GreenHive

GreenComp in Vocational Education and Training:
State of Art and Best Practices in Spain

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Acknowledgement

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List of Abbreviations

Abbreviation	Definition
Cedefop	European Centre for the Development of Vocational Training.
CONFINT	International Youth Conference: Let's Take Care of the Planet.
ESenRED	Schools Towards Sustainability Network.
GreenComp	European sustainability competence framework
LOMLOE	Organic Law for the Modification of the Organic Law of Education.
MEFP	Ministry of Education and Vocational Training.
OECD	Organization for Economic Co-operation and Development.
PBL	Problem-Based Learning.
SDGs	Sustainable Development Goals.
SEPE	State Public Employment Service.
VET	Vocational Education and Training.

Introduction

The following report delves into the interplay of education, economy, and environment in Spain. With the Vocational Education and Training (VET) sector growing significantly, this document explores the changing landscape of vocational education, within the framework of the Green Hive Project—a dynamic initiative that links VET, sustainability, and innovation.

Spain's VET sector has grown by an impressive 74% in two decades, aligning education with industry needs. The Organic Law 3/2022 underscores VET's role in creating green jobs and addressing climate change, providing a strong foundation for the Green Hive Project. Through research conducted in Spain, the report explores how sustainability skills are being integrated into VET. The study involves talking to experts in education to learn what's working and what's challenging.

The report also delves into changes in Spanish vocational training. It highlights the growth of green jobs and the need to teach students about new things like technology and the environment. While there's progress, there are still issues to address, and it's important for education providers, stakeholders and the local communities to work together.

In essence, this report acts as a guide through the evolving educational landscape in Spain. It sheds light on the current state of sustainability training, captures the perspectives of educators, and identifies best practices for integrating these competences into VET curricula. As a result, the report lays the foundation for understanding how initiatives like Green Hive can impart crucial skills to students for a sustainable future. Ultimately, it provides valuable insights into the interconnectedness of education, the environment, and the future within the Spanish context.

1. The Green Hive Project

Green Hive is a Cooperation partnership in the Vocational Education and Training (VET) field co-funded by the Erasmus+ Programme of the European Union. Implemented by a consortium of five entities, such as the *Technological University of the Shannon: Midlands Midwest* (Ireland), the companies *Lascò* (Italy) and *Femxa* (Spain), and the non-profit and non-governmental organisations *KEAN* (Greece) and *Team 4 Excellence* (Romania), the project aims to increase the capacity of VET providers to prepare learners for the green transition by developing a European platform-based ecosystem for sustainability education called the "Green Hive".

The Green Hive will consist of localised hubs for sustainability education, namely the "Green Combs," established within VET providers. While the Hive will be an open and cross-sectoral long-term cooperation network dedicated to innovation, continuous improvement and co-creation in sustainability education, the Combs will make VET providers the managing centre of networks of local stakeholders (i.e., companies, representatives of universities, civil society organisations and professional associations) for learning, networking and cooperating on sustainability challenges.

Hence, the project promotes the establishment of permanent VET co-creation structures where students will be enabled to think in systems, understand the interconnectedness of the economy, society and environment, and ultimately develop their systemic and critical thinking competencies by collaborating with other students and external stakeholders.

Four **main results** will be co-developed with over 500 VET experts in the scope of the project:

- a "**Methodological Framework**" for developing a VET sustainability education ecosystem and localised hubs to facilitate the transfer of local experience, knowledge and innovation in the field of the implementation of the European Sustainability Competence Framework

"GreenComp"[1], and encourage collective actions of VET providers, learners and external stakeholders to co-create solutions for sustainability;

- a "**Toolkit for the setup and management of Green Combs**", including a how-to guide and canvases to support VET providers in setting up, managing and growing internal hubs for sustainability education;

- "**Educational resources for Green Combs**", including guidelines to implement open spaces for discussion around learner-generated topics among members of localised hubs, micro-learning videos, workshop scenarios and project-based learning experiences in the four competence areas of the GreenComp;

- the **"Green Hive" platform**, connecting the hubs through the Internet and providing capacity-building opportunities and digital tools for VET institutions, knowledge-transfer spaces, and co-creation activities for its members. By the end of 2025, the Green Hive is expected to host and connect at least 15 localised hubs and 200 VET learners in 5 countries.

Project website: **www.greenhiveproject.eu**

2. Sustainability Education in Vocational Education and Training: The Spanish Context

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

The Vocational Training sector in Spain is the area of training that has experienced the greatest growth, from 493,769 enrolled in the 2001-2002 academic year to 891,906 in the 2019-2020, which represents a growth of 74%. [2]

This increase has also been possible thanks to a political support to Vocational Training, creating a new integrated VET model, based on qualification and competences, linking to the needs of companies, but also to the new demands emerging from the existing changes in the economy, where two simultaneous processes converge: digitalization and ecological transition that are changing the economic models and that will affect in a transversal way all sectors and professions of the economy.

These challenges facing the economy are reflected in the preamble of the Organic Law 3/2022 of 31 March on the organization and integration of Vocational Training (BOE of April 1) the Spanish Vocational Training system wants to become a major ally to successfully address, from the workplace, both the digital economy, as the ecological transition and fight against climate change.[3]

From this perspective, it is expected that by 2025 in Spain, 49% of jobs will require an intermediate qualification and only 14% a low qualification. This aspect, in the field of ecological transition, is of fundamental importance because the Law seeks vocational training plays a prominent role in promoting professions in this area.[4]

This report will describe vocational training in Spain and the challenges it faces in line with the challenges of the Spanish economy.

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[2]   Amor,   Elias.   Los   nuevos   retos   de   la   Formación   Profesional   en
https://www.educaweb.com/noticia/2019/10/29/nuevos-retos-formacion-profesional-18949/
(October, 2019)

[3] Elias, Amor. Los retos del mundo laboral y la nueva Formación Profesional con la transición verde. En https://www.educaweb.com/noticia/2022/07/21/retos-mundo-laboral-nueva-formacion-profesional-transicion-verde-20977/ (July, 2022)

[4] Elias, Amor. Los retos del mundo laboral y la nueva Formación Profesional con la transición verde. En https://www.educaweb.com/noticia/2022/07/21/retos-mundo-laboral-nueva-formacion-profesional-transicion-verde-20977/ (July, 2022)

3. GreenComp: State of the Art in Spain

3.1 Research Methodology

3.1.1 Research Strategy

The research strategy employed in this study a mixed-methods qualitative approach, combining desk research with interviews with Vocational Education and Training (VET) experts to investigate the integration of sustainability competencies in the Spanish VET system.

3.1.2 Data Collection Method and Tools

For the purpose of this research, document analysis and semi-structured interviews were used. Particularly, the **document analysis** involved the revision of national educational guidelines, policy documents, curricula, syllabi, and research studies, to address the following research questions:

a. What are the current practices and policies for developing GreenComp sustainability competencies in VET in the country?
b. How do national educational guidelines address integrating sustainability competencies in VET curricula and courses?
c. What government policies and initiatives are in place to promote the development of sustainability competencies in VET?
d. To what extent are sustainability competencies integrated into the country's VET curricula and syllabi?

In addition, **semi-structured interviews** were conducted with VET experts to gather their perspectives on sustainability education in the national VET system. A semi-structured questionnaire was used an interview guide for the researcher. Certain predetermined questions were prepared to guide the interviews and ensure that the research objectives were

addressed. However, additional questions arose during the interviews as unexpected insights and information emerged. Some sample questions that were included in the semi-structured questionnaire were the following:

a. How do you perceive the current practices for developing sustainability competencies in VET in your country?
b. What are the strengths and positive aspects of the existing approaches and practices for sustainability competencies development in VET?
c. What are the weaknesses and limitations of the current practices for sustainability competencies development in VET?
d. What challenges and barriers do VET experts encounter in the implementation of sustainability competencies in VET programs?
e. What opportunities and potential benefits do VET experts identify in developing sustainability competencies in VET?
f. How do VET experts assess the effectiveness and impact of the current practices for sustainability competencies development in VET?
g. What resources, support, and infrastructure are necessary to enhance the development of sustainability competencies in VET?
h. How do VET experts perceive the level of awareness and commitment among VET stakeholders towards sustainability competencies?
i. What innovative approaches or strategies do VET experts suggest for further advancing the development of sustainability competencies in VET?
j. What collaboration and partnership opportunities exist or should be fostered to enhance the development of sustainability competencies in VET?
k. How do VET experts envision the future of sustainability competencies in VET, considering the evolving needs and trends in sustainable development?

