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EUROPEAN CULTURAL
HERITAGE SKILLS ALLIANCE

Report: Cultural heritage education & training in Europe – pathways to qualifications

Deliverable D3.1

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Executive summary

Work Package 3 – Report on transmission mechanisms of knowledge and non-linear pathways to qualifications

Deliverable D3.1 “Cultural heritage education & training in Europe – pathways to qualifications” investigates how formal and non-formal education and training are transmitted and how these pathways may lead to qualifications for jobs and professions.

Education and training (E&T) are at the heart of all Blueprint alliances, initiatives set up by the European Commission in order to solve skills shortages in certain employment sectors. Skills needs can only be addressed effectively by first identifying existing skills gaps and, secondly, filling these very gaps through E&T opportunities which are fit-to-purpose and support the overall sectoral strategy.

Work Package 3 of the CHARTER Alliance has committed to work towards this goal for the cultural heritage sector by developing a database for cultural heritage education and training. With the help of this database we will work towards the following deliverables:

- develop a database of existing cultural heritage E&T institutions and programmes and link them to qualifications and professions in the field;
- identify gaps and needs in existing education and training programmes;
- explore quality standards and certifications schemes;
- propose innovative/emerging occupations and curricula guidelines.

The starting point for all of these activities has been the development of a methodology for data collection on education and training institutions and programmes in cultural heritage. This report reflects WP3’s research and activities in the context of this task and outlines the resulting methodology. It lists the main information and indicators the database will collect and explains our reasoning for including them in the database.

Moreover, this report reflects our analysis of previous Blueprints and the lessons learnt from them, which we have taken into account as far as possible. In addition, we have paid a great deal of attention to clarifying the key concepts relevant for our task. We also describe four sample pathways to cultural heritage qualifications and professions based on formal and non-formal learning, which illustrate the diversity and complexity of cultural heritage E&T in Europe.

This report and the methodology contained therein build on all the work that has been undertaken by our CHARTER colleagues in the first year of the project. In particular, we are greatly indebted to Work Package 2 and its model for a cultural heritage ecosystem as outlined in D2.1. Understanding cultural heritage as social value has been a crucial point of departure for this report and will shape all further analyses undertaken by WP3.



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Abbreviations

- CEDEFOP_____ European Centre for the Development of Professional Training
- CQAF_____ Common Quality Assurance Framework
- CPD_____ Continuing Professional Development
- DF-EHEA_____ Qualification Framework for the European Higher Education Area
- ENCoRE_____ European Network for Conservation-Restoration Education
- EQAVET_____ Quality Assurance in Vocational Education and Training
- EQF_____ European Qualifications Framework
- ESCO_____ European Skills/Competences, Qualifications and Occupations
- ESG_____ European Standards and Guidelines for Quality Assurance in the European Higher Education Area
- ECTS_____ European Credit Transfer and Accumulation System
- ECVET_____ European Credit System for Vocational Education and Training
- EQAR_____ European Quality Assurance Register for Higher Education
- EURES_____ European Cooperation Network of Employment Services
- HE_____ Higher Education
- ISCED_____ International Standard Classification of Education
- ISCO_____ International Standard Classification of Occupations
- LLL_____ Lifelong Learning
- ICCROM_____ International Centre for the Study of the Preservation and Restoration of Cultural Property
- ILO_____ International Labour Organisation
- MOOCs_____ Massive Open Online Courses
- NOC_____ National Occupational Classification
- NQF_____ National Qualifications Framework
- NSC_____ National Skills Classification



QA _____ Quality Assurance

VET _____ Vocational Education and Training

WP _____ Work Package



1. Introduction

Work package 3 has been charged to contribute towards the overarching goal of the CHARTER project – the development of a lasting, comprehensive skills strategy for cultural heritage – by focusing on education and training (E&T) for the sector. In other words, WP3 will investigate the E&T individuals undertake before embarking on cultural heritage jobs or professions (initial E&T), or the continuing E&T that enables individuals either to continue their careers in cultural heritage with deepened expertise or which allows someone working in other employment sectors to transition to cultural heritage.

Thus, WP3 will investigate which kind of education and training leads to cultural heritage qualifications and professions in the field. The main instrument by which we intend to fulfil this goal is to develop a database (Task 3.2), which will allow us to first collect information on European cultural heritage E&T and then analyse its content.

In addition, through this research, CHARTER will be able to support Member states in upskilling and/or reskilling cultural heritage professionals, building on the trust that the European Commission expressed towards our consortium in the Commission Recommendation of 10 November 2021 on a common European data space for cultural heritage.¹

This report reflects the research undertaken in preparation for T3.2, as well the information on cultural heritage education that we have collected through various activities in the CHARTER project over the course of its first 10 months, including an analysis of what other Blueprint initiatives did to collect similar data. Because of this, the material gathered for this report is primarily of a descriptive nature and is intended as a methodology for the implementation and use of the database. Only when the database has been established and content has been filled in, we will be able to present an analysis of education and training for cultural heritage in Europe. Moreover, this means that this report can only reflect preliminary findings. We are convinced that research based on the database and continued exchanges with our CHARTER colleagues will support us in deepening our understanding of cultural heritage E&T, which will be reflected in the forthcoming deliverables of WP3.

¹ “[I]n line with the European Skills Agenda and its first flagship initiative, the Pact for Skills, and in support of the European Pillar of Social Rights action plan, Member States should set specific targets for upskilling or reskilling cultural heritage professionals. Complementary to this, and building on the Blueprint Alliance for cultural heritage (CHARTER), the cultural and creative industries, as one of the 14 eco-systems identified by the single market strategy, are currently building a large-scale partnership for skills development that should join the Pact for Skills.” European Commission Recommendation (EU) 2021/1970 of 10 November 2021 on a common European data space for cultural heritage. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021H1970>.



1.1. Benchmarking with other Blueprints

The Blueprints for Sectoral Cooperation on Skills (also called Alliances for Sectoral Cooperation on Skills) are initiatives supported by the European Union to develop and implement strategies to address skills gaps in priority sectors via the involvement of key stakeholders, including business, NGOs, trade unions, research institutions, education and training institutions as well as public authorities. The aim is to develop concrete actions to satisfy short- and medium-term skills needs, which in turn support the overall sectoral strategy, including consideration of transversal competences (e.g. on digital skills, green skills and sustainable development), in an increasingly competitive EU labour market.

The Blueprint for Sectoral Cooperation on Skills was one of the key initiatives of the Skills Agenda for Europe 2016. Within the Pact for Skills of the Updated Skills Agenda 2020, it has been expanded and opened to more sectors.² The Blueprint builds on previous work by the European Commission and sectoral partners, in particular the European Sectoral Skills Councils and the Erasmus+ Sector Skills Alliances, to address skills gaps in sectors.

The specific objectives pursued with the Sector Skills Alliances are as follows:

- Developing strategic approaches to sectoral skills developments through partnerships for sustainable cooperation between key stakeholders in the sector and public authorities;
- Identification of existing and emerging skills needs for professions in specific sectors;
- Strengthening the exchange of knowledge and practice between education and training institutions and the labour market;
- Promoting relevant sectoral qualifications and support agreement for their recognition;
- Building mutual trust, facilitating cross-border certification and professional mobility and increasing recognition of qualifications at European level within a sector;
- Adapting VET provision to skills needs, focusing both on job specific skills as well as on key competences;
- Integrating work-based learning in VET provision, supported where possible with international experience, and exploiting its potential to drive economic development and innovation;
- Creating “platforms” and networks for sustained partnerships between VET providers, key labour market stakeholders and key national and/or regional stakeholders for constant adaptation of VET provision to skill need.

The idea of skilling for a job is central to Blueprint Alliances. They will address skills shortages and unemployment by:

- Gathering information for the European Skills Panorama;³

² About the blueprints for sectoral cooperation on skills see <https://ec.europa.eu/social/main.jsp?catId=1415&langId=en>.

³ See: https://skillspanorama.cedefop.europa.eu/en/useful_resources/including-sectoral-skills-evidence-skills-panorama-practical-framework.



- Developing a sector skills strategy;
- Developing occupational profiles, vocational programmes and qualifications;
- Designing a long-term action plan to be rolled out at the national and regional levels;
- Promoting the use of EU tools such as;
 - the European Qualifications Framework (EQF);
 - European Skills, Competences, Qualifications and Occupations (ESCO);
 - Europass;
 - the European Credit System for Vocational Education and Training (ECVET);
 - the European Quality Assurance in Vocational Education and Training (EQAVET).

In addition, the EU encourages the roll-out of sectoral strategies at national and regional level in cooperation with national and regional authorities, and key stakeholders. The evidence produced by the Blueprint partnerships will feed into strategies for the development of these sectors at European level. The data will also enrich the Skills Panorama, the public skills database powered by CEDEFOP,⁴ the European Centre for the Development of Vocational Training.

1.2. Lessons learnt from other Blueprints

The priority sectors for developing skills alliances are set forth each year based on the Commission's assessment of skills gaps in economic sectors and the potential impact of these gaps on growth, innovation and competitiveness, as well as the available budget. Skills gaps are identified with the help of data from CEDEFOP. Priority sectors have changed since the launch of the first call in 2016. The following table summarises the skills alliances supported so far by Erasmus+ Key Action 2 (KA2) - Cooperation for innovation and the exchange of good practices. Annex I provides more details and links for each project mentioned.

CALL	PROJECT TITLE	SECTOR	IMPLEMENTATION STATUS
Sector Skills alliance 2016 EAC/A04/2015	EU textile clothing & footwear (TCLF) skills council: analysis of emerging occupations in a digital environment	Manufacturing	1st December 2016 – 28th February 2019
	A European Sector Skills Alliance for Sport (ESSA-Sport)	Arts, entertainment and recreation	November 2016 – November 2019
	Fostering growth in the Blue Economy by developing an action plan for	Agriculture, forestry and fishing	December 2016 January 2019

⁴ <https://www.cedefop.europa.eu/en>.



	Innovative European Aquaculture VET and harmonized qualifications		
	Mapping Skills Needs and Supply in the Dairy Sector (AEDIL)	Agriculture, forestry and fishing	December 2016 December 2019
Sectors Skills Alliances 2017 EACEA 04/2017	S4TCLF – Skills 4 Smart TCLF Industries 2030	Textile	November 2018 December 31/12/2021
	DRIVES – Development and Research on Innovative Vocational Education Skills	Automotive	January 2018 December 2021
	MATES – Maritime Alliance for fostering the European Blue economy through a Marine Technology Skilling Strategy	Maritime	January 2018 – April 2022
	NGT - The Next Tourism Generation Alliance	Tourism	January 2018 December 2021
	EO4GEO - Towards an innovative strategy for skills development and capacity building in the space geo-information sector supporting Copernicus User Uptake	Space Geo	January 2018 December 2021
Sector Skills Alliances 2018 - EAC/A05/2017	Sector Skills Strategy in Additive Manufacturing	Additive Manufacturing	January 2019 December 2022
	Skills Blueprint for the Construction Industry	Construction	January 2019 December 2022
	Futureproof Skills for the Maritime Transport Sector	Maritime	January 2019 December 2022
	Blueprint “New Skills Agenda Steel”: Industry-driven sustainable European	Steel Skills Agenda and Strategy - Steel	January 2019 December 2022
Sector Skills Alliances 2019 - EAC/A03/2018	Alliance for Batteries Training and Skills	Batteries for electro- mobility	December 2019 December 2023
	Addressing the current and Future skill needs for sustainability, digitalization, and the bio-Economy in Agriculture: European skills agenda and Strategy	Bio-economy, new technologies & innovation in agriculture	December 2019 December 2023
	Assets+ Alliance for Strategic Skills addressing Emerging Technologies in Defence	Defence technologies	January 2020 December 2023
	Education for Digitalisation of Energy	Digitalisation of the energy value chain	January 2020 December 2023



	SPIRE-SAIS - Skills Alliance for Industrial Symbiosis - A Cross-sectoral Blueprint for a Sustainable Process Industry	Energy intensive industries / industrial symbiosis	November 2019 November 2023
	METIS - MicroElectronics Training, Industry and Skill	Microelectronic manufacturing & design	November 2019 October 2023
Sector Skills Alliances 2020 - EAC/A02/2019	CHAISE - A Blueprint for Sectoral Cooperation on Blockchain Skill Development	Blockchain	November 2020 October 2024
	CHARTER - Cultural Heritage Actions to Refine Training, Education and Roles	Cultural Heritage	January 2021 December 2024
	REWIRE - Cybersecurity Skills Alliance - A New Vision for Europe	Cybersecurity	November 2020 October 2024
	STAFFER - Skill Training Alliance For the Future European Rail System	Rail supply and transport industries	November 2020 October 2024
	The European Software Skills Alliance	Software services	November 2020 October 2024
	Blueprint for Sectoral Cooperation on Skills in Work Integration Social Enterprises	Work integration and social enterprises	January 2021 December 2024

Each project lasts generally 4 years and is implemented by large partnerships including partners from different EU countries and with different institutional objectives.

Several EU projects in the field of cultural heritage have been funded under the Erasmus+ programme, including the mapping of new and emerging cultural heritage-related professions.⁵ Their results will continue to be evaluated as part of the initial strategic analysis of cultural heritage competences and occupational profiles of the CHARTER project, the first and the only sectoral alliance in cultural heritage.

While quite a large number of alliances have been launched so far, the composition of the partnerships and the characteristics of this sectoral alliance differ greatly, as does the scope of the work. Sectors are specifically included in the call for Blueprint projects because the EU identifies a gap in the system for the provision, retention or development of skills compared to the evolution of market needs.

Each Blueprint draws on the discrete competences and networks of its partners to identify skills needs and to propose (new) strategic approaches to sectoral cooperation on skills. A Blueprint project is meant to provide strategic guidelines and tools for the sustained implementation of the sectoral strategy and cooperation over the years.

Initial Work Packages (WPs) in other Blueprints focus on mapping existing formal and non-formal, sector-relevant education and training provision. Developing a methodology for identifying the transmission

⁵ See for example Mu.SA <http://www.project-musa.eu/> and BIBLIO <https://www.biblio-project.eu/>.



mechanisms of knowledge and non-linear pathways to qualifications for CHARTER, was informed by analysis of the methodologies used in these other Blueprints, from which the following considerations emerge as being relevant for mapping E&T:

- Definition of the research objectives in order to limit and circumscribe the scope of the analysis (e.g. the EQF level, the ISCO-ESCO coding);
- Identification of the data exploration method (e.g. analytics from available data base, manual feeding, survey);
- Identification of the relevant categories for the data classification (e.g. name of the provider, main subject, location, duration, EQF level, type of learning (formal, non-formal), types of certifications awarded, entrance requirements, ECTS (if any), mode of training provision, language of the training, category of training provider (e.g. HE, VET, business, other);
- Timescale of the search;
- Geographical coverage;
- Listing and archiving data source references;
- Gathering/archiving training materials (e.g. curricula, links, etc.);
- Agreed target number of entries;
- Provide clear instructions for adding entries into the database;
- Verifying consistency of data entries and coding of the research to ascertain if a broader/narrower coding is required as soon as first round of entries is completed.

