

Deliverable 2.3

BuildEnrichedSkills

Methodology

BUILDSKILLS ACADEMY

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Abbreviations

AUEB	Athens University of Economics and Business
BSA	BuildSkills Academy
BESM	Build Enriched Skills Methodology
C-VET	Continuing VET
D2.3	Deliverable 2.3
EQAVET	European Quality Assurance in Vocational Education
EQF	European Qualifications Framework
ESF+	European Social Fund Plus
EU	European Union
GA	Grant Agreement
I-VET	Initial Vocational Education and Training
PBL	Project based learning
SH	Stakeholders
T2.3	Task 2.3
VET	Vocational Education and Training



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Executive Summary

The Build Enriched Skills methodology (BESM) for enriching Vocational Education courses in the construction sector is presented in D2.3. The report presents the scope, content and procedure of the methodology of creating the Build Enriched Skills methodology. The process involved the development of a self-assessment questionnaire which was pilot tested with the 12 existing and new courses within the BuildSkills Academy (BSA) consortium which was further refined through Stakeholder engagement via two virtual and six country roundtables. The 3-step process of the BESM as it was developed, namely the self-assessment of what the VET provider offers as a course in terms of content and methods of teaching and assessment via the questionnaire, the description of the gap identification report and the sign posting of the enrichment process are all going to be implemented via a digital platform which along with the methodology itself will be further validated by stakeholders and partners through the conduction of further virtual and country roundtables. To support the implementation of the Build Enriched Skills methodology we will provide (a) a digital platform which will follow the methodology and offer a digital application for users to assist them in identifying green and digital skill gaps in their provision and assist them with guidelines to go through the process for enrichment and (b) a PDF Handbook that will walk through the VET providers to assist them in this process.



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1.Introduction

1.1 Scope/Description

This report outlines the Build Enriched Skills Methodology (BESM) for enrichment of VET courses with transitional skills. It is based on the work done in T2.3, drawing on the list of skills and competences required for each occupation at the relevant EQF levels, as detailed in T2.1, and the quality assurance process for VET courses described in T2.2. AUEB has developed this methodology to enrich current courses by addressing the question: “What needs improvement in VET courses concerning transitional skills and competences, and what standards must these courses meet to be considered ‘enriched’?” As part of this, AUEB collaborated with stakeholders from the skills and industrial sectors, as well as representatives from organizations that participated in the national BuildUP Skills projects. Thematic groups involved in validating the syllabus in T2.6 were engaged at this stage. AUEB and its project partners facilitated dialogue with these stakeholders, collecting feedback on the methodology through two virtual roundtables.

The developed proposed methodology incorporates specific new expertise, the essential process of stakeholder involvement in co-design and validation, and diverse formats of VET delivery. These combine open, digital, and participatory methods, including AR/VR technologies, open innovation formats, problem-based learning grounded in real-world industrial challenges, work-based learning, social innovation, and case studies from the innovation ecosystem. To address the twin transition—green and digital—the content will be designed following the principle of “Plan digital, build circular,” with digital technologies acting as the foundation for green transformation. This approach integrates both digital and green skills to enhance the development of transitional skills.

The Build Enriched Skills Methodology aims to ensure VET courses provide market-relevant skills necessary for the digital and green transitions, emphasizing lifelong learning. It establishes a process for blending current VET programs with upskilling and reskilling opportunities, guided by skills intelligence. The objective is to support VET providers in narrowing the emerging skills gap in Europe’s construction industry by offering a step-by-step guide to identifying deficiencies and improving their courses to include the competences and skills needed for emerging technologies



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and sustainable practices. These skills, categorized for each occupation at specific EQF levels in T2.1, are aligned with the VET quality assurance processes outlined in T2.2. The work aims to assist VET providers in addressing the emerging skills gap in the European construction sector by providing them with a step-by-step method to identify gaps and provide recommendations to enhance their courses with the skills and competences required by the construction industry to deal with emerging technologies and sustainable practices, for the green and digital transition. These skills and competences are catalogued for each occupation at the designated EQF levels in T2.1 and adhere to the established quality assurance processes for vocational education and training (VET) as outlined in T2.2.

The methodology utilizes a combination of a self-assessment questionnaire to assess what the VET provider has in place, a custom skills-gap identification report that will answer the question of what the course needs to have in order to be considered enriched, and suggestions for the enrichment of the courses via provision of guidelines, checklists and signposting to best practices for course enrichment, taking into consideration course content as well as teaching and assessment methods. The implementation of this methodology will be supported by a digital platform which incorporates all the above-mentioned procedures and has been developed specifically for BSA. Throughout this process, AUEB has engaged with a diverse array of stakeholders from the skills and industrial ecosystems as well as other project partners to provide critical insights through a series of two virtual roundtables and 6 country roundtables which have fostered dialogue and have validated the methodology.

1.2 The Construction Sector and VET Education

Construction is one of the most important sectors of the European economy. Construction workers account for around 4 per cent of all employment in the EU. These workers form the core of the construction sector's workforce and are vital to the achievement of the European Green Deal's ambitions for the development and maintenance of Europe's built environment in all construction phases, from demolition, construction, renovation, and maintenance of buildings in residential and non-residential construction sites, as well as in the construction of large infrastructure projects. Occupations in construction vary from house builders, bricklayers, concrete placers, roofers, insulation workers, glaziers, plumbers, and painters.

Around 7.6 million people were employed as construction workers in 2022 (4 per cent of total EU



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employment). By 2035, the employment of construction workers is expected to grow by some 90 thousand. In terms of their demographics, the majority are men (in 2021, only 2 per cent of construction workers were women). Although the employment of construction workers is projected to remain stable between 2022 and 2035, an estimated 4.2 million job openings will need to be filled, mainly because of retirement. However, there is an issue of whether these new people will be adequately trained to meet the level of employment demand not only in terms of attracting new people but also in their ability to take-up of new technologies such as automation and the use of industrialized construction methods such as prefabrication. Currently, nearly two thirds of construction workers (60 per cent) have attained an education level (upper secondary education and post-secondary (non-tertiary) education) of ISCED 3 and 4 in 2021. However, as the measures in the European Green Deal are being implemented, this will also affect the skills required of construction workers since there will be changes in the buildings are designed and constructed.¹

The demand for jobs and skills worldwide is shaped by the constantly evolving labor market which fluctuates according to the global economy, changing business models and unexpected disruptions, such as the COVID-19 pandemic or the outbreak of wars. Vocational education and training (VET) aim to provide learners with the essential skills that will enhance their employability while boosting enterprise performance, competitiveness, and innovation. VET systems in Europe are supported by well-developed networks of stakeholders including employers, trade unions, and various organizational bodies like chambers and committees. Initial Vocational Education and Training (I-VET) is typically offered at the upper secondary and post-secondary levels, I-VET can be school-based or work-based, involving training centers and companies. On average, 50% of young Europeans aged 15-19 participate in I-VET. Continuing VET (C-VET) aims at upgrading knowledge and skills after initial education or the start of working life, C-VET is primarily work-based and focuses on further personal and professional development. ²The EU has set a target for at least 60% of recent VET graduates to experience work-based learning by 2025. European cooperation on VET has evolved through initiatives like the Copenhagen process, the Bruges Communiqué, and the Riga Conclusions, aiming to make VET agile, adaptable to labor market

¹ <https://www.cedefop.europa.eu/en/data-insights/construction-workers-skills-opportunities-and-challenges-2023-update>

² <https://www.cedefop.europa.eu/en/themes/skills-changing-societies>



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needs, and of high quality. The 2020 Council Recommendation on VET seeks to make VET systems more flexible, increase opportunities for work-based learning, and improve quality assurance through updated frameworks like EQAVET. Funding for VET includes substantial support from Erasmus+ and the European Social Fund Plus (ESF+), which focus on enhancing skills and addressing current labor market challenges. The European Education Area strategic framework also supports VET, particularly in relation to the green transition and environmental sustainability, promoting exchange of best practices and mutual learning among Member States. As sectors and job roles evolve, the requirements of employers and the expectations placed on employees also shift. Vocational education and training (VET) are crucial in equipping individuals with the necessary skills to address socio-economic challenges and succeed both personally and professionally. VET offers young people a direct route into the labor market from compulsory education, while also providing adults with opportunities to gain new skills required to navigate the changing employment landscape.

The European Union (EU) has consistently been at the forefront of advocating for and investing in VET. The 2020 Council Recommendation on VET for sustainable competitiveness, social fairness, and resilience articulates the EU's detailed strategy for VET's future, aiming to establish it as a high-quality, appealing choice for all learners. Although the European Commission initiates numerous policy measures, support tools, and funding opportunities at the EU level, the actual implementation of necessary reforms is up to the Member States. These states have embraced and pledged to specific measures through the Osnabrück Declaration. The VET providers stand at the forefront of executing these reforms which will propel us toward our shared goals for VET in Europe and the BSA methodology has been developed to assist them in this task within the construction sector.

1.3 Concept of the Build Enriched Skills Methodology (BESM)

The purpose of developing the Build Enriched Skills methodology (BESM) is to assist VET providers to address the emerging skills gap in the European construction sector by providing them with the step-by-step method to enhance their courses with the skills and competences required by the construction workers to deal with the emerging technologies and sustainable



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practices, for the green and digital transition.

The Build Enriched Skills methodology is based on the necessary Green and Digital Skills as set out in D2.1 matrix. The matrix presents a comprehensive list of skills and competences for each occupation and the respective EQF level, outlining key areas, occupations, skills, and knowledge for development, setting a collaborative foundation for advancing the industry's workforce capabilities. Quality Assurance descriptors and indicators have been identified to ensure BESM compliance with EQAVET standards (see D2.2).

Building on these two deliverables, the Build Enriched Skills methodology will provide a framework that VET providers can adopt in order to enrich their courses. The BESM is implemented in 3 steps (see Figure 1), each one answering a specific question which VET providers must ask themselves regarding green and digital skills required for the twin transition in the construction sector:

STEP 1: Self-Assessment – What do I have?

STEP 2: Custom Gap Identification Report – What do I need?

STEP 3: Enrichment – What do I do to bridge these gaps?

These 3 steps will be carried out within a digital platform that supports the implementation of the BESM. Step 1 will involve self-assessment conducted via a Questionnaire which has been pilot tested with 12 VET courses, 6 existing and 6 new ones to be developed, and modified accordingly after a first round of internal feedback and the first roundtable. Step 2 will carry out a comparative gap analysis between existing skills and required skills to identify the missing skills and will generate a Custom Generated Report that shows what the course needs to be considered enriched. Finally, Step 3, the enrichment step, will link the problems to the solutions by providing guidelines, checklists and signposting to best practices for improving content (green and digital skills), teaching methods, assessment and evaluation.



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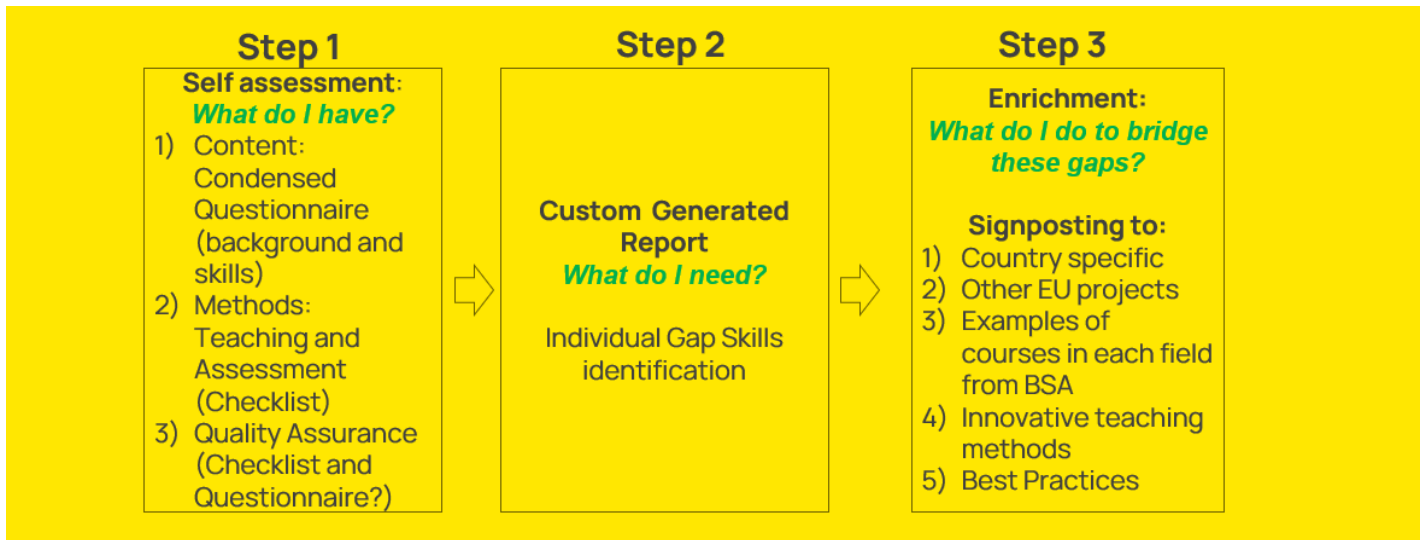


Figure 1: 3-Step process of BESM Implementation

Following the process described above, the BESM serves as a tool that can not only be used to enrich existing courses, but also support the development of new courses. As part of the process of developing this methodology, the project will pilot the implementation of the process to enrich 6 existing courses and develop 6 new courses. This process will be done together with VET providers, partners of the consortium in 6 different countries:

Existing Courses:

- 1) Work Safety in Construction, EQF 3 (APRC, Lithuania)
- 2) Circular Waste Management, EQF 4 (CETEOR, Bosnia & Herzegovina)
- 3) Construction Technology, EQF 4 (CQ, Bulgaria)
- 4) Energy Efficient Installation in Buildings, EQF 4 (APRC, Lithuania)
- 5) Energy Management for Buildings, EQF 4 (CETEOR, Bosnia & Herzegovina)
- 6) Build Liveable Urban Environment, EQF 5 (SFC, Italy)



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New courses:

- 1) Smart, Resilient & Circular Cities, EQF 5 (SFC, Italy)
- 2) Bio-inspired innovation and design for sustainable engineering solutions EQF 6 (CUT, Cyprus)
- 3) Circular Economy and Waste Management, EQF 6 (AUEB, Greece)
- 4) Risk and Reliability in Health and Safety, EQF 6 (CUT, Cyprus)
- 5) Building Information Modelling, EQF 7 (CQ, Bulgaria)
- 6) Digitalization and Sustainable Development, EQF 7 (AUEB, Greece)



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2. Methodology

This section describes the process undertaken in T2.3 to develop the BSA methodology. It covers a brief description of the Matrix of Skills (D2.1) and Quality Assurance (D2.2) and how they are incorporated into the Methodology (Section 2.1.1 and 2.1.2). Subsequently, section 2.2 describes the development of the Build Enriched Skills methodology (BESM), providing a detailed description of the Self-assessment questionnaire, the Skills Gap identification and the Enrichment process and the BESM Digital platform. Section 2.3 describes the co creation and stakeholder input via 2 virtual roundtables and 6 country roundtables conducted in: Bulgaria, Italy, Cyprus, Greece, Lithuania and Bosnia and Herzegovina.

A step-by-step guide on implementing the methodology is contained in the BESM Handbook (see Appendix 1).

2.1 Incorporating the Matrix of Skills, Competences and Occupations (D2.1) and Quality Assurance (D2.2)

The Build Enriched Skills methodology builds on previous work carried out within T2.1 Development of matrix of transitional skills and competences and T2.2 EQAVET Compliance, as described within Deliverable 2.1 (List of skills and competences for different occupations and EQF levels in the construction sector) and Deliverable 2.2 (Process for quality assurance of enriched VET courses) respectively. The first step towards developing the methodology involved the development of an understanding of the skills and competencies matrix developed in T2.1 and identifying a means by which VET providers could utilize its contents in the review of their own courses' skills and competencies.

2.1.1 Green and Digital Skills and Competencies

For D2.1, the objective was to create a list of Skills and Competences for different Occupations and EQF Levels in the Construction Sector, define transitional skills in the construction sector and establish criteria for industry reskilling and upskilling, alongside advocating for standardized certification. Through a review of the literature and EU policies to identify critical issues and



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current/future trends in construction, followed by the integration of insights from similar EU projects (e.g., BluePrint in Construction, BUS-GoCircular, PROF/TRAC), eight topical areas which were subsequently narrowed down to five critical topical areas and transitional areas were identified and subsequently, survey feedback and national policies from member countries were used to confirm the relevance of the identified areas. The analysis of occupations was guided by the ESCO taxonomy, which provides a structured EU framework for jobs and skills. The identified occupations were validated against workforce needs and national policies and this resulted in the identification of 38 occupations, grouped according to the sector and the building lifecycle phases.

The five Topical Areas for the construction sector as defined by the BuildSkills Academy (D2.1) are the following:

- 1) Net Zero Carbon Emissions: Achieving climate neutrality in the construction sector through energy-efficient practices and building refurbishment, 178 skills were identified for transformation.
- 2) Climate Resilience and Adaptation: Preparing construction projects to maintain and adapt to changing environmental conditions, including extreme weather events and resource scarcity in the context of climate change mitigation and adaptation; 110 skills for transformation.
- 3) Circular Economy Practices: Implementation of circular economy practices, considering new design and engineering methods as well as material flow and waste management; 129 skills for transformation.
- 4) Sustainable Materials and Sourcing: Utilizing sustainable materials and digital technologies to support the transition and promoting sustainability and responsible procurement; 97 skills for transformation.
- 5) Occupant Health and Well-being: Ensure that building practices prioritize the health, safety and wellbeing of occupants through better indoor air quality, daylight and ergonomic design; 104 skills for transformation.



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1. Topical Areas

Overview of the topical and transitional areas

1		2		3		4		5	
Climate Resilience and Adaptation		Net-Zero Carbon Emissions		Circular Economy Practices		Sustainable materials and sourcing		Occupant Health and Well-being	
1.1	Sustainable Site Design and Adaptive Infrastructure	2.1	Energy-efficient building design and technologies	3.1	Building renovation and retrofitting expertise	4.1	Circular Economy Implementation	5.1	Health and Safety in Green Construction & Health and Safety Protocols
1.2	Material Selection for Resilience	2.2	Renewable Energy Technologies and Systems Integration	3.2	Circular economy principles and practices in construction	4.2	Digital Material Databases	5.2	Inclusivity and Accessibility
1.3	Climate Risk Assessment	2.3	Environmental Impact Assessment	3.3	Design for Deconstruction	4.3	Green Label Certification	5.3	Indoor Environmental Quality (IEQ) Management
1.4	Water Management	2.4	Smart Building Technologies	3.4	Material flow management and waste reduction techniques	4.4	Sustainable and digital Procurement	5.4	Occupant-Centric Design, engagement and Evaluation
1.5	Ecosystem Integration	2.5	General Environmental awareness, CO2 calculation and embedded carbon in the construction sector			4.5	Supply Chain Management	5.5	Sustainable Interior Design
1.6	Climate-Responsive Design			3.5	Materials Assessment and Selection	4.6	Materials Assessment and Selection		
1.7	Legal and financial aspects of climate resilience								
T1		T1	Life Cycle Assessment (LCA)	T1	Life Cycle Assessment (LCA)	T1	Life Cycle Assessment (LCA)	T1	
T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)
T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis

Legend

■ prioritised area via survey

■ not prioritised area via survey

Figure 2: Overview of the Topical and Transitional areas (D2.1)

Following this, T2.1 grouped the ESCO Occupations according to the Building Life Cycle and subsequently 38 were identified for the construction sector. The top 6 occupations addressed were Engineers, Sorters, Civil Engineers, Architects, Building structure cleaners and Construction supervisors.

The resulting database expanded the ESCO database by adding specific skills, knowledge, and competencies for various topical areas and subareas. An analysis of new skills per topical area showed that the Topical Area Net-Zero Emissions showed the least new skills, knowledge and competences, whereas the area of Circular Economy Practices presented more new skills, knowledge and competences proportionally.

Transitional areas were included across all topical areas, integrating key subareas crucial for enabling green and digital transitions. Life Cycle Assessment is the subarea integrating more new skills, knowledge and competences. Collaboration and Project Management was the only subarea presenting only existing skills, knowledge and competences, stressing, however, the



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importance of integrating soft skills.

2.1.2 EQAVET Compliance

The EQAVET approach for the BESM aims to support anticipating skill needs in the construction industry, facilitating collaborative design, and fostering active participation in the feedback loop among stakeholders—including educational institutions, enterprises in the building sector, and suppliers supporting building innovation—all within the context of the development framework of VET in Europe.

In addition, ensuring growth opportunities for both individuals and businesses, enabling the enhancement of individual learning and the update of emerging skills, as well as fostering competitiveness development for the sector.

Finally, it aims to increase the quality of VET system for the construction sector in Europe updating the training offer in line with technological advancements and aligning with the challenges of the EU Green Deal and New European Bauhaus.

The EQAVET identified for BSA through a questionnaire answered by all partners and not only VET providers resulted in identifying as strengths the Indicators: Indicator 10 (Shared emphasis on access and guidance), Indicator 9 (attention to training needs identification) and Indicator 12 (Investment to human capital), whereas the weakest indicators were 13, 14 (Balancing participation and completion rates) and 17 (addressing vulnerable groups).

2.2 Theoretical Framework for developing the Build Enriched Skills Methodology (BESM):

The motivation behind choosing specific sectors for improvement in the VET education system was grounded both on the demands of the proposal of the BSA project but was also based on a solid theoretical foundation deriving from desk research, EU reports and stakeholder consultations.

Cedefop (European Centre for the Development of Vocational Training) in its report on European Year of Skills 2023, on Upscaling VET and adult learning, emphasizes that over the past two decades, and more recently, in response to the 2020 Council Recommendation on VET and the



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Osnabrück Declaration, European countries have placed their focus on VET education for equipping people with the right skills for the modern changing economy and society and ensuring that people's skills, and have developed national implementation plans to make their VET more attractive, inclusive, innovative, agile and flexible. All VET stakeholders are hence called to integrate green and digital skills in their curricula in order to meet the challenge of the twin transition.

Vocational Education Training systems, responding to the fast-changing world, are called to expand their outreach and cater for different learning needs and styles. Cedefop highlights that "VET systems must adapt to the new realities of work and learning, providing more flexible, accessible, and modular learning pathways" (Cedefop, 2020). VET providers need to adapt, modernize and diversify their learning materials and curricula to make learning more flexible to cater for students of various backgrounds and learning needs, be age-neutral, learner-centered and gender inclusive. OECD (2019) also discusses the need for VET systems to be more inclusive across age and gender, learner-centered hence advocating for tailored education solutions that cater to the learner's individual needs, and responsive to diverse student backgrounds.

European Commission (2020) in its reports on the modernization of VET, stresses the importance of VET providers to modularize the provision of their courses while validating professional experience to empower people to improve their skills and to engage in work, learning, and society and improve flexibility and inclusivity in vocational training.

UNESCO and Cedefop emphasize on reports new assessment methods which are being developed, shifting towards more individualized, locally adapted, inclusive and flexible assessment methods, expanding at higher EQF levels striving to make VET education more attractive for people by validating informal learning experiences and recognizing prior learning.

