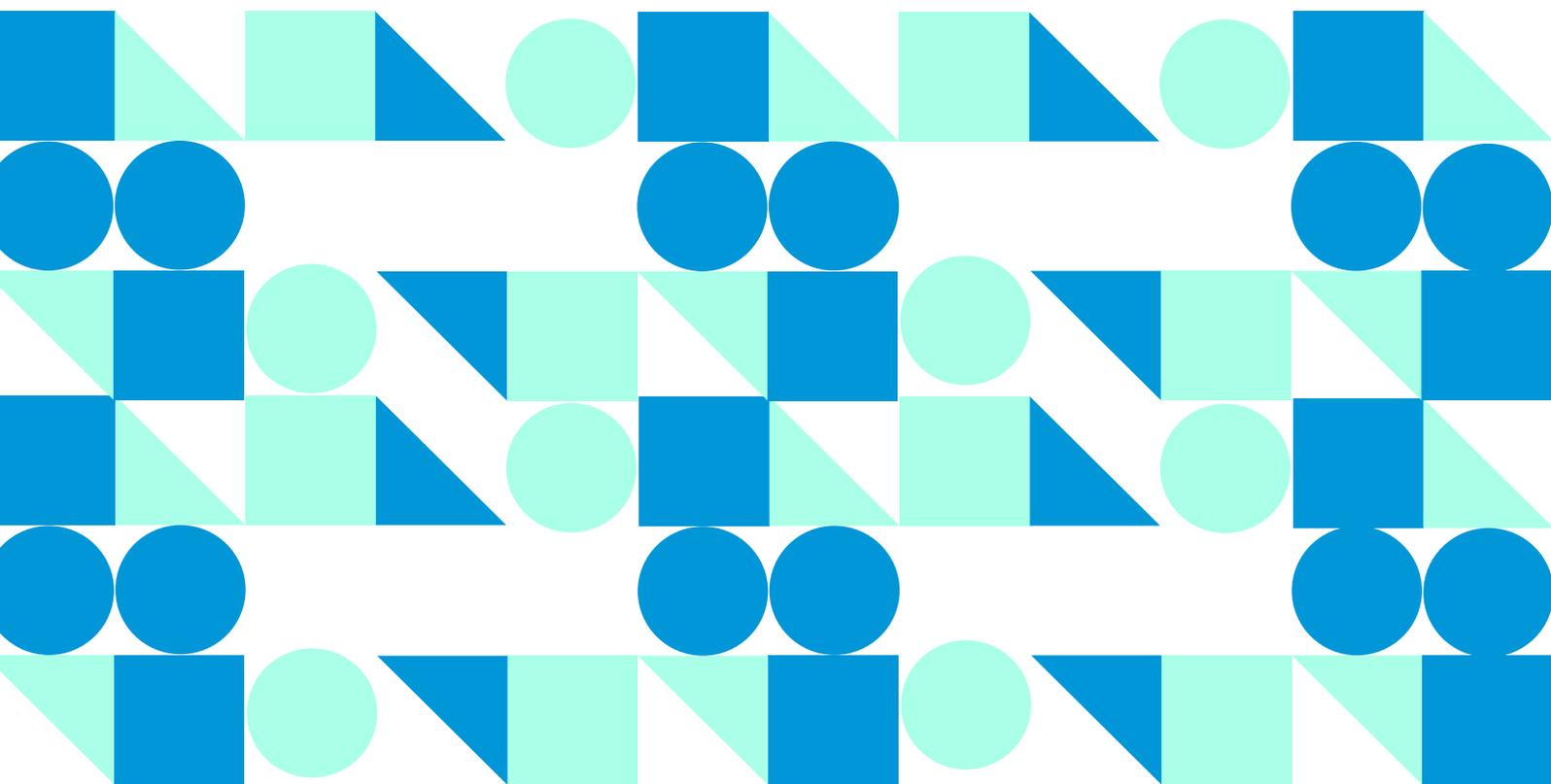




Research paper

Entrepreneurship competence in vocational education and training in Europe

Synthesis report





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Synthesis report

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The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference centre for vocational education and training, skills and qualifications. We provide information, research, analyses and evidence on vocational education and training, skills and qualifications for policy-making in the EU Member States. Cedefop was originally established in 1975 by Council Regulation (EEC) No 337/75. This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

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Foreword

Modern society is changing rapidly the way we live, work, and learn. Technological developments, climate change, demography, crises (pandemic, humanitarian) require adapting to new realities. To manage these changes, we need the right skills and competences. Resilience, flexibility, adaptability, acting upon opportunities and ideas are just some elements of entrepreneurship competence, a key competence for all.

European cooperation in vocational education and training (VET) has an important role in promoting entrepreneurship competence. In 2020, the *European skills agenda for sustainable competitiveness, social fairness and resilience* stressed the importance of fostering entrepreneurial and transversal skills. The *Council Recommendation on VET for sustainable competitiveness, social fairness and resilience* calls for adapting and expanding VET by supporting the acquisition of entrepreneurial skills together with digital and green skills. The *Osnabrück Declaration on VET as an enabler of recovery and just transitions to digital and green economies* sets an objective, by 2025, of promoting resilience and excellence through quality, inclusive and flexible VET that includes entrepreneurial education, empowering learners to open new businesses.

Responding to these EU priorities, Cedefop carried out a study to provide VET stakeholders with new evidence on how entrepreneurship competence is embedded in VET. This synthesis report presents findings from the research carried out in [Spain](#), [France](#), [Croatia](#), [Italy](#), [Latvia](#), [Austria](#), [Finland](#) and [Sweden](#).

Our research shows that VET plays a crucial role in promoting entrepreneurship competence. Efforts have been made in Europe to establish VET entrepreneurial learning ecosystems, although there is still a need for improved links between the ecosystem components and collaboration among stakeholders. Ecosystems primarily function at local and regional levels, relying on personal networks and contacts.

Entrepreneurship competence is highly valued in VET policy and practice. At policy level, it is mainly regarded as an action-oriented skill set that fosters innovative thinking and business creation. Emphasis is placed on self-knowledge, self-confidence, and the development of an entrepreneurial mindset. However, in teaching and learning the focus tends to shift more towards business activities. This is often a result of limited awareness within the VET sector of relevant policies and the use of training tools and methods which primarily nurture business-management activities.

We hope that this report will help policy-makers, social partners and VET providers continue their successful cooperation to nurture entrepreneurship competence in VET and make sure all learners are equipped with it.