Mapping of training provided is complicated by a number of factors, including:

- The availability of data bases;
- The classification of current courses for informal-non-formal training;
- The translation of information into English for better comparison;
- The speed of the evolution of the training provision during the time-frame of the project;
- The availability of an EU-accepted glossary on cultural heritage education;
- Quality control / alignment of the inputs included in the data base;
- The need to maintain the database up to date.

However, the following criteria are considered sufficient to effective analysis:

- The degree of involvement and cooperation of the sectoral skills alliance partnership and external stakeholders;
- The availability of specific IT tools for creating and surfing the data base;



- The possibility to grant open access to the results for contribution from external stakeholders (though maintaining a control over the information archived).

In addition to the above, CHARTER is a unique Blueprint project with distinctive characteristics as follows:

- It is the first Blueprint in the cultural heritage sector;
- It is mandated to consider the nature of cultural heritage based on the following axioms:
 - Cultural heritage as “public and quasi-public goods or merit goods” viz. products or services that - regardless of the private or public nature of the owner and the scope of its use (private, public or not-for-profit scope) - serve a public interest and would not survive in usual market conditions. Hence, “the government of a given country takes partial responsibility for them on behalf of citizens through regulations, incentives and public funding allocated to heritage.”⁶
 - Cultural heritage as a “common good,” co-authored and co-owned by people.⁷
- There are 5 areas of specialisation in the scope of the CHARTER project, which enlarges greatly the dimensions of the analysis. (see: chapter 2 of this document, and deliverable D2.1 of the CHARTER project).

All of these characteristics are relevant for the definition of the methodology and the concrete results of the mapping.

⁶ Cultural Heritage Counts for Europe (CHCFE) <https://www.europanostra.org/our-work/policy/cultural-heritage-counts-europe/>.

⁷ “Cultural heritage is a shared resource, and a common good. Like other such goods it can be vulnerable to over-exploitation and under-funding, which can result in neglect, decay and, in some cases, oblivion. Looking after our heritage is, therefore, our common responsibility. While heritage protection is primarily a matter for national, regional and local authorities, the European Union has a role to play in line with the EU Treaties and in respect of the principle of subsidiarity” (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions “Towards an integrated approach to cultural heritage for Europe” COM/2014/0477 final - <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52014DC0477>).



2. Five areas versus one domain with six functions

According to the Erasmus+ Call which originated the CHARTER project application, cultural heritage encompasses the following five areas:

1. *Safeguarding and Preservation*: Protection; conservation-restoration; archiving; collection management, care and enhancement; materials science / analysis; fieldwork; conservation; restoration; (including via digital means);
2. *Crafts and traditional knowledge*: Heritage-related crafts; traditional construction techniques; materials suppliers; (including via digital means);
3. *Dissemination and communication*: Audience development; community engagement; promotion; visitor care and experience; accessibility; education; cultural mediation; interpretation; presentation; (including via digital means);
4. *Knowledge*: Cultural heritage identification; study; recording, (including via digital means);
5. *Planning / Management*: strategic planning; site and project management; mediation; procurement; policymaking and regulation; fundraising; logistic; security; legal and IPR aspects.

This framework is based on the OMC⁸ and Voices of Culture Dialogues⁹ and concepts developed within the scope of the European Year of Cultural Heritage. At first glance, it appears to be a useful model for describing the cultural heritage sector. However, soon after the start of the project, CHARTER consortium members agreed that classifying cultural heritage into five mutually exclusive areas does not reflect the complexity and systemic nature of the actual situation.

Hence, the first deliverable of the project by Work Package 2 – “A new landscape for heritage professions – preliminary findings D2.1” – is developing an alternative “skills DNA” classificatory model¹⁰. Taking the ESSnet model¹¹ as a starting point, D2.1 proposes that cultural heritage be recognised as a discrete **domain** with six interconnected and overlapping **functions**:

1. Recognition
2. Preservation and Safeguarding

⁸ OMC (2018). Fostering cooperation in the European Union on skills, training and knowledge transfer in cultural heritage professions. Report available at: <https://op.europa.eu/pt/publication%20detail/-/publication/e38e8bb3-867b-11e9-9f05-01aa75ed71a1>.

⁹ VoC (2017). Skills, training and knowledge transfer in cultural heritage professions, Report available at: <https://www.voicesofculture.eu/wp-content/uploads/2018/06/VoC-Skills-and-training-Final-report-with-Appendix1.pdf>.

¹⁰ CHARTER WP2 (2021). A new landscape for heritage professions – preliminary findings D2.1. Available at: <https://charter-alliance.eu/results/>.

¹¹ ESSnet-CULTURE (2012). European Statistical System Network on Culture - FINAL REPORT. Available at: https://ec.europa.eu/assets/eac/culture/library/reports/ess-net-report_en.pdf. This has been further developed according to recent reports on targeted measuring and describing the cultural heritage sector, see CHARTER WP2 supra note sections 2.2. and 2.3.1.



3. Engagement and Use
4. Research & Innovation¹²/Education
5. Management
6. Governance and Policy Making

ESSnet defines **cultural domain** as “a set of practices around a cultural expression,” and **functions** as “clusters of activities within a domain, which can be interconnected and usually correspond to key moments in the increase or realisation of value added in economic models, not necessarily aiming to represent the whole economic cycle.”¹³

Based on these ESSnet definitions, the CHARTER D2.1 report proposes a formula for identifying the distribution of skills across cultural heritage occupations wherein activities that have a similar purpose are aggregated within each of the above six proposed functions. These activities break down into tasks that require competences, i.e. the set of skills, knowledge and attitudes, necessary to perform them. Accordingly, occupational profiles consist of suites of competences which originate across these six functional areas, and are present in different ratios depending on the role or purpose of the occupation. Mapping these competences will provide a “skills DNA” of the sector.¹⁴

A major strength of this alternative “skills DNA” model is that it helps to overcome the problem of mutual exclusivity inherent in the columns of the five areas of the ESSnet framework. The “skills DNA” model allows for several or all of the six functions to be incorporated into one occupational profile. Moreover, “Knowledge,” is now recognised as being integral to every function in cultural heritage, and is a vital dimension of all cultural heritage professions. Furthermore, applying a domain & functions model, overcomes the dilemma of crafts which are viewed as a discrete area in the the ESSnet model.¹⁵ Note, however, that work on is ongoing, and the rubric for determining the exact ratios of competences across the “skills DNA” is yet to be determined, which is why this report cannot offer a final solution for incorporating it into the classification of cultural heritage education and training.

The following table illustrates the preliminary results of the ongoing work of WP2 and is intended to illustrate how the two models can be related. WP3 will continue to work in close cooperation with WP2 in order to link our findings to their conclusions and, specifically, to work towards aligning their “skills DNA” model into our work on E&T pathways.

¹² The CHARTER D2.1 report uses the term “development” here, but discussions at the Bilbao Workshop, which took place shortly after its publication (see: <https://charter-alliance.eu/charter-events/charter-alliance-basque-workshop/?occurrence=2021-10-18>), strongly suggested that it would be more appropriate to use the term “innovation” instead of “development”.

¹³ ESSnet-CULTURE (2012), supra. Page 29 (both definitions).

¹⁴ CHARTER WP2 (2021), supra. Page 48-49.

¹⁵ Ibid. Page 33.

Skills DNA Model	Functions	Recognition	R&D and Education	Preservation and Safeguarding		Engagement and use	Governance	Management
	Activities	Refers to all the activities necessary to identify and recognise cultural heritage through, identification and advocacy. The approach chosen here, is rather wide and includes recognition by communities, experts and institutions, as well its outcome in legal and official acts to its official protection.	Refer to all the activities that are necessary throughout the process that go from the recognition of cultural heritage to the preservation and enhancement of cultural heritage. Education is necessary to acquire the skills and knowledge necessary to operate in the field. Research is an on-going activity that relates to all Functions. It is necessary to do research to identify cultural heritage, to find the best tools for its preservation and conservation, and to devise the best strategies to guarantee access to cultural heritage, enhance it, and make people use it. It also refers to the development of people, formal programmes for professionals – from access to a profession to Life Long Learning (LLL). Research and Development lead to innovation.	Refers to the multitude of activities that need to be put into place to ensure the long-term survival and care of cultural heritage, from maintenance to conservation, preventive conservation, restoration, and safeguarding of intangible cultural heritage.	Refer to all activities necessary to access and open cultural heritage, make it understandable, make it available for consultation and use, raise awareness, etc. and its use as a resource by all stakeholders. Includes activities that add value beyond the action itself as it impacts society. Also includes activities for the enhancement of cultural heritage to enable people to better engage and access cultural heritage assets, its interpretation and narration. It takes place through mediation, communication, exhibition, dissemination. It also includes forms of commercialisation of cultural heritage and related products, including by digital means.	Refers to the decision-making for cultural heritage in the wider domain of cultural heritage policy at local, regional, national and international level. Refers to the legal constraints specific to each country, to the institutions that contribute to the definition of cultural heritage and the implementation of the relative rules, these are fundamental in defining the concept of cultural heritage and the concomitant range of activities that can/cannot be undertaken. Governance and Policy-Making are a set of activities which give rise to instruments that are fundamental for the existence and development of cultural heritage at a public level including those holistic democratic and participative mechanisms of governance that bring communities to the fore of cultural heritage advocacy and decision making.	Refers to all activities that go from strategic planning to everyday administration and management: it includes organisational development, human resources management, funding, legal aspects, marketing and communication, risk management and quality control. It can support the undertaking of conservation, excavations, openings of cultural heritage to the public, activities leading to cultural heritage recognition etc.	
5 Areas Model	Areas	Knowledge		Crafts and traditional Knowledge	Preservation and safeguarding	Communication and Dissemination	Managing and Planning	
	Activities	Cultural heritage identification; study; recording, (including via digital means)		Heritage related crafts; traditional construction techniques; materials suppliers (including via digital means)	Protection; conservation-restoration; archiving; collection management; care and enhancement; materials science / analysis; fieldwork; conservation; restoration; (including via digital means)	Audience development; community engagement promotion; visitor care and experience; accessibility; education; cultural mediation; interpretation; presentation; (including via digital means)	strategic planning; site and project management; mediation; procurement; policymaking and regulation; fundraising; logistic; security; legal and IPR aspects	



3. Key concepts: education & training, qualifications, occupations and professions

Although the focus of this report is clearly on education and training, concepts related to employment and the workforce play important roles as well. Hence, we will start by exploring the key underlying notions for this report and examine their relations as well as distinctions.

Education

UNESCO defines *education* as “[t]he processes by which societies deliberately transmit their accumulated information, knowledge, understanding, attitudes, values, skills, competencies and behaviours across generations. It involves communication designed to bring about learning.”¹⁶

Training

Training, on the other hand, is defined as “[e]ducation designed to achieve particular learning objectives, especially in vocational education. The definition of education in ISCED [the International Standard Classification of Education developed by UNESCO] includes training.”¹⁷

Education and Training

The term *education and training (E&T)* is somewhat of a tautology describing learning in both general (education) as well as vocationally-oriented (training) contexts. However, it is useful insofar as it indicates that general education that is not directly geared towards a certain occupation differs in some ways from training which is targeted towards specific professional expertise. It is therefore consequential that CHARTER follows the example of CEDEFOP and the European Skills Agenda, and uses the term E&T to stress its all-encompassing approach to education leading to general as well as professional qualifications.

Qualification

Qualification is another concept that is important to understand in this context. The European Qualifications Framework (EQF) defines it as “a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.”¹⁸ In this definition, a qualification can be achieved not only through formal E&T but also via non-formal as well as informal learning, provided there exist an assessment and validation processes leading to formal outcomes.

¹⁶ UNESCO (2011). International Standard Classification of Education ISCED 2011. Page 78. Available at: <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>.

¹⁷ Ibid. Page 84.

¹⁸ European Parliament and Council (2008). Recommendation on the Establishment of the European Qualifications Framework for Lifelong Learning, Available at: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF>.



According to CEDEFOP the term *qualification* must be understood in a twofold manner:

- “Formal qualification: the formal outcome (certificate, diploma or title) of an assessment process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specific area of work. A qualification confers official recognition of the value of learning outcomes in the labour market and in education and training. A qualification can be a legal entitlement to practise a trade (OECD);
- Job requirements: knowledge, aptitudes and skills required to perform specific tasks attached to a particular work position (ILO)”¹⁹

For the purpose of this report, while certainly taking the EQF definition into account, we will use the two meanings of *qualification* as outlined by CEDEFOP. This is because in addition to formal qualifications, we also identified a number of qualifications which have not (yet) been formally assessed and validated, but still form a set of “knowledge, aptitudes and skills required to perform specific tasks” relevant for certain occupations in cultural heritage. The latter applies mainly to traditional crafts and will be further explored in the relevant chapters of this report.

Occupation

CEDEFOP (based on the definition provided by the International Labour Organisation) defines *occupation* as a “[s]et of jobs whose main tasks and duties are characterised by a high degree of similarity.”²⁰ In other words, an “occupation is a grouping of jobs involving similar tasks and which require a similar skills set,” as the term is characterised on the ESCO website.²¹

Profession and regulated profession

Interestingly, neither CEDEFOP nor ESCO provide a definition for *profession*. It is only defined as an element of the expression *regulated profession* as “professional activity or group of professional activities, access to which, pursuit of which, or one of the modes of pursuit of which is subject, directly or indirectly, by virtue of legislative, regulatory or administrative provisions, to possession of specific professional qualifications.”²²

This definition goes back to Directive 2005/36/EC.²³ Its legal language makes it difficult to grasp its exact meaning, and hence the explanation provided on the ESCO website is helpful in its clarity:

“A profession is called regulated if its access, scope of practice or its title is regulated by law. This includes:

- Professions with automated recognition of qualifications on European level;

¹⁹ CEDEFOP (2014). Terminology of European Education and Training Policy, Second Edition. Page 202. Available at: https://www.cedefop.europa.eu/files/4117_en.pdf .

²⁰ Ibid. Page 186.

²¹ See: <https://ec.europa.eu/esco/portal/escopedia/Occupation> .

²² CEDEFOP (2014), supra. Page 214.

²³ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the Recognition of Professional Qualifications. Available at: https://ec.europa.eu/growth/single-market/services/free-movement-professionals/policy/legislation_en .



- Professions regulated on a national level; and
- Activities that are regulated in some or all Member States.²⁴

Directive 2005/36/EC and its amendments facilitate the free movement of professionals by providing for automatic Europe-wide recognition for seven regulated professions. Of these, only one, namely architect, is of relevance to cultural heritage. In addition, the Directive also established a European database for professions which have been regulated at the national level, of which some belong to cultural heritage.²⁵

In the CHARTER project, and hence in this report, the two terms *occupation* and *profession* are understood to be synonymous, as outlined by D2.1.²⁶

²⁴ See: https://ec.europa.eu/esco/portal/escopedia/Regulated_professions_.

²⁵ See: <https://ec.europa.eu/growth/tools-databases/regprof/> and https://ec.europa.eu/growth/single-market/single-market-services/free-movement-professionals/recognition-professional-qualifications-practice/automatic-recognition_en

²⁶ CHARTER WP2 (2021), supra. Page 55.