The emerging modernized VET requires VET teachers continuing professional development to help empower them as change agents supporting young people's social inclusion, employability and participation in lifelong learning. European Training Foundation (ETF) emphasizes the critical role of continuous professional development for VET educators.

Hence, the sectors for improvement have been identified as being the inclusion of green and digital skills in the curriculum, the making of the VET more attractive, inclusive, innovative, agile and flexible, being age-neutral, learner-centered and gender inclusive, modernizing the teaching methods and materials, employing new assessment methods and emphasizing teachers' continuous professional development.



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For the development of the methodology, we examined established methodologies from EU projects such as Construction Blueprint and BuildUp Skills which emphasize the need for upskilling and reskilling with green and digital skills for energy efficiency, digitalization and sustainable practices (CEDEFOP 2023, BUILDUP 2023). Several European projects have developed methodologies for upskilling and reskilling in the construction sector. Construction Blueprint brought together industry stakeholders, educational institutions and vocational training providers to address skill gaps in the construction industry in the areas of energy efficiency, circular economy and digitalization and has highlighted the discrepancy between current skills provided in education and future demands for workers in the construction sector.

The BuildUp Skills initiative, launched in 2011 as part of the Intelligent Energy Europe (IEE) program, is a European project aimed at improving the skills of construction workers to meet the demands of the green transition and energy efficiency in the building sector. Unlike the Buildup Skills which only focuses in the energy efficiency, BESM focuses on 5 topical areas, energy efficiency being one of them (D2.1). BuildUp Skills includes the design and implementation of specific training programs and materials to upskill construction workers in areas such as insulation, energy-efficient installations, and the use of renewable energy technologies in buildings. The initiative involves close collaboration with industry stakeholders, including public authorities, training providers, industry associations, and companies, to ensure that training programs are aligned with the needs of the sector and labor market. BESM foresees an extensive stakeholder involvement through virtual and country roundtables. Additionally, The BuildUp Skills initiative primarily targets blue-collar workers in the construction sector, such as installers, electricians, plumbers, and other manual laborers, whereas BESM is targeting 38 occupations include white-collar workers such as architects and engineers. Although BESM does not employ a needs analysis of each participant country, it has performed national policy analysis (D2.1) and stakeholder consultations including public authorities, training bodies and industry representatives. Regarding the sectors the BESM is focusing on, they are derived from CEDEFOP and OECD reports on VET education and use a collaborative approach with vocational providers. Continuous monitoring is conducted to evaluate the effectiveness of the upskilled training programs, through the self-assessment mode that was chosen (Self-assessment questionnaire and Quality assurance questionnaire). The project incorporates and proposes innovative teaching methods. BESM, through the self-assessment and the enrichment process, incorporates innovative teaching methods such as a blended learning approach, combining face-to-face training with digital learning tools such as online courses and simulations, including the



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use of technologies like AR/VR (Augmented Reality/Virtual Reality) to simulate real-world construction scenarios, problem-based learning approaches, allowing workers to engage with real-life construction challenges while developing their skills. In conclusion, the BuildUp Skills initiative uses a comprehensive and adaptable methodology from which BESM has taken some aspects, to ensure vocational education and training programs meet the evolving needs of the construction sector.

BESM is based on the work described in section 2.1, from which two conclusions were drawn for BESM:

- a) Regarding T2.1, for the purposes of T2.3, the matrix developed needed to be presented in a form that VET providers could easily digest and subsequently use to assess the green and digital skills in their offered courses. It was judged that this endeavor could only be implemented with digital assistance and hence the proposal to develop a digital tool as presented later in this section.
- b) Regarding T2.2, a questionnaire was required to obtain data from VET providers on their course in order to establish a baseline for enrichment. Consequently, two questionnaires were developed for self-assessment of VET providers to assess the Quality Assurance indicators and process they follow in developing their courses. In the context of T2.3 and after consulting with the consortium during the General Coordination meeting in Athens, it was decided to use the Checklist (see Appendix 1C) as part of the self-assessment within the digital platform and leave the longer form of the questionnaire as a reference point should the VET providers using the BESM to consult since no KPIs are provided. (see Appendix 1E).

As such, in developing the BESM, the team mapped the 5 topical areas identified in D2.1 which differed from the topical areas as suggested in the Grant Agreement and matched them according to the subtopics in order to identify with the highest precision how they could be translated. The results are presented in detail in Appendix 1B and are summarized as follows:

Table 1: Mapping of Topical Areas



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Topical Areas in D2.1	Topical Areas in GA
Climate Resilience and Adaptation	Design and Engineering
Net-Zero Carbon Emissions	Energy Efficiency
Circular Economy Practices	Circular Waste Management
Sustainable Materials and Sourcing	New Building Materials
Occupant Health and Well-being	Environment Health and Safety

Following this, the team proceeded to develop the 3 main components of the methodology as described in the following sections. These are:

- i) A Self-assessment Questionnaire
- ii) Skills-Gap identification
- iii) Enrichment Process

2.2.1 Self-assessment Questionnaire

2.2.1.1 Rationale

The aim of this questionnaire was to gather comprehensive information about courses to be enriched, including their syllabi, teaching methods, learning outcomes, and assessment strategies. The process of developing a research tool to gather detailed information about courses was a strategic step in Task 2.3 which simultaneously provided an in-depth understanding of the current educational framework for vocational education and training (VET) providers within the BuildSkills Academy project. The questionnaire results will provide a basis for understanding the current state of courses to be enriched, in order to examine where and how these transitional skills are being addressed or overlooked, and how to potentially enhance the course in this regard. The enhancement will focus on integrating the necessary green and digital skills and relevant teaching methods, incorporating technology, while focusing on interdisciplinarity, emphasis on practical skills and real-world applications.



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2.2.1.2 Development of the Questionnaire

The first step in developing the questionnaire was to define its goals and objectives, i.e. to collect relevant information in order to assess the content (skills) and the methods (teaching and assessment) of the course to be enriched using the BESM. Subsequently, a literature review was conducted to develop the sections and questions of the questionnaire, ensuring that the questions included were relevant and focused and grounded in established research (Scribbr, 2011). One significant aspect of the questionnaire was to examine teaching methods and assessment methods used by the VET providers in delivering their courses. Research in educational theories has provided evidence that there is a shift from traditional teacher-centered approaches to student-centered learning which is more active, and students build upon their existing knowledge through practical application (Bruner, 1966; Piaget, 1971). Student-centered learning which shifts the focus from the teacher as the center of knowledge to the student's needs, abilities, and interests has been shown to be more effective, leading to better retention of knowledge and application of it when requested (Hartikainen et al., 2019) which is of special importance in the VET education since it emphasizes critical thinking, collaboration, and communication, all of which are essential skills for success in vocational education and work. Active learning, which requires students to participate actively in their learning procedure, involves project-based learning and problem-based learning and collaborative learning which are highly effective in vocational settings (Gordon et al., 2022). Project-Based Learning (PBL), involving students to work in real-world projects, and collaborative learning which involves students collaborating to solve problems are two methods vital for the workplace which should be widely used in VET education and questions were formulated in the questionnaire to assess that these methods are incorporated into the curriculum. To promote the integration of digital skills while also addressing different learning styles, blended learning is a method which combines classroom teaching with digital media such as augmented reality (AR) and should be addressed in the questionnaire supporting the need for digital competence in VET education (Dede, 2009). The need for curriculum content in VET education to align with industry needs, competency-based education (CBE) is well documented (Le, Wolfe, & Steinberg, 2014) and is addressed in the questionnaire in the section of topics and subtopics but also in the section of relationship of content development to market needs and industry collaborations as it has been documented that the involvement of industry stakeholders in curriculum development provides assurance that the skills taught are the ones in demand and up to date.



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(Billet, 2010) and that regular updates as markets change or at the request of employers are essential (Bosch & Charest, 2010). In terms of assessment, formative assessment which provides immediate feedback on students' retention and assessment of skills application in real world scenarios are both addressed in the assessment related questions (Black & William, 1998; Wiggins, 1990). Finally, gender equity in VET education is a critical issue that has been addressed through inclusive pedagogies that ensure equal gender representation (UNESCO, 2015).

The BSA project guided questions in the Questionnaire that were related to skills needs and curriculum integration such as "Does your course curriculum include training on energy efficiency, circular economy practices, and digitalization? If yes, please specify the modules included".

"How frequently is your course curriculum updated to incorporate the latest industry standards and technologies, particularly in the areas of green and digital skills?"; "What teaching methods do you use to integrate digital tools and sustainability practices in your courses? (e.g., Project-Based Learning, Blended Learning, Use of BIM and other digital tools)."; "Do you collaborate with industry stakeholders to ensure that your training programs meet current and future skill demands "as well as questions related to teaching methods.

The self-assessment questionnaire was initially broken into 10 sections, namely:

- Background Information (which included questions on the VET provider, the program, the qualification level of the program and the profile of the students)
- Course details (name of the course, topic and subtopics it covers related to the ones identified in the D2,1 matrix, EQF level, and whether it is new or existing)
- Course Structure (number of students enrolled, practical and theoretical delivery, details on the practical component such as apprenticeships,
- Syllabus of the course and checklist with course framework elements,)
- Course format (in terms of duration, topics, learning outcomes, teaching methods, materials and resources used)
- Quality assurance implemented
- Certification provided
- Occupational Alignment and Market Needs, Industry Alignment,
- Skill relevance and gaps (green and digital skills present in the course,

- Emerging skills and Challenges in updating the VET courses with the green and digital skills.

To test the efficacy of the questionnaire as a self-assessment tool, it was piloted with project partners who were involved in the 12 courses specified in our proposal. Google forms was decided as the means of administering the questionnaire at this pilot stage, in the form of an online survey to test and refine the instrument (Appendix 2). Feedback was received from all partners and the questionnaire was subsequently revised to make it more effective.

As a follow up activity, we organized individual calls with partners after the initial questionnaire responses were collected. These discussions focused on clarifying any issues, addressing queries, and exploring ideas in depth. These conversations were focused and productive, leveraging the insights gained from the questionnaire responses. We encouraged all partners to engage actively in this process, regardless of their current involvement in the specified courses. All ideas for new courses or improvements to existing ones were welcomed. This approach ensured diverse perspectives and innovative contributions to the BESM.

Based on the recommendations for improvement, questions and requests deemed redundant (e.g. uploading of the syllabi) were removed. In addition, the identification of green and digital skills within the course was considered a difficult task to perform manually without the assistance of a digital tool. Additionally, there was confusion as to what the terms 'green' and 'digital' referred to although a link to ESCO identification was provided. The revised version of the questionnaire was reduced to 4 sections, namely:

- Background information on the VET provider, the program and the course entrance criteria, duration, structure
- Course content (Topics and subtopics from D2.1)
- Course Format (teaching methods, materials and assessment)
- Occupational Alignment (industry collaborations and updates)

Overall, the revised version reflected better the required information that a self-assessment tool would need to contain within the digital platform. The final version of the questionnaire is presented in Appendix 1A). The revised version would only require 10-15 minutes to complete, which was a vast reduction in comparison to the 90 minutes required by the original questionnaire.



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2.2.2 Skills-Gap Identification

Following the completion of the questionnaire it will be possible to identify the content (skills)³ and methods (teaching methods, materials and assessment) via which the course is delivered (*What do I have?*) so that this can be compared to the matrix (D2.1). This analysis will be automated and conducted within the digital tool, highlighting the gap between what the course currently covers in terms of green and digital skills and what it needs to have based on T2.1 matrix. This will generate the custom gap identification report which will clearly display the skill gaps in the course's content and teaching methods (*What do I need?*).

An auto-generated report will be made available after every self-assessment process. The purpose of the report is twofold: It will collect and present all the background information as this is provided by the user when filling in the form wizard and on the other hand it will guide the user towards highlighting things that are missing, suggesting additional occupations and providing relevant material based on the specific course's characteristics that could be used for improving the content of the course offline.

The additional information will include:

- Highlighting the skills that are not covered by the course, but they should be covered based on the target occupation.
- Suggestion of additional occupations to target based on the skills that are already covered by the existing course.
- Targeted material to consider based on the specific characteristics of the course.
- Highlight any inconsistency based on the course' EQF level and the project's suggested EQF level required for each occupation and topical area.

For example, the report will state that for the topical area A and occupation O you already cover these skills: 1.2.3, but you need to update the content to also cover the ones required below: 1,2.

There will then be suggestions for enrichment in the static content (see Handbook, Appendix 1D).

³ The ESCO skills pillar distinguishes between i) skill/competence concepts and ii) knowledge concepts by indicating the skill type. There is however no distinction between skills and competences. Each of these concepts comes with one preferred term and a number of non-preferred terms in each of the 28 ESCO languages.



Based on this, suggestions for improvement in these areas based on best practices recommendations will be provided as described in the following section 2.2.3.

2.2.3 Enrichment Process

It is envisaged that once VET providers have been able to identify what gaps exist within their courses as highlighted within the report, the next stage of the BESM involves providing recommendations as to different means and resources for enriching the courses with Green and Digital Skills, up to par teaching methods and quality assurance.

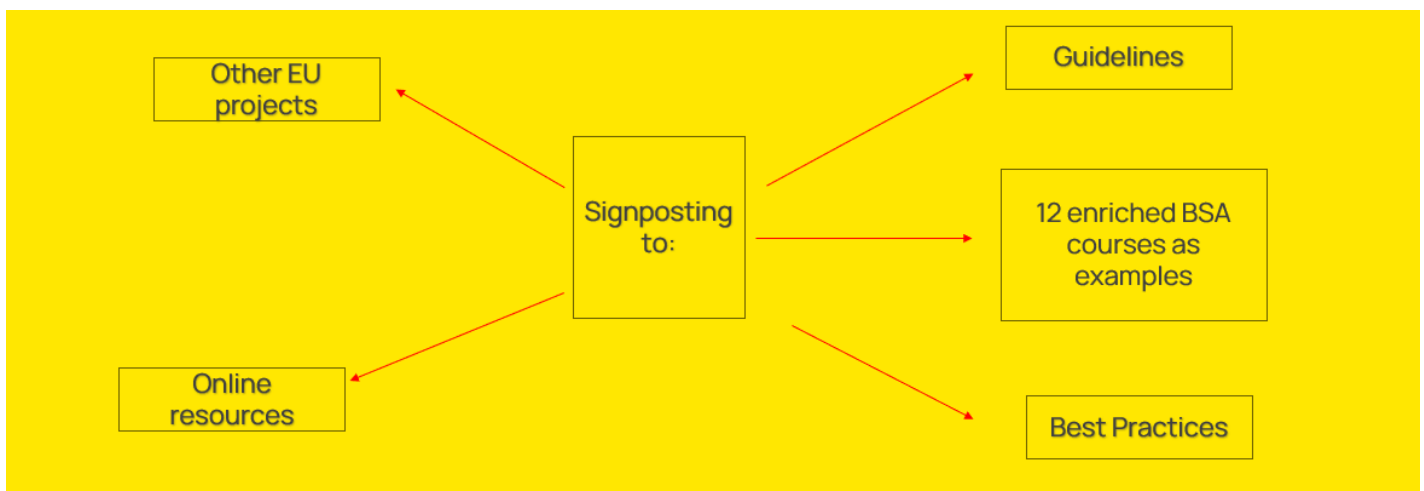


Figure 3: Example flow of the enrichment process

Drawing from a repository of other EU projects, the BESM provides VET providers with a checklist on Content (green and digital skills for upskilling and reskilling); Teaching and Assessment methods (best practice); Guidelines and Resources from best practice on how to integrate identified skills into the curriculum:

- European Qualifications Framework (EQF) Official Website: The EQF portal provides detailed descriptions of each EQF level, which can help you understand the expected learning outcomes and competencies. This understanding can guide the selection of



appropriate teaching methods for each level.

- European Centre for the Development of Vocational Training: Cedefop offers a wealth of publications, reports, and research papers on vocational education and training (VET), including best practices and innovative teaching methods for different EQF levels.
- Erasmus+ Program supports various projects focused on adult education, providing insights into effective teaching methods and strategies tailored for adult learners.

European Training Foundation (ETF) provides guidance and resources related to vocational training and lifelong learning in Europe, including teaching methodologies suitable for different levels.

The process will include signposting to:

1. The 12 enriched BSA pilot courses once they are enriched.
2. EU reports (OECD Skills Outlook 2023: Discusses the need for improved upskilling and reskilling opportunities, focusing on digital and green transitions (OECD, 2023).
3. CEDEFOP Reports: Highlight the role of VET in providing necessary skills for the green transition in European jobs (CEDEFOP, 2023)
4. EU projects related to construction (Appendix 1D)
5. Best practices (NCVER Good Practice Guide: Offers insights into incorporating digital skills into VET delivery and the implications for educators (NCVER, 2020). In order to populate the repository of best practices, an excel form was prepared and shared with all partners to source further input on resources that could support VET providers in enriching their courses ([Enrichment process Input.xlsx](#)).

2.2.4 Build Enriched Skills Methodology Digital Platform

2.2.4.1 Concept:

The large numbers of skills and competencies which required to be identified and analyzed during the self-assessment and gap identification, necessitated a computer-based tool to support the exercise which cannot be undertaken manually. As such, a digital platform was developed as a



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user-friendly means to support and streamline the implementation of the 3 main steps of the methodology as described above. The digital platform has been developed as a web application, targeting VET providers of the construction sector. It will be accessible online and will offer an intuitive and simple to use User Interface. The main objectives of the platform are to assist its potential users to identify skill gaps in their existing or future courses and improve their content and teaching methods.

The main functionality of the platform includes:

- A self-assessment step-by-step form wizard that guides the users to fill in a set of required information and dynamically generates a pdf personalized report including a skills gap analysis on green and digital skills missing, together with a structured set of information on the course characteristics, and the EQAVET indicators.
- A list of useful and state-of-the-art material and resources for the specific sector – specific to the recommendations for the enrichment of the courses.
- Static information about the relevant green and digital skills in the construction domain.

In a nutshell, the VET provider (user) will log in and firstly provide information including the name of the course. The users do not select a name since the platform is open to any user not to specific users with courses that we know in the BSA. The users then select the topical area and for each topical area they select the occupation they want to cover and for each of these selections we provide them with a list of relevant skills and ask them to select the ones that are already covered by their course. The occupation was selected as a more feasible analysis since 38 occupations were identified in the matrix as opposed to the hundreds of skills. By selecting the occupation, the user can then select the topical areas and for each topical area identify the course characteristics, the skills taught and the EQAVET indicators.

The figure below highlights the flow that the self-assessment form will follow:



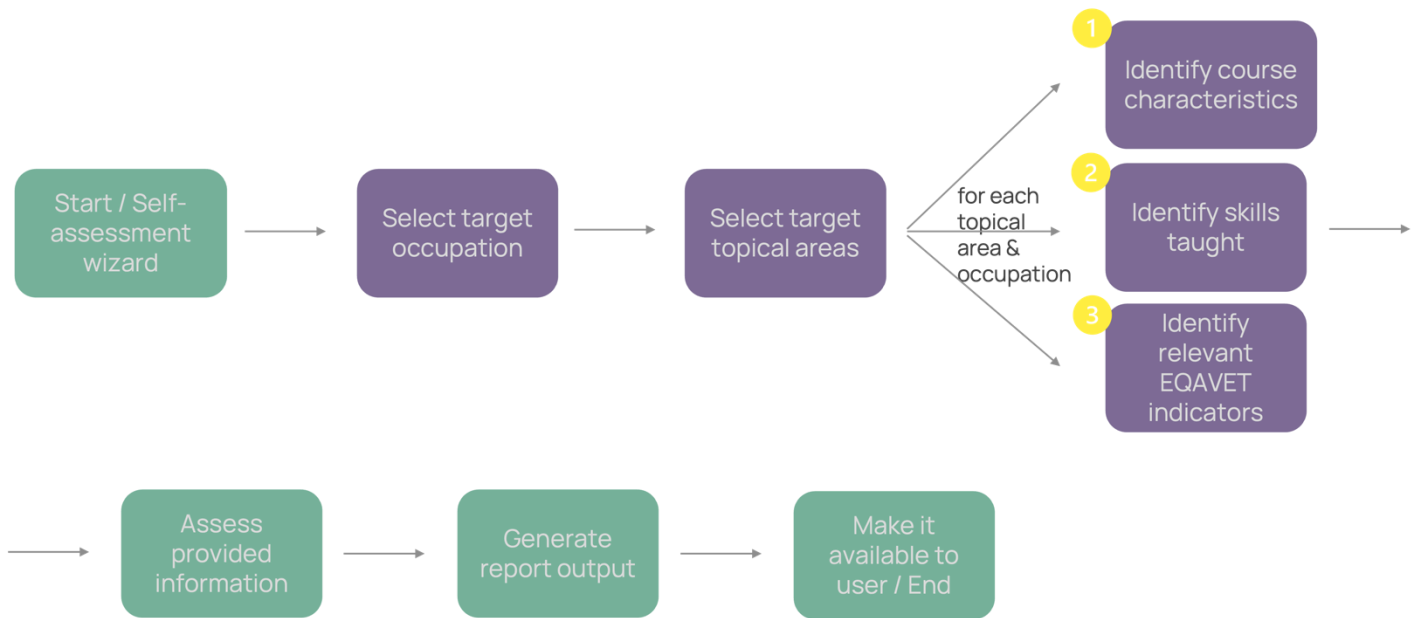


Figure 4: Example Flow in digital platform

The Digital platform has been finalized and is accessible through this link: <https://platform.buildskillsacademy.com/>.