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Executive summary

This study offers evidence for policy makers, social partners, VET providers and researchers on how entrepreneurship competence is embedded in VET across Europe, including challenges and opportunities.

Two main research questions guided the study:

- (a) how do entrepreneurial learning ecosystems support embedding entrepreneurship competence in VET in Europe?
- (b) what policies, methods, tools, and approaches are most effective for embedding entrepreneurship competence in VET?

The research comprised the development of methodology, literature and policy review, and field research in Spain, France, Croatia, Italy, Latvia, Austria, Finland and Sweden, including VET stakeholders and 48 VET providers.

Understanding the competence

Most countries under review drew inspiration from the European definition of entrepreneurship competence, applicable in diverse contexts, as the capacity to act upon opportunities and ideas, and to transform them into values for others (European Commission, 2018). Spain, Latvia and Finland have opted for a context-neutral definition, while Croatia, Italy, Austria, and Sweden explicitly refer to personal development, business creation and/or employability. None of the definitions are VET-specific. In CVET, policy documents at national level focus mainly on business creation (Spain, France, Austria), aligning with interpretations at VET provider level.

VET teachers have mixed feelings about the nature and definition of entrepreneurship. Some see it as means to develop technical, personal, and social competences that enhance VET learner professional profiles, employability, and future career prospects. Others seem to be confused by definitions or consider entrepreneurship as secondary priority. Teachers stress that transversal skills, for example literacy, numeracy, socio-emotional, and technical, should precede the development of entrepreneurship competence. The term 'entrepreneurship' carries ideological connotations and biases that sometimes result in VET teachers, trainers, and management avoiding its use. Teacher views on entrepreneurship also depend on their subject area, own industry experience and motivation. Some VET programmes consider entrepreneurship as occupation-specific competence due to its alignment with the programme contents (e.g. marketing, commerce and retail), especially in VET programmes leading to a qualification where self-employment is a likely outcome (e.g. hairdresser and graphic designer). In school-

based programmes with a work-experience element and in apprenticeships, entrepreneurship competence is often seen as vital for employability.

VET entrepreneurial learning ecosystems

The VET entrepreneurial learning ecosystem encompasses interactions and contributions of various stakeholders, both within and outside the VET provider, as well as the available resources under the existing policy framework. The ecosystem model (Figure 1, Chapter 3) that has shaped this study explores three dimensions: policy (the role of education policies, curricula, and other instruments and how these may shape the development of entrepreneurship competence); VET providers (their efforts to support the development of entrepreneurship competence in an organised, systematic, and coherent way in collaboration with stakeholders); and teaching, learning and assessment (planning and implementing the curriculum as well as teaching, learning and assessment methods and tools).

Policy instruments supporting entrepreneurship competence in VET

For over two decades, the EU has promoted an agenda for fostering entrepreneurship education. This has led to a set of policies supporting its development and consensus among stakeholders on the importance of entrepreneurship competence. For instance, in 2006, the sense of initiative and entrepreneurship were recognised as a key competence at EU level; in 2016, the European Entrepreneurship competence framework (EntreComp) offered a comprehensive depiction of the knowledge, skills, and attitudes required for individuals to exhibit entrepreneurship and generate financial, cultural, or social value for others.

The 2015 EU Riga conclusions highlighted the need to strengthen key competences in VET. Later, the Osnabrück Declaration and the Council Recommendation on VET stressed the importance of entrepreneurial education in high-quality VET systems, advocating for expansion to encourage green, digital and entrepreneurship skills and empowering learners to open new businesses.

EU Member States and their regions have followed suit, formulating and implementing policies that favour the promotion and embedding of entrepreneurship competence in VET. Many have introduced measures that promote curricular integration, teacher training, and collaboration with other stakeholders. However, the translation of policy into practice is not linear and European, national and regional policies are not always fully aligned.

The role of VET

During the field research, VET principals, teachers, trainers and learners acknowledged the advantages of VET in nurturing entrepreneurship competence. They highlighted its close ties to the job market, hands-on teaching approach, dedicated teachers, and learner enthusiasm for entrepreneurship.

However, teachers and trainers also identified organisational challenges, such as heavy workload, rigid schedules and demanding curriculum that impede collaboration and interdisciplinarity. Effective leadership and support from VET provider management were deemed essential to overcome these obstacles and cultivate an entrepreneurial culture.

VET providers that succeeded in overcoming these challenges take a systematic, long-term approach to embedding entrepreneurship competence, providing a comprehensive mix of curricular and extracurricular activities, support services, and strategic documents emphasising entrepreneurship. They cultivate an entrepreneurial culture by providing professional development opportunities for educators and fostering collaboration among stakeholders.

Regional and national policies play a significant role in promoting entrepreneurship competence. Recognition schemes and certification programmes (e.g. in Austria and Spain) are instrumental in motivating stakeholders to embrace entrepreneurship development more systematically.

Stakeholder engagement

Stakeholder engagement is vital to entrepreneurship competence in VET. The field research revealed that VET providers actively establish connections with companies, local and regional authorities, external providers of entrepreneurship education programmes, NGOs, business start-up support organisations, other VET providers, and universities. The nature of these partnerships largely depends on the personal and professional networks of teachers and principals.

While collaboration with businesses is common in VET, the primary focus has traditionally been on developing technical/occupation-specific competences, rather than entrepreneurship competence. However, in some countries under review, external entrepreneurship education providers have become central to developing the competence. National and regional authorities often endorse specific support institutions and external providers of entrepreneurship education programmes, giving them significant roles within the VET entrepreneurial learning ecosystem.

Start-up support

VET providers are well-placed to identify the entrepreneurial potential of learners and assist them in developing ideas. However, in-house support and guidance for VET learners looking to start a real business are still rare. Some VET providers in Spain and Finland have established in-house incubation units: these cater to the needs of VET learners, alumni, and even local community members, offering physical spaces and personalised support to transform their ideas into viable businesses. Other VET providers cooperate with external start-up support organisations.

Teacher training and support

Many countries under review have faced the issue of VET teachers and trainers lacking the confidence and pedagogical expertise to design, implement, and assess entrepreneurship education. The study highlights the limited availability of VET teacher training opportunities in this matter.

In-service teacher training varies among countries, with some offering limited options (e.g. France and Italy) and others providing extensive opportunities (e.g. Latvia, Austria and Finland). Even with a wide range of courses available, teachers often perceive lack of support, as observed in Latvia and Austria.

