data from the European Skills	Present up-to-date data on green skills demand in Europe and Western Balkans. Discuss sector-specific trends and

	Agenda, Cedefop, and regional studies to understand emerging green occupations, sectoral skills shortages, and opportunities for learners in areas such as construction, renewable energy, and waste management. Learners discuss quantitative and qualitative skill gaps, including technical, digital, environmental literacy, and transversal skills. The lesson encourages learners to connect local labour market needs with curriculum planning, emphasizing evidence-based approaches to skill development. It also addresses regional challenges, such as high youth unemployment, and highlights strategies to prepare learners for green jobs that are aligned with the EU Green Deal and sustainable development goals.	highlight high-demand occupations. Include exercises for mapping local labour market needs to vocational training. Address both quantity (shortages) and quality (skills gaps) of green workforce. Emphasize the link between policy frameworks (Green Deal, Skills Agenda) and education.
20 min	**Subtitle 1.3: Educators' role in skill identification** This subtitle emphasizes the critical role of educators in identifying and fostering green skills among learners. Learners learn to use the GreenComp framework as a diagnostic tool to assess learners' existing competences, identify gaps, and design learning activities that promote development across the four competence areas. The lesson covers methods for observing learners in formal, non-formal, and informal contexts, integrating self- and peer-assessment, project work, and collaborative tasks to capture evidence of knowledge, skills, and attitudes. Participants discuss strategies for curriculum revision, professional development, and linking classroom activities to broader community and workplace learning experiences	Stress the educator's role as facilitator, assessor, and guide in skill identification. Discuss integration of formal, non-formal, and informal learning opportunities. Highlight curriculum revision and professional development as tools for systematic skill identification.

3.2. Module 2: Integrating green skills into vocational training

Expected duration	Content	Comments
20 min	**Subtitle 2.1: Curriculum integration, teaching approaches and methodologies** This subtitle introduces learners to strategies for integrating green skills across curricula and employing effective teaching methodologies. Learners explore the GreenComp framework and Cedefop's learning-outcomes-based curriculum	Highlight holistic embedding of GreenComp competences across disciplines. Stress the importance of

	approach to understand how sustainability competences can be embedded throughout subject areas, projects, and assessments rather than treated as standalone topics. Activities can include designing interconnected modules, using project-based learning, inquiry tasks, and collaborative exercises to develop competences like systems thinking, futures thinking, and collective action. Learners also learn to align learning outcomes, content, and assessment to ensure students demonstrate knowledge, skills, and attitudes in real-world sustainability challenges. The lesson emphasizes iterative reflection, teacher collaboration, and institutional support as essential elements for effective curriculum integration.	learner-centred methodologies and experiential learning. Provide examples of aligning assessments with sustainability competences. Emphasize teacher collaboration and institutional support for sustainable education.
20 min	**Subtitle 2.2: Synergies between green and digital skills** This subtitle explores the intersection of sustainability (GreenComp) and digital competence (DigCompEdu) in vocational education, emphasizing the "twin transition" of green and digital skills. Learners examine how digital tools, such as IoT sensors, AI, and data analytics, can optimize resource use and enhance sustainability practices, while GreenComp principles ensure digital solutions are environmentally responsible. Activities can include designing learning projects that combine renewable energy systems with digital monitoring, smart factories, or sustainable e-mobility solutions. The lesson also addresses critical thinking, interdisciplinary collaboration, and problem-solving to prepare learners for future-ready careers. By integrating both frameworks, educators help students develop technical expertise, digital literacy, and sustainability-oriented agency.	Show real-world examples of digital tools applied to sustainable practices. Highlight opportunities to teach interdisciplinary projects combining green and digital skills. Link learning outcomes to employability in emerging green-digital job roles.
20 min	**Subtitle 2.3: Overcoming barriers** This subtitle focuses on overcoming challenges in integrating sustainability into VET, including limited teaching materials, gaps in teacher training, and student misconceptions. Learners explore how digital tools, open educational resources (OERs), simulations, AR experiences, and gamified learning can address these barriers. Professional development activities include online courses, webinars, and collaborative platforms to enhance teacher confidence and	Emphasize practical solutions for resource and training limitations using digital tools. Include interactive exercises to correct student misconceptions.

	expertise. Learners can engage with practical applications in energy efficiency, waste management, renewable energy, and sustainable production through interactive digital exercises. EU-funded initiatives such as Erasmus+ and EPALE provide structured resources and modules, enabling educators to integrate green and digital skills effectively, enhance student engagement, and ensure learners are well-prepared for sustainable and technology-driven careers.	Highlight EU-funded initiatives as accessible, high-quality teaching resources. Ensure focus on both teacher empowerment and learner engagement.