The first page is the landing page where the user can log in and access previously entered information or start a new assessment. This provides the opportunity to VET centers to compare their current status to previously entered data. Following the self-assessment, the platform requests some background information on the course itself, and then the VET provider is asked to identify the skills covered in their course, the teaching methods, materials and assessment and once all the information is provided, a report is generated. In the platform there is also static content providing the user with other information on relevant EU projects and a Skills explorer. Demonstrations of the Digital platform have been shown during the two virtual Roundtables. Below are some screenshots of different areas:



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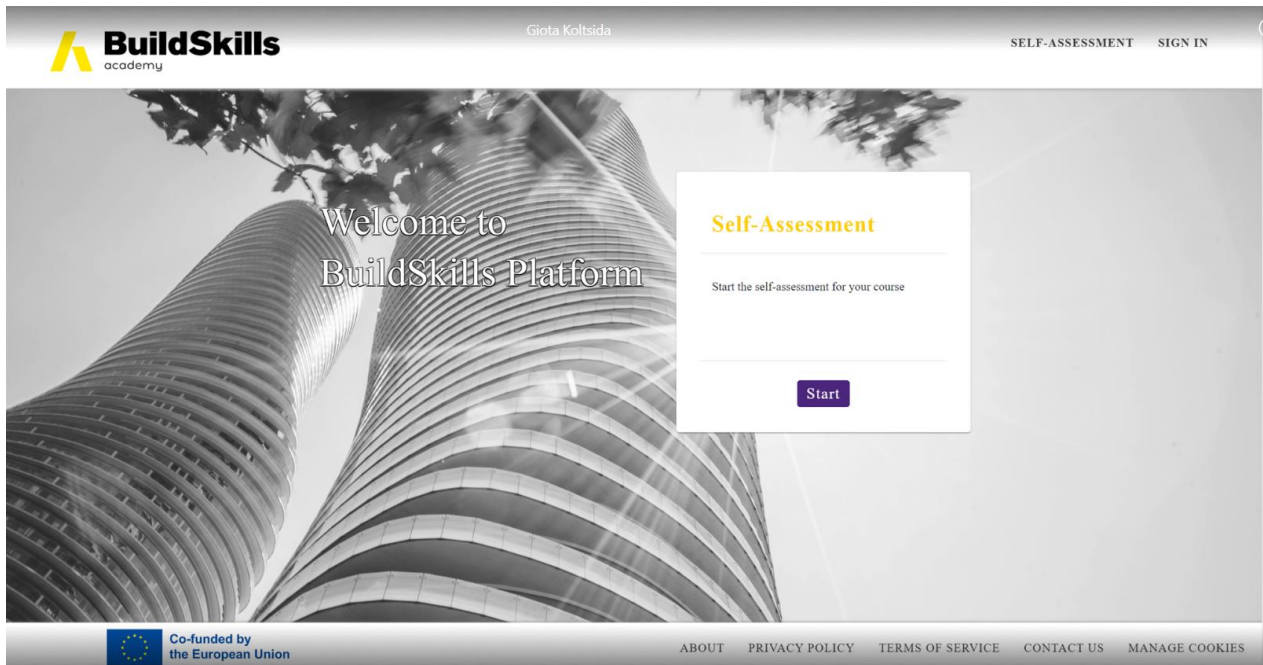


Figure 5: Landing page in the digital platform

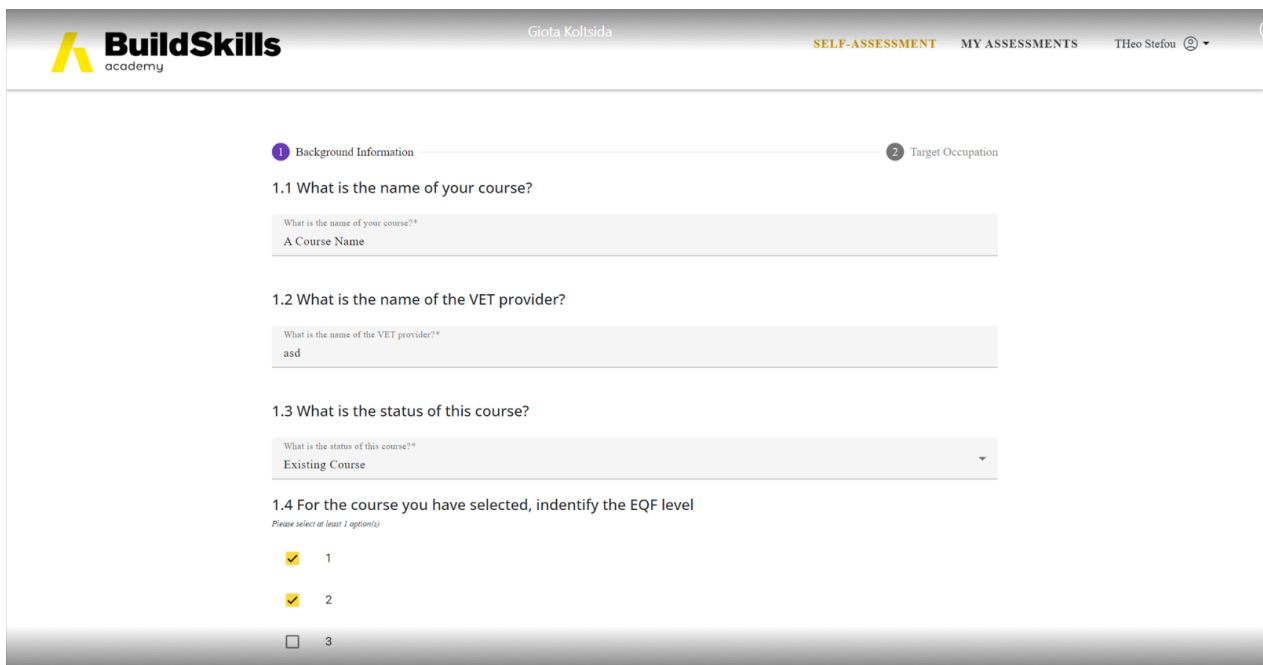


Figure 6: Background information Section in the digital platform



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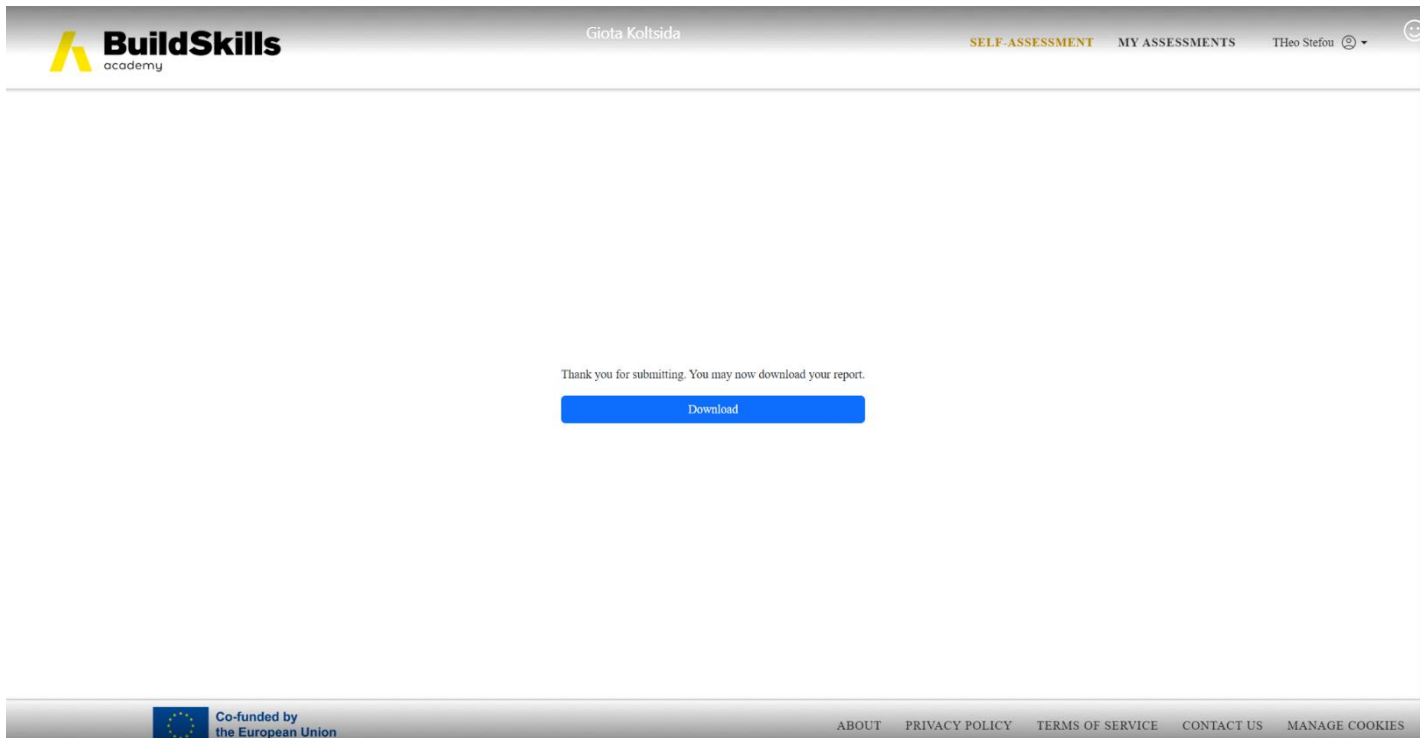


Figure 7: Submission page in the digital platform

2.3 Co-creation and Stakeholder Input

In addition to the input from project partners and the VET providers running 12 BSA courses through the pilot questionnaire as described in section 2.2.1, the process of developing the BESM was supported by the engagement of stakeholders and project partners who co-created and validated the methodology during 2 Virtual Roundtables.

Virtual Roundtable 1 provided feedback on the framework for the methodology of enrichment and the digital platform; while Roundtable 2 validated the developed enriched methodology and demonstrated a beta version of the digital platform.

After finalizing the current methodology, 6 country roundtables have been organized to solicit feedback on the BESM, with the main difference being that these roundtables targeted the participation of local stakeholders from the 6 countries where the pilot courses take place. The comments and recommendations sought during the events will be summarized and presented as part of D2.4 together with the feedback summary form the External Quality Assessment Panel –



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both summaries will show the results from the verification of the strategic fit of the BESM with current and emergent VET policies at EU level.

2.3.1 Virtual First Roundtable

2.3.1.1 Purpose

The First roundtable took place on May 28, 2024. The aim of the Virtual Roundtable 1 was to assess the framework of the BESM and the digital tool as presented by AUEB in connection with the development of D2.3. The participants were the members of the 5 Thematic Groups (T2.6), who were asked to validate the 12 enriched courses syllabi, and are engaged from this moment on to ensure a robust process. This is a long-run procedure which has already started from 2.3 and will be carried out through T2.6. They were presented with a synopsis of D2.1, D2.2 and D2.3 and materials to be discussed were sent beforehand.

2.3.1.2 Summary Feedback

The results of the questionnaire pilot testing were presented to the consortium and validated via the First virtual roundtable and the General Coordination meeting in Athens. The conclusions from the questionnaire pilot delivery were used to further modify it so that it could accordingly be incorporated within the digital platform. In addition, answers to the questions were used for the development of the platform itself: Here are concise summaries for each of the topics provided:

Topic 1: Overall Methodology

- Differentiate course offerings: Ensure ease of use and time efficiency.
- Curriculum alignment: Develop content that meets industry needs.
- Implementation guide: Provide a detailed playbook for execution.
- Industry terminology: Emphasize familiarity with sector-specific terms.
- Course delivery: Enhance methods to match user needs.
- Validation process: Address challenges with external accreditation.



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- Adaptability: Tailor methodology to different countries' regulations.
- Future-proof design: Integrate flexible, dynamic elements.
- ESCO & EQAVET: Recommend incorporating these frameworks.
- Trainer upskilling: Focus on green and digital skill areas.
- Pre-assessment training: Conduct sessions before self-assessment.
- Certification & micro-credentials: Use these for continuous updates.
- Industry involvement: Engage businesses in feedback loops.

Topic 2: Self-Assessment Questionnaire and Gap Identification

- Score updates: Determine methods to revise numerical assessments.
- Valorize alternative sources: Enhance skill updates.
- Certification schemes: Integrate these for validation.
- National perspectives: Ensure tool relevance across regulations.
- Industry input: Prioritize skill lists with business feedback.
- User-friendliness: Ensure quick, easy-to-use assessment tools.
- Progress tracking: Implement a registration system.

Topic 3: Digital Platform

- Personalized feedback: Ensure platform delivers tailored solutions.
- User-friendliness: Prioritize ease of use and modification.
- Occupational adaptability: Allow for new job roles and names.
- Skill awareness: Differentiate between current and emerging skills.
- Reporting & guidance: Provide post-assessment support.
- Cost-effectiveness: Ensure the platform is affordable.
- Content tools: Support curriculum improvement.
- Standalone design: Ensure the platform is adaptable and sustainable.
- Support features: Include live chat, FAQs, and checklists.



- Stakeholder collaboration: Maintain a feedback loop for updates.
- Content classification: Use attributes to align with national strategies.
- Quality assurance: Implement mechanisms like checklists.
- KPI benchmarks: Define clear performance indicators.
- Cost management: Address financial and logistical challenges.
- AI integration: Consider AI for enhanced user support

2.3.1.3 Main Challenges

One significant challenge for the VET providers to enrich their courses is the limited availability of resources and trained staff. Additionally, resistance from accreditation authorities poses a substantial barrier. The costs associated with implementing new methodologies and technologies also present a considerable challenge. There is a pressing need for appropriate infrastructure to support these new methodologies, without which their effective implementation may be compromised. Another concern is the potential disruption of core learning objectives, which must be carefully managed to ensure that the introduction of new methods does not detract from essential educational outcomes.

2.3.1.4 Stakeholders' Recommendations

It is crucial that the enrichment of courses with new skills does not disrupt core learning objectives. The active involvement of businesses and industry in the feedback loop is essential to ensure the relevance and applicability of the training. The methodology must be adaptable to the specific needs and regulatory environments of different countries. Utilizing existing certification schemes and micro-credentials can support continuous updates and validation of new skills.

Organizing roundtables before the self-assessment process is recommended to ensure clear understanding and accurate responses from participants. Establishing a repository of best practices can provide valuable insights and examples for VET providers. Additionally, classifying static content using attributes that help users identify relevant information and align it with national strategies or specific topics is suggested. This approach can enhance the usability and



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effectiveness of the resources provided.

Key “Take-outs” from Roundtable 1 with Thematic Group leaders on the next steps for enhancing vocational education and training (VET) programs highlight several critical actions:

- Establishing a quality assurance mechanism, whether through a checklist or questionnaire, is essential to maintain high standards.
- Defining benchmarks for key performance indicators (KPIs) will provide measurable goals and enable the tracking of progress.
- Providing supporting resources is necessary to aid VET providers in implementing new methodologies effectively.
- Addressing enrichment challenges, such as costs, curriculum disruption, regulatory compliance, certification, and localization, is vital for the successful implementation of new skills and methodologies.
- The platform should offer tailored feedback and support to meet the specific needs of users.
- The potential integration of an AI assistant is also recommended to enhance user experience and provide additional guidance.
- Defining benchmarks for key performance indicators (KPIs) will provide measurable goals and enable the tracking of progress.
- It is recommended to provide supporting resources to aid VET providers in implementing new methodologies effectively.
- Another important factor that arose was the cost of the implementation of changes, hence it is recommended that addressing this issue along with curriculum disruption, regulatory compliance, certification, and localization, is vital for the successful implementation of new skills and methodologies.

2.3.2 Virtual Second Roundtable

2.3.2.1 Purpose



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The Second Roundtable for Discussion on the BuildEnrichedSkills Methodology took place on the 24th of September 2024. The participants were the 5 Thematic Group (ThG) leaders and members who participated in the First Roundtable. The purpose of the Second Roundtable was to review once more the BESM which had incorporated the recommendations from the First Roundtable and to answer some specific questions which were provided to the ThG leaders beforehand. Afterwards, each ThG leader provided the answer to these questions and the recording of the group session and each ThG member sent their individual answers as well as the validation checklist after the completion of the Second Roundtable. The results are presented as follows.

2.3.2.2 Summary Feedback

The BuildEnrichedSkills Methodology (BESM) was well received across thematic groups, praising its structure for effectively integrating green and digital skills into vocational training. The methodology was rated as a practical, comprehensive approach for aligning VET programs with industry standards and sustainability goals. Participants appreciated the digital platform's user-friendly interface and its adaptable features, allowing for self-assessments and content updates. There was a shared emphasis across all thematic groups on industry aligned, hands-on training modules, adaptable learning methods, and the need for continuous professional development to keep pace with evolving skills demands from the industry.

2.3.2.3 Main Challenges

Challenges included the need for the methodology to accommodate national differences in VET systems, especially in course registration and regulation. Additionally, respondents stressed the need for more industry engagement to ensure BESM's relevance and applicability. Other challenges included integrating practical training modules, providing more accessible resources and testing the methodology in real world settings. The digital platform would need additional tutorials and multimedia content to support users with varying digital skills.

2.3.2.4 Stakeholders recommendations



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1. Practical Training: Increase hands-on, on-site training and case studies to prepare trainees for real world applications and evolving green and digital skills in construction.
2. Digital Platform Enhancements: Develop more multimedia content, including virtual simulations and mobile accessibility, to support interactive learning. Include clear, step by step guidelines for all platform features.
3. Continuous Professional Development: Create modular, adaptable training programs and CPD pathways for trainers to stay current with industry trends, particularly in sustainable construction.
4. Industry and VET Engagement: Foster stronger partnerships between VET providers and industry stakeholders to align training outcomes with market needs. Include more stakeholder input in the development and refinement of training modules.

3. Walk-through of BESM

This section provides an overview of the guidelines for the implementation of the BESM, with a full Handbook available in Appendix 1. The point of the walk-through summary is to quickly show what each step of the process entails from the perspective of the VET providers.

Step 1: Decide on the course you want to update (or create a new one)

Step 2: Identify the relevant skills and methods

Step 3: Complete the Quality Assurance Checklist

Step 4: Obtain the Individualized Assessment Report

Step 5: Receive recommendations on how to update/improve you course following the suggestions of the Report (Enrichment Signposting)

Step 6: Optional Self-assessment questionnaire for Quality Assurance

} Self-Assessment

3.1 Step 1: Decide on the course you wish to update



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The first step is for you (the VET provider) to decide which course you want to update. A list of topics and subtopics from D2.1 will be provided for you to get an idea of the topics you would be looking for. You could also identify emerging green and digital skills, an existing or a new course and identify with which occupation it is related and to which target group it is directed. Assess if it is part of a program, whether it is a module or a stand-alone LL training. Collect as much information as possible on all the aspects of the course. If it is a new course you want to develop, identify all the above parameters that you would aspire for the course to have. Collect all the information you have on the course (syllabus, content, teaching methods, skills it addresses, learning outcomes etc.).

3.2 Step 2: Identify the relevant skills and methods

Once you have decided on the course, log in to the digital platform and go through the provided questionnaire for self-assessment. This is a short questionnaire (it should take between 10-15' to complete). The first section is the Background information on the course which will allow you to reflect on the course you are providing in terms of content (skills) and methods of teaching and assessment. It provides clear terminology of the green and digital skills from the ESCO database and CEDEFOP. Explicit guidelines are provided for the completion of the self-assessment.

3.3 Step 3: Complete the Quality Assurance Checklist

The “Build Enriched Skills EQAVET compliance plan” implements a continuous improvement cycle that involves regular reviews and updates to the EQAVET compliance plan. It is another self-assessment tool which you can find within the digital platform, created to assist you to ensure that your institution remains responsive to changes in educational practices and EQAVET requirements. After you have identified the course you want to update, assess the relationship of your organization to your national EQAVET point how the BESM training activities are run according to the national quality criteria, if the EQAVET system for BESM is included in the management system of the VET provider, any changes to the quality system you have adopted (such as new certifications obtained, revision of BESM offer, etc.). You will be asked to fill in specific actions you carry out in the four different phases of Planning, Implementation, Evaluation and Review phases as well as your alignment to European qualifications frameworks, such as the European Qualifications Framework (EQF) and the European Skills, Competences, Qualifications,



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and Occupations (ESCO), the European strategic plan for development of individual and communities (i.e. Pact for Skills, New European Bauhaus, Digital Europe Programme, Next Generation EU, local cluster priorities, etc.), providing KPIs for every indicator your course or organization fulfills.

3.4 Step 4: Obtain the Individualized Assessment Report from the digital wizard

From the results of your self-assessment, a Custom Generated Report will be produced.

It will answer the question: What do I need to have? This report will identify the current shortcomings of your course in terms of green and digital skills. It will also highlight other occupations that may be relevant for the existing set of skills and competencies that the course currently includes with a percentage degree of relevance.

The sections will follow closely the self-assessment questionnaire sections (please refer to Appendix 1A)”

- Background information
- Course content
- Green skills
- Digital skills
- Teaching methods
- Teaching materials
- Assessment and evaluation
- Industry Alignment
- Quality Assurance Checklist

3.5 Step 5: Receive recommendations on how to update/improve your course following the suggestions of the Report (Signposting)

You will now be provided with suggestions pointing to the 12 enriched BSA courses, other similar EU projects, best practices, online resources and guidelines for enriching the content and the



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teaching and assessment methods of your course (please refer to relevant designated section in the Enrichment Process, Appendix 1D: Resources for Signposting).

3.6 Step 6: Optional Self-assessment Questionnaire for Quality Assurance

Before and after enhancing the course, as well as after the course has been operational for some time, you may utilize the Checklist in Appendix 4, provided by D2.2, to assess the quality assurance KPIs of the course you are offering. This is a self-assessment tool which references EQAVET for the BESM quality plan and relevant KPIs. Although it does not provide a KPI benchmark, it serves as an important tool for continuous quality improvement as it measures the effectiveness of VET courses by gathering information on course content, teaching methods, assessment strategies, and alignment with industry needs, green and digital skills, involvement of staff in quality planning, adoption of innovative teaching methods, and collaboration with industry stakeholders. By self-assessing via this questionnaire, VET providers can identify areas that need to be improved, making sure that their courses can meet the changing demands of the construction sector.

4. Conclusion and Next Steps

With construction being one of the most important sectors of the European economy, it is mandatory that workers are adequately trained to meet the demands of the new building environment in all its phases in order for the European Green Deal to succeed. Vocational training is at the forefront of educating these workers, either through upskilling or reskilling with the required green and digital skills to enhance their employability while boosting enterprise performance, competitiveness, and innovation. VET systems need to be more flexible, increase opportunities for work-based learning, and improve quality assurance through updated frameworks like EQAVET.

D2.3 Build Enriched Skills Methodology describes in detail the process through which the project partners devised the methodology to assist VET providers to address the emerging skills gap in



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the European construction sector by providing them with the step-by-step method to enhance their courses with the skills and competences required by the construction industry to deal with the emerging technologies and sustainable practices, for the green and digital transition. These skills and competences are catalogued for each occupation at the designated EQF levels in T2.1 and adhere to the established quality assurance processes for vocational education and training (VET) as outlined in T2.2.

The Build Enriched Skills methodology (BESM) is presented in this report in a twofold way: First, the methodological approach adopted in the design of the BSEM is presented before the BESM in itself as a step-by-step guide that guides VET providers which steps they should follow to enrich their courses. The report describes the process of developing different components of the BSEM (development of a self-assessment questionnaire, validation through virtual and country roundtables, need for digital platform and the steps of its creation) and subsequently the BESM for enrichment in steps from self-assessment questionnaires to the custom skills-gap identification report that will answer the question of what the course needs to have in order to be considered enriched, and suggestions for the enrichment of the courses via provision of guidelines, checklists and signposting to best practices for course enrichment which take into consideration course content as well as teaching and assessment methods. The implementation of this methodology will be supported by a digital platform which will incorporate all the above-mentioned procedures and will be developed specifically for BSA.

The task that follows, T2.4, involves the verification of the BESM by an External Quality Assessment Panel which is being set up and will comprise of 7 high-level policy making professionals and 7 quality assessment experts who will assess the strategic fit of the BESM according to its relevance and adequacy and its alignment with the policies in place. This task will be followed by T2.5 which will apply the BESM to the existing and new 12 VET courses and T2.6, in which the Thematic groups of experts will validate during 2 meetings per thematic group the 12 courses. Finally, T2.7 will adapt the learning provision to evolving labor market needs not only for the 12 enriched courses which will be used for pilot testing but also for more courses that will need to be enriched with transitional skills and competences in the construction sector. Based on T2.4 and T2.6, UNSDSN will set up a procedure for outlining the steps that European VETs can undertake for enriching their existing courses and teaching transitional skills along with traditional content.



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Appendix 1: BuildEnrichedSkills Methodology Handbook

General remarks:

The Handbook details the framework for implementing the Build Enriched Skills Methodology (BESM), developed as part of the EU-funded BuildSkills Academy project (2023-2027). The Academy for transitional skills in the built environment (BuildSkillsAcademy) will respond to these needs and will support the skills ecosystems to drive the twin transition by developing a transnational

cooperation platform of CoVEs, aiming to foster VET excellence for the construction sector. By uniting 17 educational, industrial and exploitation partners from 7 EU countries (BG, CY, GR, IT, LT, DE, FR), 2 associated countries (Serbia and Norway) and 1 country not associated to the programme (Bosnia and Herzegovina).