Training opportunities are sometimes accompanied by additional teacher support measures, such as online platforms offering teaching resources, tools, and networking opportunities. Formal recognition of VET teacher dedication to entrepreneurship was generally absent in most countries under review; Spain was an exception with existing formal recognition schemes. The research did not find any professional development opportunities for apprenticeship or company tutors in entrepreneurship.

Approaches, methods and tools

Methodological change towards more participatory, competence-based, learner-centred approaches is a long and challenging journey; the VET providers visited during the field research were proceeding at different speeds.

A learner-centred approach to teaching and learning is found to be effective in all VET subjects. Project-based learning stands out as the preferred methodology for nurturing entrepreneurship competence. Interdisciplinarity was also seen as an essential feature of project-based learning, but field research found limited instances of projects jointly designed by teachers of different subjects.

The contribution of in-company training to nurturing entrepreneurship competence was often mentioned and taken for granted. However, with a few exceptions, the way the competence is developed remains implicit.

VET teachers and trainers engage learners in practical entrepreneurship experiences such as mini-companies, student cooperatives, and virtual or practice firms. Extracurricular activities such as business competitions, hackathons, and participation in EU-funded projects also reinforce entrepreneurship competence development but VET providers face challenges in finding a common thread and aligning such actions with curricula.

Learning environments

Embedding entrepreneurship competence in VET involves significant methodological changes in teaching and learning. This transition is aided by the redesign of learning environments. Open and flexible learning spaces equipped with technologies and enabling different seating arrangements and classroom configurations raise the interest and motivation of learners and contribute to the development of entrepreneurship competence by favouring the deployment of action-based and collaborative methodologies. Specific policy instruments and funding supporting innovation labs, makerspaces, or entrepreneurship labs in the premises of VET providers were discovered in several countries. The emergence of innovative learning environments is seen as a leap forward, but VET teachers are struggling to take advantage of the pedagogical possibilities offered by these spaces. To overcome this challenge, VET providers appoint coordinators to manage these spaces, train staff, and ensure the most effective use of the technologies.

Assessment of the competence

In most countries under review, there is a transition towards competence-based teaching and learning, where the assessment includes a focus on various competence components, including entrepreneurship-related skills and attitudes. VET learners typically undergo both formative and summative assessments, with some countries currently updating their programmes to align with new regulations supporting the competence-based approach. However, there are two main issues: the lack of clear assessment criteria for entrepreneurship competence and limited use of formative assessment techniques, such as feedback, self-assessment, and peer-assessment. To address these, active involvement of learners in the assessment process is deemed crucial.

To improve entrepreneurship competence development and assessment in work-based learning environments, specific training for apprenticeship trainers and

company tutors is required, along with modifying assessment protocols and observing students' development of entrepreneurship competence at work.

VET students and alumni who participated in entrepreneurship activities reported acquiring a diverse range of learning outcomes, including transversal competences like teamwork, conflict management, communication, and project management skills. These activities helped them recognise the relevance of acquired knowledge and make connections across different subjects. In work environments, learners also developed employability skills, such as understanding how a company operates and effective communication with colleagues. Teachers and students noted other unintended learning outcomes, such as positive impacts on self-esteem, motivation, maturity, and academic performance.

The study has identified five main challenges in embedding entrepreneurship competence in VET across Europe. They include conceptualisation of entrepreneurship competence comprising different interpretations; the curriculum approach with conflicting options of dedicated modules/subjects and the cross-curricular approach; a gap between the intention to deliver entrepreneurship competence as a broad transversal skill and narrow actions at provider level; the taken-for-granted link between entrepreneurship competence development and employability; and the need for more evidence-based policy. The study also proposes several actionable solutions for the challenges identified.

CHAPTER 1.

Introduction

This Cedefop study *Entrepreneurship competence in vocational education and training (VET)* aims to bring new evidence for policy makers, social partners, VET providers and researchers of how entrepreneurship competence is embedded in VET across Europe.

The study was conducted in 2021-23 and addresses two main research questions:

- (a) to what extent and how do the dimensions of VET entrepreneurial learning ecosystems support the acquisition of entrepreneurship competence in VET in Europe?
- (b) which policies, methods, tools and approaches best support embedding entrepreneurship competence in VET?

The research comprised the development of the research methodology, literature review at European and national levels (desk research), and field research at policy and stakeholder levels, including 48 VET providers in Spain, France, Croatia, Italy, Latvia, Austria, Finland and Sweden. Field research included interviews with 36 policy makers, VET experts and social partners, as well as more than 70 VET provider principals or other managers, including from companies. The study also involved more than 165 teachers and trainers, 60 graduates as well as more than 40 learner focus groups. Over 700 policy and VET provider documents were analysed.

To ensure consistent and comprehensive research across all eight case study countries, the methodological guidelines (strategy) followed a common approach for national researchers to gather information and to report findings.

This report presents a comparative analysis of these findings. It is based on eight case studies published in 2022-23: [Spain](#), [France](#), [Croatia](#), [Italy](#), [Latvia](#), [Austria](#), [Finland](#) and [Sweden](#).

Chapter 2 discusses the various interpretations of the term entrepreneurship competence at policy and VET provider levels, including the aspects of opportunity, value and venture creation. It also provides an overview of digital and sustainable entrepreneurship terminology. Chapter 3 provides an overview of the conceptual framework of the VET entrepreneurial learning ecosystem and its three interconnected dimensions, which guided every aspect of the study. Chapter 4 provides an overview of policy instruments supporting entrepreneurship competence in VET, including competence frameworks, national policies, and

curriculum frameworks. It also discusses the challenges of translating policies into practice, supporting entrepreneurship competence development in VET. Chapter 5 discusses the role of VET providers, including organisational choices, stakeholder engagement, learning environments and business start-up support. Chapter 6 explores teaching, learning, and assessment aspects of VET, based on the field research findings. The concluding Chapter 7 provides an overview of the study's findings and puts forward potential approaches/strategies to address the challenges associated with integrating entrepreneurship competence in European VET.

Annex 1 lists the participating VET providers and Annex 2 outlines the main methodology steps, including desk research, field research, and comparative analysis.

CHAPTER 2.

Understanding entrepreneurship competence

Definitions of entrepreneurship competence vary. Häag and Gabrielsson (2020) in their 1980-2018 review noted a key paradigm shift from a narrow perspective on entrepreneurship to a broader view of the transversal/key competence that applies in different contexts of life other than just business creation.