3.1.3 Sample Selection

The research utilized purposive sampling, a type of non-probability sampling technique, to establish the sample for the study. In accordance with this approach, individuals were selected based on their knowledge, relationships, and expertise related to the research topic (Freedman et al., 2007). For this particular study, sample members were chosen due to their direct involvement and experience in the phenomenon being investigated, as well as their significant work background in vocational education and training and active participation in sustainability education.

3.1.4 Data Analysis

The data collected from the desk research and interviews were subjected to qualitative data analysis techniques. Thematic analysis was employed to identify recurring themes, patterns, and insights related to the integration of sustainability competencies in VET. The findings were organized, interpreted, and presented in this research publication, contributing to the understanding of current practices, challenges, and opportunities in sustainability education within the VET system.

3.1.5 Ethical Considerations:

Informed consent was obtained from all participants, clearly outlining their voluntary participation in the research and their freedom to withdraw from the study at any point and for any reason. The objectives of the study were thoroughly explained to participants, and they were assured that their responses would be treated confidentially and solely used for academic purposes specific to this research. Moreover, the study ensured that participants were not subjected to any physical or psychological harm. On the contrary, researchers strived to create and maintain a comfortable environment throughout the research process.

3.1.6 Limitations

This research had the following limitations:

a. The size of the sample for the interviews was relatively small – 15 participants. A bigger sample would probably enhance the reliability of the research;

b. The findings represent the perspectives and practices within the specific country, and generalization to other contexts should be done cautiously;

c. The research relies on self-reported information from VET experts, which may be influenced by individual biases or limited awareness of practices outside their immediate scope;

d. Sustainability education in the country may be influenced by factors which were not mentioned in this research.

3.2 Sustainability competencies in the Spanish formal education system: recent evolutions of the Country's educational policies

Considering the Spanish legislation, the General principles, Article 3 letter l, the new regulation states as one of them, "the permanent updating, agile adaptation and proactive and anticipatory detection of changes and emerging needs in the productive sectors, in particular those associated with digitalization, ecological transition, environmental sustainability, territorial innovation, health and attention to people".[5]

Given this position of promoting green jobs, the Law opens three specific areas for the commitment of vocational training for employment in the environmental sector.

1. Jobs related to the mitigation of emissions.
2. Jobs related to adaptation to climate impacts.
3. Jobs related to a culture of sustainability, with reference to environmental education, sustainable leisure and tourism, energy saving and efficiency consultancy.

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[5] Amor, Elias. Op cit.

VET degrees and certificates of professionalism related to the transition to a new economy.

Within the Spanish vocational training system there are 26 professional families. However, only one professional family incorporates the term environmental, being the professional family of Safety and Environment. However, it is not ruled out that new specialized programs may emerge, or that new families may be incorporated into the system.

The following table presents the current composition of Spanish vocational training for green jobs. There are 40 training programs related to green jobs within 5 professional families. There is a predominance of higher-level training cycles over middle level ones, and of certificates of professionalism in all families.

	VOCATIONAL TRAINING		PROFESSIONAL CERTIFICATES			
PROFESSIONAL FAMILY	MEDIUM	HIGH	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL
Safety and environment	0	2	0	4	4	10
Energy and water	1	3	1	2	5	12
Sociocultural services	0	1	0	0	0	1
Sports and physical activities	1	0	0	5	0	6
Agrarian	2	2	0	3	4	11
TOTAL	4	8	1	14	13	**40**

Source: Own elaboration using Todofp data from Elias Amor

However, despite this commitment to green jobs, apart from environmental education professionals, the areas of employment that the new vocational training program is committed to are not even listed in the Occupations Observatory of the State Employment Service (SEPE).[6]

Profiles of the green economy

The research service of la Caixa published a report in 2022[7] in which it pointed out the changes in the profiles of the green economy sector underlining the fact of four important impacts for the Spanish economy:

1. General impact on all professional profiles incorporating training in sustainability.
2. Specific impact to incorporate in traditional and very different professional activities the skills needed to operate with new elements of the green economy.
3. Impact on the adaptation of classic profiles to the sector.
4. Impact on the capacity to adapt to changes.

These impacts point to sectors where there will be a reorientation of employment towards cleaner production rather than an increase or decrease, being necessary the adaptation of vocational training policies and integrated active employment policies for the existence of a recycling and improvement of the qualifications of the employed population in these sectors.

The training offer of the sector's vocational training system must be adapted to changes in the configuration of employment. As the aforementioned report shows, there is a growing feminization of employment in the sector, which started from low levels of female presence in

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[6] Amor, Elias, Op cit.

[7] Sector de la Economía verde. Cambios en los perfiles profesionales y necesidades de Formación Profesional en España. Perspectiva 2030. https://www.caixabankdualiza.es/recursos/doc/portal/2022/10/13/perspectiva-2030-economia-verde.pdf 2022

the workforce. It is also important not to lose sight of the fact that the sector is aging, with the largest age group being employees between 45 and 65 years of age.

However, changes are being incorporated into vocational training in Spain, seeking closer collaboration between the training offer and the real needs of companies, giving rise to collaborative initiatives between the private sector and the education sector, such as the initiative carried out by Naturgy to incorporate sustainability training transversally in the VET system (recorded as BP 4.2 in this report).

This collaboration is reflected in the article 84 of the Organic Law 3/2022 "Collaboration in the training action.

The companies and similar organizations:

(a) Shall contribute, in the context of their collaboration with the public sector and for the purposes of the design of new standards of professional competence and the updating of the training offers, to the detection of the evolution of professional profiles and the new training needs arising both from technological advances and from sustainability requirements, defining and keeping updated, consequently, the training contents of the corresponding specialties"

On the other hand, there are different challenges that vocational training must face in the coming years in order to be an ally for digital and ecological transformation. [8]

1. There is a need for greater curricular flexibility of the training contents both in initial training and in occupational and continuous training in order to achieve greater adaptation of company workforces. For this reason, the Caixa study considers that the proposal of the new Organic Law on Vocational Training for curricular modularization could be a good instrument to apply.

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[8] La Caixa Report. Op. Cit

2. The criteria for territorial planning of the offer should be revised, since in the Spanish case the training competences are in the Autonomous Communities. Mechanisms should be established to ensure that sufficient qualified personnel can be offered in the localities where they are needed.

3. As mentioned above, digital and environmental culture should be incorporated in a transversal way in all the degrees of the training program catalog, both initial and occupational, going beyond the incorporation of a training module.

4. To give more weight to soft skills, both in vocational and occupational training programs.

5. The approach of the new training law in relation to the modalities of Dual Training opens possibilities to articulate a new role for companies in the qualification of their staff, more oriented to train and specialize the newly hired workforce.

From the perspective of environmental sustainability, dual vocational training is a formula for introducing new values, knowledge and skills in companies (and vice versa) on issues related to the circular economy and competencies for environmental sustainability (Cedefop and OECD, 2022; European Commission, Joint Research Centre, 2022). The development of dual training plans that integrate environmental sustainability skills and challenges (energy and resource efficiency, eco-design, etc.) not only stimulates student learning from a green perspective, but can also lead to small, applied innovation projects in the companies that train Dual VET students (Hemkes and Melzig, 2021).

6. Strengthen the presence and collaboration of companies with training centers in order to adapt the training offer to the needs of the companies.

Finally, and as a conclusion, it can be established that in the case of Spain, vocational training has been the educational area with the greatest increase in the number of enrolled students and that, by virtue of the 2022 law, it is established as an ally of digital and economic transformation. However, despite the improvements, it is necessary to introduce green competences in the training catalog beyond the 5 professional families linked to the green economy. On the other hand, the management by the autonomous communities makes a more

global vision necessary to ensure that vocational training is not localized and can be offered where competences are needed.

Specialized systems are needed to monitor the evolution of the skills and requirements of the productive fabric in these new environmental fields, and to establish equally agile processes for the design of training programs that facilitate the broader participation of students.