The Handbook aims to assist VET providers in addressing the emerging skills gap in the European construction sector by providing them with a step-by-step method to identify gaps and provide recommendations in order to enhance their courses with the skills and competences required by the construction industry to deal with the emerging technologies and sustainable practices, for the green and digital transition. These skills and competences are catalogued for each occupation at the designated EQF levels in and adhere to the established quality assurance processes for vocational education and training (EQAVET).

The methodology utilizes a combination of a self-assessment questionnaire to assess what the VET provider has in place, a custom skills-gap identification report that will answer the question of what the course needs to have in order to be considered enriched, and suggestions for the enrichment of the courses via provision of guidelines, checklists and signposting to best practices for course enrichment, taking into consideration course content as well as teaching and assessment methods. The implementation of this methodology will be supported by a digital platform which will incorporate all the above-mentioned procedures and will be developed specifically for BSA. The methodology was validated through an engagement with a diverse array of stakeholders from the skills and industrial ecosystems as well as other project partners to provide critical insights through a series of two virtual roundtables and 6 country roundtables which fostered dialogue and gathered input on the development and validation of the methodology.

This document provides an overview of the guidelines for the implementation of the BESM for the VET providers to use as a standalone or along with the digital platform. This document will make reference to other documents in the Appendices.



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Green and Digital Skills

Definitions and importance

Digital skills are defined as a range of abilities to use digital devices, communication applications, and networks to access and manage information. They enable people to create and share digital content, communicate, collaborate, and solve problems for effective and creative learning, work, and social activities at large (UNESCO, 2018). Entry-level digital skills, meaning basic functional skills required to make basic use of digital devices and online applications, are widely considered a critical component of a new set of literacy skills in the digital era, with traditional reading, writing, and numeracy skills. At the advanced spectrum of digital skills are the higher-level abilities that allow users to make use of digital technologies in empowering and transformative ways e.g., by using artificial intelligence (AI), machine learning, and big data analytics (<https://www.europeandigitalskills.eu/white-paper/>)

Green skills The European Centre for the Development of Vocational Training (Cedefop) defines green skills as “the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society”. Green skills are those skills needed to reduce environmental impacts and support economic restructuring with the purpose of attaining cleaner, more climate-resilient and efficient economies that preserve environmental sustainability and provide decent work conditions. (<https://www.europeandigitalskills.eu/white-paper/>)

Skills Gap: the gap between what the course currently covers in terms of green and digital skills (answering the question: What do I have?) and what it needs to have based on the matrix we are providing. This will generate the custom gap identification report which will clearly display the skill gaps in the course's content and teaching methods (answering the question: What do I need?).

Importance: Construction is one of the most important sectors of the European economy. Construction workers account for around 4 per cent of all employment in the EU.



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These workers form the core of the construction sector's workforce and are vital to the achievement of the European Green Deal's ambitions for the development and maintenance of Europe's built environment in all construction phases, from demolition, construction, renovation, and maintenance of buildings in residential and non-residential construction sites, as well as in the construction of large infrastructure projects.

The purpose of developing the Build Enriched Skills methodology (BESM) is to assist VET providers to address the emerging skills gap in the European construction sector by providing them with the step-by-step method to enhance their courses with the skills and competences required by the construction workers to deal with the emerging technologies and sustainable practices, for the green and digital transition.

Enriching Green and Digital Skills within your course

So, would you like to improve your courses coverage of Green and Digital skills? This Handbook will guide you through the 6 main steps in order to identify the current status of your course, highlight what gaps exist and provide recommendations on how to improve your course with regards to its coverage of Green and Digital skills. These steps are:

- Step 1: Decide on the course you want to update (or create a new one)
- Step 2: Identify the relevant skills and methods
- Step 3: Complete the Quality Assurance Checklist
- Step 4: Obtain the Individualized Assessment Report
- Step 5: Receive recommendations on how to update/improve you course following the suggestions of the Report (Enrichment Signposting)
- Step 6: Optional Self-assessment questionnaire for Quality Assurance

Self-Assessment

STEP 1: Decide on the course you wish to update

1. Start by identifying which course you would like to assess and enrich:

The first step is for you (the VET provider) to decide which course you want to update or create.

Once you have decided on the course, log in to the digital platform and go through the provided questionnaire for self-assessment. This is a short questionnaire (it should take between 10-15')



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to complete). The first section is the Background information on the course which will allow you to reflect on the course you are providing in terms of content (skills) and methods of teaching and assessment. It provides clear terminology of the green and digital skills from the ESCO database and CEDEFOP. Explicit guidelines are provided for the completion of the self-assessment.

Provide background information on the name of the course, its EQF level, qualifications to enter, student profile (age and gender distribution), duration (see appendix 1A, questions 1-11)

Enter data here:

STEP 2: Identify the relevant Skills and Methods

1. Select target occupation (s) addressed by the identified course

Select one or more occupations from the drop-down menu as shown below:

Occupation Group ESCO	CODE	38 Occupations	EQF Levels
Group 1: Construction Management and Engineering Professionals	ISCO 1323 -	Construction managers	6-7
	ISCO 2142 -	Civil engineers	6-7
	ISCO 2143 -	Environmental engineers	6-7
	ISCO 2149 -	Engineering professionals not elsewhere classified	6-7
	ISCO 2161 -	Building architects	6-7
	ISCO 2162 -	Landscape architects	6-7
Group 2: Technical Support and Supervision	ISCO 3112 -	Civil engineering technicians - EQF 5	5
	ISCO 3113 -	Electrical engineering technicians	5
	ISCO 3118 -	Draughtspersons	5
	ISCO 3123 -	Construction supervisors	5-6
	ISCO 3315 -	Valuers and loss assessors	5-6
	ISCO 3432 -	Interior designers and decorators	5
Group 3: Skilled Building Trades and Laborers in Construction	ISCO 7111 -	House builders	4-5
	ISCO 7112 -	Bricklayers and related workers	3-4
	ISCO 7113 -	Stonemasons, stone cutters, splitters and carvers	3-4



	ISCO 7114 -	Concrete placers, concrete finishers and related workers	3-4
	ISCO 7115 -	Carpenters and joiners	3-4
	ISCO 7119 -	Building frame and related trades workers not elsewhere classified	3-4
	ISCO 7121 -	Roofers	3-4
	ISCO 7122 -	Floor layers and tile setters	3-4
	ISCO 7123 -	Plasterers	3-4
	ISCO 7124 -	Insulation workers	3-4
	ISCO 7125 -	Glaziers	3-4
	ISCO 7126 -	Plumbers and pipe fitters	3-4
	ISCO 7127 -	Air conditioning and refrigeration mechanics	3-4
	ISCO 7131 -	Painters and related workers	3-4
	ISCO 7133 -	Spray painters and varnishers	3-4
	ISCO 9312 -	Building structure cleaners	3
	ISCO 9313 -	Civil engineering labourers	3
	ISCO 9612 -	Building construction labourers	3
		Refuse sorters	3
Group 4: Metal and Structural Workers	ISCO 7213 -	Sheet-metal workers	3-4
	ISCO 7214 -	Structural-metal preparers and erectors	3-4
	ISCO 7215 -	Riggers and cable splicers	3-4
Group 5: Machinery Operators, Technicians and Plant Specialists	ISCO 7521 -	Wood treaters	3
	ISCO 8114 -	Cement, stone and other mineral products machine operators	3
	ISCO 8343 -	Crane, hoist and related plant operators	3-4
Group 6: Business and Administration in Construction	ISCO 1219 -	Business services and administration managers not elsewhere classified	6-7

(Source: ISCO Occupations, BSA, D2.1)

Enter data here:

2. Select target Topical Areas from the ones shown below:

Topical Areas in GA



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Design and Engineering
Energy Efficiency
Circular Waste Management
New Building Materials
Environment Health and Safety

Enter data here:

3. Select relevant Green and Digital skills covered by your course from the drop-down list:

Within the digital platform, a drop-down list displays relevant Green and Digital skills to your course. Please select all that are covered by the content of your course syllabus (refer also to self-assessment questionnaire, Appendix 1A, Section 2):

Enter data here:



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1	Climate Resilience and Adaptation	10				
	Number of total skills	111				
	Number of repeating skills	7				
Priority	Skill area >> Skills (ESCO)	Digital (D) Green (G)	(K) Knowledge (S) Skills		(N) new	Short description >> Skills Description (ESCO)
1.1	Sustainable Site Design and Adaptive Infrastructure					design construction sites to be resilient to climate impacts, including drainage systems, elevation planning, and landscaping that can manage excess water and heat. design adaptive infrastructure, such as movable flood barriers, stormwater detention basins, and flexible utility systems.
	green space strategies	G	K			The authority's vision on how to use its green space. This includes the goals it wants to achieve, the resources, methods, legislative framework, and time needed to meet these goals.
	environmental engineering	G	K			The application of scientific and engineering theories and principles aimed at improving the environment and sustainability, such as the provision of clean habitation necessities (such as air, water, and land) for humans and other organisms, for environmental remediation in the event of pollution, sustainable energy development, and improved waste management and waste reduction methods.
	urban planning law	G	K			Investments and urban development agreements. Legislative developments regarding construction in terms of environmental, sustainability, social and financial matters.
	develop flood remediation strategies	G	S			Develop plans and design equipment for the prevention of floods and efficient aid in the event of a flood, by assessing the risks, identifying improvements in existing strategies, and designing new strategies in flood remediation.
	promote innovative infrastructure design	G	S			Throughout the coordination of an engineering project, promote the development of infrastructure that is

4. Identify the relevant teaching methods adopted by your course from the drop-down list:

Within the digital platform, a drop down list displays various teaching methods such as Teacher centered approaches (i.e. lectures/hands-on (kinesthetic)/flipped classroom, Student-centered approaches, Active learning, Inquiry-based instruction, Game-based learning, Augmented reality and virtual worlds, Social learning network (SLN), Blended learning, Technology Enhanced Learning (TEL), Peer-to-peer, Lab work etc. Please select all that utilized within the delivery of your course (refer also to self-assessment questionnaire, Appendix 1A, Section 3):



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Enter data here:

5. Identify the relevant assessment methods adopted by your course from the drop-down list:

Within the digital platform, a drop down list displays various assessment methods such as Exams, Projects, Presentations, Lab work, Internship etc. Please select all that utilized within the delivery of your course (refer also to self-assessment questionnaire, Appendix 1A, Section 3):

Enter data here:

STEP 3: Complete Quality Assurance Checklist

1. Quality Assurance checklist

The “Build Enriched Skills EQAVET compliance plan” implements a continuous improvement cycle that involves regular reviews and updates to the EQAVET compliance plan. It is another self-assessment tool which you can find within the digital platform which will assist you to ensure that your institution remains responsive to changes in educational practices and EQAVET requirements. After you have identified the course you want to update, assess the relationship of your organization to your national EQAVET point how the BESM training activities are run according to the national quality criteria, if the EQAVET system for BESM is included in the management system of the VET provider, any changes to the quality system you have adopted (such as new certifications obtained, revision of BESM offer, etc.). You will be asked to fill in specific actions you carry out in the four different phases of Planning, Implementation, Evaluation and Review phases as well as your alignment to European qualifications frameworks, such as the European Qualifications Framework (EQF) and the European Skills, Competences, Qualifications, and Occupations (ESCO), the European strategic plan for development of individual and communities (i.e. Pact for Skills, New European Bauhaus, Digital Europe Programme, Next Generation EU, local cluster priorities, etc.), providing KPIs for every indicator your course or organization fulfills.

(Please refer to Appendix 1C)



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STEP 4: Obtain Individualized Assessment Report

1. Main sections of the report and potential examples

From the results of your self-assessment, a Custom Generated Report will be produced.

It will answer the question: What do I need to have? This report will identify the current shortcomings of your course in terms of green and digital skills. It will also highlight other occupations that may be relevant for the existing set of skills and competencies that the course currently includes with a percentage degree of relevance.

The sections will follow closely the self-assessment questionnaire sections (please refer to Appendix 1A)”

- Background information
- Course content
- Green skills
- Digital skills
- Teaching methods
- Teaching materials
- Assessment and evaluation
- Industry Alignment
- Quality Assurance Checklist

STEP 5: Receive recommendations on how to update/improve you course following the suggestions of the Report (Signposting)

1. Review your curriculum based on the report from the digital tool:

- 1a. Background information

Potential Area for improvement: Gender quality representation

Please refer to suggestions in Appendix 10: 1.1

Potential Area for improvement: Attracting young people

Please refer to suggestions in Appendix 1D, section 1.2

EQF level

Please refer to suggestions in Appendix 1A: 2.1

1b. Course Format (Occupational Alignment and Market Needs)

Potential area for improvement: Occupational Alignment

Please refer to suggestions in Appendix 1D: 6.1

1c. Course Format (Industry Involvement)

Potential area for improvement: Industry Involvement

Please refer to suggestions in Appendix 1D: 6.2

2. Review your Course Content based on the report from the digital tool:

2a. Green Skills:

Potential area for improvement: Green skills

Please refer to suggestions in Appendix 1D: 3.2

2b. Digital Skills:

Potential area for improvement: Digital skills

Please refer to suggestions in Appendix 1D: 3.2

2c. Course Format (Teaching Materials)

Potential area for improvement: Teaching Materials

Please refer to suggestions in Appendix 1D: 5.1

3. Review your Training Methods based on the report from the digital tool:

Potential area for improvement: Teaching Methods

Please refer to suggestions in Appendix 1D: 5.2



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4. Review your Teacher Training Methods based on the report from the digital tool:

Potential area for improvement: Teacher Training
Please refer to suggestions in Appendix 1D: 5.3

5. Review your License/certification/accreditation according to state/European/international standards

6. Review your Quality Assurance procedure

Please refer to suggestions in Appendix 1C

7. Monitoring and Evaluation Procedure:

Re visit the Digital platform and go through it once you have enriched your course with the suggestions provided to compare the reports.

8. Promotion of the enriched course

STEP 6: (Optional) Complete Self-assessment questionnaire for Quality Assurance

Please refer to suggestions in Appendix 1E

Appendix 1A:

Revised Self-assessment Questionnaire for VET providers

Purpose of the questionnaire:

The aim of the present questionnaire is to self-assess the content (skills) of the course you are providing and the method (teaching and assessment).

The completed questionnaire will be part of the Custom Gap Identification Report you will receive to assist you in the enrichment of the course with green and digital skills.

Estimated duration for completion: 15'

Disclaimer: The data collected will be used solely for the purposes of the current BuildSkills project and will not be shared with any third unauthorized parties. data will only be kept for the duration of the project.

Email *

SECTION 1 - Background Information

Please briefly provide information on your organization and the course requirements.

1. What is the name of the VET provider/institution you are representing and the country?
2. Please indicate the name of the course you are offering:

Mark only one:

- Work Safety in Construction
- Energy Efficient Installation in Buildings
- Energy Management of Buildings
- Energy Efficient Construction and Application of Renewable Energy



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- Circular Waste Management
- Construction Technology
- Management of Renewable Building Energy Technology
- Building Information Modelling (BIM)
- Project Manager (Environment Health & Safety)
- Civil Engineering for Sustainable Design
- Circular Economy and Waste Management - UNSDSN ESG Reporting
- Digitalization and Sustainable Development.
- Other (please specify below):

3. What is the status of this course?

Mark only one:

- Existing
- New

4. For the course you have selected please identify the EQF level (info on EQF levels: <https://europa.eu/europass/en/description-eight-eqf-levels>)

Check all that apply:

- 3
- 4
- 5
- 6
- 7
- Other

5. Does this course belong to a program? If yes, what is the name of the program? *



6. What are the minimum qualifications for a student to enter the program/attend the course:

Check all that apply.

- High school diploma
- Higher education degree
- Institutional entry examination
- National entry examination
- Validation of previous knowledge
- Validation of work experience (proof of employment)
- Other (please specify below)

7. If employment is one of the criteria for a student to attend the course, please select the appropriate status:

Mark only one:

- Employed
- Unemployed
- Not applicable

8. What is the percentage of young people (below 25) and women attending your course?

9. What is the duration of the course in months/days/hours?

10. What is the structure of the course?

Check all that apply:

- full time
- part time
- both



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- Other (please specify below)

11. Does the course lead to an occupation? If yes please specify:

SECTION 2 - Course Content: Topics and Skills

For the course you have selected, can you identify under which BuildSkills topical area it falls and subsequently which subtopics it includes:

- a) Design and Engineering (Climate resilience and adaptation)
Skip to question 21
- b) Energy Efficiency (Net zero carbon emissions in construction)
Skip to question 22
- c) Circular Waste Management (Circular Economy Practices)
Skip to question 23
- d) New Building Materials (Sustainable materials and sourcing)
Skip to question 24
- e) Environment Health and Safety (Occupant Health and Well-being)
Skip to question 25
- f) Other:

Design and Engineering (Climate resilience and adaptation)

Preparing construction projects to withstand and adapt to changing environmental conditions, including extreme weather events and resource scarcity in terms of climate change mitigation and adaptation

Please select which subtopic(s) the course covers:

Check all that apply:

- Sustainable Site Design and Adaptive Infrastructure
- Material Selection for Resilience



- Climate Risk assessment
- Water management
- Ecosystem integration
- Climate responsive design
- Legal and financial aspects of climate resilience
- Other:

Energy Efficiency (Net zero carbon emissions in construction)

Achieving Net-Zero Carbon Emissions in the construction sector through energy efficient and building renovation practices

Please select which subtopic(s) the course covers:

Check all that apply.

- a) Renewable Energy Technologies and Systems Integration
- b) Environmental Impact Assessment
- c) Smart Building Technologies
- d) General Environmental awareness, CO2 calculation and embedded carbon in the construction sector
- e) Other:

Circular Waste Management (Circular Economy Practices)

Implementing Circular Economy Practices considering new Design and Engineering methods, and Material Flow and Waste management

Please select which subtopic(s) the course covers: *

Check all that apply.

- a) Building renovation and retrofitting expertise
- b) Circular economy principles and practices in construction
- c) Design for Deconstruction
- d) Material flow management and waste reduction techniques
- e) Materials Assessment and Selection



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f) Other:

New Building Materials (Sustainable materials and sourcing)

Embracing Sustainable Materials and Technologies, including digital technologies that support the transition as well as Promoting sustainability and responsible sourcing throughout the construction supply chain.

Please select which subtopic(s) the course covers:

Check all that apply.

- a) Circular Economy Implementation
- b) Digital Material Databases
- c) Green Label Certification
- d) Sustainable and digital Procurement
- e) Supply Chain Management
- f) Materials Assessment and Selection
- g) Other:

Environment Health and Safety (Occupant Health and Well-being)

Ensuring that construction practices prioritize occupant health, safety, and well-being through better indoor air quality, natural lighting, and ergonomic design.

Please select which subtopic(s) the course covers:

Check all that apply.

- Health and Safety in Green Construction & Health and Safety Protocols
- Inclusivity and Accessibility
- Indoor Environmental Quality (IEQ) Management
- Occupant-Centric Design, engagement and Evaluation
- Sustainable Interior Design
- Other:



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SECTION 3 - Course Format: Teaching, Assessment and Evaluation

1. Course framework: Please tick the elements that are already included in the course framework.

Check all that apply.

- Course Description EQF Level
- Learning Outcomes Course Materials
- List of Skills & Competencies Assessment Criteria and/or Rubric Quality Assurance
- Certification
- Course Evaluation/Feedback Teaching Methods
- Other (please specify below)

2. Which of the following teaching methods are used in the course: *

Check all that apply.

- Teacher centered approaches (i.e. lectures/hands-on (kinesthetic)/flipped classroom
- Student-centered approaches
- Active learning
- Inquiry-based instruction
- Game-based learning
- Augmented reality and virtual worlds Social learning network (SLN) Blended learning
- Technology Enhanced Learning (TEL)
- Peer-to-peer
- Lab work
- Field work/onsite learning
- Other (please specify below)

3. What materials and resources are used? (e.g., textbooks, online resources, software tools)?*

Check all that apply.

- Textbooks
- Online resources
- Software tools
- Lecture slides
- Recordings of lectures
- AR/VR tools
- Social media
- Mobile phones Handbooks
- Other (please specify below)

4. How are students assessed on this course? (e.g., exams, projects, presentations)*

Check all that apply.

- Exams
- Projects
- Presentations
- Lab work
- Internship
- Other (please specify below)

SECTION 4 - Occupational Alignment and Market Needs

1. Are there any direct industry collaborations or partnerships that inform the occupational relevance of your course content? If so, please specify:*

Check all that apply.

- Social partners and all other relevant stakeholders participate in setting VET goals and objectives at the different levels



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- Mechanisms and procedures have been established to identify the training needs of the labour market and society
- VET programmes are designed to allow flexible learning pathways and to respond quickly to changing labour market needs
- Other (please specify below)

2. Do the skills taught in your course translate into real-world applications in specific construction-related occupations? If yes, to which occupations do they lead?

Check all that apply.

- Group 1: Construction Management and Engineering Professionals
- Group 2: Technical Support and Supervision
- Group 3: Skilled Building Trades and Labourers in Construction
- Group 4: Metal and Structural Workers
- Group 5: Machinery Operators, Technicians and Plant Specialists
- Group 6: Business and Administration in Construction
- Other (please specify below)

3. How often do you update the course curriculum to align with industry changes

- a. When starting new courses
- b. at the request of the employer
- c. other

Appendix 1B:

Mapping of Topical Areas (TA) from T2.1 to the GA identified TA

1. Climate Resilience and Adaptation Design and Engineering

- Sustainable Site Design and Adaptive Infrastructure: Design and Engineering
- Material Selection for Resilience: Design and Engineering/New Building Systems and Materials
- Climate Risk Assessment: Design and Engineering/Environment Health and Safety
- Water Management: Design and Engineering/Circular Waste Management
- Ecosystem Integration: Design and Engineering
- Climate-Responsive Design: Design and Engineering /Energy Efficiency
- Legal and financial aspects of climate resilience: Design and Engineering/Environment Health and safety
- BIM (Building Information Modeling): Design and Engineering
- Digital Tools and Data Analysis: Design and Engineering
- Collaboration and Project Management: Design and Engineering

2. Net-Zero Carbon Emissions Energy Efficiency

- Energy-efficient building design and technologies: Energy Efficiency/New Building Systems and Materials/Design and Engineering
- Renewable Energy Technologies and Systems Integration: Energy Efficiency /Design and Engineering
- Environmental Impact Assessment: Energy Efficiency /Environment Health and Safety
- Smart Building Technologies: Energy Efficiency /Design and Engineering
- General Environmental awareness, CO2 calculation and embedded carbon in the construction sector: Energy Efficiency/ Design and Engineering
- Life Cycle Assessment (LCA): Circular Waste Management, Design and Engineering/Environmental Health and Safety

3. Circular Economy Practices Circular Waste Management

- Building renovation and retrofitting expertise: Circular Waste Management



- Circular economy principles and practices in construction: Circular Waste Management
- Design for Deconstruction: Circular Waste Management/Design and Engineering
- Material flow management and waste reduction techniques and recycling: Circular Waste Management
- Materials Assessment and Selection: Circular Waste Management /New Building Systems and Materials
- Life Cycle Assessment (LCA): Circular Waste Management

4. Sustainable Materials and Sourcing New Building Materials

- Circular Economy Implementation: Circular Waste Management
- Digital Material Databases: New Building Systems and Materials/Design and Engineering
- Green Label Certification: New Building Systems and Materials
- Sustainable and Digital Procurement: New Building Systems and Materials/Design and Engineering
- Supply Chain Management: New Building Systems and Materials/Design and Engineering
- Materials Assessment and Selection: New Building Systems and Materials
- Life Cycle Assessment (LCA): Circular Waste Management, Design and Engineering

5. Occupant Health and Well-being Environment Health and Safety

- Health and Safety in Green Construction & Health and Safety Protocols: Environment Health and Safety
- Inclusivity and Accessibility: Design and Engineering
- Indoor Environmental Quality (IEQ) Management: Environment Health and Safety
- Occupant-Centric Design, engagement and Evaluation: Environment Health and Safety, Design and Engineering
- Sustainable Interior Design sub area: Design and Engineering
- BIM (Building Information Modeling): Design and Engineering
- Digital Tools and Data Analysis: Design and Engineering
- Collaboration and Project Management: Design and Engineering

Appendix 1C:

Referencing EQAVET for BES quality plan and relevant KPIs

The table below proposes a reference between possible actions that the VET provider may undertake, for the implementation of the quality plan for BES and the EQAVET indicators.