4. Sectors

4.1. Higher education

When we look at higher education from an institutional point of view and ask which institutions belong to the sector, the *Frascati Manual*²⁷ provides an answer in terms of research and development and defines higher education in this way:

- “all universities, colleges of technology and other institutions providing formal tertiary education programmes, whatever their source of finance or legal status;
- all research institutes, centres, experimental stations and clinics that have their R&D activities under the direct control of, or administered by, tertiary education institutions.”

In terms of educational and training programmes, the ISCED classification’s preferred term for the sector is *tertiary education* and defines it as:

“build[ing] on secondary education, providing learning activities in specialised fields of education. It aims at learning at a high level of complexity and specialisation. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education. It comprises ISCED levels 5, 6, 7 and 8, which are labelled as short-cycle tertiary education, Bachelor’s or equivalent level, Master’s or equivalent level, and Doctoral or equivalent level, respectively. The content of programmes at the tertiary level is more complex and advanced than in lower ISCED levels, programmes on levels 5 to 8 to belong to the higher education sector.”²⁸

Similarly, levels 5 to 8 in the European Qualifications Framework (EQF)²⁹ cover the higher education sector from short cycle HE qualifications (5), Bachelor (6), Master (7) to the Doctorate (8).³⁰ Incidentally, higher education was the first E&T sector to develop a qualification framework. The Bologna Process was launched in 1999 by representatives of the ministers responsible for higher education of 29 European countries to establish a common European Higher Education Area (EHEA) and to improve the efficiency and effectiveness of higher education in Europe. In the course of the Bologna Process descriptors for the Bachelor, Master and Doctoral levels were defined, which in turn resulted in the Qualification Framework for the European Higher Education Area (QF-EHEA). These so-called Dublin Descriptors characterise higher education programmes on the basis of five dimensions: “knowledge and understanding,” “applying knowledge and understanding,” “making judgements,” “communication” and “learning skills”. While the Dublin Descriptors differ

²⁷ OECD (2015). *Frascati Manual 2015. Guidelines for Collecting and Reporting Data on Research and Experimental Development*. Page 34. Available at: <https://www.oecd-ilibrary.org/docserver/9789264239012-en.pdf?expires=1635429255&id=id&accname=guest&checksum=0E660B64D3EFC046860DDDC3ADA9C71E>.

²⁸ UNESCO (2011), *supra*. Page 46.

²⁹ See: <https://www.cedefop.europa.eu/en/projects/european-qualifications-framework-efq>

³⁰ Note that some vocational qualifications have also been assigned to levels 5 or 6. For instance Germany and Austria have placed the apprenticeship graduate and master craftsperson qualifications at level 5 and 6 EQF, respectively.



somewhat from the learning outcomes used to describe these levels in the EQF (based on skills, knowledge, competence), the two systems are considered to be compatible in principle.³¹

For the purpose of this report we will combine the three definitions for higher education based on the *Frascati Manual*, ISCED and the EQF and will understand all education and training programmes that are offered by institutions which in their national context are attributed to the higher education sector and whose programmes are classified as ISCED and EQF levels 5 to 8, respectively, as belonging to higher education, with only EQF levels 6 to 8 encompassing academic degrees.

4.2. Vocational education and training

CEDEFOP defines *vocational education and training* (VET) as

“education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market.”³²

For the purpose of the CHARTER project and this report, we will use this definition, as it is not restricted to levels below EQF level 5, but in theory encompasses the full range of EQF levels 3 to 8. As we will see, VET is far from being restricted to the level traditionally considered crafts education (EQF 4).

However, a strong theoretical component tends to be the exception rather than the rule for VET, which is why this chapter will focus on VET in terms of traditional crafts education in Europe, as many of these craft professions are considered vital for the cultural heritage sector. This concerns built heritage (e.g. carpenters, masons, bricklayers, roofers) but also many other crafts whose practice is essential for cultural heritage. Given the wide variety of these crafts, and the differing terms used in different countries/regions for them, it is difficult to come up with an exhaustive list. Therefore, the following enumeration is only meant to illustrate the wide variety of different relevant crafts involved. They encompass many of those working with textiles, leather, glass, metal, wood, ceramics and paper in areas as diverse as dressmaking, embroidery, weaving, shoe- and saddle making, traditional glazing, gold- and blacksmithing, watch-making, cabinet making, pottery and paper making. Moreover, (heritage) gardening and various crafts related to food production, printing and the making of musical instruments must not be forgotten.

While all of these craft processes are indispensable for the cultural heritage sector, many “traditional” techniques are in danger of dying out in Europe, because the market for their product is either non-existent or too small to support a living, as this is exacerbated by the fact that most handmade products are cheaper to produce in other parts of the world. The latter applies, for instance, to gold beating. While there is still considerable demand for gold leaf, the price of

³¹ European Commission (2008). Explaining the European Qualifications Framework for Lifelong Learning. Available at: <https://europa.eu/europass/system/files/2020-05/EQF-Archives-EN.pdf> and Danish Ministry of Science, Technology and Innovation (2005). A Framework for Qualifications of the European Higher Education Area. Bologna Working Group Report on Qualifications Frameworks. Available at: http://www.ecahe.eu/w/images/7/76/A_Framework_for_Qualifications_for_the_European_Higher_Education_Area.pdf.

³² CEDEFOP (2014), supra. Page 292.



European-made gold leaf is so disproportionately high compared to Chinese imports that practically no market exists for this skill in Europe any more.

It therefore comes as no surprise that gold beating is classified as “extinct” by the Heritage Arts Council, which publishes a “Red list of endangered crafts.”³³ Although this list refers to the United Kingdom only, it is indicative of trends across the whole of Europe. We did not identify any other national/regional lists, but UNESCO’s “List of intangible cultural heritage”³⁴ also specifies endangered traditional crafts, in addition to other aspects of intangible heritage.

While this is not explicitly within the remit of this report, the authors wish to underline that the decline of practice in some traditional crafts and the corresponding decline of offers of education and training in these fields have raised considerable concern among CHARTER members. At the Timisoara Workshop in June 2021, the question was raised of how to keep the transmission of knowledge alive for endangered crafts. The concept of “protection of crafts” has been viewed as problematic because it anchors crafts in the past, rather than viewing these processes as dynamic, capable of adapting to present needs, and anticipating future ones; as well as having the possibility of becoming economic drivers, encouraging resilience and mitigating climate change through the sustainable use of resources.

CHARTER members suggested that (re-)establishing crafts as an integral part of school education would be one promising way of overcoming this dilemma. In order for traditional crafts to survive and thrive, they need to be seen as paths to successful careers for young people. This will be only possible if school pupils learn about crafts, not just in an academic or theoretical manner, but if they are actually encouraged to make things with their own hands. Moreover, research suggests that in addition to fostering motor and sensorial skills, this also aids pupils’ cognitive development. Thus, strengthening art and craft education in primary and secondary schools has various benefits for individuals and society as a whole that are highly relevant for cultural heritage education, but also go far beyond it.³⁵

There is no such thing as a European system of VET. No Bologna-like process has been taking place in VET that would have resulted in a European VET Area that could be compared to the European Higher Education Area. Consequently, VET systems in Europe are still deeply rooted in national and/or regional traditions.³⁶ Nevertheless, a few supra-national similarities have been

³³ See: <https://heritagecrafts.org.uk/redlist/> .

³⁴ See: <https://ich.unesco.org/en/lists> .

³⁵ See for instance the initiatives by Mad’ in Europe <https://madineurope.eu/en/home/> and the Crafts Council <https://www.craftscouncil.org.uk/learning/education> . For studies on “hands-on know-how”, see for instance the publications of Trevor H J Marchand, professor emeritus of SOAS University of London: <https://www.soas.ac.uk/staff/staff31381.php> . For an interview with Prof. Marchand, see https://www.zdh.de/migration/user_upload/20210401_Interview-English_Trevor-Marchand.pdf . The University of Göttingen, Germany, has concluded a project on crafting skills and implicit knowledge, see: Objects of Experts. Materializations of Experiential Knowledge in Handcrafting Between Tradition and Innovation (OMAHETI) <https://www.uni-goettingen.de/en/506427.html> .

³⁶ The authors would like to thank Dr. Titus Kockel of Zentralverband des Deutschen Handwerks (ZHD) <https://www.zdh.de/> , the German central association of skilled crafts, for generously sharing his expertise on the structures of crafts education in Europe. Dr. Kockel has been immensely helpful with his insights in the subject and has also referred the authors to the work of Prof. Marchand and initiatives on fostering crafts in various contexts, see the above paragraphs.



identified: The recent CEDEFOP report on VET in Europe, 1995-2035,³⁷ distinguishes between models of VET in different countries/regions:

1. Central and Eastern Europe
 - 1.1. Baltic States
 - 1.2. Visegrád group
 - 1.3. South-eastern countries
 - 1.4. South-central countries (Croatia and Slovenia)
2. Southern Europe
 - 2.1. Portugal and Spain
 - 2.2. Greece and Cyprus
 - 2.3. Italy and Malta
3. Western Europe
 - 3.1. D-A-CH Region: Austria, Germany and Switzerland
 - 3.2. Benelux and France
 - 3.3. UK and Ireland
4. Northern Europe

The CEDEFOP report also outlines in detail the various VET systems and developments within these systems, so there is no need to repeat them here. In general, it may be said that systems vary greatly between school-based or work-based (apprenticeship) types of VET. In addition, mixed systems exist. Moreover, academic drift has been observed in many countries meaning that VET secondary education provides students with access to higher education or even HE-VET, i.e. primarily VET-oriented education offered in higher education. At the other end of the spectrum, we note that VET education in some heritage professions does not exist within formal education systems, but is delivered in non-formal or informal settings.

It is for these reasons that all work on education and training within the CHARTER project will pay special attention to ensuring that all VET education and training is properly covered by the project, regardless of the setting in which it takes place.

³⁷ CEDEFOP (2020). Vocational education and training in Europe, 1995-2035. Available at: https://www.cedefop.europa.eu/files/3083_en.pdf .



5. Three learning formats

The objective of this report is to investigate formal and non-formal education and training. We also rehearse the definition of informal learning here to illustrate why it would be very difficult to identify professions, let alone qualifications, based solely on informal learning. However, as we shall see, some cultural heritage E&T does contain informal elements.

1. **Formal learning:** learning that occurs in an organised and structured environment (such as in an education or training institution or on the job) and is explicitly designated as learning (in terms of objectives, time or resources). Formal learning is intentional from the learner's point of view. It typically leads to certification.
2. **Non-formal learning:** learning embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support). Non-formal learning is intentional from the learner's point of view.
3. **Informal learning:** learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective.

The above definitions have all been quoted from CEDEFOP's Terminology of European Education and Training Policy³⁸ and are now widely used in educational contexts in Europe. These definitions are also used in the context of the European Qualifications Framework.

³⁸ CEDEFOP (2014), *supra*. Pages 99, 183 and 111.



6. Two types of E&T programmes

There are considerable differences in approach to education and training depending on whether it takes place prior to joining the workforce, or afterwards. The distinct types of E&T programmes are characterised by the following two concepts:

1. **Initial education and training:** general or vocational education and training carried out in the initial education system, usually before entering working life. Some training undertaken after entry into working life may be considered as initial training (such as retraining). Initial education and training can be carried out at any level in general or vocational education (full-time school-based or alternate training) or apprenticeship pathways.
2. **Continuing education and training:** education or training after initial education and training – or and training after entry into working life aimed at helping individuals to:
 - improve or update their knowledge and/or skills;
 - acquire new skills for a career move or retraining;
 - continue their personal or professional development.

Continuing education and training is part of **lifelong learning** (LLL) and may encompass any kind of education (general, specialised or vocational, formal or non-formal, etc.). Moreover, **adult education** is close to, but not synonymous, with continuing education and training and may be considered a certain type of continuing education and training explicitly for mature learners. In addition, it encompasses learning not only geared towards professional purposes, but also to advance private interests.

Again, the definitions for the two types of E&T programme are quoted from CEDEFOP's Terminology, and the explanations on LLL and adult education have been derived from this compilation as well.³⁹

In English-speaking countries the term continuing professional development (CPD) is used to denote training on core professional skills and is usually organised by membership organisations or professional institutes in a non-formal way. It is usually considered distinct to in-house training provided by the employer. While the term is used quite frequently in individual CEDEFOP reports, it is not listed in its *Terminology of European Education and Training Policy*.⁴⁰

³⁹ CEDEFOP (2014), supra. Page 117, 51 and 18.

⁴⁰ See CEDEFOP (2014), supra and search results for the term at <https://www.cedefop.europa.eu/en>.



7. Attributes and indicators for mapping E&T programmes

7.1. International classifications (ESCO, ISCO, NOC) and operational tools (EURES, Europass)

International classifications are aimed at providing a common framework for classifying occupations for meaningful comparisons and statistical analysis at international level. There are currently two international classifications for occupations: ISCO and ESCO, with the latter referring to the European context.

ISCO,⁴¹ the International Standard Classification of Occupations (ISCO), is a four-level classification of occupation groups managed by the International Labour Organisation (ILO). Its structure follows a grouping by education level. The latest version of ISCO is ISCO-08 (dating back to 2008). Its aim is to facilitate international communication about occupations by providing statisticians with a framework to make internationally comparable occupational data available. Since ISCO is a statistical classification, its occupation groups do not overlap.

ESCO⁴² (European Skills, Competences, Qualifications and Occupations) is the European multilingual classification of skills, competences, qualifications and occupations relevant for the EU labour market and education and training area. Its common reference terminology helps make the European labour market more effective and integrated, and allows the worlds of work and education/training to communicate more effectively with each other. To this end, it is available in 27 languages (24 EU languages, plus Icelandic, Norwegian and Arabic).

ESCO adopts a structure of three pillars: 1) occupations; 2) skills and competences; 3) qualifications which is linked to relevant international classifications and frameworks, e.g. ISCO (for occupations), ISCED (for education and training) and EQF (for qualifications).

ESCO refers to occupations, not jobs. Occupations in ESCO cover all types of labour market activities including unpaid activities, voluntary work, self-employment and political mandates (if the mandate is an occupation itself).

The ESCO skills hierarchy is in a continuous process of improvement. There are currently 13,485 skills/competences concepts (October 2021) structured in a hierarchy which contains four sub-classifications. Each sub-classification targets different types of knowledge and skill/competence concepts:

- Knowledge

⁴¹ ISCO-08 and the previous versions are available at <https://www.ilo.org/public/english/bureau/stat/isco/>.

⁴² The ESCO portal can be reached at <https://ec.europa.eu/esco/portal/howtouse/21da6a9a-02d1-4533-8057-dea0a824a17a>



- Skills
- Attitudes and values
- Language skills and knowledge

In addition to the hierarchy, subsets of skills can be accessed through:

- A transversal skill hierarchy
- A collection of languages
- A collection of digital skills

Each ESCO occupation is therefore mapped to only one ISCO unit group. ISCO-08 can therefore be used as a hierarchical structure for the occupations pillar. ISCO-08 provides the top four levels for the occupations pillar (ESCO 1: major group, ESCO 2: sub-major groups, ESCO 3: minor group; ESCO 4: unit group). ESCO occupations are located at level 5 and lower. In addition, ESCO provides both essential and optional Knowledge and Skills, as per the example below.