3.3 Experiences from the field: interviews with VET experts

In today's dynamic world, the integration of sustainability competencies in Vocational Education and Training (VET) has emerged as a critical consideration for fostering responsible and forward-thinking professionals. This research delves into the experiences and perspectives of VET experts, shedding light on the current landscape of sustainability competencies in education and envisioning its future trajectory amidst evolving sustainable development trends.

Through these interactions, significant patterns emerged, offering profound insights into the present and future of sustainability competencies in VET. Respondents prevailing sentiment was that while existing sustainable practices and competencies are acknowledged, they often remain insufficiently integrated into practical applications. The lack of institutional support, scarce resources, and inadequate infrastructure emerged as common challenges impeding the comprehensive development of sustainability competencies.

However, a silver lining is the recognition of opportunities and benefits inherent in the development of sustainability competencies in the training for employment sector. Educators identified potential in leveraging the large pool of learners undergoing various training, thereby creating a platform to embed sustainability skills and foster impactful personal practices. Collaborations with sustainable companies, consultancies, and NGOs offer a tangible pathway to integrating practical sustainability examples into training programs.

Innovative strategies, such as project-based learning and immersive training, were also proposed to propel sustainability competencies forward.

Looking ahead, educators foresee a future in which sustainability competencies are progressively integrated due to society's growing need for improvement. These competencies are poised to become fundamental in education, bolstering both individual empowerment and societal progress. While challenges persist, the optimism and determination exhibited by educators point to a future where sustainability competencies in VET play a pivotal role in shaping a more sustainable world.

3.3.1 Composition of the Group

The group was composed of 7 trainers and 8 teachers working in Upper-secondary (20%), Continuing (67%) and Post-Secondary (13%) VET. Most of the respondents had no previous knowledge of the GreenComp Framework: particularly 1 indicated a good knowledge of the Framework, while 5 participants out of 10 had a very basic knowledge and most of the participants (9) did not have knowledge of the Framework prior to the interview.

3.3.2 Summary of the findings

Q1	How do you perceive the current practices for developing sustainability competencies in VET in your country?

The majority of participants emphasize that while there are established sustainable practices and training competences, these are often insufficient. Moreover, these practices are frequently presented as theoretical values rather than being effectively implemented.

Some of the recorded responses from the interviewed educators are the following:

- *Very basic*

- *I do not see them reflected in teaching activity.*
- *Current practices, in general, are far from sustainable.*
- *Little or only superficially applied, almost more for compliance or image.*
- *In practice, nil, at least in certain areas.*
- *Ineffective and scarce, it is necessary to expand the training of students and teachers in sustainability.*
- *I think they are not yet implemented.*
- *There is transversal training in environmental awareness or equal opportunities so that pupils become aware, but we need to continue working on the actions we carry out daily so that these values are assimilated.*
- *Low as it is a transversal competence.*
- *Necessary but insufficient*

Q2	What are the strengths and positive aspects of the existing approaches and practices for sustainability competencies development in VET?

The educators' responses highlight several common points about the strengths and positive aspects of existing approaches and practices for sustainability competencies development in VET. Some educators point out that the effectiveness of these approaches largely relies on the instructor delivering the training. Additionally, the active interest from both learners and educational institutions, stands out as a positive factor. Another shared perspective is the promotion of student awareness across all educational levels, with the aim of fostering a future application of these values in work environments. While some educators admit their lack of awareness about successful practices in this domain, the general trend indicates an increasing initiative to install these values. The commencement of sustainability-focused courses is noted as a positive starting point, with one educator proudly citing personal involvement in teaching a significant number of hours in this context.

Some of the recorded responses from the interviewed educators are the following:

- *I believe that these approaches depend almost entirely on the teacher who delivers the training.*
- *The rise of e-learning and digital skills are more sustainable.*
- *Different containers for waste separation.*
- *The interest of learners and institutions to include it. In addition, there are funds and benefits for it.*
- *Raise awareness of students at all levels and that they can pass it on to working environments in the future.*
- *I am not aware of good practice in this area.*
- *There is a growing initiative to inculcate these values.*
- *Courses are being run, which is a good start. I, in particular, have taught 300 hours.*

Q3	What are the weaknesses and limitations of the current practices for sustainability competencies development in VET?

The educators' responses converge on several common weaknesses and limitations associated with the current practices for developing sustainability competencies. A notable issue is the lack of institutional support, which impedes the effective implementation of these practices. Many educators note that these competencies are not deemed essential for employment, creating a gap between training and real-world application. Excessive paper printing emerges as a practical concern, indicative of unsustainable practices within the learning environment. Moreover, concerns are raised about the quality and meaningful preparation of sustainability education, as well as the absence of clear definition and guidelines. There is a consensus on the necessity of training teachers to effectively deliver sustainability education. A shared observation is that the current approach often remains confined to analytical thinking and fails to induce genuine behavioural change. Additionally,

the lack of subject knowledge and minimal support from administrative bodies for training programs are recurring themes. In conclusion, educators identify a range of obstacles, from institutional support and job relevance to pedagogical quality and teacher training, all of which collectively hinder the comprehensive integration of sustainability competencies within VET.

Some of the recorded responses from the interviewed educators are the following:

- *Precisely the lack of institutional support*
- *These skills are not required when taking up a job.*
- *A lot of paper printing.*
- *Quality and preparation to do it with sense and fulfilling objectives.*
- *Lack of knowledge and difficulties for educational centres and workplaces to be able to carry them out.*
- *Need to train teachers.*
- *Lack of definition and guidance.*
- *In general, we are stuck in analytical thinking and reflection and we have not managed to achieve a real change in behaviour.*
- *Lack of knowledge on the subject and little impetus from the administrations in terms of training programmes.*
- *They appear in the programmes in the transversal modules on care for the environment. And they should appear in the manuals, in the practices from topic 1 to the end... as well as in the transversal modules.*
- *That there is a lot of fear of change in many sectors and employees, which can hinder this development.*

Q4	What challenges and barriers do VET experts encounter in the implementation of sustainability competencies in VET programs?

Educators encounter several common challenges when implementing sustainability competencies within VET programs. These include difficulties in seamlessly integrating sustainability across diverse topics in further training, limited availability of relevant courses, constraints in training duration and agendas, and resistance to deviating from established curricular essentials. Adapting sustainability within formal education modules faces obstacles due to curriculum structures. A significant challenge lies in aligning education professionals with sustainability values to set examples, as internal resistance to change persists, once again the incorporation of a transversal competence such as sustainability lies on the individual educators. In conclusion, educators face multifaceted challenges, ranging from content scarcity and institutional constraints to the need for educator alignment and the quality of curricular materials, all of which emphasize the complexity of embedding sustainability into VET programs.

Some of the recorded responses from the interviewed educators are the following:

- *As a challenge, to be able to link sustainability competences in a cross-cutting way with a wide range of possible topics in further training for employment.*
- *I see few related training courses.*
- *Generally, the duration, agendas and hours of training are limited and very restricted, where training is unfortunately "sold" by weight, so that there is almost no room for anything that goes beyond the essentials.*
- *To be able to adapt them within the curriculum in formal education modules.*
- *Lack of ready-made training materials.*
- *The main challenge is that as education professionals we are trained in the action plan and take on these values to set an example in our day-to-day practices. The barriers are our own resistance to doing things differently.*
- *Ideologically biased, poorly developed and inconsistent curricula.*
- *Resistance to change and lack of resources.*

Q5	What opportunities and potential benefits do VET experts identify in developing sustainability competencies in VET?

Educators recognize abundant opportunities in promoting sustainability skills within VET programs. With a large number of individuals undergoing diverse training, there is a chance to seamlessly incorporate sustainability skills and foster impactful personal practices. This skill development can empower educators to shape a greener future while also contributing to emerging sustainable economies and enhanced employability. The concept of providing cross-cutting training applicable to all professions stands out as particularly advantageous, offering benefits to professionals and society at large. Utilizing frameworks like GreenComp can streamline skill development processes. These competencies are not only crucial for adapting to an evolving economy but also for promoting sustainable behaviours that address ongoing challenges. Additionally, educators emphasize the alignment of these efforts with the Sustainable Development Goals (SDGs). In summation, the integration of sustainability skills within VET holds substantial promise, influencing personal behaviours and contributing to global objectives simultaneously.