The collection is not exhaustive and may be complemented with indicators that, according to their quality plans, each BES provider may propose to be integrated into the collection of BES quality reference indicators.

Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
1	New certification schemes have been adopted	Increase of the certification schemes adopted (no. new certification at local, regional, national or EU level)	<p>1. As a VET Provider in the building sector, how many and which specific new certification schemes have been adopted by your organization at the local, regional, national, or EU level, in the past year? Among the 'new certification schemes' may be (please indicate which of these applies to in your case)</p> <ul style="list-style-type: none"> <input type="checkbox"/> certification of competencies learned on the job <input type="checkbox"/> new digital certification schemes of competences (i.e. micro- credentials referring to micro courses, etc.)



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
			<ul style="list-style-type: none"> <input type="checkbox"/> new certified qualifications in the green building sector <input type="checkbox"/> new certification procedures for previously delivered training and skills <input type="checkbox"/> other (please, specify)
1	The assignment of responsibilities related to the EQAVET system for BES	no. of VET quality assurance responsible for quality management	<p>The COVE BSA promotes the adoption of the EQAVET system. <i>If you want to learn more about the EQAVET system, we suggest visiting this [EQAVET link].</i></p> <p>2. How does the VET provider where you work manage the EQAVET system?</p> <p>a. We do not have a dedicated working group to adopt the EQAVET principles, and we are not interested in identifying one.</p> <p>b. We have a dedicated staff consisting of teachers and management personnel, which, based on an established plan, monitors and develops actions related to the EQAVET system in our VET Provider</p> <p>c. Our VET provider is accredited (meaning it follows the quality rules of the regional/national accreditation system).</p> <p>d. Our VET provider is certified (UNI EN ISO), and therefore implements the series of</p>



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
			<p>actions required by the audit system for certification. <i>(If you choose this answer, please specify which certification the VET provider adopts.)</i></p> <p>e. other (please, specify)</p>
2	Skills development training for teachers and trainers, related to BES	<p>no. of training programs and learning outcomes achieved by VET Staff</p> <p>Title, duration and learning outcomes of the training courses attended by teachers and trainers</p>	<p>3. What is the title, durations and main topic of the skills development training program(s) attended by teachers and trainers in the past year?</p> <p>4. What specific learning outcomes have VET staff achieved from attending these training programs?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Professional development programs <p>i.e. specialized training, workshops, and seminars on Green Building technologies, sustainable construction practices, and energy efficiency.</p> <p>Other (please, specify...)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Capacity building to improve the collaboration with Industry and Green Building professionals <p>i.e. joint project in cooperation with Universities and Companies, reporting and project design skills,...</p>



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
			Questions (PROPOSAL) Other (please, specify...) <ul style="list-style-type: none"> <input type="checkbox"/> Integration of innovative teaching approaches and tools i.e. use of innovative educational technologies such as virtual reality (VR), gamification, digital simulation tools to create more engaging and effective learning experiences, Flipped classroom approach, Peer learning and Collaborative networks <ul style="list-style-type: none"> <input type="checkbox"/> Other (please, specify...)
2	Early involvement of staff in EQAVET revision, development, and implementation	Percentage of VET staff actively participating in the early VET planning stages	5. Can you describe the level of staff involvement in the early stages of EQAVET revision, development, and implementation at your institution? Specifically, what percentage of your VET staff are actively participating in these processes, and what roles do they typically play? <i>Open-ended</i>



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
2	Supported innovation in teaching and learning with digital technologies and online tools, both in schools and workplaces.	No. of pedagogical approaches implemented in the training courses Budget dedicated to investments in innovative pedagogical approaches (purchase of materials, software, virtual reality programmes, etc.)	<p>6. How many and what types of innovative pedagogical approaches involving digital technologies and online tools have been implemented in your training courses related to Green Building, over the past year?</p> <p>7. What is the total budget allocated over the past year for investments in innovative pedagogical approaches, including the purchase of materials, software, virtual reality programs, and other digital tools?</p> <ul style="list-style-type: none"> <input type="checkbox"/> no investment <input type="checkbox"/> up to 5,000 <input type="checkbox"/> up to 15,000 <input type="checkbox"/> up to 30,000 <input type="checkbox"/> over 30,000
3-4	Advocacy of BES pathways toward specific learner	number of guidance services implemented, concerning BES pathways.	<p>8. How many guidance services specifically tailored to Buildskills pathways have been implemented in the past year, and what has been the impact on student engagement and enrolment?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Career fairs.....(no. in the past year)



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
	targets	No. of participation in career fairs No. of one-to-one meetings with potential students No. of meetings with classes of students leaving school	<ul style="list-style-type: none"> <input type="checkbox"/> One-to one meetings with potential students <input type="checkbox"/> Meetings with classes of students leaving school <input type="checkbox"/> Meetings with sectorial workers at risk of labour market exit (e.g., those over 50, unskilled, etc.)." <input type="checkbox"/> Other guidance services (please, specify)
5	Individual learning needs were taken into account through a learner – centered approach, to	No. of personalized training programmes No. of validated skills based on non-formal/informal/learning on the job	9. To what extent are the courses your VET provider delivers customized to address the specific individual training needs of students? <ul style="list-style-type: none"> <input type="checkbox"/> (LOW) Individual needs are directed towards existing courses and training categories that are best suited to the individual. <input type="checkbox"/> (INTERMEDIATE) Courses can be slightly adapted to individual needs, in terms of hybrid online and face-to-face attendance, reconnection of certain skills already learnt, etc. <input type="checkbox"/> (HIGH) Courses can be designed according to the needs of the individual and



Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
	enable learners with specific needs to achieve the expected learning outcomes		considering the needs of the commitment company
6	Updated BES learning outcomes concerning workers' adaptability to building innovations	No. of innovations in the construction process taken into account no. of BES learning outcomes updated, based on renewed innovation needs	10. How many new innovations in the construction process have been identified and integrated into your training programs over the past year? Can you describe these innovations and how they have been incorporated into the curriculum? Can you provide examples of these updated learning outcomes and explain the process used to identify and implement these changes? <i>Open-ended</i>
7	Harmonization of BES learning	GDP trends in the building sector at local, regional,	11. How have the learning outcomes of your training programs been harmonized with the local, regional, and national development trends in the building sector over the past few years?



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
	outcomes to local sector development trends	national level in recent years (growth or stagnation of the sector)	Can you provide specific examples of adjustments made to align with these economic trends? <i>Open-ended</i>
8	Set up of explicit goals/objectives of BES programmes compared to specific targets	Unemployed / vulnerable rate in the building workforce Planned vulnerable/unemployed target in BES programmes participation (annual rate)	12. Has your VET Provider delivered Green Building training courses considering the specific needs of vulnerable target groups, such as unemployed, women, youth...? <input type="checkbox"/> Yes <input type="checkbox"/> No
9	Consultation with social partners and other relevant	No. of social partners and stakeholders participating	13. How much and which social partners did you involve in the identification of learning outcomes relevant to the labor market and the future job placement of the trainees? Please, compile at least partially this list of indicators: <input type="checkbox"/> No. of social partners and stakeholders participating in the training planning



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
	stakeholders	Profile of social partners and stakeholders participating No. of meetings conducted involving social partners and stakeholders No. of companies involved	phase..... <input type="checkbox"/> Profile of social partners and stakeholders engaged..... <input type="checkbox"/> No. of meetings conducted involving social partners and stakeholders <input type="checkbox"/> No. of companies involved in the training design..... <input type="checkbox"/> Other....
9	Cooperation with social partners and other relevant stakeholders	No. and kind of feedback collected No. of BES learning outcomes integrated/revised in cooperation with social partners and	14. Does your VET Provider plan a feedback loop system with relevant social partners, public authorities to share results and improve the training offer of your organization in Green Building? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, please indicate:



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
		relevant stakeholders	<ul style="list-style-type: none"> <input type="checkbox"/> frequency of meetings <input type="checkbox"/> outcomes of meetings in terms of follow-up audits, incorporation of improvements or changes to courses <input type="checkbox"/> Further characteristics of the Feedback Loop you want let us know.....
9	Keeping teachers up to date with the scenario of innovations in the sector	<p>Percentage of VET staff actively participating in the early BES planning stages</p> <p>No. of sectorial fair attended by teachers on innovation in building and further relevant topics for building sector</p>	<p>15. What percentage of your VET staff actively participated in the early stages of planning for Green Building programs this year?</p> <ul style="list-style-type: none"> <input type="checkbox"/> None <input type="checkbox"/> less than 25% <input type="checkbox"/> around 50% <input type="checkbox"/> around 75% <input type="checkbox"/> around 100% <p>16. How has participation in these events influenced the incorporation of new trends and innovations into your training programs?</p> <p><i>Open-ended</i></p>



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Ref. to EQAVET Ind.	Type of action	KPIs	Questions (PROPOSAL)
9	Meetings to provide at/to collect from stakeholders with up-to-date information on future labour market needs.	No. of feedback and recommendations implemented by the VET provider to enhance learning provision	17. How many feedback items and recommendations from stakeholders have been implemented by your VET provider in the past year to enhance learning provision? Can you provide examples of specific changes or improvements made as a result of this feedback?



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Appendix 1D:

Enrichment Process: Resources for Signposting

The sections follow the structure of the self-assessment questionnaire. The format follows the report Result from the digital platform, a BSA Fact is provided and then a set of Suggestions and signposting is provided for each section.

1. EU Projects related to construction

1.1. BIMEET (BIM-based EU-wide Standardized Qualification Framework for achieving Energy Efficiency Training)

- Link: [BIMEET Project](#)
- Description: A project that addresses the need for energy efficiency training in the construction sector through Building Information Modeling (BIM), focusing on creating a standardized qualification framework.

1.2. BIMplement Project

- Link: [BIMplement Project](#)
- Description: Enhances BIM (Building Information Modeling) implementation by developing the necessary skills to use BIM tools effectively, focusing on energy efficiency and sustainable construction practices.

1.3. Blueprint in Construction

- Link: [Blueprint in Construction](#)
- Description: A project aiming to develop a strategic approach to sectoral cooperation on skills in the construction industry, focusing on green and digital transitions.

1.4. BUILD UP Skills

- Link: [BUILD UP Skills](#)



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- Description: An EU initiative that focuses on enhancing the energy efficiency skills of construction workers to meet the goals of the Energy Performance of Buildings Directive (EPBD).

1.5. BUS-GoCircular

- Link: [BUS-GoCircular Project](#)
- Description: Promotes sustainable construction practices through interventions such as multifunctional green roofs, facades, and circular economy construction techniques.

1.6. CAPEB Campaign “Bâtir la mixite”

- Link: [Bâtir la mixite](#)
- Description: A campaign launched by CAPEB to promote gender equality in construction, particularly encouraging the participation of female administrators.

1.7. CORDIS Projects

- Link: [CORDIS Projects](#)
- Description: A platform offering a repository of EU-funded research and innovation projects, including those focused on VET, green skills, and digital skills.

1.8. European Alliance for Apprenticeships (EAfA)

- Link: [European Alliance for Apprenticeships](#)
- Description: Promotes high-quality apprenticeships across Europe, fostering cooperation between governments, companies, and VET providers to meet evolving skills needs in sectors like construction.

1.9. European Centre for the Development of Vocational Training (CEDEFOP)

- Link: [CEDEFOP](#)
- Description: Supports vocational education reforms by providing research and data, particularly focusing on green and digital transitions in VET.

1.10. Green Skills for Nearly Zero-Energy Buildings (NZEB)

- Link: [NZEB Green Skills Paper](#)



- Description: Research highlighting the need to incorporate green skills into VET programs for Low-Energy Construction (LEC), particularly focusing on NZEB standards.

1.11. ILO Toolkit for Quality Apprenticeships

- Link: [ILO Toolkit](#)
- Description: Comprehensive guidance for improving apprenticeship systems, offering practical tools for policy-makers and practitioners.

1.12. InnoConstruct

- Link: [InnoConstruct](#)
- Description: A project aimed at promoting innovation in construction through skills development related to new technologies, green construction, and digitalization.

1.13. LIFE Clean Energy Transition

- Link: [LIFE Clean Energy Transition](#)
- Description: A project under the LIFE program that supports energy efficiency training and capacity building, focusing on upskilling professionals in the construction sector.

1.14. Net-UBIEP

- Link: [Net-UBIEP Project](#)
- Description: Enhances energy performance in buildings by offering BIM-based training for various construction sector stakeholders.

1.15. New European Bauhaus

- Link: [New European Bauhaus](#)
- Description: An interdisciplinary project combining sustainable design with artistic innovation to promote aesthetic and eco-friendly urban development.

1.16. Nous Construisons Demain Campaign

- Link: [Nous Construisons Demain](#)
- Description: A campaign aimed at attracting new talent to the construction industry by showcasing opportunities, innovation, and job security in green and digital construction.



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1.17. Pact for Skills

- Link: [Pact for Skills](#)
- Description: An EU initiative promoting upskilling and reskilling for green and digital transitions, emphasizing collaboration between educators and businesses.

1.18. PROF/TRAC

- Link: [PROF/TRAC](#)
- Description: A project that provides training for professionals in energy-efficient and zero-net-energy building technologies.

1.19. Renovation Wave

- Link: [Renovation Wave Strategy](#)
- Description: A strategy aimed at improving building renovations to meet EU sustainability goals, focusing on energy efficiency and emissions reductions.

1.20. RIBA Framework

- Link: [RIBA Framework](#)
- Description: The Royal Institute of British Architects' professional development framework for sustainability, energy efficiency, and best practices in design and engineering.

1.21. SELFIE Tool

- Link: [SELFIE Tool](#)
- Description: A digital tool supporting vocational schools and companies in collecting feedback from learners and trainers to improve the integration of digital technologies in education.

1.22. Simplon IT for She

- Link: [Simplon IT for She](#)
- Description: A program that empowers women to pursue IT careers through coding workshops, mentorship, and job placement, contributing to gender equality in digital skills.

1.23. Storykit by Peab



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- Link: [Storykit](#)
- Description: A social media-based initiative by Peab that uses videos to showcase female construction workers, encouraging more women to enter the industry.

1.24. TwinRevolution Project

- Link: [TwinRevolution Project](#)
- Description: A training course that provides VET learners with green and digital competencies, contributing to sustainable and digital construction practices.

1.25. Upskilling Construction Workers

- Link: [Upskilling Construction Workers](#)
- Description: Focuses on enhancing the digital skills of construction workers to increase their employability in the green construction industry.

1.26. VET4LEC

- Link: [VET4LEC](#)
- Description: A vocational education and training project for low-energy construction that equips learners with the skills needed for energy-efficient building practices.

1.27. Women Can Build Project

- Link: [Women Can Build](#)
- Description: A project promoting gender inclusion in construction by offering quality vocational training for women in the sector.

1.28. Zero Pollution Action Plan

- Link: [Zero Pollution Action Plan](#)
- Description: An EU strategy aimed at reducing pollution in order to promote healthier ecosystems, especially relevant in the context of construction practices.

2. Content

1.1. EQF Level



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1.1.1. Recommendations for enrichment:

1. The EQF portal (European Qualifications Framework (EQF) Official Website: <https://europass.europa.eu/en/description-eight-eqf-levels>) provides detailed descriptions of each EQF level, which can help VET providers understand the expected learning outcomes and competencies. This understanding can guide the selection of appropriate teaching methods for each level.
2. The [Osnabrück Declaration](#) supports an initiative for VET excellence in Europe and emphasizes the relevance of VET programs at EQF levels 5 to 8 on a par with HE in order to offer VET graduates a flexible, inclusive and valuable path to high-level jobs and career opportunities in response to current and future socioeconomic needs.



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Level 1 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
Basic general knowledge	Basic skills required to carry out simple tasks	Work or study under direct supervision in a structured context

Level 2 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
Basic factual knowledge of a field of work or study	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy

Level 3 - learning outcome

Knowledge	Skills	Responsibility and autonomy
Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work or study; adapt own behaviour to circumstances in solving problems



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Level 4 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

Level 5 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others



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Level 6 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups



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Level 7 - learning outcomes

Knowledge	Skills	Responsibility and autonomy
<p>Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research</p> <p>Critical awareness of knowledge issues in a field and at the interface between different fields</p>	<p>Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields</p>	<p>Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams</p>



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Level 8 - learning outcomes

Knowledge

Knowledge at the most advanced frontier of a field of work or study and at the interface between fields

Skills

The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice

Responsibility and autonomy

Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research



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3. New Skills and technologies

3.1. Digital Skills

3.1.1. BSA Facts:

By 2035, an estimated 4.1 million people will be needed to replace those who are expected to leave the occupation - mainly as a result of retirement - in addition to the projected growth of an additional 88 thousand people

([CEDEFOP: Skills opportunities and challenges](#))

The take-up of new technologies - including automation and the use of industrialized construction methods such as prefabrication - will drive changes in the skills required of construction workers in the future. As the measures in the European Green Deal increasingly gain traction, this will also affect the skills required of construction workers (e.g. those skills which result from changes in the way buildings are designed and constructed).

3.1.2. Recommendations for enrichment:

1. Improving BIM skills and knowledge with your course:

This course will provide you with an understanding of how Building Information Modelling (BIM) supports Learning principles to reduce waste in construction and asset management. This course will provide an overview of the standards that define BIM implementation and the fundamental processes of a Common Data Environment (CDE): [BSI group](#):

The Institute of Applied Technology – Construction (IATC) offering in Digital Construction or Building Information Modelling (BIM) to support new and budding project managers, site engineers, information managers in the Construction Sector: [iat](#)

2. Improving CADD skills and knowledge with your course:

Technology plays a key role in the field of architecture / architectural engineering. Engineering design / Computer Aided Drafting & Design software is widely used in planning



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and designing of buildings, and creating mechanical, structural, electrical and lighting features of building design, and construction: [cadd centre](#)

3. Improving Data Analysis skills and knowledge with your course:

The building industry is exploding with data sources that impact the energy performance of the built environment and health and well-being of occupants. Spreadsheets just don't cut it anymore as the sole analytics tool for professionals in this field. Participating in mainstream data science courses might provide skills such as programming and statistics, however the applied context to buildings is missing, which is the most important part for beginners: [Class central](#)

4. Improving Digital skills and knowledge with your course: [digital skills curriculum report](#)

5. Improving Artificial intelligence skills in your curriculum: [Zigurat](#)

6. Improving 3-D models skills and knowledge with your course: [iat](#), [novatr](#)

7. Improving Machine learning skills and knowledge with your course: [Big data](#)

8. Improving learning how to redesign traditional construction processes to take advantage of the state-of-the-art automation and robotics technology: [University of Maryland](#)

9. Improving Energy efficiency in Buildings skills and knowledge with your course: [Renewable Energy Institute](#)

10. Improving Digital training in health and safety skills and knowledge with your course: [hse](#)

11. Improving Remote-controlled vehicles, drones, smart tools, and the installation of smart sensors skills with your course: [remote control](#)

12. Industrialized construction methods are reducing construction times and changing the nature of work on construction sites. Off-site fabrication reduces demand for traditional



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craftsmen (e.g. bricklayers, plasterers), but increases demand for workers skilled in installing prefabricated parts: The [European Green Deal](#) initiatives, the [Renovation Wave](#), the [New European Bauhaus](#), and the [Circular Economy Action plan](#) focus on transforming the EU's built environment into a sustainable one. The EU plans to move from the current [nearly zero-energy buildings to zero-emission buildings by 2030](#), and boosting demand for sustainable renovation and retrofitting. The [Renovation Wave](#) is expected to create new jobs in building renovation and renewable technology installation ([CEDEFOP](#))

3.2. Green Skills

3.2.1. BSA Facts:

Skills for the green transition are a wider set of skills and competences, including knowledge, abilities, values and attitudes needed to live, work and act in resource-efficient and sustainable economies and societies (Cedefop, 2022c). They can be technical (either occupation-specific or cross-sectoral), linked with production processes; or soft and more transversal, linked to sustainable thinking and acting, relevant to work and life. Sectoral and regional/local specificities determine the exact skillsets per occupation ([Cedefop 2024](#)).