A recent report to ESCO ⁽¹⁾ working group on a terminology for transversal skills and competences (Hart et al., 2021) categorised skills and competences into six broad groups: core skills, physical and manual, thinking, self-management, social and communication, and life skills and competences. Entrepreneurial and financial skills and competences were defined within the 'Life skills and competences' cluster as abilities to process, and utilise knowledge and information with wide-ranging implications, fostering active citizenship and personal/professional growth.

This chapter delves into understanding of entrepreneurship competence in different national VET settings, using insights from the eight country case studies. The analysis highlights the characteristics and approaches of each country, deepening the understanding of the contextual nuances that shape the perception and implementation of entrepreneurship competence within their VET environments.

2.1. The many meanings

The concept of entrepreneurship competence varies among and within countries. Sweden's policy documents refer to entrepreneurship as a competence, while Italy, Austria and Finland mainly refer to entrepreneurship education. Latvia's policy refers to transversal skills, which include entrepreneurship skills. Policy documents in Croatia make use of synonyms such as entrepreneurship, entrepreneurship competence, enterprising. In Spain, the term entrepreneurship competence is not part of the vocabulary in VET policy documents; instead, VET curricula refer to entrepreneurship and professional, personal, and social competences.

⁽¹⁾ European skills, competences, qualifications and occupations.

At national level, definitions often derive from the EntreComp and EU key competences frameworks offering broad definitions of entrepreneurship competence (Table 1).

Table 1. **Defining entrepreneurship competence**

EU key competences framework	<p>2006 Sense of initiative and entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance.</p> <p>2018 Entrepreneurship competence refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively to plan and manage projects that are of cultural, social, or financial value.</p>
Entrepreneurship (EntreComp)	Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, or social.

Source: Bacigalupo et al., 2016; European Commission, 2018; European Commission, 2006.

All eight countries, except France, use these to define competence in policy documents. Table 2 presents national definitions and their alignment with EU frameworks.

Table 2. **National definitions and their alignment with EU frameworks**

Country	Definition (translated into English)	Framework
Austria	'Enabling the individual to take the initiative and think and act independently as an entrepreneur, employee and as a consumer, to act actively and responsibly and thus help shape the economy and society' (Republic of Austria, 2014).	EntreComp
Croatia	'One of key lifelong competences needed [...] for everyone to build own (self-) employability and ensure personal development in the society of knowledge' (Croatia. Ministry of Science and Education, 2019).	EU key competences
Finland	'An ability to observe and seize opportunities; to transform ideas into action, which generates economic, cultural, social, or societal value.' (Finland. Ministry of Education and Culture, 2017b).	EU key competences

Country	Definition (translated into English)	Framework
Italy	'[...] ability to turn ideas into action. Creativity, innovation and risk-taking, planning and managing projects, seizing opportunities which can lead to establishing or contributing to social or commercial activity. Realisation of entrepreneurial autonomous activity' (Italy. Ministry of Education, University and Research, 2018b).	EntreComp
Latvia	'Creative activity and entrepreneurship skills' are defined as follows: [...] the pupil, upon viewing the situation with an interest and from different points of view, notices new possibilities and offers different, original solutions, proactively seeks possibilities to improve his or her own quality of life and that of others, knows how to manage a process from the creation of an idea until the implementation thereof, uses mistakes as the possibility for growth, remains calm and open in atypical situations [...]' (Latvia. Cabinet of Ministers, 2019)	EU key competences
Spain	'The ability to act on opportunities and ideas that generate social, cultural, or economic value for other people. Thus, by the end of basic education, learners are expected to be able to analyse needs and opportunities, self-assess their strengths and weaknesses, generate innovative ideas and valuable solutions through thoughtful planning and project management.' (Spain. Ministry of the Presidency, Relations with the Cortes and Democratic Memory, 2020).	EU key competences
Sweden	'The school should stimulate students' creativity, curiosity, and self-confidence, as well as a willingness to try and put ideas into action and to solve problems. All students should develop their ability to take initiative and responsibility and to work both independently and together with others. The school should contribute to all students developing knowledge and attitudes that promote entrepreneurship, business creation and innovative thinking, which increase the students' opportunities for future employment, through entrepreneurship or employment' (Skolverket, 2022).	EntreComp
France	In France, the concept of entrepreneurship competence is not clearly defined; the dissemination of an entrepreneurial mindset is prioritised; and entrepreneurship competence and entrepreneurial mindset are considered a consequence of the development of core vocational competences: the more professional competences learners master, the more they will be able to take the initiative, to act autonomously, to lead teams and more generally to undertake entrepreneurial or intrapreneurial activities (Cedefop, 2023d).	-

Source: Authors.

The broad definitions in national policy documents citing European frameworks do not necessarily promote the transversal nature of competence. For example, Italy's *Entrepreneurship education syllabus* defines entrepreneurship broadly. However, it seems to suggest activities that are skewed more towards business creation.

National definitions of entrepreneurship competence are not VET-specific. They encompass primary and secondary education and so apply mainly to IVET but not CVET. The exception is France, where entrepreneurship competence is only referred to CVET. In Spain, VET experts, trainers, provider management

teams and teachers interviewed believe that developing this competence was not a clear goal of CVET, except in a specific course called 'Creation and management of micro-enterprises'.

In practice, both narrow and broad definitions of entrepreneurship coexist. The terms 'narrow' and 'broad' were frequently used by research participants, representing two different views of entrepreneurship: either a business creation or a key/transversal competence that is useful in various contexts. In Austria and Finland, VET teachers, school principals and trainers demonstrated consensus favouring a broad definition of entrepreneurship. In Austria, the Reference framework for entrepreneurship education also adopts this broad approach (Box 1).

Box 1. Austrian reference framework for entrepreneurship education

The Austrian framework for entrepreneurship builds on EntreComp. The e.e.si ⁽²⁾ Impulse Centre and IFTE Initiative for teaching entrepreneurship have jointly developed the Austrian Reference framework for entrepreneurship education, comprising three main categories:

- developing ideas (attitude and recognising opportunities);
- implementing ideas (organising and working together);
- thinking sustainably (acting future-oriented and ABC of finance).

Source: [Case study Austria](#) (Cedefop, 2023a).

In Spain, France, Italy and Latvia, however, understanding of entrepreneurship ranges from transversal competence to business creation and employment skill. In Latvia, it has a dual meaning. At policy level, it is broadly considered as an essential transversal skill for all, but IVET providers mainly see it as supporting start-ups, except for a VET provider that devised its own three-step concept to develop entrepreneurship competence, clearly aligned with the broader policy level definition (Box 2).