Box: how the ESCO occupations appears on the EC ESCO

Example of ISCO/ESCO classification

ISCO-08			ESCO		
Level	Code	Description	Level	Code	Description
I	3	Technicians and associate professionals	I	3	Technicians and associate professionals
II	34	Legal, social, cultural and related associate professionals	II	34	Legal, social, cultural and related associate professionals
III	343	Artistic, cultural and culinary associate professionals	III	343	Artistic, cultural and culinary associate professionals
IV	3433	Gallery, museum and library technicians	IV	3433	Gallery, museum and library technicians
			V	3433.1	Art handler



How to read ESCO classification: **3** **4** **3** **3** **1**

3	4	3	3	.1
ESCO level I = ISCO level I	ESCO level II = ISCO level II	ESCO level III = ISCO level III	ESCO level IV = ISCO level IV	ESCO level V (unique to ESCO)

How the occupation ESCO 3433.1 looks like in ESCO:

Art Handler

Code 3433.1

Description: Art handlers are trained individuals who work directly with objects in museums and art galleries. They work in coordination with exhibition registrars, collection managers, conservator-restorers and curators, among others, to ensure that objects are safely handled and cared for. Often they are responsible for packing and unpacking art, installing and deinstalling art in exhibitions, and moving art around the museum and storage spaces.

Alternative labels: fine arts packer, museology technician, museum technician, art conservator, art preparator, gallery technician, art handlers, artifacts conservator

Regulatory aspects: To see if and how this occupation is regulated in EU Member States, EEA countries or Switzerland please consult the Regulated Professions Database of the Commission. Regulated Professions Database: http://ec.europa.eu/growth/single-market/services/free-movement-professionals/qualifications-recognition_en

Hierarchy*:

- [3 - Technicians and associate professionals](#)
- [34 - Legal, social, cultural and related associate professionals](#)
- [343 - Artistic, cultural and culinary associate professionals](#)
- [3433 - Gallery, museum and library technicians](#)
- art handler

Essential Skills and competences: advise on art handling, assess object condition, deliver correspondence, ensure safety of exhibition, handle art, supervise artefact movement

Optional Skills and competences: advise on loans of art work for exhibitions, communicate in English in a competent way, compose condition reports, manage loan administration, present exhibition

Optional knowledge: art collections, art history, conservation techniques, fine arts

Definition URL: <http://data.europa.eu/esco/occupation/6040c941-ab83-44b2-84e7-5cbfa1eafcdc>



* Each level in the hierarchy has its own official definition. For example: ISCO-08/ESCO category 34- Legal, social, cultural and related associate professionals is defined as follows:

Legal, social, cultural and related associate professionals perform technical tasks connected with the practical application of knowledge relating to legal services, social work, culture, food preparation, sport and religion. Competent performance in most occupations in this sub-major group requires skills at the third ISCO skill level.

Tasks performed by workers in this sub-major group usually include: providing technical and practical services and support functions in legal processes and investigations, social and community assistance programmes, and religious and cultural activities; participating and adjudicating in sporting events; developing and delivering sports coaching, fitness and recreational programmes; combining creative and technical skills in a variety of artistic, cultural and culinary activities; creating dishes and menus and overseeing the preparation of meals.

Occupations in this sub-major group are classified into the following minor groups:

341 Legal, Social and Religious Associate Professionals

342 Sports and Fitness Workers

343 Artistic, Cultural and Culinary Associate Professionals

NOC refers to the National Occupational Classification. In some countries, NSC (National Skills Classification) is also employed. NOC provides a systematic classification structure that categorizes the entire range of occupational activity in one country for collecting, analysing and disseminating occupational data for labour market information and employment-related programme administration. NSC focuses on skills and competences relevant for training and/or occupation-related purposes.

Comparisons of occupations among countries or regions demand that national occupational statistics be converted to international standards. This is usually achieved by mapping the national occupational categories into a common international classification system.

The 2016 Commission new EURES Regulation⁴³ recommended that ESCO had to be further developed and Member States had to map their national occupational classifications/national skills classifications (NOCs/NSCs) to and from the European classification. One of the results of CHARTER will be to identify and request the insertion of new occupations into ESCO and thus to improve the ESCO classification.⁴⁴

Finally, it is worth restating that ESCO and ISCO are statistical tools offering frameworks for international comparison. While statistical information is useful to support policies to: i) bridge the gaps between educational and occupational systems and employer needs; ii) encourage mobility

⁴³ European Parliament and Council (2016). Regulation 2016/589 of 13 April 2016 on a European network of employment services (EURES), workers' access to mobility services and the further integration of labour markets, and amending Regulations (EU) No 492/2011 and (EU) No 1296/2013. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021H1970>.

⁴⁴ See CHARTER WP2 (2021), supra. Page 27.



of students and workers, these objectives can be and indeed are supported by other “operational tools,” namely EURES and Europass.

Since 2014, **EURES** is the European job mobility portal based on a cooperation network of employment services designed to facilitate the free movement of workers⁴⁵. EURES is a portal providing a broad range of services, including for example information and guidance and other support services for workers and employers, matching of job vacancies to CVs, access to information on living and working conditions in the EU member states, support to dynamic recruitment events, information on and access to post-recruitment assistance, such as language training and support with integration in the destination country. In addition, EURES operates the EURES Targeted Mobility Scheme (TMS), an action which promotes professional mobility, tackling intra-EU mobility challenges and sustaining jobseekers who need a package of support services to succeed in their endeavour.

Consistent with EURES’ mission, **Europass** offers a set of free online tools and information to help students and workers manage every step of their learning and development.⁴⁶ Europass permits users to record learning, work or personal experiences and achievements in one place, to “translate” them into “skills” for a better matching with the labour/education market offers. Europass also supports education providers, policy makers, career guidance professionals and employers in identifying opportunities and resources relevant to their activities.

Both EURES and Europass provide CHARTER with content and context for the mapping of transmission mechanisms of knowledge and non-linear pathways to qualifications; as well as structures for bridging the gaps between educational and occupational systems and employer needs.

7.2. Credit systems and micro-credentials

The European Union has several common instruments helping individuals in the transfer, recognition and accumulation of their assessed learning outcomes, to achieve a qualification or to take part in lifelong learning. The most commonly used are ECTS and ECVET for higher education and for VET respectively.

ECTS, the European Credit Transfer and Accumulation System is a tool of the European Higher Education Area for making studies and courses more transparent in respect of student workload and promote students’ mobility in the framework of the Bologna Process since 1999.⁴⁷ It has been the most frequently used credit system for European higher education institutions (HEIs) since 1989, when it was first used in the context of the Erasmus student mobility programme purely for credit transfer. This original use of ECTS for transfer purposes only is still reflected in the acronym.

⁴⁵ <https://ec.europa.eu/eures/public/homepage>.

⁴⁶ <https://europa.eu/europass/en>.

⁴⁷ https://ec.europa.eu/education/resources-and-tools/european-credit-transfer-and-accumulation-system-ects_en.



ECTS allows credits taken at one higher education institution to be counted towards a qualification studied for at another, thus helping students to move between countries and to have their academic qualifications and study periods abroad recognised. At the same time, it helps HEIs in the planning, delivery and evaluation of their education programmes.

The ECTS credits system is based on the definition of learning outcomes (see chapter 7.6) and their associated workload.⁴⁸ ECTS also makes it possible to blend different learning styles, such as university and work-based learning, within the same programme of study or through lifelong learning.

ECVET⁴⁹ is the European credit system for VET. Since the 2009 ECVET recommendation,⁵⁰ Member States are invited to create the necessary conditions and adopt measures to apply the system to all VET qualifications.

ECVET allows learners to accumulate, transfer and use their learning in units progressively as they are achieved. This enables learners to build a qualification at their own pace from learning outcomes acquired in formal, non-formal and informal contexts, in their own country and abroad. The system is based on units of learning outcomes as part of qualifications that can be assessed and validated.

In cooperation with the European Commission, CEDEFOP monitors and provides technical and analytical support for application of the ECVET recommendation at EU, national and sectoral levels.

ECVET has widely contributed to the development of a better-quality mobility experience, through more effective agreement on, and documentation of learning outcomes and their recognition being adopted within all Member States. In some countries this has created a shift where learning outcomes undertaken abroad can now contribute to a learner's VET qualification, while also ensuring the mobility experience is better structured, organised and quality assured. However, ECVET contribution to increasing flexible learning pathways for upskilling and reskilling could be greater.

It is worth mentioning that the EU Council Recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience⁵¹ highlights that “[d]uring the ten years of its implementation, ECVET has widely contributed to the development of a better-quality mobility experience through the use and documentation of units of learning outcomes. The concept of ECVET points however was generally not applied and ECVET did not lead to the development of a European credit system in vocational education and training.”

Therefore, the Council Recommendation includes the key principles of ECVET (e.g. units of learning outcomes) related to flexibility, as well as recommendations for the application of EQAVET and

⁴⁸ 60 ECTS credits are the equivalent of a full year of study or work. In a standard academic year, these credits are usually broken down into several smaller modules.

⁴⁹ <https://www.cedefop.europa.eu/en/projects/european-credit-system-vocational-education-and-training-ecvet>.

⁵⁰ European Parliament and Council (2009). Recommendation of 18 June 2009 on the establishment of a European Credit System for Vocational Education and Training (ECVET). Available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009H0708%2802%29>.

⁵¹ European Council (2020). Recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience 2020/C 417/01 2020/C 417/01. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020H1202%2801%29>.



overcoming of the shortcomings of its implementation in relation to the quality of learning outcomes, certification and assessment, stakeholders' consultation, the role of teachers and trainers, work-based learning, and flexibility of VET.

The potential for compatibility and permeability between ECVET and ECTS was foreseen in the EU Recommendation to establish ECVET in 2009, in which ECVET is described as complementary to ECTS by providing a link between existing accrediting pathways and support for the recognition and transfer of learning. Furthermore, the Bruges Communiqué of 2010⁵² called for the promotion of flexible links and enhanced permeability between vocational and higher education and training, greater participation in lifelong learning and greater coherence between ECVET and ECTS. Despite these calls, few mechanisms link ECTS and ECVET, and so the extent to which permeability between the two systems can be achieved is not well understood.⁵³

The principles included in the November 2020 EU Council Recommendation shall be taken into consideration when mapping the current offer of education and formal and non-formal training and proposing emerging curricula in the CHARTER project.

Also, CHARTER should consider how ECTS and ECVET complement and build on concepts and the European tools for education and training (EQF, QF-EHEA, EQAVET), as well as the operational tools (Europass).

Finally, CHARTER may also explore how the current discussion on micro-credentials can be used for mapping training provision, relevant skills and competences and occupation in the cultural heritage sector.⁵⁴

A micro-credential is a qualification evidencing learning outcomes acquired through a short, transparently-assessed course or module. Micro-credentials are a highly flexible, inclusive form of learning allowing the targeted acquisition of skills and competences at any point of the education/career path, including for those in full-time employment or in need for re-skilling/up-skilling.

Maintaining and acquiring new competences is also essential to enable active participation in society, to ensure continued personal, social and professional development and to boost employability and socio-economic innovation.

Micro-credentials are offered by higher and vocational education and training institutions as well as by private organisations.

However, without common standards ensuring quality, transparency, cross-border comparability, recognition and portability, micro-credentials cannot reach their full potential.

⁵² Bruges Communiqué (2010). Available at: <https://www.cedefop.europa.eu/en/content/bruges-communicue>.

⁵³ Ryan, C., Berger, M., Titze, S. and Ruf W. (2018). "ECVET and ECTS credit equivalency in higher education – A bridge too far?" *European Journal of Education* 53(115): 1-11. Available at: https://www.researchgate.net/publication/328285464_ECVET_and_ECTS_credit_equivalency_in_higher_education_-_A_bridge_too_far.

⁵⁴ The ongoing work of the European commission on micro-credentials can be consulted at: https://ec.europa.eu/education/education-in-the-eu/european-education-area/a-european-approach-to-micro-credentials_en.



The Commission, therefore, is seeking to develop a common definition and European standards for micro-credentials, which are independent of the awarding body, building on existing tools as far as possible. The work is still in its initial phase. The road map includes activities such as: i) exploring the inclusion of micro-credentials in national qualification frameworks with possible reference to the EQF; ii) developing a list of trusted providers and fostering quality assurance processes; iii) exploring how ECTS can be used in the context of micro-credentials at other education levels and in other sectors; iv) working on guidelines for more rapid recognition; v) using micro-credentials to improve access to lifelong learning opportunities by ensuring better permeability between education and training sectors and ensuring an informed learner choice by expanding guidance services underpinned by real time labour market data.⁵⁵

In the framework of CHARTER, the concept of micro-credentials is particularly useful for its connection to the labour market, as it certifies competences and skills which may be relevant for an employer (and thus for a job-seeker to highlight). Micro-credentials can be used to identify competences acquired via on-the-job training, short training courses and courses/modules outside or within a longer training / education programme which are generally associated with an EQF level, while the specific competences may relate to learning objectives and skills of another EQF level. Also, micro-credentials can be relevant for identifying competences acquired/needed through life-long-learning (LLL) and/or required by professional register in cases where professional updating is required by national regulation in order to perform a regulated profession.

7.3. Duration

The duration of a programme or a course depends largely on whether it is part of initial education and training or if it belongs to continuing E&T, in particular if the latter refers specifically to re- and up-skilling for lifelong learning. While initial E&T will always cover a longer period of time, continuing E&T may vary greatly in length, depending on the scope and content of the programme.

Initial education and training

Initial Education and Training at ISCED levels 3 to 5 takes at least two years and may extend up to five years, whereas for ISCED 6 the minimum learning period in the HE sector is three years. However, for complementary studies at ISCED 7 (Master) at least one year has to be foreseen, so that the first two HE cycles (Bachelor / Master) may in rare cases take four years, but for the vast majority of programmes five years. For a (research) PhD another two or three years have to be added as a minimum, so that the full circle of the three-tier Bologna system extends up to eight or nine years.⁵⁶

⁵⁵ The MICROBOL project (Micro-credentials linked to the Bologna key commitments) supports ministries and stakeholders in exploring, within the Bologna Process, whether and how the existing Bologna tools can be used and/or need to be adapted to be applicable to micro-credentials. In July 2021 it issued the "MICROBOL recommendations to the EU public consultation on micro-credentials" (<https://microcredentials.eu/>).

⁵⁶ European Commission/EACEA/Eurydice (2021). The Structure of the European Education Systems 2021/22: Schematic Diagrams. Eurydice Facts and Figures. Luxembourg: Publications Office of the



With the Bologna Process the conditions for HE have become more coherent within European countries, as the levels of education and training have been defined in terms of EQF levels on the one hand (see chapter 4 above) and on the other hand the European Higher Education Area (EHEA) has also defined each level of the three-tier study cycle.

The currency for these definitions is the nominal student workload expressed in ECTS, the European Credit Transfer System, with the average workload per semester set at 30 ECTS. According to this framework, Bachelor studies ranges from 180 to 240 ECTS, which equals 3 and 4 years, respectively, and Master studies may usually range from 60 to 120 ECTS. The duration of PhD studies differs, because they are by definition research based and therefore less structured than Bachelor or Master studies. Furthermore, very often they are taken up by persons already in full-time employment and therefore often take much more time than formally foreseen. Therefore no range of ECTS has been assigned to Doctoral studies in the Bologna Process.⁵⁷

The system outlined above does give indications as to programme duration, but does not strictly define it. Moreover, one ECTS credit may equal 25 or 30 hours of work, depending on national regulations. It is for these reasons that one and the same qualification may be the result of slightly differing programme durations and student workloads in different countries or even within countries. Nevertheless, the learning outcomes and acquired skills, knowledge and competence should be similar in terms of substance.