3.2.2. Recommendations for enrichment:

Improving sustainability principles knowledge with your course: [Sustainability Leadership program](#), Imperial College, [INSEAD](#), , [Sustainable construction and development CIOB Academy](#), [Green building and sustainable development, UNSDG](#)

Improving life cycle assessment and circularity skills and knowledge with your course: [Cambridge circular economy and sustainability strategies](#)

Improving Green policies skills and knowledge with your course: [uc louvain](#)

Improving Sustainable construction management skills and knowledge with your course: [coursera](#)

Improving green and digital skills and knowledge with your course: TwinRevolution Project: An interactive tool and training course aimed at upskilling VET learners with green and digital competencies (European Circular Economy Stakeholder Platform, 2023): <https://twinrevolution.eu/>



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Improving green and digital skills and knowledge with your course: Construction Blueprint: This project aims to develop a new strategic approach to sectoral cooperation on skills in the construction industry. It focuses on identifying and promoting the necessary skills for the green and digital transitions: <https://constructionblueprint.eu/>



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4. Skills and Occupations

4.1. BSA Facts: The Skills, Topical Areas and Occupations identified in D2.1

Legend

prioritised area via survey
not prioritised area via survey
transitional areas

Topical areas

	1		2		3		4		5
	Climate Resilience and Adaptation		Net-Zero Carbon Emissions		Circular Economy Practices		Sustainable materials and sourcing		Occupant Health and Well-being
1.1	Sustainable Site Design and Adaptive Infrastructure	2.1	Energy-efficient building design and technologies	3.1	Building renovation and retrofitting expertise	4.1	Circular Economy Implementation	5.1	Health and Safety in Green Construction & Health and Safety Protocols
1.2	Material Selection for Resilience	2.2	Renewable Energy Technologies and Systems Integration	3.2	Circular economy principles and practices in construction	4.2	Digital Material Databases	5.2	Inclusivity and Accessibility
1.3.	Climate Risk Assessment	2.3	Environmental Impact Assessment	3.3	Design for Deconstruction	4.3	Green Label Certification	5.3	Indoor Environmental Quality (IEQ) Management



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1.4	Water Management	2.4	Smart Building Technologies	3.4	Material flow management and waste reduction techniques	4.4	Sustainable and digital Procurement	5.4	Occupant-Centric Design, engagement and Evaluation
1.5	Ecosystem Integration	2.5	General Environmental awareness, CO2 calculation and embedded carbon in the construction sector			4.5	Supply Chain Management	5.5	Sustainable Interior Design
1.6	Climate-Responsive Design			3.5	Materials Assessment and Selection	4.6	Materials Assessment and Selection		
1.7	Legal and financial aspects of climate resilience								
T1		T1	Life Cycle Assessment (LCA)	T1	Life Cycle Assessment (LCA)	T1	Life Cycle Assessment (LCA)	T1	
T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)	T2	BIM (Building Information Modeling)
T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis	T3	Digital Tools and Data Analysis	T3		T3	Digital Tools and Data Analysis
T4	Collaboration and Project Management	T4	Collaboration and Project Management	T4	Collaboration and Project Management	T4	Collaboration and Project Management	T4	Collaboration and Project Management

ISCO Occupations



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Occupation Group ESCO	CODE	38 Occupations	EQF Levels	Building lifecycle phase	Secondary Phase	
Group 1: Construction Management and Engineering Professionals	ISCO 1323 -	Construction managers	6-7	Construction		
	ISCO 2142 -	Civil engineers	6-7	Plan-Design	Procurement	Construction
	ISCO 2143 -	Environmental engineers	6-7	Plan-Design	Procurement	Operation-Use
	ISCO 2149 -	Engineering professionals not elsewhere classified	6-7	General		
	ISCO 2161 -	Building architects	6-7	Plan-Design	Procurement	Construction
Group 2: Technical Support and Supervision	ISCO 2162 -	Landscape architects	6-7	Plan-Design	Procurement	
	ISCO 3112 -	Civil engineering technicians - EQF 5	5	Construction		
	ISCO 3113 -	Electrical engineering technicians	5	Construction		
	ISCO 3118 -	Draughtspersons	5	Construction		
	ISCO 3123 -	Construction supervisors	5-6	Construction		
Group 3: Skilled Building Trades and Laborers in Construction	ISCO 3315 -	Valuers and loss assessors	5-6	End of Service Life	Plan-Design	
	ISCO 3432 -	Interior designers and decorators	5	Plan-Design		
	ISCO 7111 -	House builders	4-5	Construction		
	ISCO 7112 -	Bricklayers and related workers	3-4	Construction		
	ISCO 7113 -	Stonemasons, stone cutters, splitters and carvers	3-4	Construction		
	ISCO 7114 -	Concrete placers, concrete finishers and related workers	3-4	Construction		
	ISCO 7115 -	Carpenters and joiners	3-4	Construction		
	ISCO 7119 -	Building frame and related trades workers not elsewhere classified	3-4	Construction		
	ISCO 7121 -	Roofers	3-4	Construction		
	ISCO 7122 -	Floor layers and tile setters	3-4	Construction		
ISCO 7123 -	Plasterers	3-4	Construction			
ISCO 7124 -	Insulation workers	3-4	Construction			
ISCO 7125 -	Glaziers	3-4	Construction			



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	ISCO 7126 -	Plumbers and pipe fitters	3-4	Construction
	ISCO 7127 -	Air conditioning and refrigeration mechanics	3-4	Construction
	ISCO 7131 -	Painters and related workers	3-4	Construction
	ISCO 7133 -	Spray painters and varnishers	3-4	Construction
	ISCO 9312 -	Building structure cleaners	3	Construction
	ISCO 9313 -	Civil engineering labourers	3	Construction
	ISCO 9612 -	Building construction labourers	3	Construction
		Refuse sorters	3	End of Service Life
Group 4: Metal and Structural Workers	ISCO 7213 -	Sheet-metal workers	3-4	Construction
	ISCO 7214 -	Structural-metal preparers and erectors	3-4	Construction
	ISCO 7215 -	Riggers and cable splicers	3-4	Construction
Group 5: Machinery Operators, Technicians and Plant Specialists	ISCO 7521 -	Wood treaters	3	Construction
	ISCO 8114 -	Cement, stone and other mineral products machine operators	3	Construction
	ISCO 8343 -	Crane, hoist and related plant operators	3-4	Construction
Group 6: Business and Administration in Construction		Business services and administration managers not elsewhere classified	6-7	General



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5. Course format (Teaching Materials, Methods, Assessment and Evaluation)

5.1. Teaching Materials

5.1.1. BSA Facts

Vet providers should strive for short courses: Short-course provision, including those provided online, offer a means for construction workers to acquire new skills in a way that allows them to balance the pressures of work with finding time to train: [How to design a short course](#), [ucl short course design process](#), [designing and teaching short courses](#)

Vet providers should consider the option of microcredentials: They allow individuals “to build their own skills-profile by collecting and ‘stacking’ learning in a flexible way, at their own pace and according to their own priorities” ([CEDEFOP](#))

5.1.2. Recommendations for enrichment:

Examples of short online courses for construction workers can be found here:

- [BuildUpSkills](#)
- [CONSTRYUE 2020](#)
- [ingREeS](#) project in Czechia.
- BUS-GoCircular (<https://busgocircular.eu/training/>) provides open available training materials but also creates new ones to upskill professionals in circular construction.
- Training material for public procurers: How to procure circular construction skills? ([click HERE](#)).
- Materials for training of trainers: the following modules are intended as a bank of free training material that can be used and edited by trainers
 1. Introduction to the Circular Economy ([PDF click here](#))
 2. Design and Implementation of Circular Practices ([PDF click here](#))
 3. Bio Based Material Use ([PDF click here](#))
 4. Retrofits, Upgrades, Repair and Maintenance ([PDF click here](#))



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5. Water in Design and Construction ([PDF click here](#))
6. Energy in Design and Construction ([PDF click here](#))
7. Digitalization ([PDF click here](#))
8. Material Impact Measurement and Reduction ([PDF click here](#))
9. Waste in Design and Construction ([PDF click here](#))
10. Deconstruction ([PDF click here](#))
11. Circular Economy Principles Across the Value Chain ([PDF click here](#))

Download PPT versions of the 11 modules above: [click here](#).

5.2. Teaching methods

5.2.1. BSA Facts: There is a shift from traditional teacher-centered approaches to student-centered learning which is more active, and students build upon their existing knowledge through practical application (Bruner, 1966; Piaget, 1971).

5.2.2. Recommendations for enrichment:

Improving project based learning (PBL) (which involves students to work in real world projects, and collaborative learning which involves students collaborating to solve problems) in your course: [project based learning in construction](#), [Team project based learning](#), [Challenges of project based learning in construction](#)

Improving Student-centered learning (which emphasizes critical thinking, collaboration and communication) in your course: [Student centered learning classroom](#)

Improving Active learning (which requires requires students to participate actively in their learning procedure, involves project-based learning and problem based learning and collaborative learning which are highly effective in vocational setting)s in your course: [7 effective teaching methods for adults](#), [Active learning strategies for professional development](#)

Improving blended learning (which is a method which combines classroom teaching with digital media such as augmented reality (AR) supporting the need for digital competence in

VET education) in your course: [Balancing the best of both worlds](#), [Teaching strategies addressing online learning](#), [Guide to blended learning](#)

Improving the development of digital infrastructure for learning and teaching purposes in VET including artificial intelligence and AR/VR technologies and develop suitable institutional teaching and training arrangements underpinned by adequate infrastructure, especially in remote and rural areas thus ensuring social inclusion ([Osnabrück Declaration](#)): [EPALE: guidelines for adult education implementation](#), [EPALE: online curriculum](#), [ctvr.eu: practical tips for integrating VR/AR](#)

5.3 Teacher training

5.3.1 BSA Facts:

- a) Teacher shortages are reported in nearly all the 2023 Education and Training Monitor's country reports and more profoundly in VET education ([Education and Training Monitor 2023](#))
- b) Staff qualifications, if necessary, offer upskilling: The qualifications band training requirements for teaching professionals in VET vary, in line with their different roles and profiles. In most countries, a higher education degree is required to teach general subjects or theoretical vocational courses in VET schools. For staff teaching practical vocational subjects, the required qualifications generally include upper secondary education or a professional degree. In some countries, further requirements apply, such as professional experience, or a state exam or competition
- c) Professional development: Professional development is organized and provided in a wide variety of forms: courses, seminars, workshops, school networks, peer learning, master's degree studies, thematic conferences etc. Professional development usually focuses on pedagogical and didactic competences, but sometimes also on transversal and technical competences. It can be provided face-to-face, online or in blended mode and through various activities: training programs, seminars, validation assessments, courses, study visits, training manuals, guidelines, evening/weekend offers, traineeships, etc. Responsible entities for professional development can be: VET schools, educational agencies, companies, national VET agencies, CPD institutions, universities, local or regional authorities, NGOs ([Cedefop](#)).

- d) Continuing professional development (CPD) is mandatory for VET teachers in 19 countries, whereas only 10 countries have such provisions in place for in-company trainers. The 19 countries where CPD is mandatory for VET teachers include a mix of European and non-European nations and related to our project BSA are among others: Slovakia and Germany ([TVET Journal](#), [CEDEFOP](#)). On the other hand, only 10 countries require CPD for in-company trainers. The lack of mandatory CPD for in-company trainers may impact the quality and consistency of training provided to students in work-based settings ([European Training Foundation](#)).

5.3.2 Recommendations for Enrichment:

- a) Provide opportunities for international staff mobility is a way to make a teaching career attractive and flexible. The Erasmus+ program provides opportunities for teaching staff to participate in mobility activities in EU countries: [Erasmus+ courses for teachers](#), [Erasmus+ staff training](#)
- b) Provide digital teaching and training required by VET staff to develop new methodical and didactical approaches to apply in the connected world⁴: [CEDEFOP: empowering human teaching talent with digital skills](#), [Futurelearn: digital skills for teachers](#), [Teach and learn practical digital skills](#)
- c) Support access of business professionals to the teachers' and trainers' professions within VET institutions, in line with national legislation and conditions of access to the teaching profession ([Osnabrück Declaration](#))
- d) Provide specific tools for teacher training for VET practitioners: [CEDEFOP tool for VET practitioners](#)

^{4 4} An extra measure to recruit specialized teachers in the area of informatics and advanced digital technologies is mentioned in the 2023 Commission proposal for a Council Recommendation on improving the provision of digital skills in education and training. A recommendation to EU countries has been proposed to support a two-way exchange and collaboration between education and training institutions on the one hand and the private sector on the other, building upon initiatives such as the Pact for Skills and the Digital Skills and Jobs Coalition. This type of exchange and collaboration would allow specialized teachers to acquire specific skills in informatics and specific digital technology fields. These national implementation plans were submitted for the 2020 Council Recommendation on VET, which set out key principles to ensure VET provides quality learning opportunities for young people and adults, as well as the 2020 Osnabrück Declaration on VET, which set out specific actions for 2021–25 at both national and EU level, focusing in particular on green and digital transitions.

- e) The Knowledge Hub organizes webinars, seminars and peer learning activities for members. It also provides updates on EU policies and instruments, as well as information on projects, tools, and best practices.: [Pact for Skills](#)
- f) Provide mentoring: Usually available for newly appointed teachers as part of their initial professional development or induction plan. It usually includes methodological support and counselling for the preparation and implementation of their professional development plan ([Cedefop](#))
 - Provide a self-evaluation questionnaire for teachers to determine their digital skills acquisition: [SELFIE](#)

6. Occupational Alignment and Market needs

6.1 Apprenticeships

6.1.1 BSA Facts: [Cedefop and OECD](#) note that apprenticeships are important but that existing schemes need to adapt to accommodate new training needs and requirements for higher levels of expertise and theoretically broader, deeper, more technical and inter-disciplinary knowledge.

6.1.2 Recommendations for enrichment

Bottom-up approaches for greening apprenticeships and Top-down transversal initiatives Sector-specific initiatives : [Greening Apprenticeships](#)

[CEDEFOP: Apprenticeship and the digital transition](#)

Website created by the [European Construction Industry Federation](#) showcasing apprenticeship and training opportunities in the EU construction sector serves as an example.

6.2 Industry involvement



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6.2.1 BSA Facts: : Training content and learning outcomes: insufficient cooperation between the education and training sector and the world of work in defining, delivering and assessing apprenticeship curricula may lead to either lack of flexibility to accommodate sector needs or, in the absence of reference documents, to excessive, unstructured adaptation to firm-specific needs ([Cedefop analytical framework for apprenticeships](#))

Forms of dual VET have proven their worth in practice. An essential component of dual training systems is the targeted involvement of the business sector. Alternating school-based and in-company training phases can, in principle, increase the relevance, quality and attractiveness of training ([SDC 2016](#))

6.2.2 Recommendations for enrichment:

Training provision is available for in-company trainers to develop and update their pedagogical/ didactic and transversal competences and for teachers to update their competences

Mechanisms are in place for cooperation and exchange between in-company trainers and teachers ([Cedefop analytical framework for apprenticeships](#))

7. Background Information

7.1 Gender Equality

7.1.1 BSA Facts:

Construction workers are mainly men. In 2021, just 2 per cent of construction workers were women ([CEDEFOP Construction workers](#))

- According to the [Transition Pathway](#) for construction of the European Commission, women still only make up around 10 % of the construction workers in Europe. This figure consists mainly in women in administrative and technical positions, while those actively working on construction sites is a smaller group. This means that there is a huge talent pool untapped and that



attracting women to the sector could also help in facing another big challenge of the construction industry, the aging workforce.

- Having more even gender distribution is not just a hygiene factor, but also leads to greater success. According to [the Peterson Institute](#), construction companies with more female employees have increased productivity. Among the companies that are among the top 25 percent in terms of gender equality, 46 percent have a greater chance of outperforming their competitors.
- Another study conducted by [Credit Suisse](#) shows that companies, where half of the managers are women, have ten percent higher returns than companies with fewer female managers.

7.1.2 Recommendations for enrichment:

Examples of innovative ways to attract women (social media campaigns, posters, interviews etc.):

1. [Construction blueprint](#):

- a) Passport for Work (PFW) is a three-year urban innovation project led by the city of Eindhoven and aims to increase the labour participation and ensure its regional labor market remains competitive as well as inclusive through developing an inter-sectoral skills passport with a gamified skills assessment.

Developing an inter-sectoral skills passport with a gamified assessment that can be used in several sectors of the labor market

- Creating tailor-made and restructured eLearning education programs for skills improvement
- Reducing the time for reintegrating jobseekers and ensuring more sustainable labour market outcomes
- Ensuring a better and more transparent connection between employers and employees by contributing to the creation of a common “skills language”.

Visit the website: <https://www.passportforwork.nl/>

- b) TAB4BUILDING aims to develop a common training for architects/civil engineers and construction workers, enabling them to increase their skills in the knowledge and application of FRP in the construction sector.



The project connects the entire value chain of the construction sector. Instead of focusing only on the top of the scale (architects), the training also targets construction workers and updates the knowledge of FRP materials for the whole value chain. Moreover, an innovative methodology will be applied based on the collaboration between both target groups with different levels of knowledge, where both will learn everything necessary to understand the main features of the FRP materials and at the end will work together to achieve the main objective through a case study. They will interact and be able to understand each other to solve a specific real problem based on the use of FRP materials in construction.

Visit the website: <https://tab4building.gzs.si/vsebina/English/About-the-project>

c) “Nous Construisons Demain”

BOUWUNIE, Belgian member of the European Builders Confederation, recently launched the [campaign entitled “Nous Construisons Demain”](#), aiming at attracting new talents into the construction sector.

The campaign is jointly organized by the Belgian social partners of the construction industry, with the aim of breaking down stereotypes about the construction sector and show it for what it can be: an attractive, versatile sector, full of possibilities, offering opportunities and job security. New technologies and innovative materials are changing the construction industry, with new professions attracting new profiles which have emerged.

All the material developed as part of the campaign is gathered in an interactive website, available in [French](#) and [Dutch](#), including [a TV promotional video](#); actions and events organized at local and national level; factsheets dedicated to trending topics in construction, such as innovation and safety, well-being and inclusion, circularity, etc.; and also an interesting overview and description of the [different professions in construction](#).

2. [ebc construction](#):



In the Bouwunie podcast “Vrouw in de Bouw,” active women in construction talk about the pros and



cons of the sector itself and entrepreneurship in honest and transparent exchanges. [Click here](#) to access the podcast.



b)

This year, the CAPEB launched the campaign “*Bâtir la mixite*” (Building Gender Equality, in English) to mark International Women’s Rights Day. Committed to increasing the gender balance of its governing bodies, the CAPEB network has undertaken to identify new female administrators from among its members to make gender balance a reality within CAPEB bodies and to respond to their apprehensions about taking on representation responsibilities.

Against this backdrop, 12 female CAPEB representatives, who exemplify diversity and skills at the service of the collective, wanted to shed their own personal light on the subject through testimonials collected in the communication campaign. For more information about the CAPEB’s campaign, [click here](#)

In addition to that, EBC also aims at raising the topic of women in construction in its involvement in EU-funded projects. For instance, two Horizon Europe Projects in which EBC is a partner, [HumanTech](#) and [BEEYONDERS](#), are trying to better integrate gender and morphology considerations in their development of wearables and exoskeletons, for a construction sector that is safer, more inclusive, and more appealing to women and youth.

3. [Women can build:](#)



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In short, it is about awareness raising and advocating for equal opportunities, improving the social conditions of the sector, promoting professionalization, through quality training; and promoting labor insertion, with the activation of the labor market.

The objectives that the Women can build project faces are the following:

- Make a paradigm shift in the construction sector, which is more egalitarian, attractive and socially responsible, through training.
- Remove cultural barriers and improve the sensitivity of women to this sector.
- Capture the attention of women towards the construction industry, emphasizing those activities with more possibilities of achieving an effective insertion in the labor market.
- Provide Vocational Training centers (VT) with a gender perspective that allows them to rethink their training approach and look for opportunities for a more egalitarian sector.
- Establish advisory measures that facilitate the transition of the construction industry towards greater awareness and gender balance.
- Achieve the recognition of gender competencies and create the conditions that allow the realization of new programs with a better performance.

4. [storykit](#):

Social media has proven to be very effective for Peab in terms of employer branding.

([recruiting on social media](#))

To attract women, we must [show the women](#) who work for us, who are "ordinary" women that most people can [identify with](#). For example, we have a series where [female employees have filmed themselves](#) to get more women to join the industry.



5. [women-digital](#) :



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<https://buildskillsacademy.com/>



The Commission's Women in Digital strategy focuses on encouraging and empowering women to play a more active role in the digital age. Women's involvement and active participation is indispensable for a sustainable, fair and equitable economy and society. The strategy focuses on three areas:

a) Promoting digital skills and education

- *Digital Opportunity Traineeships*: The EU sponsors young Europeans to be trainees in companies
- *Codeweek*: Trains thousands of girls to code every year
- *Scoreboard on Women in Digital*
- *European Network of Women in Digital*
- *Digital Skills and Jobs Coalition*: The Coalition brings together Member States, companies, social partners, non-profit organizations and education providers who take concrete actions to tackle the lack of Digital skills in Europe

b) Challenging digital gender stereotypes

- *Digital Skills Awards*: Annual awards to recognize and promote role models
- *No Women No Panel Campaign*
- *Cooperation with Audiovisual regulators* - A report was published by the European Platform for Audiovisual Regulators (EPRA) about the representation of women in media (on- and Off-screen) with constructive recommendations.

c) Advocating for more women entrepreneurs

- *Startup Europe* recognizes and promotes women-led startups
- *WE Hubs* - network to help female entrepreneurs in the digital sector
- *EU prize for women innovators* recognizes and rewards top women innovators
- *CEO Declaration on closing the digital gender gap in high-tech companies*

The Commission works with the Member States of which 27 have signed the EU Women in Digital Declaration to encourage women to play an active and prominent role in the digital technology



sector. The EU countries will work closely with the public and private sectors and civil society to improve gender equality in tech.

The Commission's #DigitalRespect4Her campaign raises awareness about online violence and the difficulties women face online such as threats, stalking, intimidation, objectification and undermining of their professional work or their presence in the public sphere. This often discourages them from participating in important online conversations and engaging in politics, which should be an arena of everyone's voices.

Everyone is encouraged to share their story or support the campaign on social media through #DigitalRespect4Her.

To monitor progress, we have launched the [Women in Digital Scoreboard](#), which is part of Digital Economy and Society Index (DESI) and the European semester reports as of 2019. The scoreboard assesses Member States' performance in the areas of internet use and digital skills, as well as specialist skills and employment based on thirteen indicators.

c) Sharing best practices in Europe

The European Commission recognizes successful initiatives that have the potential to be replicated across Europe, including through the European Digital Skills Awards and the Digital Skills and Jobs Coalition repository of best practices, which highlight outstanding projects across the EU. The Awards have a category targeting digital skills for girls and women.

d) Digital Skills Awards, Digital Skills for Girls and Women2018

#Hackeuses is a six-week training course run by Simplon that is reserved for women of all profiles, background and ages. During the course, the participants learn the basics of web programming with the objective of training for a job in the digital sector.

6. [Simplon website](#)



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IT for She supports a new generation of women to start careers in the IT and technology sectors. Four elements make up IT for She. Its annual Women in Tech camp provides programming workshops for top female ICT students. In Kids in IT, female volunteers teach coding and technology to 1,000 children in small towns each year. Leading technology companies also provide mentors to coach young women for high tech careers.

The fourth and most recent element is the Perspektywy Women in Tech Summit which was held for the first time in 2018. It is organized by Perspektywy, a Polish Foundation that promotes women's participation in science, technology and mathematics.

[IT for She website](#)

7. Digital Skills and Jobs Coalition Best Practice
8. Rails Girls Sofia is making technology more approachable for women in Bulgaria. The programme runs free, two-day workshops for women and girls on the basics of Ruby on Rails, a programming framework used to develop web applications. Aimed at women with zero or minimal programming and technology experience, Rails Girls aims to make learning fun, exciting and useful. The programme is part of the global Rails Girls community, which fosters technology skills among women.

[Rails Girls Sofia website](#)

7.2 Age Level

7.2.1 BSA Facts: Across the European Union construction will grow from 1.5% in Spain to 3% in France and the Netherlands. The average growth across the EU is projected at 2.7%, while the United Kingdom is looking at 6.3% ([Procore](#))

7.2.2 Recommendations for enrichment:



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- Digitization of the sector: Highlight how construction work will become less physically demanding, less repetitive, and more technologically advanced and rewarding .Recent reports indicate that digitization has the potential to attract and retain young talent: [Procore](#)
- Teach project management and execution, adequate design processes, invest in skills development, R&D, and innovation: [McKinsey report](#)
- New roles in construction are appealing to young people who have grown up with tech: virtual reality, augmented reality, robotics, and building information modeling specialists. Also, work in scheduling, estimating, and project management, all involve tech expertise: [Education for the future of construction](#)
- While robotics and autonomous machines have an uprise in construction, manual workers are still needed as construction jobs like finishing concrete or building frame walls are still needed and should also be highlighted and taught: [UK workforce](#), [ILO: construction in the 21rst century](#), [Work-life balance for construction manual workers](#)
- Best Practices:

[Construction blueprint](#) :

Slovenia: Exhibition of construction machinery

On 10th March 2023 at MEGRA – International Fair for Construction, Energy, Utilities and Crafts pupils and students from schools of the north-east part of Slovenia were able to learn about the latest construction machinery. One of Slovenia’s largest construction companies brought a number of machines and trucks to the fair’s large yard for all to see. Interested students could experience what it feels like to operate such powerful tools. We believe that many found inspiration for a career in construction that day.