(²) Entrepreneurship Education for School Innovation.

Box 2. 'Understand, learn, take on' concept of Liepaja State Vocational Technical School, Latvia

The 'Understand, learn, take on' concept within the Initiative and entrepreneurship module outlines three steps for developing entrepreneurship competence:

- understanding how to develop ideas, manage enterprises, collaborate, and realise potential;
- learning creativity, persistence, leadership, teamwork, problem solving, emotional intelligence, and overcoming failure;
- embracing responsibility, risks, challenges, opportunities, successes, and learning to manifest ideas and expand knowledge.

Source: [Case study Latvia](#) (Cedefop, 2022b).

An Italian VET provider developed a noteworthy interpretation of entrepreneurship competence (Box 3).

Box 3. Entrepreneurship competence according to teachers and learners, Galilei-Costa-Scarambone Institute, Italy

Daniele Manni, Global Teacher Award recipient 2020, described entrepreneurship as 'self-entrepreneurship'. He considered it a universal competence, helping develop not just entrepreneurs but an entrepreneurial mindset characterised by creativity, innovation, managing risks, and failures. According to Manni's learners, entrepreneurship is about addressing social needs through idea generation and team collaboration.

Source: [Case study Italy](#) (Cedefop, 2022a).

In work-based learning contexts, including apprenticeships, VET provider representatives often consider entrepreneurship competence as a crucial part of the skillset, enhancing employability. This perception is particularly prevalent among apprenticeship providers in France and Italy, where entrepreneurship competence is predominantly related to employability. In VET qualifications that promote self-employment and CVET however, it is occupation-specific or even a professional requirement as for hairdressers and beauty therapists in Italy.

The field research suggests there is a discrepancy between the broad national definitions of entrepreneurship competence and those at VET provider level, where both narrow (business creation) and broad (key/transversal competence) interpretations coexist. More information on teacher and trainer views of entrepreneurship competence is available in Section 6.1.

2.2. Opportunity, value and venture creation

At policy level, entrepreneurship is widely associated with opportunity, value, and business creation in many countries, including Spain, Croatia, Italy, Latvia, Austria and Finland. In Austria, for example, entrepreneurship VET is interpreted as the creation of opportunities and value. Similarly, Finland's Guidelines for entrepreneurship education (Finland, Ministry of Education and Culture, 2017b) establish entrepreneurship competence as the capacity to identify and seize opportunities, transforming them into actions that yield economic, cultural, social, or societal value. Entrepreneurship education in this country is thus designed to foster positive attitudes towards entrepreneurial activities, develop entrepreneurial skills, encourage new business creation, and support research, development, and innovation activities. Spain's perspective, delineated in the 2020 Education Law (LOMLOE) (Spain, Ministry of the Presidency Relations with the Cortes and Democratic Memory, 2020), emphasises opportunity identification and value creation as key elements of entrepreneurship competence (Box 4).

Box 4. Opportunity and value creation supported by Education Law in Spain

In Spain, the new Education Law (LOMLOE) defines entrepreneurship competence as the ability to act upon opportunities and ideas, creating social, cultural, or economic value for others. Consequently, by the end of basic education, learners should be able to assess needs and opportunities, recognise their strengths and weaknesses, and generate innovative and valuable solutions through strategic planning and project management.

Source: Spain. Ministry of the Presidency, Relations with the Cortes and Democratic Memory, 2020.

In Italy, the syllabus for entrepreneurship education (*Educazione all'Imprenditorialità: Sillabo per la Scuola Secondaria di Secondo Grado*) (Italy, Ministry of Education University and Research, 2018a) includes parts dedicated to opportunity ('Forms and opportunities of being enterprising'), value ('Idea generation, the context, and the social needs') and business creation ('From the idea to the enterprise, resources and competences').

2.3. Digital and sustainable entrepreneurship

While national agendas are increasingly prioritising inclusiveness, digitalisation and sustainability, these themes are rarely integrated explicitly into national guidelines for entrepreneurship. Digital entrepreneurship, for instance, transcends the mere use of digital tools in entrepreneurial classes. It is not sufficient to use

digital tools while acquiring entrepreneurship competence: the digital and innovative dimensions should also be evident in the learning outcomes.

At the same time, sustainable entrepreneurship is gaining momentum at VET provider level, where it is viewed as a solution to environmental degradation and social inequalities (Terán-Yépez et al., 2020). Austria's commercial academies ⁽³⁾ are good examples, weaving elements of digital and sustainable entrepreneurship into all their subjects (Box 5).

Box 5. Keep Growin' initiative: sustainability and entrepreneurship for apprentices, Austria

The Rotary Club Kitzbühel sponsors the Keep Growin' initiative, where apprentices develop sustainable entrepreneurial ideas applicable to their businesses. Participants receive support from Rotary Club coaches and mentors, nurturing entrepreneurial thinking, innovative strength, and awareness of business sustainability.

Source: [Case study Austria](#) (Cedefop, 2023a).

In France and Italy, although the curriculum and work experience guidelines do not specify digital and sustainable entrepreneurship, these themes are often nurtured through student-led projects. In Italy, IAL FVG offers a 40-hour course on environmental and social sustainability principles within the circular economy (Entrepreneurship – environmental and social sustainability: principles of circular economy). In Latvia, digital and sustainable entrepreneurship is promoted mainly through projects (Box 6).

Box 6. 3LoE project, Latvia

3LoE is an Erasmus+ project focusing on providing comprehensive green skills. It aims to strengthen vocational excellence in the green economy by implementing a variety of education, training and higher education measures. The project targets energy savings, renewable energy usage, environmental and climate protection through innovative SMEs.

Source: 3LoE, 2021.

In Sweden, there are teachers connecting entrepreneurship with sustainability. Junior Achievement's UF-*företag* concept has also begun emphasising sustainability.

⁽³⁾ HAK, a type of VET provider.

While the above examples indicate a positive shift towards integration of entrepreneurship, digital and sustainability, further progress is needed to make them systematic and embedded into national VET systems.

CHAPTER 3.

VET entrepreneurial learning ecosystem

VET entrepreneurial learning ecosystem refers to a network of interconnected entities, programmes, and resources that support and promote entrepreneurship education development within vocational education and training. The ecosystem aims to foster an entrepreneurial mindset and equip VET learners with entrepreneurship competence. It provides the context in which entrepreneurship learning happens.