Formal programme duration in HE is usually stated in terms of semesters as defined in the curriculum. Many HE institutions have no restrictions concerning the real duration of studies, often the average exceeds the formal duration by 20 percent or more. Nevertheless, there are also universities in Europe where the students are obliged to finish according to the prescribed timetable, or else they fail.

The VET field at ISCED levels 3 to 5, leading to EQF levels 3 to 5, shows diverse tracks, depending on the country and the system applied. There are basically two ways of transmitting knowledge: work- based learning in the setting of a firm or an institution or school-based learning. In a combination of these two paths the German speaking countries follow the dual system of apprenticeship. This foresees learning by apprenticeship within a firm or an institution and combines work-based learning with a defined amount of schooling. The advantage of that system is that the school provides both theory and the latest developments, whereas the practical part is transmitted in real life situations, in which apprentices actively pursue their profession. Usually the proportion between apprenticeship / school is in the range of 75%/25% – 85%/15% while the overall duration is usually three years.

In addition, some countries such as Finland or the UK offer so-called competence-based qualifications. These refer to qualifications that are awarded based on the demonstration of the skills, knowledge and competence required for a certain qualification, regardless of how (formal, non-formal or informal learning) these skills were acquired.⁵⁸

European Union. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/content/structure-european-education-systems-202122-schematic-diagrams_en .

⁵⁷ See: <http://www.ehea.info/page-three-cycle-system> .

⁵⁸ See for example: <https://epale.ec.europa.eu/en/content/finnish-competence-based-qualification-system-now-20-years-use> .



Continuing education and training

The duration of continuing E&T in the sense of re-skilling and up-skilling varies largely, due to the great diversity of programmes and courses. The range of time may vary from a few hours to days, weeks, months or even longer, depending on the subject. In the case of re-skilling, continuing E&T is related to learning the latest developments in one's sector to gain up-to-date knowledge, whereas up-skilling is directed towards a new qualification and new competences, in order to improve the chances on the job market.

Both re-skilling and up-skilling relate to all levels of the EQF and are relevant in the VET sector as well as for HE.

The duration of re-skilling will usually be shorter in comparison to up-skilling, as it will only add to already existing knowledge and skills by refreshing or upgrading outdated information. The aim of up-skilling on the other hand is to add a new qualification to an existing one, which will require a much longer programme duration in most cases.

7.4. Study format

In this chapter we will explore different formats of studying, either full-time or part-time as well as online and blended learning.

Full-time learning– initial education

Full-time studies are studies which are pursued continuously over longer periods without interruption, except for holidays. In the VET sector as well as in the HE sector, full-time studies are the standard format in initial education. In the VET sector, learning is inextricably linked to working in a firm or an institution or attending a school, and in HE, standard curricula normally demand fulltime physical presence, although blended-learning elements have become available even before the current pandemic. The length and time frame of initial E&T are usually fixed by law.

However, funding problems may represent a major obstacle for many students in HE. The obligation to earn money while studying may derive not only from a personal need but from the necessity to make a living for the family. For students who have children the situation is even more difficult. A number of HE institutions provide free or low-cost childcare for student parents or provide other support. If enough support is given full-time studies are feasible for these groups of students.⁵⁹

In the VET sector of ISCED levels 3 to 5, a majority of learners is employed on a fulltime basis, but the provision of E&T in this kind of setting depends on the availability of employment. With unstable economic circumstances as for e.g., in the financial crisis 2008, employment can be unsteady.

⁵⁹ For more information, see: https://ec.europa.eu/education/study-in-europe/news-views/studying-parent-europe_en



Unfortunately, part-time employment is still much more unlikely to provide enough support for E&T.⁶⁰

Part-time learning – continuing education

For reasons explained above, initial E&T programmes may be designed to allow for part-time studying instead of full-time, to facilitate financially less supported students to pursue their studies or make allowances for other non-traditional study situations such as students with care-responsibilities, students with special needs or mature students in employment.

In the field of continuing education and training, however, programmes that are designed part-time are the rule, rather than the exception. One reason for this is to facilitate participants to follow the course while still working in their occupation. Yet, many courses are also offered part-time in order to give the participants the possibility fulfilling extensive homework assignments as an essential part of the course. The time frame in these cases is variable: for didactic reasons teaching periods are often extended over some months, so as to provide a framework for access to teachers/trainers for continuous feedback over a longer period.

Distance and online learning

The terms “distance learning”, “e-learning” and “online learning” are often used as synonyms. Another term used in this context is blended learning. However, these terms are not synonymous, as research by Moore et al. has shown.⁶¹ Concepts for these types of learning vary depending on the geographical location.

As it is difficult to find conclusive definitions, in this report we will use the definition for distance learning as given by Merriam-Webster, which explains the term in a very general way:

“Distance learning: a method of study where teachers and students do not meet in a classroom but use the Internet, email, mail, etc., to have classes.”⁶²

The terms “e-learning” and “online learning” may or may not include the physical presence of teacher/trainer and students, they may combine traditional class room teaching with computers or other modern media, including the internet. Blended learning usually denotes a mix of presence and distance/online sessions.

Before the Covid-19 pandemic, distance learning and e-learning were mainly used in specific circumstances. With the pandemic making physical meetings difficult or impossible, online teaching has been employed on a large scale, replacing classroom teaching nearly completely with video conference software during lockdowns. This has led to an extremely fast growth of this sector. Although in- person teaching/learning in many circumstances cannot be replaced

⁶⁰ CEDEFOP (2020), supra. Page 37.

⁶¹ Moore, Joi L., Camille Dickson-Deane, and Krista Galyen. "E-Learning, online learning, and distance learning environments: Are they the same?" *The Internet and higher education* 14.2 (2011): 129-135. Available at: https://www.researchgate.net/publication/233751524_Designing_for_E-learn_Online_and_Distance_Learning_Environments_Are_They_the_Same .

⁶² Merriam-Webster, available at: <https://www.merriam-webster.com/dictionary/distance%20learning> .



completely by online provision, online teaching has opened up new and interesting didactic possibilities in certain fields, too.⁶³

So-called *Massive Open Online Courses* (MOOCs) are a specific type of online learning, usually employed in HE and adult education. The term primarily describes courses offered for free and without any admission requirements other than an internet connection and thus leading to high numbers of participants. However, the degree of openness in terms of costs and admission restrictions can vary. MOOCs require significant learner autonomy and tend to be faced with high drop-out rates.⁶⁴

7.5. Access and admission requirements

Access to E&T may require previous knowledge and competence, in some cases even specific formal qualifications. Therefore, access (formal requirements) and admission requirements (usually tested during admission exams focussing on aptitude, cognitive capacities, knowledge and skills, dexterity or other prerequisites, but also soft skills and motivation to embark on a certain programme) are common also in any type of cultural heritage education.

However, actual requirements will differ widely, depending on the education sector (HE or VET), if it concerns initial or continuing education and training, or the actual content of an E&T programme. Therefore, the substance of access and admission requirements tends to be an important information source about the exact nature of any E&T training. Knowing about this is essential both for research on cultural heritage E&T for HE and VET as well as for potential students wishing to embark on a career in the cultural heritage sector.

When viewed together with learning outcomes, access and admission requirements can provide particularly robust facts on the substance of learning that will be required to pass a certain E&T programme and thus put the proverbial flesh on the bones of numerical indicators such as EQF, ISCED, ECTS, ECVET.

⁶³ For the different sectors, see for instance: European Commission NESET (2021). The impact of COVID-19 on higher education. A review of emerging evidence: analytical report. Available at: <https://op.europa.eu/en/publication-detail/-/publication/876ce591-87a0-11eb-ac4c-01aa75ed71a1/language-en> . CEDEFOP (2020). Digital gap during Covid-19 for VET learners at risk in Europe. Available at: https://www.cedefop.europa.eu/files/digital_gap_during_covid-19.pdf . European Commission/EACEA/Eurydice (2021). Adult education and training in Europe: Building inclusive pathways to skills and qualifications. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/node/11855_en .

⁶⁴ Kennedy, Jolie. (2014). "Characteristics of Massive Open Online Courses (MOOCs): A Research Review, 2009-2012." *Journal of Interactive Online Learning* 13(1) 1-16. Available at: <https://eric.ed.gov/?id=EJ1032981>



7.6. Learning outcomes

One of the key actions of the Bologna Process is to define third level educational programmes that allow both students to clearly understand which competences and which qualification they acquire, and educational institutions to clearly define the scope of their offering. Therefore, all Member states are invited to elaborate a strategy fostering third level institutions in (re)writing the programmes in terms of learning outcomes.⁶⁵

The European Commission's glossary on E&T defines the learning outcomes as

"statements of what the individual knows, understands and is able to do on completion of a learning process. The achievement of learning outcomes has to be assessed through procedures based on clear and transparent criteria. Learning outcomes are attributed to individual educational components and to programmes in their entirety. They are also used in European and national qualifications frameworks to describe the level of the individual qualification."⁶⁶

The learning outcomes approach has also been adopted by the European Qualifications Framework. Therefore, an important element of ECTS is the learning outcomes approach: using a combination of this and student workload in programme design and delivery situates the student at the centre of the teaching and learning process. It is therefore essential that all credits are linked to programme components which are described in terms of learning outcomes.

In order to investigate how to include the concept of learning outcomes into WP3's work for CHARTER, we organised a workshop with Dr Declan Kennedy of University College Cork, Republic of Ireland, in the context of the Timisoara meeting in June 2021 (Milestone 6). Dr Kennedy is a renowned expert on learning outcomes and the author of one of the seminal works on the topic.⁶⁷

In terms of writing learning outcomes to an international standard, Declan Kennedy suggested that we use Benjamin Bloom's Taxonomies, which distinguishes between the cognitive, the affective and psychomotor domains.⁶⁸ Bloom described the cognitive domain as the "knowing" or "thinking" domain involving thought processes. The affective domain is concerned with value issues and involves attitudes. The third domain stresses physical skills involving co-ordination of the brain and

⁶⁵ Cf. The European higher education area in 2020 Bologna Process implementation report (2020). Available at: <https://op.europa.eu/en/publication-detail/-/publication/c90aaf32-4fce-11eb-b59f-01aa75ed71a1/language-en/format-PDF/source-183354043>.

⁶⁶ European commission's glossary on education and Training, available at https://ec.europa.eu/assets/eac/education/ects/users-guide/glossary_en.htm.

⁶⁷ Kennedy, Declan (2006). Writing and Using Learning Outcomes: A Practical Guide. University College Cork: Quality Promotion Unit. Page 5. Available at: <https://cora.ucc.ie/handle/10468/1613>.

⁶⁸ Bloom, B. S., Engelhart, M., D., Furst, E.J, Hill, W. and Krathwohl, D. (1956) .Taxonomy of Educational Objectives. Volume I: The Cognitive Domain. New York: McKay and Bloom, B.S., Masia, B.B. and Krathwohl, D. R. (1964). Taxonomy of Educational Objectives Volume II: The Affective Domain. New York: McKay. There exists an update and revision of this work: Anderson, L., Krathwohl, D. et al. (2001). A Taxonomy for Learning, Teaching, and Assessing. A Revision of Bloom's Taxonomy of Educational Objectives. Complete Edition. New York: Longman.



muscular activity and is particularly important for writing learning outcomes in the context of skilled crafts.⁶⁹

Bloom and other scholars in the field drew up hierarchies of increasingly complex processes for each of the three domains and suggested verbs that characterize the ability to demonstrate these processes. These lists of action verbs provide a tool kit for writing learning outcomes, as they allow us to describe the different levels in each of the three domains in a systematic manner. Moreover, Bloom's Taxonomy stresses that there are areas of overlap between the three domains cognitive, affective and psychomotor.

Using the action verbs provided by Bloom's Taxonomy we were divided into 6 breakout groups in the workshop. Two breakout groups each worked on writing learning outcomes for module of a Master's degree programme in "World heritage and cultural projects for development", a training course on the "Conservation of built heritage" and the training of traditional shingle makers in a Romanian region. These three education and training programmes will be discussed in detail below in the chapter on sample pathways to cultural heritage qualifications and professions.

This practical exercise demonstrated to CHARTER members the benefits of having E&T programmes described in terms of systematic learning outcomes. However, it also clearly illustrated the challenges of writing learning outcomes, with the affective domain standing out as the most difficult to measure. Moreover, group work also showed that learning outcomes can only be written by persons directly involved in or closely affiliated with a certain E&T programme or module/course. Without first-hand experience, it is nearly impossible to effectively write learning outcomes.

7.7. Proportion of VET (practice) element and mandatory practical training

VET by definition clearly incorporates a strong practice element, meaning that typical activities of a particular occupation are simulated and trained.

Generally, in HE the ratio between these two factors tends to be exactly the reverse to VET. Yet, cultural heritage E&T is likely to contain more VET elements and (mandatory) practical training than other HE programmes, because a certain amount of VET is necessary for many of these qualifications, even though they are primarily academic in nature.

The CHARTER database on cultural heritage education and training will provide information on the extent of VET elements in E&T programmes and the relation between theoretic and practical content. Moreover, the database will reflect the status of mandatory practical training in cultural heritage E&T.

⁶⁹ Bloom's work on the psychomotor domain was never finished. Declan Kennedy in his book refers to the following work for this domain: Dave, R. H. (1970). *Developing and Writing Behavioural Objectives*. (R J Armstrong, ed.) Tucson, Arizona: Educational Innovators Press.



7.8. Required qualification of teachers/trainers in the core subjects

Combining theory and practice in teaching is a challenge. Still, linking these two elements in cultural heritage E&T is of paramount importance when trying to deliver the values inherent to this field in an informed and conscious way to society and the generations to come.

For example, although E&T for the profession of conservator-restorer takes place in higher education and much of its learning is academic, practice training is a vital component, as noted by ENCoRE: “Practice is the comprehensive activity of providing physical care for cultural heritage, being associated with its interpretation, and representing the core competence of the conservator-restorer. It is based on the understanding of the appearance, meaning, values, material composition, and condition of the cultural heritage object as interdependent parameters and their relevance to the decision-making process.”⁷⁰

The quality of an E&T programme is always directly related to the qualification of those who teach or train in the core subjects, in particular concerning the relation between practice and theory. It is for this reason that the database will ask for this information.

7.9. Quality assurance obligations

Higher Education – QA and the Bologna Process

Quality assurance (QA) has been at the centre of the Bologna Process rights since its inception. The “promotion of European co-operation in quality assurance with a view to developing comparable criteria and methodologies” was one of the objectives of the original Bologna Declaration in 1999.⁷¹ At their next meeting in Prague,⁷² Ministers explicitly called upon HEIs and quality assurance agencies and networks to “to collaborate in establishing a common framework of reference and to disseminate best practice” on quality assurance. Two years later in Berlin, Ministers went further and called upon the main stakeholders in higher education to develop “an agreed set of standards, procedures and guidelines on quality assurance” and “to explore ways of ensuring an adequate peer review system for quality assurance and/or accreditation agencies or bodies.”⁷³

⁷⁰ ENCoRE. On Practice in Conservation-Restoration. W. Baatz, K. Borchersen (ed.). E-newsletter 2/2014. Available at: <http://encore-edu.org/PracticePaper2014.html>.