Some of the recorded responses from the interviewed educators are the following:

- *Opportunities exist in the fact that there are a large number of people being trained in various subjects in which sustainability competences could be included to make an impact on society and thus increase good practices on a personal level.*
- *Improve the future as education professionals.*
- *Development opportunities in sustainable and future-oriented economies.*
- *A transversal training for all professionals and a transfer to society.*
- *Competence development and application of GreenComp for education.*
- *Education and training for a new economy.*
- *The development of these competences will help the population to act in a more sustainable way and this will help not to further increase the existing problem.*

- *They are of utmost importance to get closer to the SDGs.*
- *Preparing for a sustainable future, improving employability, innovation, cost reduction, social responsibility and compliance with environmental regulations.*
- *That new families of vocational certificates will appear and therefore more supply will be offered.*
- *Less impact or repercussion on society.*

Q6	How do VET experts assess the effectiveness and impact of the current practices for sustainability competencies development in VET?

Educators' responses collectively highlight a lack of evaluation and assessment regarding the effectiveness and impact of current practices for developing sustainability competencies within VET. Most participants express that these practices are not being directly evaluated or recognized as positive attributes within the field. There is a recurring negative response to this question, indicating a general absence of systematic assessment. In conclusion, there is a widespread perception among educators that the current practices for sustainability competencies development are not subject to thorough evaluation, which may limit the understanding of their true effectiveness and impact.

Some of the recorded responses from the interviewed educators are the following:
- *No, I think that in general it is a field that is not evaluated, at least I have never been told about it directly.*
- *At the moment, it is not evaluated as a positive thing to have these competences.*
- *No.*
- *I don't know.*

Q7	What resources, support, and infrastructure are necessary to enhance the development of sustainability competencies in VET?

Educators' responses reveal a consensus that there is a lack of dedicated resources, support, and infrastructure to effectively enhance the development of sustainability competencies in VET. The common sentiment is that currently, such resources are limited or non-existent. The recurring "no" responses underline the absence of substantial support, or the failure to get existing resources to the educators. However, one educator suggests that enhancing sustainability competencies might not demand extensive infrastructure or resources; instead, sustainable actions within each profession could be pivotal in improving daily practices. In conclusion, educators largely perceive a dearth of necessary resources, support, and infrastructure to facilitate the comprehensive development of sustainability competencies in VET, which could hinder the integration of these skills effectively.

Some of the recorded responses from the interviewed educators are the following:

- *No, and I don't know of any training resources that would lead me to develop specific competences for the educational area.*
- *None.*
- *I don't know, but from my point of view I don't think it would require large infrastructures or resources, but rather sustainable actions from each profession to improve our daily practices.*
- *I know the environmental guide of Xunta de Galicia, ODS, but I think that much more would be needed, tools based on gamification, greater awareness, etc.*

Q8	How do VET experts perceive the level of awareness and commitment among VET stakeholders towards sustainability competencies?

Educators' responses reflect a prevailing perception of a relatively low level of awareness and commitment among various stakeholders in the VET sector towards sustainability competencies. This sentiment is widespread, with many participants noting a general lack of awareness and dedication across all involved parties. While some acknowledge awareness at the corporate level of companies, this awareness often does not translate into educators'

competences. The distinction between theoretical high awareness and practical low commitment emerges as a notable theme. A few educators observe a modest increase in awareness over the years, but emphasizing the ongoing need for continuous learning. In conclusion, educators commonly perceive a deficiency in the level of awareness and commitment towards sustainability competencies among VET stakeholders, although there are indications of progress. Economic considerations often overshadow sustainability concerns, emphasizing the continued importance of cultivating commitment to these competencies in the VET landscape.

Some of the recorded responses from the interviewed educators are the following:

- *I perceive a low level of awareness and commitment in general of all the actors involved.*
- *Awareness exists at the corporate level of companies, but not at the level of educators' competences.*
- *In theory high, in practice very low.*
- *Low but certainly higher than 10 years ago. But requires continuous learning.*
- *Not an aspect taken into account by any of them (stakeholders).*
- *Low.*
- *Diffuse.*
- *Some are more advanced than others, but in general I think we are still at a very early stage, we still have a lot of work ahead of us.*
- *Little, economic benefits still prevail.*
- *Superficial*

Q9	What innovative approaches or strategies do VET experts suggest for further advancing the development of sustainability competencies in VET?

Educators suggest various innovative approaches and strategies for advancing the development of sustainability competencies in VET. A common suggestion is to create comprehensive training plans focused on sustainability for teachers. Practical measures to promote sustainability within the learning environment are highlighted, including the implementation of energy-saving technologies and conscious resource usage like motion sensor lights, sensor taps, and more. Projects and service-learning experiences are also recommended as effective strategies. Educators emphasize the importance of training for teachers, offering practical methodologies that incorporate real-world scenarios. Starting with achievable actions is advised, fostering confidence and enthusiasm among educators to gradually change daily behaviours. Additionally, the need for practical and immersive training that connects students with real-world problems is stressed. In conclusion, educators emphasize the significance of practical training, hands-on experiences, and methodologies that directly address sustainability challenges to effectively advance the development of sustainability competencies in VET.

Some of the recorded responses from the interviewed educators are the following:

- *Develop training plans on sustainability for teachers.*
- *Motion sensor lights, sensor taps, cisterns with flow regulation, controlling the use of air conditioning, as well as using other measures such as double-glazed windows, curtains, etc.; printing as few documents as possible, etc...*
- *Projects. Or service learning*
- *Training for teachers, development of methodologies.*
- *Start with small actions that we know we can carry out, to build confidence and enthusiasm that, even on a small scale, we can gradually change our day-to-day behaviour.*
- *Much more practical, even immersive, training. I don't see much point in giving 50 hours of courses in a closed room that sometimes doesn't even meet the requirements of the law. You have to connect students with the problem in situ.*
- *Encouraging and emphasising the advantages and benefits to be gained by implementing them.*

Q10	What collaboration and partnership opportunities exist or should be fostered to enhance the development of sustainability competencies in VET?

Educators highlight several collaboration and partnership opportunities to enhance the development of sustainability competencies. A common suggestion is to collaborate with sustainable companies and environmental or sustainability consultancies, leveraging their practices as examples in training courses. The partnership potential lies in teaching successful company models and implementing good practices, as well as creating partnerships that can contribute expertise and guidance. Learning from advanced entities or companies is proposed as a way to transition from reflection to tangible action. Educators emphasize the importance of training teachers and raising awareness in workplaces, potentially through cooperative efforts. In general, multilevel cooperation involving certification bodies, companies, NGOs and public administrations is identified as beneficial. Ultimately, educators stress the necessity for more training that is closely linked to daily life practices. In conclusion, fostering partnerships with sustainable companies, consultancies, NGOs, and other stakeholders, alongside enhancing teacher training, is a promising approach to advancing the development of sustainability competencies in VET.

Some of the recorded responses from the interviewed educators are the following:

- *Perhaps collaboration with sustainable companies to include them as examples in the training courses, teaching good practices implemented in successful companies...*
- *Collaboration between training companies and environmental and sustainability consultancies.*
- *Training of teachers and awareness-raising in the workplace.*
- *Cooperation between entities, NGOs, certification of competences*
- *Multilevel collaboration with entities, companies and public administrations*
- *Collaboration with entities or companies that are more advanced in the development of these competences so that they can show us how they have moved from reflection to action.*

- *More training and much more applied to our daily lives.*
- *Collaboration with companies by means of guides, websites, prizes that will encourage greater involvement: it is about our future as a species...*
- *Mobility between countries that are pioneers in these measures.*
- *Private companies that have implemented these sustainability competences and can give examples of their benefits.*

Q11	How do VET experts envision the future of sustainability competencies in VET, considering the evolving needs and trends in sustainable development?

Educators envision a future for sustainability competencies in VET characterized by progressive implementation driven by societal needs for improvement. Sustainability competencies in VET are seen as a progressively important and essential aspect of education, contributing to societal and environmental well-being in the face of evolving needs and trends in sustainable development.