Box 7. VET entrepreneurial learning ecosystem

A learning community to promote and embed entrepreneurship competence through various activities and initiatives led by VET providers and implemented with the commitment of teaching staff in collaboration with a range of external stakeholders. The entrepreneurial learning ecosystem encompasses the organisations and individuals involved, the interactions taking place internally and externally, and the resources available within a given policy environment. The model puts the VET provider at the centre 'due to its critical role in developing entrepreneurial attitudes, aspirations, and activity' (Regele and Neck, 2012) and explores their internal and external actions and how and to what extent they are influenced by policies in place and shaped in collaboration with external actors.

Source: Authors.

The ecosystem's model is characterised by collaboration and interaction between key actors: policy-makers, employers, VET providers, teachers/trainers, learners, and other stakeholders such as chambers of commerce, business start-up support agencies and research centres. These interact, contribute to, influence, and play different roles in the shaping of key processes such as agenda-setting, curriculum-making, teacher training, teaching, learning, performance assessment and extracurricular activities. These interactions are mediated by policy, curricula, teaching, learning, assessment of learning outcomes, learning environments, technology and other assets and resources available.

In line with Brush (Brush, 2014), this model puts the VET provider at the centre of the entrepreneurial learning ecosystem to explore and understand interactions from internal and external perspectives. The internal perspective is about strategic, organisational, and pedagogical decisions and actions taking place at VET provider level to nurture entrepreneurial learning.

Box 8. **Entrepreneurial learning**

'[...], also called entrepreneurial or entrepreneurship training, seeks 'to foster self-esteem and confidence by drawing on the individual's talents and creativity, while building the relevant skills and values that will assist learners in expanding their perspectives on schooling and opportunities beyond. Methodologies are based on the use of personal, behavioural, motivational, attitudinal and career planning activities.'

Source: UNESCO and UNEVOC, 2020.

The external perspective explores the role of a VET provider and the level and type of engagement with other stakeholders to promote entrepreneurial learning. VET providers play a key role, interacting and engaging with policy-makers, employers, and other external stakeholders to learn from each other and shape the curricula.

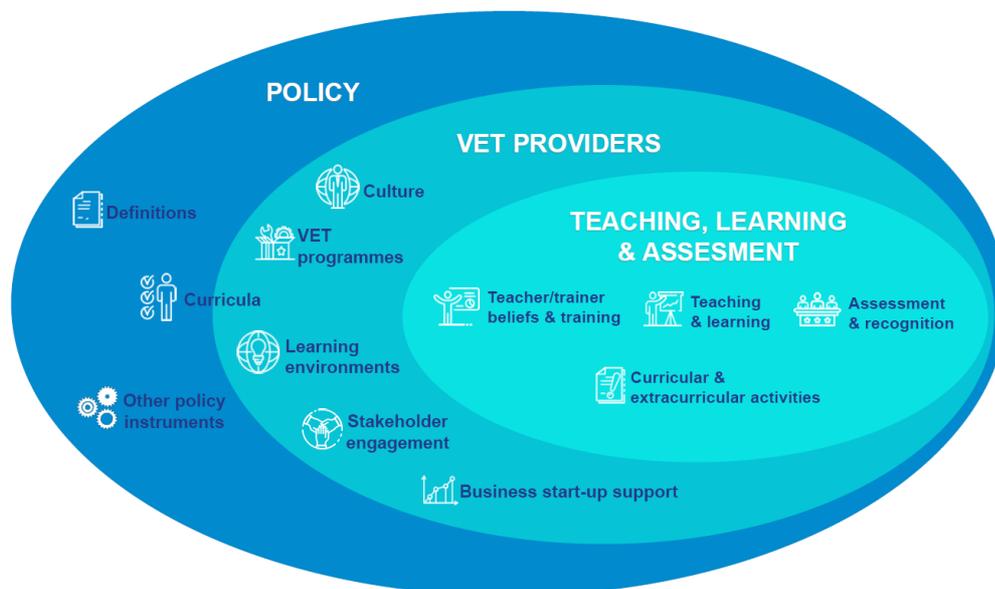
The model paves the way towards embedding entrepreneurship competence in VET as an interplay between three interlocking dimensions:

- (a) policy ⁽⁴⁾: the role of education policies, curricula, and other policy instruments and how these shape the development of entrepreneurship key competence in VET;
- (b) VET provider and company: supporting the development of entrepreneurship competence in an organised, systematic, and coherent way in collaboration with external stakeholders;
- (c) teaching, learning and learner performance assessment: the process of implementing the curriculum using appropriate methods and tools, of learning and assessment, and the interactions between teachers/trainers and learners.

The structure of the VET entrepreneurial learning ecosystem is presented in Figure 1.

⁽⁴⁾ Policy is 'a set of ideas or a plan of what to do situations that has been agreed to officially by a government' (Cambridge dictionary).

Figure 1. VET entrepreneurial learning ecosystem



Source: Authors.

The policy dimension in the VET entrepreneurial learning ecosystem model considers the main policy instruments⁽⁵⁾ influencing the way entrepreneurship competence is approached in VET. This includes an array of policies, strategies, action plans and legislation developed by public authorities to improve entrepreneurship competence development in VET.

The translation of policy into practice is neither linear, nor unidirectional. A top-down model assuming a cascading effect of European policies on national and regional policies often fails to consider the complexity of policy making in multi-level systems (Starck, 2017). Member States of the European Union are not passive recipients of European policies. Rather they tend to 'engage in a complex process of selective adoption of policy measures that suit specific purposes, formulate various aspects of policy often in tension with other Member States, and possibly reject those elements of policy that do not fit national priorities or timelines' (Alexiadou, 2007). A similar pattern is observed in the interaction between national and regional policies. Garritzmann, Röth and Kleider (2021) argue that in multi-level systems, national and regional governments jointly affect policymaking.

Kohler-Koch and Rittberger (2006) suggest interpreting those 'systems of continuous negotiation amongst nested levels of government (supranational,

⁽⁵⁾ Policy instrument: 'a link between policy formulation and policy implementation (e.g. standards and regulations, economic incentives, education, capacity building and awareness raising activities, monitoring mechanisms).'

national, regional, local, etc.)’ through the lenses of ‘multilevel’ and ‘network governance’ to understand and research better the ‘process of “mutual adaptation” and “co-evolution” between the domestic and the European levels’ (Radaelli, 2004). Two broad groups of policy instruments are of interest here:

- (a) the legal and regulatory framework of VET, including national or regional curriculum ⁽⁶⁾ of VET programmes;
- (b) other policy instruments (e.g. entrepreneurship education strategies, action plans) and supporting mechanisms (e.g. funding programmes, calls).