3.3. Module 3: Case studies – successful green skill applications in the workforce

Expected duration	Content	Comments
20 min	**Subtitle 3.1: Emerging green jobs in energy efficiency, waste management, recycling, renewable energy, and sustainable production** This subtitle introduces learners to emerging green jobs across five key sectors: energy efficiency, waste management, recycling, renewable energy, and sustainable production. Learners explore sector overviews, trends, and skill requirements, helping them prepare learners for the green labour market. For energy efficiency, learners examine roles like energy auditors, smart energy system operators, and building retrofit specialists, emphasizing knowledge of energy-efficient technologies, data analysis, and digital monitoring tools. Waste management focuses on roles such as hazardous waste technicians and composting specialists, highlighting circular economy principles. Recycling, renewable energy, and sustainable production sectors are discussed with their respective emerging jobs, digital and technical competencies, and sustainable practices. Activities can include mapping sector-specific skills, identifying overlaps across green and digital competencies, and discussing how these skills can be integrated into VET curricula.	Include hands-on exercises mapping sector trends to skills taught in VET programs. Highlight the interplay between technical, digital, and sustainability competences. Use examples to demonstrate employability pathways in emerging green jobs.
20 min	**Subtitle 3.2: Sectoral case studies in energy efficiency, waste management, recycling, renewable energy, and sustainable production** This subtitle presents real-world case studies of companies demonstrating best practices in sustainability across the five sectors. Learners	Use interactive discussions to link case studies to curriculum content. Highlight digital and sustainability

	examine FoodObox (waste management), Schneider Electric (energy efficiency), TerraCycle (recycling), Vestas (renewable energy), and Kronospan (sustainable production) to understand practical applications of green skills. Learners analyse how digital tools, circular economy strategies, and sustainability-oriented business models contribute to resource efficiency, reduced emissions, and economic value. Activities can include group discussions, case analysis exercises, and identifying transferable practices that students can implement in project work. Educators can facilitate reflection on the intersection of technical skills, sustainability competences, and innovation to prepare learners for the green workforce.	solutions for real-world impact. Encourage learners to draw parallels between sector practices and local opportunities. Include multimedia materials (videos, apps, platforms) to make cases tangible.
20 min	**Subtitle 3.3: Student projects for applied learning** This subtitle guides learners in designing applied learning projects that enable learners to implement green skills in real-world contexts. Projects are hands-on and structured to combine technical knowledge, sustainability competences, and problem-solving. Learners may analyse local energy efficiency challenges, design waste reduction programs, or create sustainable production plans, applying circular economy strategies across pre-use, use, post-use, and system-level redesign. Educators scaffold learning by providing frameworks for project planning, reflection, and assessment, encouraging collaboration, creativity, and critical thinking. These projects connect learners to authentic challenges, foster employability skills, and reinforce knowledge gained through earlier modules on green and digital competences.	Encourage projects linked to local challenges for contextual relevance. Integrate circular economy principles at every stage of product life. Promote interdisciplinary teamwork and critical reflection. Provide guidance on connecting technical skills with sustainability awareness and problem-solving.

4. Adapting the course for different contexts

This course can be adapted to a wide range of vocational settings and learner profiles, incorporating interactive teaching methods to actively engage participants throughout the learning process. Module One enables educators to introduce the GreenComp framework, highlight key labour market trends and emerging demands, and explore the educator's role in identifying and fostering green skills. Depending on the learner profile, interactive methods may include discussions and brainstorming activities on local labour market trends, reflective exercises on how educators can support and assess green competences, or the use of practical examples to illustrate each GreenComp competence. For more advanced groups, educators can integrate case studies or project-based learning activities drawn from the GreenComp

framework, as well as exercises focused on mapping local labour market needs to vocational training provision.

Module Two may be delivered as a lecture supported by guided discussions on essential topics such as the relationship between green and digital skills, barriers learners may face in acquiring green competences, and strategies to overcome these challenges. To provide a hands-on component, educators can encourage learners to explore one of the EU-funded initiatives related to skills development or sustainability, or facilitate brainstorming sessions to identify additional initiatives and resources relevant to their context.

Module Three encourages educators to apply contemporary, learner-centred methods that involve participants in nearly every stage of the learning process. These may include hands-on exercises that map sector-specific trends to the skills taught in VET programmes, interactive discussions that connect case studies with curriculum content, and project-based learning activities linked to local environmental or socio-economic challenges to enhance contextual relevance. Depending on the learners' experience and needs, educators can select the most appropriate combination of approaches to ensure meaningful engagement and effective learning outcomes.

5. Conclusion

This guidebook equips VET educators with the knowledge and tools to identify, teach, and integrate green skills across vocational curricula. By combining GreenComp and DigCompEdu frameworks, educators can develop learners' sustainability competences alongside essential digital skills. Practical methodologies, real-world case studies, and applied student projects demonstrate how these skills translate into workforce readiness. Educators are empowered to address labour market needs, foster student engagement, and support learners in applying green skills in meaningful ways. Ultimately, the course prepares learners to become environmentally responsible, socially aware, and capable contributors to a sustainable, green economy.