Some of the recorded responses from the interviewed educators are the following:
- *I believe that it will be implemented progressively because of society's need to improve in this area.*
- *They will be important, as the SDGs will mark the objectives of many training companies.*
- *It is essential to train and be trained in sustainability-related issues, not only in vocational training for employment but also at the individual level.*
- *This will be a fundamental practice in the future.*
- *Training in the specific skills of GreenComp*
- *It will be useful when it is clear and implemented.*
- *That although we still have a long way to go, by continuing to raise awareness we will be able to create a population that is more committed to the cause and that, united, will achieve better*

results. Because small-scale initiatives do not produce results and people become discouraged and go back to their previous habits.

- *My view is pessimistic. As I teach in the courses, according to some sources, we will finish with the Planet by 2050.*

4. Developing sustainability competences: Best practices in Spain

This chapter presents ten Spanish best practices in developing the GreenComp sustainability competencies. The following criteria guided the selection of the best practices:

- Effectiveness: The extent to which the practice has demonstrated positive outcomes in developing sustainability competencies among VET learners, such as improved knowledge, skills, and attitudes towards sustainability.
- Inclusiveness: The practice's ability to cater to diverse learners, including individuals from different socio-economic backgrounds, genders, ethnicities, and abilities, ensuring equitable access and participation in sustainability competencies development.
- Innovation: The degree of creativity, novelty, and originality exhibited by the practice in its design, implementation, and delivery of sustainability competencies development in VET, incorporating new approaches, methods, or technologies.
- Transferability: The potential for the practice to be adapted, replicated, and scaled up in different VET contexts and settings, considering factors such as feasibility, adaptability, and compatibility with varying institutional and cultural contexts.
- Impact: The impact of the practice on learners' ability to apply sustainability competencies in real-world contexts, as well as its potential to contribute to broader societal and environmental goals.
- Scalability and Replicability: The potential for the practice to be scaled up and replicated in other VET systems, considering factors such as scalability, cost-effectiveness, and practicality.

4.1 Efficient with the Environment

"Efficient with the Environment" is a transformative project with a primary goal of promoting sustainability and environmental awareness, the project engages students, teachers, and the educational community in an encompassing journey towards responsible ecological practices. Through innovative methodologies, collaborative partnerships, and a commitment to aligning with global sustainability objectives, the project sets out to foster a culture of conscious environmental stewardship within the school and beyond.

Efficient with the Environment

2020-2022	**Author(s):** Eduardo Linares Lumeras Secondary School.

Element	
Goals of the best practice	*The primary objective of the "Efficient with the Environment" project is to promote sustainability and environmental consciousness within the Eduardo Linares Lumeras Secondary School. The project aims to instill responsible attitudes towards the environment and to act as a role model in addressing climate change challenges.*
Target Group/Beneficiaries	*The beneficiaries of the practice include the students, teachers, and the entire educational community of Eduardo Linares Lumeras Secondary School in Molina de Segura, Murcia. The project directly impacts more than 500 students and around 60 teachers.*
Needed resources	*To successfully replicate or adapt the "Efficient with the Environment" project, several key resources are necessary:* • *Multidisciplinary Team: The involvement of teachers from various departments, including mathematics, language, and science, is essential for a comprehensive approach to environmental education.* • *Eco-Audit Materials: Resources for conducting eco-audits, including data collection tools, graphs, and comparison*

	templates, are required to analyze energy and water consumption, track progress, and identify areas for improvement. • *Support from Local Authorities: Collaborative engagement with local institutions, such as Molina de Segura Town Council and the Ministry of Education and Vocational Training, is essential to access resources, support, and guidance for sustainability initiatives.* • *Gamification Resources: Resources for designing and implementing gamification activities that engage students in an interactive and educational manner, fostering a deeper understanding of sustainability concepts.* • *Sustainable Garden Creation: Necessary materials, tools, and support for creating a sustainable school garden, including soil, plants, irrigation systems, and gardening equipment.* • *Access to Environmental Education Programmes: Collaboration with established environmental education programmes, such as the Environmental Education Centres Programme, provides opportunities for knowledge exchange and access to valuable resources.*
Methodology	*The practice encompasses a series of activities aimed at raising environmental awareness and fostering sustainability. These activities including:* • *Alignment with Sustainable Development Goals (SDGs): The project centers on SDGs like clean energy and sustainable communities, ensuring its activities contribute to global sustainability goals.* • *Integration of Eco-Audits: Students conduct eco-audits, analyzing energy and water consumption, deepening their understanding of resource use and avenues for improvement.* • *Promotion of Responsible Consumption: Initiatives like the "3 R's rule" and campaigns against plastic waste instill responsible consumption habits among students, empowering them as change agents.* • *Engagement through Gamification: Gamified learning with activities like "Great fall!" and "My environment takes care of me, I take care of it" enhances student interaction with environmental concepts.* • *Creation of a Sustainable School Garden: Collaborative efforts with local institutions establish a school garden, providing*

	practical experiences in ecology, gardening, and sustainable practices. • *Participation in Educational Programmes: Engagement in programmes and competitions like the Environmental Education Centres Programme widens horizons and fosters camaraderie among students from diverse backgrounds.* • *Innovation and Adaptation: The project embraces innovation with solar panels for clean energy, LED lights for reduced consumption, and outdoor classrooms for interactive learning.* • *Continuous Monitoring and Evaluation: Rigorous monitoring ensures the project remains responsive, aligned with goals, and continually refining outcomes for lasting impact.eco-audits, actions promoting responsible consumption, creation of gamification games, sustainable garden construction, excursions for environmental awareness, participation in educational programmes, and more.* *The project utilizes a well-rounded methodology that immerses students in an enriching learning experience. By actively involving students, addressing critical sustainability concerns, and fostering essential skills, the project empowers learners to embrace and promote sustainability while nurturing a profound sense of responsibility towards the environment and society at large.*
Success Factors	• *Interdisciplinary Collaboration: Engaging teachers from various departments fosters diverse perspectives and expertise. As well as involving other collaborators such as members of the community and representatives of the administration.* • *Student Involvement: Active student participation leads to a greater understanding of environmental issues.* • *Real-World Implementation: Transforming theoretical concepts into tangible actions enhances students' practical skills.* • *Supportive Environment: Institutional commitment, family engagement, and external partnerships bolster the project's impact.* • *Innovation and Adaptation: Adapting to challenges and seeking innovative solutions amplifies the project's effectiveness.*

Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, systems thinking, critical thinking, problem framing, and collective action.*
Related **Resources /Link**	*[Collection of good practices in education for sustainable development - Ministry of Education and Vocational Training](), nº 7.*

4.2 New Sustainability Module for VET in Spain

This best practice developed by Naturgy Foundation aims at enhancing professionals' job readiness through updated energy sector training. It has already benefited over 45,000 since 2018. The goal is to integrate Sustainability modules into Spain's VET curricula by 2024-2025. Collaborating with Naturgy's CSR Department and top institutions like FECYT and CSIC, the initiative also empowers educators. Success factors include strategic alignment, stakeholder engagement, and resource provision.

New Sustainability Module for VET in Spain

[2018]	**Author(s):** Naturgy Foundation

Element	
Goals of the best practice	*The program's goal is to help future professionals in the field get better prepared for the labour market. It does this by offering updated information about energy sector innovations. Since 2018, more than 45,000 people have taken advantage of these free courses.*
Target Group/Beneficiaries	*The aim of this sustainability initiative is to reach all VET learners across Spain, providing a shared opportunity for comprehensive training in sustainability. The goal is for the Sustainability module to be integrated into the curricula of all upper secondary and post-secondary VET programs throughout Spain by 2024-2025.*