The VET provider dimension is at the core of the model due to its ‘critical role in developing entrepreneurial attitudes, aspirations, and activity’ (Regele and Neck, 2012). It comprises the following main elements:

- (a) culture: mission statements, in-house strategic orientations and organisational measures that support the development of entrepreneurship competence;
- (b) VET programmes: this is where entrepreneurship competence ‘lives’ on campus in different forms and shapes (e.g. compulsory, dedicated module or cross-curricular competence);
- (c) learning environments: physical, digital, school- and work-based learning environments and the mechanisms for acquiring, leveraging, and managing resources (social, financial, physical, technological, and organisational);
- (d) stakeholder engagement: organisations and individuals actively engaged in the implementation of entrepreneurship education;
- (e) business start-up support: a service by VET providers or partners to help learners and graduates set up their own business, including detection of entrepreneurial talent, personalised advice, training, and networking.

In teaching, learning and assessment of learner performance, VET programme delivery is central. Teacher interpretations of the ‘intended’ curriculum inform decisions around the selection of content, teaching resources and pedagogical approaches. The choices above are also influenced by elements of two other dimensions of the ecosystem model. Curriculum policy ⁽⁷⁾ and other policy instruments (if available) may enable or constrain programme delivery. Organisational measures (e.g. timetable), the availability of resources and

⁽⁶⁾ The curriculum is a set of subjects and standards defined at national or regional level and followed by VET providers. It covers what subjects are taught, their contents and the learning outcomes VET learners should reach to obtain a qualification.

⁽⁷⁾ Formal decisions made by government or education authorities that have a direct or significant effect on the curriculum, its development and implementation. These decisions are normally recorded in a range of official documents (*Source: Curriculum policy* by IBE).

infrastructure at VET provider level also influence teacher beliefs and actions. The dimension comprises the following main elements:

- (a) teacher/trainer beliefs and professional development opportunities: teacher understanding, and internalisation of entrepreneurship competence significantly impact the achievement of entrepreneurship learning objectives. It is important to consider teacher training, support, and recognition schemes as facilitating factors;
- (b) teaching and learning: the range of methods, tools and approaches chosen and applied by VET teachers/trainers to nurture entrepreneurship competence;
- (c) assessment and recognition of learning outcomes: process of appraising the acquired entrepreneurship competence against standards associated with it;
- (d) curricular and extracurricular activities: the portfolio of education experiences within and outside the formal curriculum offering VET learners opportunities for entrepreneurship competence development.

Establishing links within and between the three ecosystem dimensions guided the study design and the data collection.

CHAPTER 4.

Policy instruments supporting entrepreneurship competence in VET

4.1. Competence frameworks and EU policy

For over 25 years, the EU has been extensively promoting entrepreneurship education. In 1998, the European Commission's communiqué to the Council (European Commission, 1998) led to the establishment of consensus on entrepreneurship competence and of the creation of assessment tools to gauge institutional readiness for delivering entrepreneurship education (Singer and Oberman Peterka, 2020).

The 2003 green paper on entrepreneurship in Europe (European Commission, 2003) highlighted the importance of entrepreneurship education in bridging the competitiveness gap between Europe, the USA and Japan. This milestone was soon followed by the 2006 Oslo Agenda for Entrepreneurship Education in Europe, which provided a support policy framework for education institutions, championing entrepreneurship activities in education and training (European Commission, 2006).

Recognising the central role of entrepreneurship competence, the 2006 framework on key competences for lifelong learning (European Parliament and European Council, 2006) incorporated the 'sense of initiative and entrepreneurship' as one of eight key competences, marking a significant step in the EU-level policy towards entrepreneurship education.

Two years later, the 2008 Small Business Act for Europe (European Commission, 2008) reaffirmed the importance of entrepreneurship education and highlighted the need for collaboration with the business community to establish comprehensive entrepreneurship education strategies.

The progressive nature of EU policies was evidenced in the 2010 *Towards greater cooperation and coherence in entrepreneurship education* report (European Commission, 2010). This advocated a more systematic approach to entrepreneurship education across the EU and proposed a progression model for policy design and implementation.

In 2012, *Rethinking education: investing in skills for better socio-economic outcomes* (European Commission, 2012) called for nurturing entrepreneurial skills through creative teaching and learning methods. To support Member States, the Commission embarked on the task of identifying tools to assess progress and demonstrate the acquisition of entrepreneurial skills. In collaboration with the

OECD, it has developed a self-assessment framework to serve as a guiding mechanism for entrepreneurial education institutions across all levels, including schools and VET.

In 2013, the Entrepreneurship 2020 action plan adopted an integrated approach, focusing on entrepreneurial education and training, creating an entrepreneur-friendly environment, and addressing barriers to entrepreneurship culture (European Commission, 2013a). In the same year, the publication *Entrepreneurship education: a guide for educators* (European Commission, 2013b) delineated the competences of teachers in entrepreneurship education and the roles of various stakeholders.

The 2015 Riga Conclusions (Council of the European Union, 2015) prioritised key competence development, including entrepreneurship, and advocated work-based learning and strengthening of key competences in VET curricula. The 2018 Council Recommendation on key competences for lifelong learning (Council of the European Union, 2018) updated the 2006 framework and sought to encourage a shared understanding of key competences while promoting their inclusion in curricula.

More recently, the 2020 European Skills Agenda, Council Recommendation on VET, and the Osnabrück Declaration have emphasised the importance of entrepreneurship competence. The Osnabrück Declaration promoted 'high-quality VET that includes entrepreneurial education' and centres of vocational excellence (Council of the European Union, 2020b). The Council Recommendation on VET called for adapting and expanding VET offers, especially for adults, by aiding the acquisition of entrepreneurial, digital and green skills (Council of the European Union, 2020a).

The evolution of EU policies over the past quarter of a century reflects a growing emphasis on entrepreneurship competence. It highlights the EU's commitment to developing effective strategies that support entrepreneurship competence across various education levels, including VET.