⁷¹ Bologna Declaration (1999). Available at: http://www.ehea.info/Upload/document/ministerial_declarations/1999_Bologna_Declaration_English_553028.pdf.

⁷² Prague Communiqué (2001). Available at: http://www.ehea.info/Upload/document/ministerial_declarations/2001_Prague_Communique_English_553442.pdf.

⁷³ Berlin Communiqué (2003). Available at: http://www.ehea.info/Upload/document/ministerial_declarations/2003_Berlin_Communique_English_577284.pdf.



This resulted in the “Standards and Guidelines for Quality Assurance in the European Higher Education Area” (ESG)⁷⁴, a document that provides three sets of standards and guidelines for:

1. Internal quality assurance for higher HEIs
2. External quality assurance for higher HEIs
3. Quality assurance for external quality assurance agencies

The ESG established a cascading system of quality assurance in the European Higher Education Area. The ESG state that, first and foremost, the responsibility for quality assurance lies within higher education institutions which have to establish internal QA systems. These internal systems should then be monitored via external QA mechanisms, undertaken by external QA agencies. To ensure the quality and comparability of the work of these agencies, those, too, have to undergo external QA processes. All QA agencies which successfully passed such cyclical external reviews should then be included into a register.

This system was put into effect by the establishment of the European Quality Assurance Register for Higher Education (EQAR)⁷⁵ in 2008. Since then, all QA agencies listed by EQAR are subject to cyclical reviews, organised by EQAR, based on the ESG. These agencies are then obliged to apply the ESG in their regular external reviews of HEIs. In these reviews HEIs have to demonstrate internal QA processes in line with the ESG. While the actual criteria for these QA processes do vary among HE institutions and national/regional QA agencies, the ESG must be observed by all as a common denominator. And while the ESG are not legally binding, most EU countries and many countries belonging to the EHEA but not the EU, have established fully functioning QA systems. This means all HEIs are subject to regular external QA processes by an agency that has successfully demonstrated compliance with the ESG by undergoing an EQAR review.⁷⁶

Vocational education and training – QA and the Copenhagen Process

Initiatives on common quality assurance standards in European VET commenced in 2002 with the Copenhagen Process, wherein one of its four main priorities aim at “Promoting cooperation in quality assurance with particular focus on exchange of models and methods, as well as common criteria and principles for quality in vocational education and training.”⁷⁷ The Maastricht Communiqué paid particular attention to the development of the European Qualifications Framework and described quality assurance mechanisms primarily as support instruments insofar

⁷⁴ Standards and Guidelines for Quality Assurance in the European Higher Education Area (2005). Available at: http://www.ehea.info/media.ehea.info/file/ENQA/05/3/ENQA-Bergen-Report_579053.pdf . The ESG were adopted by ministers through the Bergen Communiqué (2005). Available at: http://www.ehea.info/Upload/document/ministerial_declarations/2005_Bergen_Communique_english_580520.pdf . In 2015, the ESG underwent a revision, in which some details were changed, but the system as such remained the same, see: Standards and Guidelines for Quality Assurance in the European Higher Education Area (2015). Available at: http://www.ehea.info/media.ehea.info/file/ESG/00/2/ESG_2015_616002.pdf .

⁷⁵ See: <https://www.eqar.eu/> .

⁷⁶ See the list of registered agencies at: <https://www.eqar.eu/register/agencies/> .

⁷⁷ Copenhagen Declaration (2002). Available at: https://www.cedefop.europa.eu/files/copenhagen_declaration_en.pdf .



as they would enhance mutual trust into VET systems and qualification frameworks.⁷⁸ The 2006 Helsinki Communiqué⁷⁹ did not elaborate on quality assurance, but just mentioned the topic in its review of priorities referencing EU documents. It supported the strengthening of quality assurance in national VET and called for increased European cooperation in the field.

In parallel to these ministerial meetings and communiqués, the process has been driven by EU recommendations and resolutions, the first of which was the Council Resolution of 19 December 2002 on the promotion of enhanced European cooperation in vocational education and training.⁸⁰ Moreover, the first set of European quality assurance standards for VET, the so-called Common Quality Assurance Framework (CQAF), was developed under the leadership of the EU commission with support from CEDEFOP in 2007.⁸¹

The next step in European cooperation in VET quality assurance was the establishment of EQAVET, which was based on the Recommendation of the European Parliament and Council on the establishment of a European Quality Assurance Reference Framework for vocational education and training in 2009.⁸² Both CQAF and as EQAVET address two levels: the EU member states' system level of VET and the individual VET providers. EQAVET created a basic quality cycle and formulated what it called "indicative descriptors" for the two levels.⁸³

The Council recommendation on VET for sustainable competitiveness, social fairness and resilience in the EU in 2020, pointed out that the original EQAVET did not contribute significantly to the improvement of transparency of quality assurance arrangements and was mostly applied in school-based initial VET. Therefore, the Council updated the EQAVET descriptors and complemented them with EU level peer reviews of quality assurance at system level.⁸⁴

Although the Copenhagen Process has sometimes been called the VET equivalent to the Bologna Process, these two processes cannot be compared in terms of structure, scope or substance. The main structural difference between the two is that the former is an EU initiative derived from the Lisbon Strategy (established in 2000) whereas the latter is a supranational process that now encompasses 49 countries far beyond the reach of the EU and its applicant countries. Moreover, in terms of quality assurance for VET, it has to be stressed that no European quality assurance mechanism that would be comparable to the ESG/EQAR model exists. This corresponds to what we have noted above regarding VET education and training in general: VET and its quality assurance are still highly individualistic systems steeped in national/regional traditions with very few European reference points. If a system for the peer review of national VET systems at EU level

⁷⁸ Maastricht Communiqué (2004). Available at: https://www.cedefop.europa.eu/files/communiqu_e_maastricht_priorities_vet.pdf .

⁷⁹ Helsinki Communiqué (2006). Available at: https://www.cedefop.europa.eu/files/helsinkicom_en.pdf .

⁸⁰ European Council (2002). Resolution of 19 December 2002 on the promotion of enhanced European cooperation in vocational education and training. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32003G0118%2801%29> .

⁸¹ CEDEFOP (2007). Fundamentals of a common quality assurance framework (CQAF) for VET in Europe. Available at: https://www.cedefop.europa.eu/files/5168_3a.pdf .

⁸² Parliament and Council (2009). Recommendation on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training. Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009H0708\(01\)&qid=1611571795661](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009H0708(01)&qid=1611571795661) .

⁸³ For more information on EQAVET see <https://ec.europa.eu/social/main.jsp?catId=1536&langId=en> .

⁸⁴ European Council (2020). Recommendation on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience, supra.



is to be developed, it remains to be seen whether it will ultimately turn out to be comparable in function to the ESG/EQAR system of higher education.



8. Pathways to cultural heritage qualifications and professions

In this chapter we outline four different cultural heritage E&T programmes and the qualifications and professions they lead to. These examples illustrate the complexity of educational provision for the sector and our task in CHARTER. Three of these examples were tested in the section on learning outcomes at the Timisoara workshop, and one example emerged during the CHARTER Bilbao meeting.

1. Master's degree in "World heritage and cultural projects for development"⁸⁵

This international qualification -temporarily suspended due to the pandemic situation- is gained by successfully completing the higher education study programme of the same name at the University of Barcelona. The minimum requirement for access is a three year higher education degree of at least 180 ECTS. This is a formal qualification organised as a double degree by the University of Barcelona and the University of Torino leading to a master's degree situated on EQF level 7. Teaching takes place as blended learning, combining online and face-to face instruction lasting for one academic year with a student workload of 60 ECTS. The University of Barcelona is subject to regular reviews by AQU - Catalan University Quality Assurance Agency, which in turn has been registered with EQAR, the European Quality Assurance Register and thus has demonstrated substantial compliance with the ESG.

The programme website explains that combining both theoretical and practical perspectives, the study programme analyses the social and economic impact of diverse strategies, cause-effect relationships which enhance the sustainability of projects, rooted in the respective communities. One of the main sectors of analysis is tangible and intangible heritage, with particular emphasis on those declared by the UNESCO as world heritage. Graduates of the programme will be able to work in public and private cultural heritage institutions, both on the national as well as international level (UNESCO, NGOs etc.), which require the skills transmitted through this educational programme.

This Master's degree is an example of a "classic" formal higher education study programme in cultural management. Hence, information and indicators on the institution, the programme and the qualification it leads to will be easily identified and reflected in the database (EQF, NQF, ISCED level and field). However, this will be different for any kind of employment-related indicators such as ESCO, ISCO or NOC. Given the wide range of potential occupations graduates of this programme will work in, it will be difficult to link it to one or a few specific occupation(s).

⁸⁵ See: <https://www.ub.edu/cultural/master-en-patrimoni-mundial-i-projectes-culturals-per-al-desenvolupament-2/?lang=en>.



2. Training course on the “Conservation of built heritage”⁸⁶

This training course is organised in Italy by ICCROM, the International Centre for the Study of the Preservation and Restoration of Cultural Property. Upon successful completion, ICCROM will issue a certificate of attendance. The access requirements for this E&T programme include at least four years of professional experience in the conservation of built heritage. Therefore, participants must have already completed their initial education in fields such as architecture, archaeology, engineering etc. before embarking on this training course. The course lasts for two months and requires in-person attendance by participants. Given these parameters, we can state that the ICCROM training course leads to a non-formal qualification that is part of continuing education. Participants need to have a prior qualification at EQF level 7.

The public information available does not include anything on quality assurance. Nevertheless, given ICCROM's reputation and standing in the cultural heritage sector, the qualification “Conservation of built heritage” is well known and well regarded. According to the website, the programme's graduates will have a better understanding of critical processes in conservation in order to apply them professionally at the macro/micro levels. Through this educational programme, they will improve their strategic planning skills relevant to heritage management. Moreover, they will expand their awareness, knowledge, and understanding of current principles and practices in conservation of the built heritage and enhance skills, judgments, and experience.

This is a relatively short programme which provides E&T mainly in transferable skills to participants coming from very different cultural heritage professions. Information on the programme and its provider are easily identifiable, and the learning outcomes can be clearly defined. Yet more detailed educational descriptors (credits, contact hours, teacher qualification) are lacking. Moreover, because it is a non-formal programme that has not been validated, we cannot link it to a specific qualification or ISCED level/field. Similarly, given the different occupations graduates of this programme will work in, establishing a clear link to one or a few ESCO, ISCO or NOC occupations will most likely be difficult, too.

3. Shingle making, Apuseni Mountains / Western Carpathian Mountains, Romania⁸⁷

Education and training in shingle making is organized by families and family groups (e.g. Vasile Negrea and his family, Albac, Alba County; see pictures below) via continuous traditional transmission and is based on a master to apprentice model. This skilled craft includes all steps of the production process, from sourcing of the wood (identification of suitable trees, according to location, exposure, morphology, biology of the tree), the harvesting of the trees (moment of harvesting in relation to seasons, calendar), cutting the logs to size, splitting the logs in raw shingles, the finishing of the shingles and laying the shingle roofing.

Given this situation, we would characterize the kind of learning through which these shingle makers are being trained as non-formal with some informal elements. Even though it is informally organised, it is certainly a planned activity, and the learning is intentional. Since there is no formal

⁸⁶ See: <https://www.iccrom.org/courses/conservation-built-heritage> .

⁸⁷ The authors would like to thank CHARTER partner Ștefan Bâlici of the National Institute of Heritage in Romania for providing the description of this qualification.



qualification provider and, so far, no validation or inclusion in the National Qualifications Framework of Romania has taken place, we cannot say that this E&T leads to a qualification in the sense of the EQF definition. However, it certainly does lead to a profession and there are clear job requirements. Hence, it is a qualification if we apply the wider meaning of the term suggested by CEDEFOP as outlined in chapter 3 of this report. If we were to validate it, our suggestion would be to place it on EQF 4, which is the level of many formal skilled crafts apprenticeship programmes in Europe. There is no standard duration for this initial E&T programme, but the skills, knowledge and competence required practicing this profession seem to be clear (see the above paragraph): They include all the steps from sourcing the wood, making the shingles to laying the roofing.

Unfortunately, the number of active craftspeople in shingle making is diminishing, even though there is a good market for their skills in both restoration and architecture for tourism and holiday homes in Romania and other European countries which also have traditional buildings with shingle roofs. Due to the non-formal nature of the education and lack of validation, shingle makers only have limited access to publicly funded cultural heritage work. Moreover, they tend to be employed without official work contracts and hence have no corresponding social or medical insurance in Romania. In light of these conditions, it does not come as a surprise that shingle making may soon become an endangered craft, despite the fact that there is sufficient demand for these skills in the market.

Although this is a non-formal E&T programme with many informal elements, it could be reasonably linked to ESCO 7121.1 Roofer, which also offers “roofing carpenter” as an alternative label. In the German version of ESCO, this is translated as “Schindeldachdecker,” which is even more to the point. Moreover, the skills, knowledge and competence that are used to describe this occupation in ESCO come very close to the description of what the Aouseni Mountains shingle makers have to know, understand and be able to do. From this it follows that a link to ISCO 7121 (Roofer) would be possible, too. However, since this programme is in no way formalised in Romania, we can safely assume that there is no link to its NOC or NQF/EQF.

While establishing connections to ESCO and ISCO could be done in a fairly straightforward manner, this E&T programme would pose many challenges with regards to educational descriptors and indicators due to its non-formal/informal nature. It would be difficult to pin down a conclusive list of education providers (local families), contact hours, even duration of the programme. And there would be certainly no way to link it to ISCED classifications. Despite of this, we hope that the database would -both through the fields that can be filled out as well as those which would necessarily remain unanswered – adequately reflect the nature of E&T programmes like this and their value for cultural heritage.





4. Industrial cultural heritage mediator/community engagement professional/restorer

On the occasion of the Bilbao workshop in October 2021, CHARTER members visited La Encartada Fabrika Museoa in Balmaseda, a premier example for an industrial cultural heritage site in Europe.⁸⁸ From 1892 to 1992 this textile factory produced mainly the traditional Basque berets, but also other wool items such as blankets, gloves and socks.

There is one person in this museum who is responsible for leading tours, operating the historical machinery and demonstrating its usage to visitors by creating some of the same products that the factory was originally used for. He also repairs broken parts or replaces them with duplicates, which he makes using a 3D printer. Mr. Joaquin Marco is a musician and luthier by training, so he does have some professional background in cultural heritage. But regarding his work at this museum he is largely self-trained with the help of former employees of the factory who have instructed him on how to operate and repair the machines and shared their experiences of working there. Mr. Marco has also been very successful in engaging the local community for his work on a site that for 100 years was an important employer in the area.