Needed resources	*The module on sustainability applied to the production system includes new and updated content on sustainability, developed in collaboration with Naturgy's Environment and Corporate Social Responsibility Department. This module is part of an extensive training catalogue designed to update training, and has been created with the participation of leading education and research institutions such as FECYT, CSIC, the State Public Employment Service and the Open University of Catalonia.*
Methodology	*The topics addressed are varied, they are related to sustainable mobility, rehabilitation and sustainable building, renewable gases, digitisation of electrical references, energy consulting in renewable environments, installation and maintenance of photovoltaic panels, and green and digital gas networks.* *One of the main achievements of this initiative is its provision of teacher training opportunities. Through these courses, educators can gain insights into sustainability as applied to various sectors. The courses offer pedagogical resources that assist in classroom instruction and achieving the desired learning goals. These goals include building knowledge and fundamental competencies in green economy and sustainability, along with understanding how sustainability requirements impact the processes within specific sectors.* *The curriculum covers several topics:* • *Introduction to Sustainability* • *Environmental, Social, and Governance Challenges* • *Circular Economy* • *Ecosystem and Health Protection* • *Sustainability in Professional Activities*
Success Factors	*Several key success factors contribute to the effectiveness of this best practice:* • *Alignment with Strategic Initiatives: The practice is in line with the Strategy of Just Transition by MITECO and the new law for Vocational Training. This alignment facilitates the integration of the sustainability module into formal curricula.*

	• *Collaboration and Stakeholder Involvement: Collaborators and stakeholders collaborate as part of the initiative, ensuring that the content remains relevant, innovative, and responsive to labor market needs and the green economy. Natugy, the module's author, is part of the VET alliance promoted by the Minister of Education and Vocational Training. The initiative benefits from contributions by multiple respected collaborators such as FECYT, CSISC, SEPE, Colegio de Arquitectos de Cataluña (COAC), Asociación Española de Biogás (AEBIG), Volkswagen, SCANIA, Gas Eco Suministros, and the Institute of Nacional Cualificación (INCUAL).* • *Provision of Resources: The project goes beyond content creation, offering the provision of didactic materials and equipment. Additionally, opportunities for educator upskilling are provided, ensuring educators have the necessary resources and knowledge to successfully implement the program in classrooms.*
Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, systems thinking, critical thinking, problem framing, adaptability, political agency, and collective action.*
Related **Resources /Link**	*Fundación Naturgy – Training for Employment* *Fundación Naturgy – Training for Educators* *News Echoing the New Sustainability Module*

4.3 REVIVE, Environments for Climate.

"REVIVE, Environments for the Climate," an interdisciplinary educational endeavour, aims to foster sustainability through collaborative action. Rooted in school entrepreneurship, the project actively contributes to global sustainability initiatives and aligns with the SDGs of the 2030 Agenda. By engaging students, teachers, and the local community of IES Juan Bosco, it transforms waste management, creates green spaces, and promotes biodiversity. Supported

by strategic alliances and embodying competencies from GreenComp, "REVIVE" stands as a dynamic force for positive environmental change.

REVIVE, Environments for Climate.

[2023]	**Author(s):** IES Juan Bosco (Alcázar de San Juan)
Element	

Goals of the best practice	*The "REVIVE, Environments for the Climate" project is an interdisciplinary educational initiative focused on school entrepreneurship through collaborative action. The project emerged from Intermediate Level Administrative Management students engaging with simulated business projects related to the SDGs. This inspired collaborative efforts to enhance sustainability within the school and the local community.* *The main purpose of the project is to actively contribute to global efforts in creating a more sustainable and environmentally friendly world. It aims to achieve this by participating in "Strategic Alliances" that work towards sustainable development. The project also seeks to play an active role in advancing the Sustainable Development Goals (SDGs) of the 2030 Agenda.*
Target Group/Beneficiaries	*The beneficiaries of the "REVIVE" project are the students, teachers, and local community of IES Juan Bosco. The project involves students and teachers participating in collaborative activities related to recycling, landscaping, and biodiversity. Additionally, local institutions, companies, and the community are also indirect beneficiaries as they collaborate and participate in the project.*
Needed resources	*To replicate and adapt the "REVIVE" project, the following resources are required: active engagement and collaboration of students and teachers, support from local institutions and companies, financial resources for landscaping efforts, cooperation with the municipality, and educational materials aligned with SDGs and environmental sustainability.*

Methodology	*The "REVIVE" project is a comprehensive effort that involves multiple steps and initiatives:* *Recycling Strategy: The project aims to change waste management practices within the school, fostering circular economy strategies. The focus is on creating environmental awareness, sustainable consumption habits, and responsible waste management.* *Green Area Creation: The project involves the development of green spaces within the school's courtyard, promoting climate improvement and community well-being. Native species are planted, and participants are educated about ecosystem care and biodiversity.* *Biodiversity Promotion: The project contributes to biodiversity protection by creating a "Pollinator Classroom" in collaboration with the Department of the Environment. This initiative aims to address the decline in pollinators, such as the endangered "Iberian Bee."*
Success Factors	*For the success of the "REVIVE" project, both internal and external factors play crucial roles. Internally, the project relies on classroom elements and tools that facilitate collaborative learning. Externally, institutional support, economic resources, cooperation with local entities, and community involvement are necessary for project success. Additionally, alignment with global strategic alliances and SDGs enhances the project's impact.*
Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, supporitng fairness, promoting nature, critical thinking, problem framing, and collective action.*
Related **Resources /Link**	*REVIVE website* *Teachers for future Spain - News.*

4.4 Real projects

The following practice pioneers a hands-on approach in vocational training, where real projects fuse theory with practical applications, enriching students' skills and fostering a holistic understanding of technical subjects while emphasizing sustainability integration.

Real projects

2015	**Author(s):** IES Sierra de Carrascoy, Vocational Training in Refrigeration and Air Conditioning Installations, and Water Treatment Networks and Stations.

Element	
Goals of the best practice	*The primary objective of this practice is to enhance vocational training through real projects that enable students to apply theoretical knowledge in practical, real-world scenarios. The projects aim to improve the students' skills while addressing the institute's needs and fostering a holistic understanding of technical and practical aspects. The hands-on nature of the projects enhances students' understanding of sustainability and its integration into their field of study.*
Target Group/Beneficiaries	*The beneficiaries of this practice are the students enrolled in Basic Vocational Training cycles in Electricity and Electronics, Refrigeration and Air Conditioning Installations, and Water Treatment Networks and Stations. The practice impacts around 15 to 20 students annually in the Refrigeration and Air Conditioning Installations cycle and 10 to 15 students in the Water Treatment Networks and Stations cycle.*
Needed resources	*The resources required for replicating or adapting this practice include a multidisciplinary team of teachers, necessary materials for implementing real installations, technical expertise, and coordination between different departments within the institute.*
Methodology	*The practice involves designing real projects that align with the curriculum's learning objectives. These projects are initiated based on the detection of needs, either for student training or facility improvement. The projects are implemented by relevant department teachers, and whenever possible, other cycles are also engaged in various tasks. Students work on real installations, facing practical challenges, which fosters skills development and a comprehensive understanding of their field.*
Success Factors	• *Collaborative Synergy: Engaging a multidisciplinary team fosters diverse insights, enriching project design and implementation.*

	• *Real-World Integration: By applying theory to real installations, students develop practical skills and problem-solving abilities.* • *Holistic Skill Set: Students gain technical expertise alongside teamwork, time management, and communication skills.* • *Sustainability Focus: Addressing resource efficiency nurtures environmental awareness and responsible practices.* • *Supportive Environment: Institutional support, flexible spaces, and interdisciplinary learning catalyze impactful outcomes.*
Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, problem framing, adaptability, collective action and individual initiative.*
Related **Resources /Link**	*Establish a list of references related to the practice (training manuals, guidelines, photos, videos, web pages, etc.).* *Link to the home page of the experience in question. If possible, contact the organisation and/or person who carried out the practice.*

4.5 ESenRED: Schools Towards Sustainability Network+

"ESenRED: Schools Towards Sustainability Network" is a transformative educational initiative that unites non-university educational centers across Spain. Focused on environmental education for sustainability and global citizenship, ESenRED empowers students and teachers to address the eco-social crisis through shared learning, collaborative projects, and responsible actions. By fostering a culture of sustainability and involving students and teachers, ESenRED aims to create a more ecologically balanced and socially just society.