[ZGIGM I VZPOREDNI DOGODKI NA MEGRI \(gzs.si\)](#)

8 Slovenian: How strong is the bridge?

On 10th March 2023 at MEGRA – International Fair for Construction, Energy, Utilities and Crafts a spaghetti bridge building competition took place. The talented students enthusiastically took up the challenge and showed their knowledge and creativity. It is worth mentioning that the winning team



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was made up of all girls. We hope that the award has given them the encouragement they need to recognise their potential and pursue a career in construction.

[ZGIGM | VZPOREDNI DOGODKI NA MEGRI \(gzs.si\)](https://www.gzs.si/)

9 Lithuania: The best Lithuanian universities of technology supervise gymnasiums

Two of the best-rated Lithuanian universities of technology, VILNIUS TECH and Kaunas University of Technology, supervise schools – VGTU Engineering Lyceum and Kaunas University of Technology Gymnasium. Both of these schools strive to attract the best students interested in exact sciences and pay special attention to engineering education. Schools organize field trips to universities and engage in other joint activities.

After graduating high school, most students choose to study engineering fields, often civil engineering. Both schools are doing a great job of getting young people interested in construction science and educating future professionals.

10 Lithuania: The competition 'Pasta bridges' attracts a lot of interest from students and schoolchildren

VILNIUS TECH university has been hosting the Lithuanian Championship "Pasta bridges" for more than ten years, this event is organized by the faculty of civil engineering. During it, testing of pasta bridges, made by the participants, are carried out. The aim is to find out which team's bridge will withstand the greatest load.

From the beginning, only VILNIUS TECH students participated in this competition, later on teams from other universities joined, and now there are plenty of teams from schools all over Lithuania.

It is an interesting event that requires creativity and engineering knowledge, during which participants learn a lot about structures of various forms and their operation. Small structures built from pasta behave similarly to full-scale structures made from structural steel.



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This event encourages interest in the construction of buildings and structures and contributes to school children's decision to choose civil engineering or other related study programs after graduation.



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Appendix 1E (optional):

EQAVET for BESM - Quality self-assessment survey form (Checklist)

Based on the PDCA paradigm, the “Build Enriched Skills EQAVET compliance plan” implements a continuous improvement cycle that involves regular reviews and updates to the EQAVET compliance plan. This ensures that the BESM VET Providers and institution remain responsive to changes in educational practices and EQAVET requirements.

The EQAVET quality self-assessment survey will be carried out temporally, in agreement with the project's Board Management, and with the involvement of the External Quality Assessment Panel.

VET Provider _____ Survey completion date _____
--

1. Which BESM courses have you implemented during the timeframe this survey refers to?

BESMSkillsGroup	Title	Completed time (from-to)
Group 1: Construction Management and Engineering Professionals		
Group 2: Technical Support and Supervision		
Group 3: Skilled Building Trades and Labourers in Construction		
Group 4: Metal and Structural Workers		
Group 5: Machinery Operators, Technicians and Plant Specialists		
Group 6: Business and Administration in Construction		

2. on the defined BESM programs, have you made any changes?



Yes

No

2.1 The changes are due mainly to:

- The composition of the target audience
- the labour market trend
- the training needs of individuals
- Other (to be defined)

3. Has your organization contacted the national EQAVET point (if available) to sound out interest in supporting BESM courses and how the BESM training activities are run according to the national quality criteria, and to the S3 on the Building sector?

Yes

No

4. Is the EQAVET system for BESM included in the management system of the VET provider?

Yes

No

5. In the last year, were there any changes to the quality system adopted by the VET Provider? (new certifications obtained, revision of BESM offer, etc.)

Do you carry out one or more of the following actions in the Planning phase?

Focus groups with stakeholders, and experts in green, and digital innovation in the construction sector to decline learning outcomes of BESM consistently with emerging innovation in the sector.

If yes, please provide at least 1 of these KPIs:

no. (and profile of) stakeholders participating to the Training Needs analysis (umbrella organization for green building, ESG, etc.)

no. of accepted recommendations or proposals from stakeholders and experts

other (please, specify)...



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Consultation with social partners representing both Companies and Workers

If yes, please provide at least 1 of these KPIs:

no. (and kind of) social partners and relevant stakeholders participating to the Training Needs identification (representation of both companies and workers)

no. of relevant indications, and requests emerged during the focus group (active participation from both company representatives and worker representatives in the consultation sessions).

other (please, specify)...

Referencing of BESM curricula with European, National and local strategic plans for the development and the building sector innovation.

If yes, please provide at least 1 of these KPIs:

Percentage of BESM aligned with European qualifications frameworks, such as the European Qualifications Framework (EQF) and the European Skills, Competences, Qualifications, and Occupations (ESCO)

no. of cross-referencing of BESM curricula with the European strategic plan for development of individual and communities (i.e. Pact for Skills, New European Bauhaus, Digital Europe Programme, Next Generation EU, local cluster priorities, etc.)

no. of integration to BESM VET Programs to harmonize BESM learning outcomes to local sector development trends

other (please, specify)...



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- Set up specific measures of financial support, apprenticeships, scholarships for BESM
If yes, please provide at least 1 of these KPIs:
- integration of the BESM programme with other funds at national, local level to provide a student grant
- no. of agreements with companies to support an apprenticeship, internship or other forms of work/training program that may provide for a contribution or refund of participation expenses to students
- other (please, specify)...

- Set up explicit goals/objectives of BESM programmes compared to specific targets
If yes, please provide at least 1 of these KPIs:
- no Unemployed / vulnerable rate in the building workforce
- Planned vulnerable/ unemployed target in BESM programmes participation (annual rate)
- other (please, specify)...

- Advocacy of BESM pathways towards specific learner targets
If yes, please provide at least 1 of these KPIs:
- no. of guidance services implemented, with reference to BESM pathways
- no. of participation in career fairs, one-to-one meetings with potential students, meetings with classes of students leaving school, etc.
- other (please, specify)...

Complement the above list with other actions you carry out, aimed at sharing planning with other relevant actors, at interlacing BESM learning outcomes with broader development objectives of the sector, at local, national and European levels.

Also indicate the KPIs used to measure the results achieved.

Do you carry out one or more of the following actions in the Implementation phase?



VET Staff and Trainers are encouraged to innovate teaching methods and learning approaches
If yes, please provide at least 1 of these KPIs:

- rate of distinct innovative teaching methods implemented by VET staff and trainers over a specific period
- Percentage of VET staff actively participating in the early BESM planning stages
- no. of sectorial fairs attended by teachers on innovation in building and further relevant topics for building sector
- no. of awards or recognitions received by VET staff/trainers for their innovative teaching methods.
- other (please, specify)...

The adoption of more student-focused teaching/learning methods is supported:
If yes, please provide at least 1 of these KPIs:

- Percentage of courses utilizing learner-centered approaches, such as project-based learning or collaborative activities.
- Flexibility in the delivery timing and methodologies of training to accommodate different learner needs and preferences (including deferred, online, evening, etc.)
- Scalability of Learning Outcomes (emphasizes the step-by-step nature of learning outcomes, allowing learners to build skills progressively, and the potential for scalability across different contexts or levels)
- other (please, specify)...

The demonstration of a commitment to sharing successful approaches with the broader education community.

If yes, please provide at least 1 of these KPIs:

- no. of publications or presentations by VET staff/trainers showcasing innovative teaching practices in BESM
- no. of collaborations between VET staff/trainers and industry partners to incorporate industry- relevant teaching methods.
- other (please, specify)...



The adoption of guidance service for students

If yes, please provide at least 1 of these KPIs:

rate Mentors/Students

Satisfaction rate for guidance service by students

Successful rate of students adopting a guidance service

other (please, specify)...

Individual learning needs were taken into account through a learner - centered approach, to enable learners with specific needs to achieve the expected learning outcomes

If yes, please provide at least 1 of these KPIs:

no. of personalized training programmes

no. of validated skills based on non-formal/informal/learning on the job

other (please, specify)...

New certification schemes have been adopted to deliver BESM skills

If yes, please provide at least 1 of these KPIs:

Increase of the certification schemes adopted by the VET provider (no. new certification at local, regional, national or EU level)

Differentiation of certificate standard for BESM skills (digital seal for BESM, micro-credentials, EQF certification, etc.)

other (please, specify)...

Complement the above list with other actions you carry out, aimed at ensuring the widest achievement of learning objectives from target groups with specific needs, and give VET Trainers the needed support to innovate their teaching/learning approach consistently with the building innovation framework.

Also indicate the KPIs used to measure the results achieved.

Do you carry out one or more of the following actions during the Evaluation phase?



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The effectiveness of BESM is monitored

If yes, please provide at least 1 of these KPIs:

no. of VET educational and training programs that explicitly include BESM in their curriculum, ensuring a continuous pipeline of skilled professionals.

Reduction in identified skill gaps within the building sector as a result of the application of BESM, as effectiveness of these skills in addressing specific skill shortages and needs within the industry.

other (please, specify)...

The relevance of BESM is monitored

If yes, please provide at least 1 of these KPIs:

no. of collaborations between BESM certified learners and R&D, innovative Companies within the building sector

no. of BESM skilled professionals working in advancing research and innovation projects within the sector

other (please, specify)...

The BESM teaching methods meet the actual industry needs.

If yes, please provide at least 1 of these KPIs:

Percentage of BESM courses/modules incorporating real-world applications and practical experiences.

no. of collaborations between VET staff/trainers and industry partners to incorporate industry- relevant teaching methods.

other (please, specify)...



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Feedback and Satisfaction from Learners provides insights in BESM learning impact

If yes, please provide at least 1 of these KPIs:

Percentage of BESM learners' feedback surveys measuring satisfaction with the innovative

teaching approaches

Percentage of BESM certified learners successfully employed in roles aligned with the strategic plans for sector development.

other (please, specify)...

Complement the above list with other actions you carry out, aimed at ensuring consistency and reiteration of the evaluation and review plan between the parties.

Also indicate the KPIs used to measure the results achieved.

Do you carry out one or more of the following actions in the Review phase?

Assimilation of BESM into local sector development plans, to measure the relevance and responsiveness to fostering innovation within the building sector.

If yes, please provide at least 1 of these KPIs:

no. of local strategic development plans where build enriched skills are explicitly referenced.

no. of professionals with BESM actively involved in building sector innovation initiatives.

other (please, specify)...



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Feedback Loop System

If yes, please provide at least 1 of these KPIs:

Survey results or feedback mechanisms capturing the satisfaction and recognition of industry stakeholders regarding the contribution of build enriched skills to sector development.

no. of revisions implemented in the BESM Learning Outcomes, based on the Survey results of feedback mechanism involving stakeholders

other (please, specify)...

Updated BESM learning outcomes concerning workers' adaptability to building innovations
If yes, please provide at least 1 of these KPIs:

No. of innovations in the construction process considered

no. of BESM learning outcomes updated, based on renewed innovation needs

other (please, specify)...

Complement the above list with other actions you carry out, aimed at readapting the program to evolving needs and reorganizing it in alignment with the COVE BA (BA) program.

Also indicate the KPIs used to measure the results achieved.



Appendix 2:

Key findings from the Questionnaire

<p>Background information</p>	<ul style="list-style-type: none"> / Half of the courses are new courses / 3 of the Topics from GA are not covered / Great variation in duration of the course (from 3 days to 22 months) and commitment from the learner / High school diploma is the most common qualification to enter the course / Employment for half of the providers is not a prerequisite to enter the course
<p>Content: Teaching methods and Assessment</p>	<ul style="list-style-type: none"> / Some of the identified subtopics are not covered at all under each topical area / Quality Assurance, Certification and Course Evaluation have the lowest inclusion in the course framework / Active Learning and teacher centered approaches are the most common teaching methods used, AR and VR are the least / Lecture slides the most common tool used, AR/VR the least common / Courses are well-structured to provide a diverse range of skills, they reflect a balanced approach / Offering a wide range of green skills ,however, the inconsistency in responses also suggests a potential area for improvement in clearly defining and integrating green skills across all VET offerings / Solid foundation in digital skills, with an emphasis on both technical proficiency and the cognitive skills necessary for effective digital engagement. / →While there is some awareness of the importance of integrating green and digital skills into vocational training, there is also a significant variation in how well these needs are understood and implemented / Assessed mostly through some form of examination (interim, final, quizzes), projects, and less through lab work and



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	<p>internship</p> <ul style="list-style-type: none"> / Emphasis on Skill Application / Varied Alignment with Industry Needs: Course relevance to market needs to some extent, for others not applicable / Potential gaps in curriculum design or delivery: Courses may not fully meet the evolving demands of the construction sector / Focus on Green and Digital Transformation / Stakeholder Engagement / Need for Further Development / While many VET courses in the construction sector are making strides in the certifications aligning assessments with occupational skills, there is still room for improvement / VET courses are diverse, formally recognized, and aligned with both regulatory requirements and industry needs.
Content: Skills	<ul style="list-style-type: none"> / Relevant stakeholders participate in setting VET goals and objectives / The skills translate into real world occupations except for Metal and Structural workers and Machinery operators / Regular updating of VET courses to align with dynamic industry requirements, emphasizing stakeholder feedback, legislative changes, and the integration of new technologies and methodologies. / Necessity of continuously updating and enriching VET programs with new technologies and skills that reflect the latest industry trends and needs. / Necessity of continuously updating and enriching VET programs with new technologies and skills / A multidimensional approach to aligning VET courses with industry needs, emphasizing continuous adaptation, stakeholder collaboration, and practical engagement with real-world challenges / While the integration of green and digital skills into VET programs is seen as beneficial and sometimes even advantageous for the industry, the actual implementation faces multiple practical, regulatory, and educational challenges



Appendix 3A:

Virtual Roundtable 1: Agenda

AGENDA

BuildSkills Academy

First Virtual Roundtable for Discussion on the BuildEnrichedSkills Methodology

Tuesday, 28 May 2024, 14:00 - 15:30 CET

Time	Agenda item	Speaker
13:55 – 14:00	Entry into the virtual room	CTBG
14:00 – 14:05	Welcome and Brief Introductions	CTBG
14:05 – 14:10	Purpose and goals of the 3 roundtables for discussion on the BuildEnrichedSkills Methodology	AUEB
14:10 – 14:20	Background information – key achievements of BuildSkills Academy: <ul style="list-style-type: none"> List of skills and competences for different occupations and EQF levels in the construction sector Process for quality assurance of enriched VET courses 	CB SFC
14:20 – 14:40	BuildEnrichedSkills Methodology: <ul style="list-style-type: none"> Concept Tools Implementation 	AUEB
14:40 – 15:00	Assessing the methodology - Interactive feedback session (split in TGs/breakout rooms): <ul style="list-style-type: none"> Topic 1: Feedback on the overall concept Topic 2: Self-Assessment Questionnaire and Gap Identification Topic 3: Digital Platform Topic 4: Best Practices from Industry/Academia 	AUEB TGs leaders
15:00 – 15:20	Plenary Sharing:	AUEB



	<ul style="list-style-type: none"> • Development of recommendations for the course enrichment process: integrating updated Green and Digital Skills into existing curricula or developing new 	
15:20 – 15:30	Conclusion and Next Steps Wrap up and next roundtable preview	AUEB



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Appendix 3B:

Virtual Roundtable 1: Questions

Virtual Roundtable 1: Presenting the BuildEnrichedSkills Methodology Interactive Feedback Session (split into 5 Thematic Groups)

Topic 1: Feedback on the overall concept:

1. What are your initial thoughts on the methodology presented today?

****prompt questions:

- Is the aim and process clearly articulated and practical?
- Does the methodology clearly address the needs it proposes to meet?
- How relevant do you find the approach to current industry and educational standards?
- What methods or tools would you propose for identifying skills that are currently missing from the VET offerings?
- Given the concerns about integrating new skills, how should the methodology facilitate this integration effectively? What strategies would you recommend?

Topic 2: Self-Assessment Questionnaire and Gap Identification:

1. What are your thoughts on the questionnaire's structure and content?

****prompt questions:

- Are there any additional sections or questions you would suggest enhancing the questionnaire's effectiveness?
- Are there any questions/sections you would remove?
- How do you envision the Gap Identification to take place?

Topic 3: Digital platform:

1. What is your overall opinion on the digital platform?

****prompt questions:

- What features or capabilities would you expect this digital tool to have?
- Do you agree with the approach of starting from defining the occupation-

specific skills for developing this tool?

- Would you consider starting from the Topical area?
- Are there other considerations you think are vital for the foundational phase of this digital tool? Any suggestions you would like to make?

Topic 4: Best Practices from Industry/Academia

13. What is your overall opinion on current VET provision and industry alignment in the construction sector?

*****prompt questions:

- How well do the learning objectives of the VET courses align with current industry needs?
- Are there any areas where alignment could be improved?
- Which teaching methods do you find most effective?
- Are there innovative teaching approaches you would suggest incorporating into the methodology?
- How do the proposed assessment methods align with the EQAVET standards for Quality Assurance??
- Are there adjustments or enhancements you would recommend?
- How can the missing green and digital skills be more effectively integrated into the existing system?
- What difficulties do you foresee in the enrichment process?



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Appendix 3C:

Virtual Roundtable 1: Feedback

Topic 1: Overall methodology

The suggestions from Roundtable 1 with Thematic Group leaders for the overall methodology emphasize several critical aspects to enhance vocational education and training (VET) programs. These key suggestions include differentiating course offerings to ensure they are easy to use and time-efficient, providing comprehensive guidance for developing curriculum content aligned with industry needs, and offering a detailed playbook to guide implementation. The importance of familiarity with industry-specific terms and enriching the means of course delivery is highlighted. The methodology should focus on enabling handcraft workers to compare their own VET programs or work experiences with the platform. Addressing the validation process of enriched courses and the potential challenges with external accreditation bodies is crucial. The methodology should be adaptable to different countries' specific needs and regulatory environments, designed to be future-proof and dynamic. The integration of new methodologies, such as the ESCO framework, is recommended, along with the need for understanding and incorporating EQAVET standards. Training the trainers in new skills, particularly in green and digital areas, is essential. Informational training sessions before VET providers start filling in the self-assessment questionnaire are suggested. The use of existing certification schemes and micro-credentials can support continuous updates. Lastly, involving business and industry representatives in the feedback loop is considered a crucial element for continuous improvement and relevance.

Topic 2: Self-Assessment Questionnaire and Gap Identification

Suggestions from Roundtable 1 for the Self-Assessment Questionnaire and Gap Identification emphasize several key elements. Firstly, there is a focus on determining how to update the numerical scores used in the self-assessment. Additionally, the importance of valorizing other sources to facilitate the updating of skills is underscored. Incorporating potential certification schemes is deemed crucial for validation. The tool should also reflect national perspectives to ensure its relevance across various regulatory environments. Input from industry and business representatives is



necessary to accurately prioritize the list of skills and competencies. Ensuring that the self-assessment tool is quick and user-friendly is essential for accessibility. Finally, the implementation of a registration system to save users' progress is suggested, with consideration given to potential barriers that might arise.

Topic 3: Digital platform

Recommendations from Roundtable 1 with Thematic Group leaders on the development of a digital platform for vocational education and training (VET) highlight several critical aspects. The platform should deliver personalized feedback and solutions, be easy to use, and allow for modifications. User-friendliness is paramount, along with guidelines and options to add new occupations, ensuring compatibility with different occupational names across various countries. The platform should distinguish between existing and emerging skills, particularly those users may not yet be aware of, utilizing a numerical scoring system for self-assessment with clear definitions of green skills and circular economy principles.

A digital tool should support the reporting phase post-assessment and provide tailored guidance to VET providers for curriculum redesign. The platform must be cost-effective to implement and maintain, with sustainable updates to include new occupations and skills. Tools to help VET providers improve their content should be integrated, with training methods tailored to the European Qualifications Framework (EQF) level or the target audience. The platform should be designed to be standalone and adaptable to evolving skills analysis needs, with continuous updates referencing the ESCO database and integrating certification schemes to ensure sustainability.

Support features such as live chat or an FAQ section are essential to assist users. Including a checklist that retrieves information from best practices can guide users effectively. The platform should be adaptive, incorporating new skills as they emerge, and should enhance the means of course delivery and infrastructure. Continuous collaboration with stakeholders is necessary to refine the methodology, ensuring a flexible approach to implementing changes while adhering to institutional and regulatory frameworks. Support mechanisms, such as FAQs, pop-ups in digital tools, and examples of best practices, should be in place to aid users in adopting new methodologies successfully.

2.3.1.4 Main Challenges



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One significant challenge is the limited availability of resources and trained staff. Additionally, resistance from accreditation authorities poses a substantial barrier. The costs associated with implementing new methodologies and technologies also present a considerable challenge. There is a pressing need for appropriate infrastructure to support these new methodologies, without which their effective implementation may be compromised. Another concern is the potential disruption of core learning objectives, which must be carefully managed to ensure that the introduction of new methods does not detract from essential educational outcomes.



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strengths

- + **Ease of Use:** The self-assessment should be simple, user-friendly, and quick to complete, ensuring that VET providers can easily navigate and utilize the tool.
- + **Comprehensive Structure:** The structure of the questionnaire helps VET providers assess their offerings and identify gaps effectively.
- + **Widely Applicable Tool:** Designed to be widely applicable and usable even after the project's end, ensuring long-term relevance and utility.
- + **Informational Support:** Providing informational training before filling out the questionnaire ensures clear understanding of the topics.
- + **Live Support Features:** A live chat feature or a Q&A section could assist users during the completion of the self-assessment, making the process more efficient.

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weaknesses

- **Complex Terminology:** The need for pop-ups or FAQs to help facilitate the questionnaire indicates potential complexity and unfamiliarity with terms.
- **National Legislation Variances:** The questionnaire needs to reference differences in national legislation, which might complicate its uniform application.
- **Living Matter:** Questionnaires and questions are living matters that change infrequently but are still subject to change, requiring a flexible design.

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- + **Enhanced Training:** Including procedures for training the trainers in new skills, particularly green and digital skills, can improve the effectiveness of VET courses.
- + **Continuous Improvement:** Designing the questionnaire as an open matter subject to changes allows for ongoing updates and refinement based on feedback.
- + **Integration with Certification Schemes:** Linking the questionnaire to the ESCO database and Europass system for certification and micro-credentials can enhance its credibility and applicability.
- + **Industry and Business Input:** Involving businesses and industry representatives in the feedback loop can ensure that the identified gaps remain relevant to current market needs.

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1. **Limited Flexibility in Some Regions:** In regions like Lithuania, VET providers have limited flexibility in deciding the list of competencies and skills, which could restrict the questionnaire's applicability.
2. **Customization Challenges:** Combining international standards with customization at the territorial level may be challenging due to varying regional strategies and priorities.
3. **Alignment with Industry Needs:** Ensuring that the methodology maintains strong connections between VET and the industry sector is crucial for its success.
4. **Updating Challenges:** Continuously updating the database and ensuring it remains relevant to current industry standards and requirements can be resource-intensive.