We have included this individual in this report to illustrate the challenges that the mapping of E&T for cultural heritage may hold in individual cases. We could characterise Mr Marco's E&T as being non-formal (because it has been intentional) VET with many informal elements (because it has taken place mainly via informal exchanges between him and former factory workers). It is continuing education, but it would probably be difficult to suggest an EQF level for this. The skills, knowledge and competence required for this profession go far beyond those of the individuals who worked at this factory and actually encompass all of their individual tasks, in addition to advanced communication skills. Again, without validation, it is not possible to say that he holds a qualification in the narrow (EQF) sense, but there are clear job requirements and learning outcomes for this profession.

⁸⁸ See <https://www.bizkaikoa.bizkaia.eus/detalleContenido.asp?id=65&t=1&idioma=IN>



9. Next steps – CHARTER database for cultural heritage education and training

The next major step of WP 3 will be to implement a database for cultural heritage E&T (CHARTER Task 3.1), which will be directly informed by the research we have undertaken for this report and the many discussions we have had with CHARTER partners throughout the first 10 months of the project.

The main purpose of the database will be to collect information on cultural heritage education and training programmes in Europe. Initially, the database will be used mainly for research purposes within CHARTER in order to complete the tasks that WP3 has taken on in this project. Through it, we hope to identify innovative/emerging curricula in the field, strengthen our analysis of quality standards and certification schemes and identify gaps and needs in cultural heritage E&T. Furthermore, we hope that the database will support us in linking our work on education and training to WP2's work on occupational profiles.

Once a sufficient number of entries have been added to the database, it is also meant to provide information on the various cultural heritage education and training offerings in Europe to the general public. For instance, it would allow prospective students to search for cultural heritage E&T opportunities in certain locations or based on content, education sector, type of programmes etc.



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Annex – Summary of Sector Skills Alliances 2016-2020

Call	Project title	Sector	Implementation status	Link / resources	Short description
Sector Skills alliance 2016 EAC/A04/2015	EU textile clothing & footwear (TCLF) skills council: analysis of emerging occupations in a digital environment	Manufacturing	1 st December 2016 – 28 th February 2019	https://euroleather.com/index.php/homepage/list-of-news-releases/192-new-project-for-the-tclf-skills-council	<p>After identifying and characterizing the profiles of 9 emerging digital occupations and the correspondent required skills sets, the Partners created a harmonized matrix, in coherence with ESCO format, for these 9 occupations.</p> <p>In order to provide a detailed prediction of the future impact of these emerging occupations, in terms of European employment and strategic development of the TCLF sectors, a survey was conducted to a relevant category of stakeholders in the Textile, Clothing, Leather and Footwear sectors.</p> <p>On the basis of the occupations and skills identified and the questionnaire results, the emerging gaps between the current VET and Training offer and the requirements of the 9 emerging digital occupations were analysed.</p> <p>Results of the project: http://digitaltclf.eu/news/#output-results :</p> <ul style="list-style-type: none"> • Emerging Digital Occupations • Market Potential for Emerging Digital Occupations in the TCLF sectors • Is the TCLF training offer ready for the digital era? • A proposal for the future
	A European Sector Skills Alliance for Sport (ESSA-Sport)	Arts, entertainment and recreation	November 2016 – November 2019	https://www.essa-sport.eu	<p>The project is aimed at delivering the first EU wide Employment and Skills map of the sport and physical activity sector across the 28 Member States. ESSA-Sport will analyse the situation and challenges facing the sector and finalise a European strategic action plan with detailed and concrete priorities and recommendations to create the conditions for change and ensure education, training and qualifications are geared towards the realities of the sector.</p> <p>Activities: Desk research and wide consultation activities will take place with the active support of EU network organisations and national sector representatives to finalise a European Strategic Action Plan on skills (priorities/recommendations) to help ensure education, training and</p>

					<p>qualifications are geared to the realities of the sector, and to inform employment and career advisers of the real employment opportunities and skills needed in the sector.</p> <p>Project outcomes:</p> <ul style="list-style-type: none"> • 28 National Reports To describe sport and education systems in each country; To propose concrete conclusions and recommendations/priority actions for implementation at the national level • The European Report presenting the main findings To: describe sport and education systems across the European Union; present new knowledge gathered for the sector in terms of employment and skills; propose concrete conclusions and recommendations/priority actions for implementation at the European level • European Fact Sheet • National Fact Sheets <p>Project outcomes:</p> <p>https://www.essa-sport.eu/essa-sport-outcomes-are-now-available/</p>
	Fostering growth in the Blue Economy by developing an action plan for Innovative European Aquaculture VET and harmonized qualifications	Agriculture, forestry and fishing	December 2016 January 2019	http://www.blueedu.eu	<p>The BlueEDU mission is to help the cage farming sector of the aquaculture industry to find ways of developing the workforces' knowledge, skills and qualifications more effectively and efficiently.</p> <p>Project outcomes: http://www.blueedu.eu/findings/project-deliverables/</p> <p>D2.1 – BlueEDU initial opinion study</p> <p>D3.1 – Analysis and investigations of existing studies and research-based data on skills gaps in aquaculture industry and VET supply</p> <p>D4.1 – An evaluation of the derivation and application of occupational definitions to VET design and delivery in the aquaculture sector</p> <p>D4.2 – Occupational standards for European cage farmed salmon, correlated to cage based production in the Mediterranean area.</p>

					<p>D5.1 – BlueEDU European aquaculture VET inventory description of the VET system in a number of countries</p> <p>D5.2 – European aquaculture VET, identification of best practice</p> <p>D6.1 – Qualitative analysis of skill gaps and VET needs</p> <p>D6.2 – European salmon farming industry's VET needs</p> <p>D6.3 – An analysis of the European aquaculture industry's VET needs</p>
	Mapping Skills Needs and Supply in the Dairy Sector (AEDIL)	Agriculture, forestry and fishing	December 2016 December 2019	https://dairysectorskills.com	<p>The objective is to provide the sector with consolidated recommendations on training provision to meet the skills required by the labour market</p> <p>The project is composed of four major processes:</p> <ul style="list-style-type: none"> • Development of a framework for research of skills needs and supply in the dairy sector. • Research in 13 countries with interviews of educational institutions, dairies and ex-students. • Analysis and interpretation of the data collected. • Recommendations on how to close the gaps and even out mismatches found in the research. <p>The project produced:</p> <ul style="list-style-type: none"> • Recommendations on how to close the gap between the educational institutions and the needs of the labour market. • Forecasts on skills needs and trends five years ahead. • A collection of Best Practices on Work Based Learning from the dairy industry. <p>Project outcomes: https://dairysectorskills.com/project/documents/</p>
Sectors Skills Alliances 2017 EACEA 04/2017	S4TCLF – Skills 4 Smart TCLF Industries 2030	Textile	November 2018 December 31/12/2021	https://s4tclfbprint.eu/project	The project aims to enhance the modernisation and competitiveness of the EU Textile, Clothing, Leather, and Footwear (TCLF) sectors through the development of a sustainable upskilling and reskilling strategy, which is

					<p>supported by a communication campaign to attract social, economic and political actors.</p> <p><u>Main outputs:</u></p> <ul style="list-style-type: none"> • 2018: Analysis of skills gaps in over 200 companies and 50 training institutes • 2019: Design of 8 new MOOCs • 2020-21: Pilot and Validation of the new training courses • 2018-2021: Develop a Sustainability Action Plan through: i) Network of VET providers across EU; ii) Engagement of regions and other stakeholders
	DRIVES – Development and Research on Innovative Vocational Education Skills	Automotive	January 2018 December 2021	https://www.project-drives.eu/en/aboutus	<p>DRIVES objectives</p> <p>SECTORAL INTELLIGENCE</p> <ul style="list-style-type: none"> • Analyse key trends in the automotive, covering the whole value chain • Define the skills and job roles needed in the future • Analyse offer side currently available for the trainings/upskilling • Identify skills gaps for foreseen changes <p>RECOGNITION</p> <ul style="list-style-type: none"> • Ensure mutual recognition of the skills and job roles across the EU • Create an EU-wide framework that can be used throughout the EU and implemented in the EU regions – based on commonly used definitions • Regularly deliver policy recommendations reflecting the needs of the automotive sector to the European Commission <p>TRAINING OFFER</p> <ul style="list-style-type: none"> • Create trainings for selected skills and job roles in the automotive sector • Provide as a pilot 1100 trainings across the EU and across the education and training institutions • Provide clear guidance for the education and training providers on skills needs of the automotive industry <p><u>Main outputs:</u></p>

				https://www.project-drives.eu/en/results	
	MATES – Maritime Alliance for fostering the European Blue economy through a Marine Technology Skilling Strategy	Maritime	January 2018 – April 2022	https://www.projectmates.eu	<p>MATES' objective is to develop a skills strategy that addresses the main drivers of change to the maritime industry, in particular shipbuilding and offshore renewable energy.</p> <p>As a transversal line of action, MATES will carry out a robust dissemination and outreach plan. This aims to increase the attractiveness of the maritime industry, particularly careers in the shipbuilding and offshore renewable energy sectors, while also ensuring future adoption of the strategy.</p> <p>MATES will validate actions and priorities suggested by the skills strategy through the setup of 11 pilot case studies. These case studies will test the MATES concepts on digital skills, green skills, mobility, innovation management, curricula development and ocean literacy.</p> <p>Furthermore, the project will widen perceptions of Ocean Literacy initiatives by embedding an appropriate industrial perspective. It will spread an updated image for the maritime industry and send out a convincing message concerning the high-tech and long-term future of the maritime sector.</p> <p>Main outputs: https://www.projectmates.eu/results/</p> <ul style="list-style-type: none"> ● D2.1 Baseline Report on Present Skill Gaps ● D2.3 Foresight scenarios identifying future skills needs and trends ● D3.1 Identification of Priorities and Lines of Actions ● D3.2 Baseline Strategy: identifying priorities, action lines and how MATES Pilot Experiences will contribute to the strategy ● D4.2 Compilation of Pilot Experience Layman Reports ● D5.2 Maritime Technology Skills Strategy ● D5.3 MATES Sustainability and Long-term Action Plan
	NGT - The Next Tourism Generation Alliance	Tourism	January 2018 December 2021	https://nexttourismgeneration.eu	The Next Tourism Generation Alliance (NTG) is the first European partnership and alliance for improving a collaborative and productive relationship between education and industry. The NTG Alliance will provide employees, employers,

					<p>entrepreneurs, teachers, trainers and students with a set of Core NTG modules in digital, green and social skills.</p> <p>The NTG approach, modules and learning methods will be integrated into the current European VET system and Industry, providing a benchmark, tools and good practice for green and social skills to support sustainable development and digital and technological innovation within 5 sub-sectors operations.</p> <p><u>Main outputs:</u> https://nexttourismgeneration.eu/research-and-insights/</p> <ul style="list-style-type: none"> • NTG Skills reports: research insights reports written to paint a fuller picture of current skills gaps and future skills needs from primary desk research as well as relevant secondary information from surveys and expert interviews • The NTG Skills Resources HUB is a specialist library providing tools and resources to educational providers, industry representatives, students and the general public.
	EO4GEO - Towards an innovative strategy for skills development and capacity building in the space geo-information sector supporting Copernicus User Uptake	Space Geo	January 2018 December 2021	https://www.copernicus.eu/en/eo4geo-towards-innovative-strategy-skills-development-and-capacity-building-space-geo-information	<p>The EO4GEO project is an alliance for sectoral cooperation dedicated to skills development and capacity building in the Space and geo information sector which in turn supports the Copernicus programme to unleash its full potential in terms of benefits for the EU economy and for its citizens. EO4GEO aims “to improve the use of Copernicus data and services by helping to bridge the gap between the skills demand and supply in the fields of Earth Observation and Geographic Information”.</p> <p><u>Main outputs:</u> https://www.copernicus.eu/en/library/library</p>
Sector Skills Alliances 2018 - EAC/A05/2017	Sector Skills Strategy in Additive Manufacturing	Additive Manufacturing	January 2019 December 2022	https://www.skills4am.eu	<p>SAM Project Objectives</p> <ul style="list-style-type: none"> • Build a sector skills strategy in AM; • Assess and anticipate skills (gaps and shortages) in AM; • Support with data the AM European Qualification System and foster wideness of its scope; • (Re)design professional profiles according to the industry requirements; • Develop specific relevant qualifications to be delivered for the AM Sector;

					<ul style="list-style-type: none"> • Increase the attractiveness of the sector to young people, whilst promoting gender balance; • Strengthen education-research-industry partnerships and encourage creativity “in companies and relevant educational and scientific institutions”; • Track students, trainees and job seekers and promote match making between job offer and search. • By doing these, SAM ambitious challenge is to develop a Sector Skills Strategy in Additive Manufacturing by establishing a platform for AM skills at European, National and Regional levels. <p><u>Main outputs:</u> https://www.skills4am.eu/results.html</p> <ul style="list-style-type: none"> • D1.4 Professional Profiles/Set of Skills Roadmap • Assessment of current and future skills in AM • Methodology for developing and revising professional profiles and skills • D4.5 Reports on the Analysis and Validation of Needs • D4.9 Mapping of projects in AM • D4.10 Sector Skills Strategy Roadmap • Piloting of the methodology for developing and revising professional profiles and skills • D6.5 New Professional Profiles /Qualifications and Units of Learning Outcomes • D6.7 AM Updated Catalogue
	Skills Blueprint for the Construction Industry	Construction	January 2019 December 2022	https://constructionblueprint.eu/it/home-2/	<p>This Blueprint will define a Sectoral Skills Strategy. The project includes the following activities:</p> <ul style="list-style-type: none"> • Collecting good practices at national and regional level to illustrate and promote other initiatives addressing skill gaps, integrated in an Interactive Map. • Designing and piloting training curricula for Energy Efficiency, Circular Economy and Digitalisation for the construction industry; also different online trainings (Massive Open Online Course -MOOC-) on these topics will be available. • Creating a tool (Observatory) to provide valuable information about particular skill needs at regional/national level.