ESenRED: Schools Towards Sustainability Network	
2011-Now	**Author(s):** ESenRED
Element	

Goals of the best practice	*The primary objective of ESenRED (Schools Towards Sustainability Network) is to develop environmental education for sustainability and global citizenship among students. The practice aims to empower students to address the eco-social crisis by fostering responsible behaviors and active engagement. It seeks to create a culture of sustainability within schools, encouraging students to take on responsibilities and commit to actions that contribute to a more sustainable world.*
Target Group/Beneficiaries	*The beneficiaries of ESenRED are students, teachers, and educational communities in non-university educational centers across different Autonomous Communities in Spain. With more than 1,500,000 students and over 100,000 teachers, the network provides a platform for peer learning, exchange of experiences, and collaborative projects. While the primary beneficiaries are students and teachers, the broader impact extends to local and global communities through the shared commitment to sustainability.*
Needed resources	*Replicating and adapting the ESenRED practice requires the engagement of technical staff, support from educational institutions, and collaboration with public administrations. Stable organizational structures, a technical secretariat, and resources for coordination and administration are needed to ensure effective network functioning. Additionally, financial resources are necessary for organizing events such as seminars, conferences, and symposiums.*
Methodology	*The ESenRED practice operates through a series of coordinated activities:* • *Seminar: Annual gatherings of technical staff from different networks to exchange experiences, information, and collaborative planning.* • *Caring for the Planet Youth Conference (CONFINT): Biennial event where students engage in educational processes focused on eco-citizenship, sustainability, and global responsibility.* • *ESenRED Teachers' Symposium: Yearly meeting of teachers to share successful practices, receive training, and initiate common projects.* • *ESenRED Action 5 June: An annual educational-communication action conducted on World Environment Day, addressing current environmental issues.*

	• *Exchange Learning Collective: Engaging students in joint projects that produce eco-social transformations in their immediate environment, fostering empowerment and responsibility.*
Success Factors	*The success of ESenRED practice relies on various factors:* • *Shared Leadership: Technical staff from networks collaboratively take on responsibilities and decisions, forming the organizational backbone.* • *Empowerment of Students: Students are given a voice, enabling them to engage in real decision-making scenarios and contribute to transformative actions.* • *Cross-cutting Nature: The practice's interdisciplinary approach and focus on key competencies facilitate critical thinking, creativity, communication, and responsible action.* • *Collaboration and Exchange: The network's capacity to share experiences, learn from peers, and engage in cooperative projects strengthens its impact.* • *Recognition and Commitment: The commitment of educational institutions, public administrations, teachers, and students contributes to the practice's success.* *The ESenRED practice demonstrates a holistic approach to environmental education for sustainability, fostering responsible behaviors, empowering students, and promoting collaboration for a more socially just and ecologically balanced society.*
Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, supporitng fairness, promoting nature, system thinking, future literacy, adaptability, political agency and collective action.*
Related **Resources /Link**	[ESenRED blog](#) [Collection of good practices in education for sustainable development - Ministry of Education and Vocational Training](#)

4.6 International Youth Conference: Let's Take Care of the Planet (CONFINT)

International Youth Conference: Let's Take Care of the Planet (CONFINT) is a constructivist approach that mobilizes youth and educational communities. Through a series of conferences

at various levels, students engage in research, dialogue, and action on eco-social challenges, fostering responsibility, empowerment, and collaboration. This practice connects local issues to global sustainability goals, benefiting hundreds of students annually and promoting cross-curricular integration and intergenerational dialogue.

International Youth Conference: Let's Take Care of the Planet (CONFINT)

2010-Now	**Author(s):** ESenRED and CONFINT

Element	
Goals of the best practice	*The best practice CONFINT is a constructivist process that mobilises and engages youth and the educational community, seeking individual commitment and collective transformation towards sustainable societies. Its core are conferences, that are structured at different levels of participation and exchange: school, network, state, European or international conferences. It aims to empower students and the educational community to address urgent eco-social challenges and contribute to the transformation of their local and global environment towards sustainability. It encourages active participation, responsible action and dialogue between young people and different stakeholders.*
Target Group/Beneficiaries	*The beneficiaries of this practice are young people from different schools, regions, countries, and continents, comprising hundreds of students involved annually. The practice also indirectly benefits the wider educational community, local authorities, and decision-makers involved in the network.* *This are the participants in the conferences celebrated till now:* *2012, Victoria (ES): 101 youth, 63 educative centers, 5 AACC.* *2012, Brussels: 60 youth, 14 countries* *2014, Barcelona (ES): 123 youth, 72 educative centers, 10 AACC.* *2016, Logroño (ES): 120 youth, 40 educative centers, 9 AACC.* *2018, Albacete (ES): 116 youth, 66 educative centers, 9 AACC.* *2018, Lisbon: 70 youth, 10 countries*

	2019, Rio de Janeiro: 400 youth, 53 countries *2021, Madrid (ES): 70 youth, 54 educative centers, 10 AACC.*
Needed resources	• *A network of non-university sustainable education centers.* • *Dedicated teachers and educators.* • *Organizational support from public administrations and educational institutions.* • *Collaborative platforms for communication and resource sharing.* • *Technological tools for research, communication, and collaboration.*
Methodology	• *Conference Structure: The practice revolves around a series of conferences held at different levels (school, network, state, European) where students present research, deliberate on eco-social issues, propose solutions, and elect representatives.* • *Interactive Process: Young people actively participate in research, dialogue, and planning. They choose actions, seek allies, implement initiatives, and evaluate results.* • *Educommunication: Communication is emphasized throughout, using various tools and methods to share findings, ideas, and achievements.* • *Global Perspective: The practice connects local issues to global challenges, aligning with the Sustainable Development Goals (SDGs) of the United Nations.*
Success Factors	• *Responsibility: Emphasizing individual and collective responsibility for eco-social issues.* • *Youth Empowerment: Empowering young people to take action and be agents of change.* • *Participatory Approach: Involving students in decision-making processes and allowing them to elect representatives.* • *Cross-Curricular Integration: Integrating various competencies and subjects to address complex challenges.* • *Network of Collaboration: Collaboration between schools, regions, and countries enhances the impact.* • *Dialogue with Generations: Engaging different generations in learning and action.*

Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are mainly valuing sustainability, system thinking, problem framing, exploratory thinking, future literacy, adaptability, political agency, collective action and individual initiative.*
Related **Resources /Link**	*Collection of good practices in education for sustainable development - Ministry of Education and Vocational Training* *Summary of the 5th State Youth Conference "Let's Take Care of the Planet".* ESenRED – CONFINT blog

4.7 MEFP. Guide with methodological orientations for the curricular anchoring of Education for Sustainable and Global Citizenship

The following best practice provides practical and contextual methodological proposals across various educational stages, while enabling educators and institutions to foster sustainability competences while adhering to the European sustainability framework, GreenComp. MEFP embraces innovative methodologies, harness the power of diverse projects, and cultivate a brighter, more sustainable future through education.

MEFP. Guide with methodological orientations for the curricular anchoring of Education for Sustainable and Global Citizenship	
2022	**Author(s):** Sub-Directorate General for Territorial Cooperation and Educational Innovation
Element	
Goals of the best practice	*The objective of the guidelines is to facilitate the incorporation of Education for Sustainable Development and Global Citizenship as set out in the 2030 Agenda and the LOMLOE. They are exemplified and*

	contextualised methodological proposals in various educational areas and stages that are also aligned with the European sustainability framework GreenComp.
Target Group/Beneficiaries	*The guidelines are meant for educational centers and individual educators, in order to help them introduce sustainability education and improve their competences and those of their students.*
Needed resources	*The guidelines provide the necessary information to implement all the practices included. It explains the target group, how to proceed with the assessment and which competences should be developed through the practices. It also incorporates different methodologies and approaches that will be useful with different target groups and ages.*
Methodology	*The combination of 7 methodologies with SDG themes results in 10 projects:* *Project-based learning (PBL): My first vegetable garden and A sustainable cupboard.* *Case studies: Water is Life and Industrial Livestock Production and Community Development.* *Service learning: Activating our community and Analysis of a riverbank ecosystem.* *Learning in nature: How big is my classroom!* *Future scenarios: Re-thinking the uncertain future in the face of climate emergency.* *Game-based learning: Technology and sustainability, friends or foes?* *Inverted classroom: Biodiversity holds the key to our future.*
Success Factors	• *Tailoring activities to enhance specific competences while fostering sustainability skills.* • *Offering comprehensive didactic materials and guidelines to facilitate practice development.* • *Employing diverse practices and innovative methodologies to cultivate students' sustainability awareness with minimal resource investment.*
Competences of the GreenComp addressed	*Each individual practice and project described in the guidelines emphasizes the development of specific competences outlined in GreenComp. Moreover, the guidelines themselves promote the*

	following competences: system thinking, adaptability, exploratory thinking, future literacy and collective action.
Related **Resources /Link**	*News* *Guidelines*

4.8 Re-thinking the uncertain future in the face of climate emergency

The next practice engages upper secondary and VET students in a transformative learning experience. "Re-thinking the uncertain future in the face of climate emergency" fosters anticipatory and systemic thinking by guiding students through the creation of future scenarios within the urgent context of climate change. By envisioning diverse pathways to 2050 and proposing actionable solutions, students develop essential competences in geography and economy while contributing to a more sustainable world.