Evaluation



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The SWOT analysis highlights that methodology is appreciated for its comprehensive coverage and personalized feedback capabilities. However, it also points out the need for clearer guidance, better understanding of EQAVET standards, and the necessity for user-friendly self-assessment tools and thorough training for both trainers and participants in green and digital skills

Roundtable 1 Topic 3: Digital platform:

strengths

- + **User-Friendly Design:** The platform is intended to be easy to use, with a clear flow from selecting target occupations to identifying topical areas.
- + **Personalized Feedback:** The digital tool will provide tailored feedback based on user input, making it more responsive and useful for VET providers.
- + **Adaptability:** The platform allows for changes, supplements, and edits to content, ensuring it remains relevant and up-to-date.
- + **Integration with Guidelines:** The platform includes guidelines and offers the option to add new occupations, ensuring comprehensive coverage.

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- + **AI Integration:** Incorporating an AI assistant to support the reporting phase and guide curriculum redesign can enhance the platform's responsiveness and effectiveness.
- + **Future Updates:** The platform can be designed to easily update data and accommodate new occupations and skills as they emerge.
- + **Enhanced Training Methods:** The platform could suggest training methods and resources based on the EQF level and target audience, further supporting VET providers.
- + **Numerical Scoring:** Introducing a numerical score for self-assessment could help in recognizing the existing level of skills and identifying gaps more effectively.

weaknesses

- **User-Friendly Design:** The platform is intended to be easy to use, with a clear flow from selecting target occupations to identifying topical areas.
- **Personalized Feedback:** The digital tool will provide tailored feedback based on user input, making it more responsive and useful for VET providers.
- **Adaptability:** The platform allows for changes, supplements, and edits to content, ensuring it remains relevant and up-to-date.
- **Integration with Guidelines:** The platform includes guidelines and offers the option to add new occupations, ensuring comprehensive coverage.

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- **User Adoption:** The platform's success depends on its ease of use and acceptance by VET providers; any complexity or lack of clarity could hinder adoption.
- **Sustainability:** Maintaining the platform's relevance and updating it continuously to reflect new skills and occupations may require ongoing effort and resources.
- **Differentiation Challenges:** Ensuring the platform can differentiate between existing and new skills effectively, and directing users to select new skills they might be unaware of, could be difficult.
- **Regulatory Variations:** Differences in national legislation and specific requirements across countries could complicate the platform's implementation and usage.

- Create comprehensive guides and FAQs to explain the platform's functionality, addressing initial confusion and ensuring all users understand how to navigate and use the tool.
- Organize informational sessions for VET providers to demonstrate the platform's features and answer any questions.
- Conduct usability testing with a diverse group of VET providers to gather feedback and make necessary adjustments before the official launch.
- Design the platform to be modular, allowing for easy updates and the addition of new occupations and skills.
- Implement a live chat feature and a comprehensive Q&A section to provide real-time support to users during the self-assessment process.
- Conduct pilot tests with selected VET providers to validate the platform's effectiveness and gather insights for further refinement.
- Ensure the platform aligns with international standards like EQAVET and integrates seamlessly with existing certification schemes and micro-credentials.
- Customize the platform to accommodate national legislative differences and specific regional needs, ensuring its broad applicability.



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strengths

- **Comprehensive Structure:** The structured methodology and inclusion of best practices provide a robust framework for VET providers.

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- + **Adaptive Methodology:** Flexibility to incorporate changes and new skills as needed, ensuring the methodology remains relevant.
- + **Stakeholder Engagement:** Ongoing feedback from businesses, industry representatives, and VET providers can help prioritize and update skills and competencies.
- + **Support for Certification:** Using existing certification schemes and micro-credentials can support continuous updates and validation of skills.
- + **International Standards:** Combining international standards with local customization can enhance the relevance and applicability of the methodology.

weaknesses

- **Resource Limitations:** Limited availability of resources and trained staff may hinder the effective implementation of best practices.
- **Complexity in Adaptation:** Adapting the methodology to align with different national legislative and regulatory frameworks can be challenging.
- **Maintaining Relevance:** Ensuring the best practices remain current and applicable over time requires continuous effort and updates.
- **Understanding Terminology:** Need for clear definitions of terms like green skills and circular economy to avoid misunderstandings.

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- **Regulatory Compliance:** Potential resistance from accreditation authorities and the complexity of aligning with various regulatory requirements.
- **Infrastructure Costs:** Modifying training content may incur additional costs and require infrastructure support.
- **Resistance to Change:** VET providers and other stakeholders may resist adopting new skills and methodologies.
- **Sustainability Concerns:** Ensuring the long-term sustainability and regular updates of the methodology to keep it relevant and useful.

1. **Feedback Collection:** Collect additional feedback from participants via email to further refine the methodology.
2. **Pilot Testing:** Implement pilot tests with selected VET providers to validate the methodology and gather insights for further refinement.
3. **Roundtable Discussions:** Plan for a second roundtable in September to present and validate the finalized methodology.
4. **Continuous Improvement:** Maintain ongoing communication with stakeholders to refine and improve the methodology continuously.

Appendix 4A:

Virtual Roundtable 2: Agenda

AGENDA

BuildSkills Academy

Virtual Roundtable 2

on the BuildEnrichedSkills Methodology

Tuesday, 24 September 2024, 14:00-15:30

Time	Agenda item	Speaker
13:55 – 14:00	Entry into the virtual room	CTBG
14:00 – 14:05	Welcome and Brief Introductions	CTBG
14:05 – 14:10	Purpose and goal of the 2nd roundtable	AUEB
14:10 – 14:20	Background information – key findings from roundtable 1	AUEB
14:20 – 14:40	BuildEnrichedSkills Methodology updated: Presentation Digital Platform: demonstration of the draft platform	AUEB
14:40 – 15:00	Assessing the methodology - Interactive feedback session (split in TGs/breakout rooms): <ul style="list-style-type: none"> • Topic 1: Feedback on the updated final version of the methodology • Topic 2: Feedback on the digital platform Digital Platform • Topic 3: Best Practices from Industry/Academia • Topic 4: Implementation of the methodology as presented 	AUEB TGs leaders
15:00 – 15:20	Plenary Sharing: presentation by each group	AUEB/All
15:20 – 15:30	Conclusion and Next Steps	AUEB



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Appendix 4B:

Virtual Roundtable 2: Questions

Virtual Roundtable 2: Assessing the BuildEnrichedSkills methodology (BESM)
Interactive Feedback Session (split into 5 groups corresponding to the Thematic
groups)

Questions:

Topic 1: Feedback on the updated final version of the BESM

2. Overall Impressions of the final version of the BESM.
3. Does it address adequately the issues raised in the First Roundtable?
4. Are the methods and tools clear to you?

Topic 2: Handbook assessment of clarity and usefulness

2. What are your thoughts on the handbook structure and content?
3. Are there any additional sections or questions you would suggest enhancing the Handbook's usability?

Topic 3: Digital platform

1. Overall impression of the Digital tool?
2. Easy to use rating.
3. Suggestions for improvement.

Topic 4: Industry Alignment

1. Do you find the current methodology addresses the issues that need to be considered by VET providers to successfully enhance their courses with the required green and digital skills required in the building sector? Would you propose anything more?



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Appendix 4C:

Virtual Roundtable 2: Feedback

Summary Feedback from Thematic Group Leaders

Circular Waste Management TG

- BESM feedback: the methodology is well structured and practical for application.
- Handbook and platform: more time is needed to review the draft handbook the digital platform is praised for its functionality allowing multiple self-assessments and updating only small parts making it user friendly.
- Training and industry alignment: emphasized the importance of tailoring courses to the needs of the trainers of the trainees and their backgrounds. Co-created agendas and practical on-site training are recommended due to the industry's practical nature.

Design and Engineering TG Feedback

- BESM Methodology: considered clear and useful. The structure is highly applicable to the sector.
- Digital Platform: Considered a necessary tool, with features allowing for flexibility in self-assessment. Recommendations include more emphasis on practical sessions and hands on work.
- Training Design: Highlighted the importance of having training designed in collaboration with the industry to ensure alignment with market needs and the practical nature of the sector.

Environment, Health, and Safety TG Feedback

- BESM Framework: it was acknowledged as comprehensive and well-tailored for vocational training programs.
- Health and Safety Considerations: Recommendations focused on integrating health and safety topics into VET programs, stressing the importance of practical applications.



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New Building Materials - TG Feedback

- Methodology feedback: the overall structure is seen as well aligned with the needs of the industry.
- Digital platform: key feature appreciated is the ability to update small portions of self-assessments. Practical on-site training is also highlighted as essential.
- Alignment with industry: the methodology is seen as thoroughly aligned with modern industry standards in building materials and sustainability.

Overall Summary of the BSA Roundtable Feedback

The feedback from the various BSA roundtable discussions provided insights across several sectors, focusing on vocational training, industry alignment, practical applications and the integration of sustainability and digital technologies. More specifically:

1. Practical Training and Industry Alignment

Across all areas, the need for practical, hands-on training was emphasized. Participants emphasized the importance of aligning vocational education with real-world industry practices, ensuring that the enriched courses prepare trainees for the evolving demands of the market in terms of green and digital skills.

There was a strong suggestion to create training modules that include on-site experience, case studies and real-time problem-solving exercises rather than focusing solely on theoretical knowledge.

2. Digital Platforms and Flexibility

TG members recognized the value of developing the digital platform for self-assessment noting their flexibility, adaptability, and capacity for frequent updates allowing both trainers and trainees to track progress efficiently.

The platform was also seen as beneficial for updating content, making it responsive to the rapidly evolving demands in the construction and engineering sectors.

3. Green Skills and Sustainability

All groups emphasized sustainability and energy efficiency in the construction sector. In particular, training programs should be aligned with green building standards, circular economy principles, and the latest principles for energy efficient construction. Programs related to circular waste management were recommended to focus on integrating recycling practices, resource efficiency, and sustainable building



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materials into training curricula. The BESM methodology was appreciated for its attention to these principles.

4. Health, Safety, and Environment

Environmental safety and health concerns were also prioritized, by all TGs, with feedback highlighting the importance of including health and safety training as part of vocational education especially with new green technologies and sustainable practices in mind. Training in safe and sustainable construction was regarded as essential particularly with emerging technologies like energy efficient systems, low carbon materials, and digital tools for construction management.

5. Training in New Technologies

Several recommendations focused on equipping trainees with the latest digital skills for BIM (Building Information Modeling), AI-driven design, smart construction technologies, and circular economy practices. Emphasis was placed on aligning courses with digital competencies necessary for modern construction roles. The feedback further suggested incorporating blended learning techniques, combining online digital tools with traditional classroom methods, to improve the delivery of digital skills in a scalable accessible format.

Recommendations for Improvement

1. Ongoing Professional Development

Teacher training should also include continuous professional development (CBD) opportunities, ensuring that trainers are up-to-date with new methods in sustainable and digital construction. This includes enhancing the digital skills of instructors to better equip them for leading the transition to greener, more technologically advanced practices.

2. Modular and Tailored Programs

Feedback recommended offering modular programs that could be tailored to specific industry needs. This should include flexible learning schedules, allowing learners to gain expertise while managing work commitments.

3. Inclusivity and Diversity

Programs should also aim to be more inclusive, encouraging gender equality and diversity in construction roles there was recognition that efforts to attract underrepresented groups and young people to the sector are crucial for future



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industry sustainability.

Combined Feedback on BESM, Handbook, Digital Platform, and Industry Alignment from All Groups

Topic 1: Feedback on the Updated Final Version of the BESM

1. Overall Impressions of the Final Version of BESM

The general impression was positive, with participants appreciating the comprehensive nature of the BESM. They acknowledged that it effectively integrates green and digital skills into vocational education training (VET). Many highlighted its potential to drive sustainable and innovative changes in construction training. There were some suggestions for clarity improvements in certain sections, and suggestions were offered for additional real-life case studies which could further enhance the understanding of the model's practical application.

2. Does it Adequately Address the Issues Raised in the First Roundtable?

The updated version was seen as having adequately addressed most of the concerns from the First Roundtable. The feedback was that the inclusion of more practical training modules and detailed implementation steps were significant improvements. Some noted that while the BESM has expanded its scope there is still room to ensure consistency across different regions to reflect the varied local needs and regulatory contexts in construction.

3. Are the Methods and Tools Clear?

Participants generally agreed that the methods and tools provided by the BESM were clear and well structured. However, a few indicated that some of the technical language could be simplified to make the model more accessible for educators with less expertise in digital tools. It was suggested that additional diagrams or interactive elements in the documentation could help to clarify complex methodologies, particularly regarding energy efficient and sustainable construction techniques.

Topic 2: Handbook Assessment of Clarity and Usefulness

1. Thoughts on Handbook Structure and Content

The handbook was considered clear, well organized, and comprehensive. Many felt



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that it provides a solid foundation for VET providers and educators to follow. The focus on green skills and digital competencies was praised with the handbook being viewed as a useful tool to guide curriculum development. There were suggestions to include a glossary of key terms especially for terms related to digital technologies and energy efficient building methods. A few respondents mentioned that some sections could benefit from condensing to improve readability.

2. Suggestions for Enhancing Usability

Several participants proposed adding more region-specific examples, particularly to address local building standards and sustainability practices this would make the handbook more adaptable to diverse geographic contexts. It was also recommended to include additional case studies and guidelines for assessment, allowing trainers to measure within progress more effectively. A few participants mentioned that the handbook could benefit from more step-by-step guidelines for integrating new technologies into VET courses.

Topic 3: Digital Platform

1. Overall Impression of the Digital Tool

The overall feedback regarding the digital platform was positive thanks to its intuitive interface and user-friendly navigation. Especially features such as the platform's ability to provide interactive learning modules and self-assessment tools were highly appreciated. In addition, the integration of green and digital learning modules was seen as a major strength. The platform was rated as easy to use particularly for learners with basic digital skills, although others felt that users who are less familiar with digital tools may require additional tutorials or onboarding support to maximize the platform's potential.

2. Easy to Use Rating

Most participants rated the platform high on easy to use, particularly for learners with basic digital skills but some indicated that the users who are less familiar with digital tools may require additional tutorials or onboarding support.

3. Suggestions for Improvement

More multimedia content, including videos and virtual simulations, was suggested to enhance the interactivity of the platform. Also, a mobile-friendly version to increase accessibility for users on the go was suggested. Additionally, participants mentioned



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the importance of integrating feedback mechanisms directly into the platform to allow for continuous improvement.

Topic 4: Industry Alignment

1. Does the Methodology Address Industry Needs?

Most participants agreed that the methodology addresses the green and digital skills needed in the construction sector, particularly the focus on sustainability and energy efficient practices. However, some participants recommended further alignment with specific occupational roles suggesting the inclusion of more specialized modules or certification for different sectors within the construction industry, such as BIM for civil engineers or energy efficient practices for brick layers

2. Proposals for Additional Considerations

It was recommended that the methodology provides more industry specific pathways for continuous professional development (CPD) ensuring that VET providers stay updated with technological advances and green construction standards/ They also suggested stronger partnerships with industry stakeholders to ensure that the BESM stays relevant and adaptive to the rapidly changing demands of the construction sector, especially with the advent of smart technologies and automation.

Feedback on the BESM from the Thematic group members

All 19 respondents agreed that the build enriched skills methodology (BESM) is a well-structured and comprehensive approach that successfully integrates green and digital skills into VET courses. The methodology was praised for its clarity systematic structure, and practicality, and most respondents emphasized its readiness for implementation.

Overall impressions of BESM

- The overall reception of BESM was highly positive, with most respondents describing it as easy to understand and straightforward to implement. Several responses highlighted the methodology's ability to tackle current and emerging challenges in the construction sector, particularly in areas like net-zero emissions, climate resilience, and the circular economy.



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- In terms of addressing issues raised in the First Roundtable, all participants agreed that BESM had successfully responded to the concerns and suggestions raised during the earlier discussions.
- Methods and tools: all participants confirmed that the methods and tools included in the methodology were clearly defined, easy to understand, and appropriate for enriching courses. Some respondents praised the systematic approach that BESM follows in addressing green and digital skills requirements for VET courses.

1. Handbook Assessment of Clarity and Usefulness

The handbook, which serves as a detailed guide for implementing the methodology, received highly favorable reviews. Respondents described it as well organized, clear, and logically structured. The handbook was found to be effective in providing a step-by-step guide to help VET providers implement the BESM methodology.

a. Structure and Content:

Most respondents were satisfied with the handbook's clarity and practicality. It was praised for offering a clear breakdown of the three main steps in the methodology, making it easy for VET providers to navigate the enrichment process. The handbook was consistently described as useful for guiding trainers through the course enrichment process, with clear instructions provided for implementing both green and digital skills into existing or new courses.

b. Suggestions for Improvement:

- A suggestion was to add step-by-step examples showing how a course can go through the enrichment process, which would provide concrete guidance for trainers and VET providers.
- Several respondents proposed including an annex with access to free learning resources to support vet providers in enriching their courses this would help users identify educational materials that align with the methodologies green and digital skills focus.
- Country specific content was recommended by some respondents recognizing that local adaptations might be necessary for the handbook



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to be effective in different EU member states. They emphasized that regional and national regulatory differences could affect how vet courses are developed and registered, making it crucial for the handbook to offer guidance on navigating these issues.

- In order to identify any areas that might require further clarification, it was recommended to run practical testing of the handbook in real-world training settings.

3. Feedback on the Digital Platform

Overall, the digital platform was positively received with respondents describing it as user-friendly, intuitive, and well designed. The platform's structure and interface were commended for their logical coherence, and participants appreciated the clarity of its features. However, there was a strong emphasis on the need for practical testing to ensure that the platform operates as effectively as it appears.

a. User-Friendliness:

The platform's design was widely regarded as easy to use, with an intuitive interface that should facilitate quick navigation for both experienced users and those less familiar with digital tools. Many respondents felt that the platform is well suited to supporting the goals of the BESM methodology particularly in terms of self-assessment tools and skills gap analysis.

b. Suggestions for Improvement:

- Several respondents emphasized the importance of practical testing to ensure the platforms' effectiveness once fully deployed. They suggested conducting real world tests to verify that all functions, particularly the self-assessment tools, work as intended and provide meaningful outputs.
- A step-by-step guide or detailed explanations of how specific features of the platform work, such as how to conduct skills assessments and generate gap reports, were recommended. This would provide users with a clearer understanding of how the platform can support commerce enrichment.



- Several respondents recommended ensuring that the platform allows practical and easy access to enrichment resources so that users can quickly find the relevant materials to enhance their courses.

2. Industry Alignment

Overall, respondents confirmed that the methodology is well aligned with the green and digital transitions required in the construction sector. The feedback highlighted that the BESM methodology effectively incorporates the skill needs of the sector, aligning with European frameworks like EQF (European Qualifications Framework) and EQAVET (European Quality Assurance in Vocational Education and Training).

1. Relevance to Green and Digital Skills:

- All respondents confirmed that the methodology addresses the most important skills required by the construction sector in the context of the green and digital upskilling and reskilling as mandated by EU policies like the Green Deal. The methodology was found in alignment with emerging technologies and sustainability practices, fitting within existing industry and EU regulations.

2. Engagement of Industry Stakeholders:

- Several respondents emphasized the need for better industry engagement and partnerships between VET providers and businesses to ensure the methodology's real world applicability.

Challenges of National Differences:

- National differences in VET systems might present challenges for the implementation of BESM. The recommendation was to keep the methodology flexible so that it can be adapted to various national contexts, particularly in how new courses are registered and accredited.

Checkmarks for Validation and Recommendations

The validation of the BuildEnrichedSkills Methodology across 20 checklists reveals a strong consensus on key elements of the methodology. Relevance to current labor market needs was consistently marked as adequate in 19 out of 20 checklists, demonstrating widespread agreement that the methodology addresses the needs of



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both employers and employees. Similarly, technical quality and presentation were deemed satisfactory in 19 out of 20 cases reflecting the perceived clarity and robustness of the materials.

In terms of digital training methods and tools, identifying skills gaps, and communication with employers in the construction sector, 19 checklists confirmed the sufficiency of these elements. Recommendations for training the trainers and the procedure for enriching courses were also positively evaluated with 19 out of 20 checklists endorsing their adequacy.

The relevance to gaps in skills and training offerings, outlined in Del 2.1, was confirmed by 18 out of 20 respondents, along with the process for assessing the effectiveness of course enrichment. However, slightly fewer respondents (17 out of 20) found the methodology scalable to other sectors or fully aligned with the latest tendencies and technologies. Lastly the procedure for digital self-assessment of acquired skills was marked as effective by 18 out of 20 reviewers highlighting a general approval but with room for improvement in a few areas.

Suggestions for Improvement

Carbon Footprint Course

A strong suggestion was made to introduce a new course focused on the carbon footprint of buildings, covering aspects such as embedded energy and life cycle emissions. This recommendation aligns with the increasing emphasis on sustainability and environmental responsibility in the construction industry by incorporating a dedicated course on carbon footprints, the methodology would address the growing demand for knowledge on how buildings contribute to climate change.

2. Emphasis on Green Aspects

Several reviewers noted that the methodology should place greater emphasis on green and sustainable practices alongside digital training. While the methodology already includes adequate digital training tools, it was suggested that more explicit focus on the environmental impacts of construction and green building technologies would strengthen the approach. This could involve embedding sustainability concepts more prominently in every course ensuring that construction professionals are not only digitally literate but also equipped to incorporate eco-friendly materials, technologies, and methods into their work. This enhancement would ensure that



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trainees are prepared to meet the demands of an increasingly eco-conscious market.

3. Tailored Communication with Stakeholders

There was a clear recommendation to improve stakeholder communication by tailoring the approaches to meet the diverse needs of the construction sector. The sector comprises various actors such as employers, contractors, VET trainers and policymakers, each with different levels of expertise, language requirements, and communication preferences. It was suggested to include multilingual communication options to address the needs of international teams and employ a variety of communication methods such as digital platforms, reports, or face to face interactions to ensure inclusivity. Additionally, using specialized tools for each group, such as project management software for contractors or instructional materials for trainers, would help ensure that information is shared in the most efficient and accessible way possible.

4. Practical Testing of the Methodology

The need for practical testing of the methodology with actual project participants, VET teachers, and students was proposed. The testing would involve applying the methodology in a real training to see how it performs in practice, which would allow stakeholders to identify any gaps or challenges that may not be apparent in the theoretical validation.

5. Expansion of Occupational Scope

A suggestion has been made to expand the list of occupations covered by the methodology to ensure it comprehensively addresses all relevant roles in the construction sector. Specifically, geotechnical works and earthworks were identified the areas that were underrepresented in the existing scope. By broadening the list of occupations, the methodology would be more inclusive of the full range of specialized skills required in construction. This would not only make the training more relevant to a wider audience but also ensure that critical roles in infrastructure development, such as those related to soil mechanics and foundational works, are adequately addressed.

6. Clearer Definition of Training Outcomes and Target Groups



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Several reviewers emphasized the need for more clearly defined training outcomes and better specification of target groups. This would help ensure that the methodology is focused and outcome oriented. Defining the learning objectives more explicitly would allow trainers and trainees to have a clear understanding of what skills and competencies are expected to be gained by the end of the course. Additionally, a clearer definition of target groups, for instance by specifying whether the training is aimed at entry level workers, mid-career professionals or experienced managers, would help in tailoring the training content to the needs of each group, ensuring that it is neither too basic nor too advanced for its intended audience.



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