					<ul style="list-style-type: none"> ● Identificating and selecting occupational profiles that should be updated in terms of Energy Efficiency, Circular Economy and Digitalisation. ● Carrying out an outreach campaign for the Construction industry to promote its attractiveness among youngsters and women, identifying and promoting solutions to facilitate mobility of construction workers in Europe. ● Creating a new virtual tool (website) where all project outputs will be available for stakeholders, as well as a Sector Skills Alliance platform for collaborative work. <p>Blueprint will be starting deployed by getting main market players involved (Education-Economic-Political-Environment-Civil Society/Cultural) taking up opportunities to make the best of their talents. They will constitute together with the partnership, the Sector Skills Alliance, the necessary driver to push a sustainable sectoral strategy and Blueprint implementation.</p> <p>Main outputs: https://constructionblueprint.eu/results/</p>
	Futureproof Skills for the Maritime Transport Sector	Maritime	January 2019 December 2022	https://www.skillsea.eu	<p>SKILLSEA aims at ensuring that the region's maritime professionals possess key digital, green and soft management skills for the rapidly changing maritime labour market. It seeks to not only produce a sustainable skills strategy for European maritime professionals, but also to increase the number of these professionals - enhancing the safety and efficiency of this vital sector.</p> <p>The future-proof project is developed by the industry's social partners, the <u>European Community Shipowners' Associations</u> (ECSA) and the <u>European Transport Workers' Federation</u> (ETF) and is comprised of a consortium from national maritime authorities, shipping companies, shipowners' associations, maritime trade unions and maritime education providers from 16 countries in Europe.</p> <p>Key aims and objectives include:</p> <ul style="list-style-type: none"> • Analysing the effect of technological developments on the industry's skills requirements • An even better match between the industry's skills needs and the education and training of maritime professionals • Overcoming barriers to the mobility of maritime professionals

					<ul style="list-style-type: none"> Improving cooperation and synergy between education providers, maritime authorities and the industry Ensuring that Europe retains a world-leading access to maritime skills and experience for improved competitiveness <p>Main outputs: https://www.skillsea.eu/index.php/results/public-deliverables</p> <ul style="list-style-type: none"> <u>D1.1.2 Current and skills needs (Reality & Mapping)</u> <u>D1.1.3 Future Skills and competence needs (Possible future development)</u> D2.2 Educational Packages for specified skills D2.4 Guide on Business/Education Partnerships <u>D3.1 Strategy Plan Framework - Summary</u> <u>D3.2 Measuring evaluation strategies in MET</u> D3.3 Employability, Anticipating Skills needs and GAP measurement <u>D3.4 Internationalized Strategies in Maritime Education Training</u> D3.5 Maritime Education Training and its stakeholders: interconnections and strategies <u>D3.6 BLUEPRINT Maritime Shipping Portal</u> D3.7 Strategy key findings D5.2 The Roadmap towards a sustainable skills strategy
	Blueprint "New Skills Agenda Steel": Industry-driven sustainable European	Steel Skills Agenda and Strategy - Steel	January 2019 December 2022	https://www.estep.eu/essa/	<p>ESTEP's mission aims to engage in collaborative EU actions and projects on technology, which are tackling EU challenges (notably on renewable energy, climate change (low-carbon emission), circular economy) in order to create a sustainable EU steel industry. This is namely done by disseminating results of projects, by facilitating a supportive environment for collaborative projects, by the Strategic Research Agenda and by the active network of ESTEP's community.</p> <p>Main outputs: https://www.estep.eu/library/publications/</p>
Sector Skills Alliances 2019 - EAC/A03/2018	Alliance for Batteries Training and Skills	Batteries for electro- mobility	December 2019 December 2023	https://www.project-albatts.eu/en/aboutus	<p>The Alliance for Batteries Technology, Training and Skills (ALBATTTS) aims to be a major contribution to the green mobility in Europe. As the European battery value chain is being developed, organisations from the demand and supply side of skills/competences are brought together, to establish a Blueprint for preparedness of future skills across Europe.</p> <p>VET providers and Universities will work in coordination with the demand side in order to identify and develop the relevant competences required to fulfil their economic activity. The bridging with national authorities will be permanent to</p>

					<p>assure inclusion of produced curricula and learning materials into the national qualification frameworks. Appropriate measures and education and training materials are to be prepared according to local or horizontal context.</p> <p><u>Main outputs</u> https://www.project-albatts.eu/en/results</p> <ul style="list-style-type: none"> • D3.3 - Desk Research and Data Analysis of the sector as a whole- Release 1 • D3.4 - Survey results for Battery sector • D3.5 - Analysis of Future Needs • D4.1 - Desk research and data analysis for subsector ISIBA - Release 1 • D4.2 - Survey results for sub-sector Stationary and Industrial Battery Applications • D4.3 - Future Needs Definition for sub-sector • D4.5 Sectoral Intelligence definition for sub-sector ISIB - Release 1 • D6.1 - Report on State-of-Art of job roles and education in sector
	Addressing the current and Future skill needs for sustainability, digitalization, and the bio-Economy in Agriculture: European skills agenda and Strategy	Bio-economy, new technologies & innovation in agriculture	December 2019 December 2023	https://www.erasmus-fields.eu/home/	<p>FIELDS will rely on previous activities and competences represented in the large consortium to define a sectoral skills strategy. FIELDS project will also rely on two on-going activities led by BIC (Bio-Based Industries Consortium) and CEPI (Confederation of European Paper Industrie), which aim at identifying skills needs and skill gaps in the bio-economy sector and the forestry sector as well as soft skills, sustainability and digitalization.</p> <p>The projects database provides information on the state of the art of the European projects with reference of agriculture, forest and related sectors (Bio-economy, Digitalisation, Soft skills and Sustainability).</p> <p><u>Main outputs</u> https://www.erasmus-fields.eu/articoli-test/</p> <ul style="list-style-type: none"> • Stakeholder strategic plan and analysis report • Trend and scenario analysis • Curricula • Best practices
	Assets+ Alliance for Strategic Skills addressing	Defence technologies	January 2020 December 2023	https://assets-plus.eu	<p>The ASSETS+ project aspires to build a sustainable human resources supply chain which allows defence sector companies to innovate by both attracting highly-skilled young workers and upskilling their</p>

	Emerging Technologies in Defence				<p>employees thanks to customised, complementary education & training programmes addressing these main technologies: Robotics/Autonomous Systems/Artificial Intelligence, Cyber Security and C4ISTAR.</p> <p>The ASSETS+ project will focus on 4 main activities:</p> <ol style="list-style-type: none"> 1. Skill Strategy to translate the selected technologies into actionable sets of relevant fine-grained skills to be (potentially) transformed into new job profiles 2. Design of three training programmes to address high-school students, university students, employees 3. E&T programme realisation and improvement 4. Development of community of practice (i) and body of knowledge (ii) to promote new skills acquisition, development and retention <p>Main outputs https://assets-plus.eu/results/</p> <ul style="list-style-type: none"> ● Technologies Roadmap. ● Skills Blueprint. ● Body of Knowledge.
	EDucation for DIgitalisation of Energy	Digitalisation of the energy value chain	January 2020 December 2023	https://www.edsoforsmartgrids.eu/eddie/	<p>EDDIE is aimed to create a Sector Skill Alliance by bringing together all the relevant stakeholders in the Energy value chain, from industry, education and training providers until legal authorities.</p> <p>The main objective of this SSA is to develop a long -driven Blueprint for the digitalisation of the European Energy sector to enable the matching between the current and future demand of skills necessary for the digitalisation of the energy sector and the supply of improved Vocational Education and Training (VET). An interdisciplinary approach is also sought, including green and soft skills with a high collaborations of workers by using participatory approaches through Information and Communication Technologies (ICT) methodologies.</p> <p>Main outputs : https://www.edsoforsmartgrids.eu/category/position-papers/</p>

					https://www.edsoforsmartgrids.eu/type-of-project/technical-expertise/
	SPIRE-SAIS - Skills Alliance for Industrial Symbiosis - A Cross-sectoral Blueprint for a Sustainable Process Industry	Energy intensive industries / industrial symbiosis	November 2019 November 2023	https://www.spire2030.eu/sais	<p>The SPIRE-SAIS project aims to develop an industry-driven and proactive skills strategy that will assist the wider implementation and exploitation of industrial symbiosis and energy efficiency across the energy intensive industrial sectors represented in SPIRE: chemicals, steel, engineering, non-ferrous metals, minerals, water, cement, and ceramics. The new skills developed will help unfold the potential of digital transformation within SPIRE companies and beyond. The project will build on the existing coordination, projects and activities of SPIRE in a truly cross-sectoral approach.</p> <p>Educational modules and tools for greater awareness of the needs and opportunities provided by improved industrial symbiosis and energy efficiency will be developed. New skills, including digital skills, for the practical implementation of industrial symbiosis in globally competitive industries will be identified that anticipate the skills requirements of industry and allow proactive practical activities to meet the future skills needs of the Energy Intensive Industries in Europe and beyond.</p> <p>Main outputs: https://www.spire2030.eu/sais</p> <ul style="list-style-type: none"> ● D2.1 Industrial Symbiosis and Energy Efficiency in European Process Industry: State of Art and Future Scenario ● Factsheet - WP2 Technological Development ● Factsheet - WP3 Skills Requirements ● Factsheet - WP4 VET Systems
	METIS - MicroElectronics Training, Industry and Skill	Microelectronic manufacturing & design	November 2019 October 2023	https://www.metis4skills.eu/tag/microelectronics/	<p>METIS implements a new strategic approach to sectoral cooperation on skills for microelectronics by involving the key players across industry, education & training and regulatory/certification bodies. To this end, METIS will:</p> <ul style="list-style-type: none"> ● Develop the Microelectronics Sector Skills Strategy ● Define and refine occupational profiles based on existing competence frameworks and the ESCO classification system of skills, competences, qualifications and occupations. ● Introduce innovative learning-outcome-based VET curricula jointly developed by industry & education

					<ul style="list-style-type: none"> • Benchmark and align the METIS curricula and training with ESCO, EQF and EQVET principles of quality and relevance. • Enhance the visibility of the microelectronics sector as a professional option, • Establish the Microelectronics Observatory & Skills Council. <p>Main outputs: https://www.metis4skills.eu/deliverables/</p>
Sector Skills Alliances 2020 - EAC/A02/2019	CHAISE - A Blueprint for Sectoral Cooperation on Blockchain Skill Development	Blockchain	November 2020 October 2024	https://chaise-blockchainskills.eu	<p>As a Sector Skills Alliance, CHAISE addresses the growing demand for blockchain and distributed ledger technologies (DLTs) skills in Europe. The core mission of CHAISE is to develop a strategic approach on blockchain skills development for Europe. CHAISE will deliver future-proof training solutions, in order to tackle blockchain skill shortages and to respond to the current and future skill needs of the European Blockchain workforce.</p> <p>Main intended Results:</p> <ul style="list-style-type: none"> • A European Blockchain Skills Strategy • A 5-semester Blockchain VET Programme • The first-ever “blockchain specialist” occupational profile • National & European Blockchain Skills Ecosystems • Transnational mobility schemes for Blockchain students & professionals • A forecasting mechanism to anticipate future blockchain skill needs <p>Main outputs https://chaise-blockchainskills.eu/publications-and-reports/</p>
	CHARTER - Cultural Heritage Actions to Refine Training, Education and Roles	Cultural Heritage	January 2021 December 2024	https://charter-alliance.eu	<p>CHARTER, the European Cultural Heritage Skills Alliance, brings together and represents the whole range of the cultural heritage sector in Europe. Charter strives towards making apparent the value of cultural heritage and creating a resilient and responsive sector.</p> <p>CHARTER works towards creating a lasting, comprehensive strategy that will guarantee Europe has the necessary cultural heritage skills to support sustainable societies and economies.</p> <p>Main outputs https://charter-alliance.eu/results/</p>

	REWIRE - Cybersecurity Skills Alliance - A New Vision for Europe	Cybersecurity	November 2020 October 2024	https://rewireproject.eu/about/	<p>The Cybersecurity Skills Alliance – New Vision for Europe – REWIRE project develops a Blueprint for the Cybersecurity industry and a concrete European Cybersecurity Skills Strategy. It brings together 25 partners from academia and VET, cybersecurity industry, non-cyber industries, certification partners and umbrella organizations. Its work builds upon four pilot projects: CONCORDIA, SPARTA, ECHO, CyberSec4Europe implemented with the support of the European Union’s Horizon 2020 research and innovation programme.</p> <p>Main outputs https://rewireproject.eu/results/#1585668826964-d63cf46d-9bc0</p> <ul style="list-style-type: none"> ● R2.1.1 PESTLE Analysis results ● R2.2.2 Cybersecurity Skills Needs Analysis ● R2.2.3 Methodology to anticipate future needs ● R2.3.1 Cybersecurity Skills Strategy ● R3.2.1 European Cybersecurity Blueprint ● R3.3.1 Cybersecurity skills Framework ● R3.4.1 Mapping the framework to existing courses and schemes ● R3.5.1 Cybersecurity career pathway analysis ● R3.6.1 European Cybersecurity Blueprint ● Blueprint Toolbook (for educational providers)
	STAFFER - Skill Training Alliance For the Future European Rail System	Rail supply and transport industries	November 2020 October 2024	https://www.railstaffer.eu	<p>STAFFER is a four-year, European Commission-funded Blueprint project focused on the topic of skills in the rail sector. A large share of the workforce is expected to retire in the next 10 years and the sector is currently experiencing both a severe skill shortage and a need for re/upskilling. STAFFER will deliver human capital solutions for all levels of the rail value chain, gaining the holistic view of the sector as a system of systems, unifying the European rail world</p> <p>Project objectives</p> <ul style="list-style-type: none"> ● Identifying skills needs: staffer will help operators, infrastructure managers and suppliers anticipate their competence needs of tomorrow ● Adapting curricula: design new training curricula to complement existing training programmes and adapt existing ones to meet future challenges ● Facilitating transnational mobility: our consortium’s work will allow the development of a framework facilitating transnational mobility for students, apprentices, trainees, or other staff groups in the rail industry ● Developing a long-term strategy: this initiative will help the whole rail sector come together around a long-term action plan for skills.

					Main outputs https://www.railstaffer.eu/publications-resources/deliverables/
	The European Software Skills Alliance	Software services	November 2020 October 2024	https://www.digitaleurope.org/essa-european-software-skills-alliance/	<p>ESSA will formulate and deliver a European strategy to address skill mismatches and shortages in the Software Sector and deliver appropriate and future-focused training, qualifications and mobility solutions, geared towards sectoral realities and needs.</p> <p>The global objective of ESSA is to design and implement a highly innovative, effective and sustainable Software Skills Strategy and VET Training Programme for Europe that will ensure the skills needs of the rapidly expanding and evolving software sector can be met in the short, medium and long term. The strategy will be market demand-led at its core, continuously adapting and evolving to address current and future market needs in order to support growth, innovation and competitiveness in the sector.</p>
	Blueprint for Sectoral Cooperation on Skills in Work Integration Social Enterprises	Work integration and social enterprises	January 2021 December 2024	http://www.bwiseproject.eu	<p>B-WISE (Blueprint for Sectoral Cooperation on Skills in Work Integration Social Enterprises) is an Erasmus+ project that aims to develop a European strategy (Blueprint) to address the skills needs, in particular regarding digital skills, in the Work Integration Social Enterprises (WISEs) sector.</p> <p>The B-WISE project will:</p> <ul style="list-style-type: none"> • Identify the skill gaps – mainly digital skill gaps; • Chart the skills that the sector will need in the future; • Develop a credible and sustainable plan to match demand (employees/employers) and supply (VET providers) of identified skills needs; • Update the transnational vocational training curricula according to the new needs of the labour market; • Support the exchange of good practices at national and regional level; • Enhance the attractiveness of the WISEs sector as a career choice. <p>To reach these goals and prepare WISEs to face future challenges, the project implements the following actions:</p> <ul style="list-style-type: none"> • Develop a report to provide an overview of the WISEs sector across Europe and identify the skills needs in the sector. • Design three training curricula to meet the skills gaps of workers in integration, their supporters and their managers.

					<ul style="list-style-type: none"> • Make those curricula a reality by testing them in 13 countries and validating them by certification authorities. • Develop a European Strategy to continue addressing the skills needs in the WISEs sector even after the end of the project. • Raise awareness to promote the WISEs sector as a career choice, on the importance of digital skills and of the use of digital technologies to help people with support needs. <p>Main outputs http://www.bwiseproject.eu/results</p>
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Social Networks