Re-thinking the uncertain future in the face of climate emergency

2022	**Author(s):** MEFP, Sub-Directorate General for Territorial Cooperation and Educational Innovation.
Element	
Goals of the best practice	*The goal of the best practice is to promote anticipatory and systemic thinking by crafting future scenarios within a climate emergency context. It aims to formulate proposals for a more sustainable future while addressing the challenges posed by the climate crisis.*
Target Group/Beneficiaries	*The project is aim at learners in upper secondary school and VET. (16 to 18 years old)*
Needed resources	*To replicate or adapt this practice, the following resources are essential:*

	- *Audiovisual materials ("An Inconvenient Truth" and/or "Before it's Too Late")* - *Collaborative classroom spaces* - *Access to relevant information on climate change, sustainability, and economic trends*
Methodology	*The practice unfolds in several phases:* - *Analysis of the current climate emergency situation: Introduction to climate change causes, consequences, adaptation, and mitigation measures.* - *Exploration of key variables and agents: Group analysis of factors influencing climate emergency and identification of key actors.* - *Elaboration of narratives for future scenarios: Teams create narratives and graphics depicting future scenarios based on renewable or non-renewable energy models and varying temperature increases.* - *Development of proposals for optimal scenarios: Teams propose mitigation and adaptation measures aligned with Sustainable Development Goals (SDGs).*
Success Factors	*For the successful implementation of this practice, both internal and external conditions are crucial. Internally, collaborative classroom elements and suitable tools are needed to facilitate group work and discussion. Externally, institutional support, access to relevant information, and recognition of the importance of sustainability and climate action contribute to the effectiveness of the practice. Economic and social factors also play a role in its success, as broader awareness and commitment to equitable, just, and sustainable initiatives can provide a conducive environment for the practice to thrive.*
Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are, among others, system thinking and exploratory thinking.*
Related **Resources /Link**	*[Guide with methodological orientations for the curricular anchoring of Education for Sustainable and Global Citizenship](), p. 68.*

4.9 Affordable and Clean Energy

The "Affordable and Clean Energy" practice engages students in assessing the energy efficiency of a building and formulating improvement plans. Through collaborative analysis and reflection, students develop a deeper understanding of energy consumption and contribute to enhancing sustainability within their educational environment.

Affordable and Clean Energy

2022	**Author(s):** FORMA NAEN, Interreg POCTEFA programme. **Collaborators:** Vocational training centres in Nouvelle Aquitaine, the Basque Country and Navarre.

Element	
Goals of the best practice	*The goal of the "Affordable and Clean Energy" practice is to assess the energy efficiency of a building and develop an improvement plan for its energy performance. This practice aims to engage students in analyzing energy usage, identifying areas of improvement, and proposing strategies to enhance energy efficiency.*
Target Group/Beneficiaries	*The beneficiaries of this practice include students in the 1st or 2nd year of a higher or intermediate level cycle of Vocational Education and Training. This practice indirectly benefits the broader community by promoting energy awareness and sustainability.*
Needed resources	*To replicate or adapt this practice, the following resources are needed:* • *Energy analysis sheet (Resource 1)* • *Latest electricity and gas bills*
Methodology	*The practice involves the following steps:* • *Formation of a multidisciplinary team comprising students, teachers, building maintenance personnel, and relevant stakeholders.* • *Conducting a comprehensive tour of the building to assess energy usage and potential areas for improvement.* • *Analyzing water, electricity, and gas bills to identify possible adjustments in consumption and contracted power.*

	• *Collaboratively reflecting on the building's energy performance, identifying strengths and weaknesses, and proposing changes to enhance energy efficiency.*
Success Factors	*To ensure the success of this practice, the following conditions are necessary:* • *Active engagement and collaboration of the multidisciplinary team.* • *Access to energy analysis sheets and recent utility bills.* • *Willingness to explore and implement changes in energy consumption and efficiency.*
Competences of the GreenComp addressed	*This practice addresses several competences of the GreenComp, including system thinking, adaptability, future literacy, and problem framing.*
Related **Resources /Link**	*Link to the practice: Affordable and Clean Energy Practice, p.22. Resource 1: Energy analysis sheet, 29*

4.10 Escape room Climate Change

The next innovative practice aims to enhance climate change education by immersing students in a playful and engaging learning experience.

Escape room Climate Change

2022	**Author(s):** FORMA NAEN, Interreg POCTEFA programme. **Collaborators:** Vocational training centres in Nouvelle Aquitaine, the Basque Country and Navarre.
Element	
Goals of the best practice	*By means of a recreational activity such as a virtual scaperoom, to introduce some concepts about Climate Change, and to generate a debate with the students about Climate Change. Through the use of*

	computer technology, participants explore crucial concepts, sparking discussions and debates about individual and collective actions for addressing climate challenges.
Target Group/Beneficiaries	*Students in the 1st or 2nd year of a higher or intermediate level cycle of Vocational Education and Training.*
Needed resources	*The main resource for the development of the activity is the scape found online in the following link: https://sealevelriseroom.com/es/*
Methodology	*The escape room can last 50 minutes (depending on the speed at which the groups discover the clues).* *A teacher can previously get to know the game first hand, download the materials and prepare the discussion afterwards.* *1-2 hours can be reserved. Create 4 teams. Each team enters as 1 player.* *Once finished, the teacher can project the materials available in the section "Reflection guide" and stimulate the discussion about what they have discovered through playing the game.* *This is followed by a discussion on "individual spheres of action vs. collective impact".*
Success Factors	*To ensure the success of the Climate Change virtual escape room practice, both internal and external factors play pivotal roles. Internally, a well-equipped classroom with computers and a stable internet connection is essential for participants to engage seamlessly with the virtual environment. Additionally, facilitators must be well-versed in the escape room's dynamics, ensuring a smooth execution and meaningful debriefing post-activity. Externally, institutional support and awareness campaigns are crucial for promoting participation and integrating the practice into the curriculum effectively. Economic considerations for access to necessary technology and coordination with relevant bodies enhance the overall impact. Socio-economic context and local climate initiatives also contribute to contextualizing the practice, making it a holistic success in fostering climate change education and awareness.*

Competences of the GreenComp addressed	*The competencies of GreenComp addressed by this practice are, among others, promoting nature, valuing sustainability and critical thinking.*
Related **Resources /Link**	[Guidelines for best practices, BP2](#) [Virtual Escape room](#)

Conclusions

The Spanish vocational training system comprises 26 professional families, but only one incorporates the term "environmental." Despite the commitment to green jobs, employment areas outlined in the vocational training program are not listed in the State Employment Service's Occupations Observatory. La Caixa's research highlights shifts in the profiles of the green economy sector, affecting traditional professions, emphasizing the importance of sustainability training.

Challenges in vocational training for digital and ecological transformation include the need for curricular flexibility, revising territorial planning, integrating digital and environmental literacy, and emphasizing soft skills. The evolving modalities of Dual Training offer opportunities to align workforce qualifications with new environmental values.

The interviews with educators provide insights into the current state of sustainability competencies in VET. While there are established practices and competencies, they are often insufficiently integrated. Strengths lie in instructor involvement and learner interest. Weaknesses include a lack of institutional support, minimal evaluation, and inadequate teacher training. Challenges encompass integrating sustainability, curricular limitations, and low stakeholder awareness.

Looking ahead, the future of sustainability competencies in VET is expected to be progressively integrated, driven by societal needs and evolving trends in sustainable development. Vocational training needs to adapt to changes in the configuration of employment, emphasizing collaboration between the education sector and the private sector to meet industry demands effectively.