The European Commission has developed competence frameworks to support the implementation of the Recommendation on key competences for lifelong learning: the European digital competence framework for citizens (DigComp); the Entrepreneurship competence framework (EntreComp); the European Framework for personal, social and learning to learn key competence (LifeComp); and GreenComp, the European reference framework for sustainability competences. These frameworks serve as guiding tools rather than aiming to standardise the teaching and learning of key competences across different educational contexts in Europe. They provide a reference and common understanding for the development and assessment of these competences,

promoting a consistent approach to their integration into education and training systems across EU Member States. However, competence frameworks are not standards themselves but reference documents that require adaptation and contextualisation to align with real-world needs and specific education contexts. Member States have the flexibility to tailor and implement the frameworks according to their unique circumstances and requirements.

Entrepreneurship competence frameworks and models lay a groundwork for determining learning outcomes and the role of entrepreneurship competence in education. Five competence models have been compared by Lilleväli and Täks (2017) ⁽⁸⁾. While there are notable structural differences between these models, all underline competence tied to opportunity pursuit and value creation, as summarised in (Table 3).

Table 3. **VET stakeholder benefits of entrepreneurship competence frameworks and models**

Stakeholder/system	Benefit
Teachers	Prepare and monitor learners' competence development based on their previous experiences in various educational settings
Learners	Establish appropriate learning aims, outcomes, activities, and assessment methods for their target group
VET programme coordinators, curriculum developers	Progressively develop learners' entrepreneurship competence with increasingly demanding assignments
Policy-makers	Apply the gradual development of entrepreneurship competence and embed entrepreneurship competences for intended learning outcomes early in curricular development
Education system	Embed entrepreneurship education (EE) learning outcomes in the wider education system

Source: Based on Lilleväli and Täks, 2017.

Among the five models, the European entrepreneurship competence framework (EntreComp) (Bacigalupo et al., 2016) stands out given its significance in European discourse as a support measure for nurturing the key competence (Bacigalupo, 2022). The framework was designed to establish a common understanding of the skills, knowledge, and attitude necessary for nurturing such

⁽⁸⁾ These were: Gibb's model (UK) (Gibb, 2008); National Content Standard for Entrepreneurship Education (US) (Consortium for Entrepreneurship Education, 2004); Progression Model, The Danish Foundation for Entrepreneurship - Young Enterprise (Denmark); the Danish model (Rasmussen; Moberg and Jensen, 2015); Nordic model (From Dream to Reality: Learning Outcomes and Didactic Principles for Teaching Entrepreneurship in Nordic Schools (Nordic countries) (Rasmussen and Fritzner, 2016); and EntreComp model (EU) (Bacigalupo et al., 2016).

a mindset without being prescriptive⁽⁹⁾. It maps out three competence areas of entrepreneurship (ideas and opportunities, resources, and action), and 15 sub-competences, all of which embody such a mindset. By linking knowledge, skills, and attitudes for entrepreneurship with different aspects of value creation (financial, cultural, or social), EntreComp paves the way for integrating entrepreneurship competence in learning.

Despite the wide promotion of EntreComp across the EU, Lilleväli and Täks (2017) caution against the potential risks of applying a standard model across education and training systems with diverse characteristics. They conclude that a single entrepreneurship education competence model may not fit another education system without adaptation to a national context and that the effectiveness of such models is yet to be demonstrated⁽¹⁰⁾.

4.2. Legislation, strategies and support programmes

Entrepreneurship competence development in VET is supported by national/regional legislation, strategies and support programmes. For example, entrepreneurship features as a core objective and priority in the Finnish act on VET (Finland, Ministry of Education and Culture, 2017a). The Spanish Law for the organisation and integration of VET (Spain, Ministry of the Presidency Relations with the Cortes and Democratic Memory, 2022) and the Croatian act on VET (Republic of Croatia, 2018) highlight entrepreneurship as a core objective and priority in VET.

Strategies and action plans define objectives and measures for curriculum development, teacher training and support, assessment, governance, and quality assurance that promote entrepreneurship competence in VET. In Latvia and Spain, these entrepreneurship-specific measures are part of national education guidelines (strategies). For example, the Latvian national education guidelines 2021-27 outline goals for entrepreneurship as a transversal competence through investments in VET environment, including business incubators and training companies.

⁽⁹⁾ The framework has been reinforced with publications guiding individuals and organisations in applying its principles, including *EntreComp into action – get inspired, make it happen* (McCallum et al., 2018); *EntreComp at work* (McCallum et al., 2020); and *EntreComp playbook* (Bacigalupo et al., 2020). The European Commission (EC) also backs projects that test EntreComp implementation at national and sectoral levels funded through the COSME programme.

⁽¹⁰⁾ Except for the National Content Standards for Entrepreneurship Education.

In Austria, Finland and Sweden, specific entrepreneurship education strategies and action plans drive entrepreneurship across all education levels, including VET. The Austrian national action plan presents a comprehensive vision for fostering an entrepreneurial culture (Box 9).

Box 9. National action plan for entrepreneurship education, Austria

The national action plan for entrepreneurship education in Austria, Entrepreneurship education map of actions for children and young adults, aims to create a future-proof society by 2025 through:

- cultivating entrepreneurship education as a recurring theme with a clear profile, enabling individuals to handle opportunities and challenges constructively in society;
- integrating sustainable and social entrepreneurship education into curricula and child/youth work, fostering interdisciplinary approaches that can be combined with digital skills and STEM;
- establishing networks among education institutions, businesses, organisations, public facilities, and individuals to support the implementation of entrepreneurial ideas;
- identifying and nurturing the potential of children, adults and teachers, encouraging proactive idea development and practical implementation;
- ensuring quality through sustainable planning, implementation, and evaluation of processes, supported by stable partnerships and networks;
- providing opportunities for teachers and youth workers to learn alongside children and adults, aligning with the principles of entrepreneurship education.

To achieve this vision, the action plan encompasses a range of private and public initiatives, including innovative school activities, new teaching methods, and focused efforts on digitalisation, sustainability, human resources, and new subjects.

Source: Austria. Federal Ministry for Digital and Economic Affairs (BMDW), 2020.

Entrepreneurship education is also influenced by regional strategies and action plans, as for example in Finland and Spain ⁽¹⁾. Spain has also made significant progress with programmes supporting entrepreneurial culture among VET learners, teachers, and management teams, such as EmprènFP in Catalonia, Ekingune in the Basque Country and Emprén in the Valencian Community (Box 10).

⁽¹⁾ Spain: 5th Basque Plan for VET (Spain, Basque Country Regional Government, 2019); Asturias Entrepreneurship Programme 2021-23 (Spain, Asturias Department for Employment, 2021); Finland entrepreneurship education strategies: South-West region (2020), Northern Ostrobothnia (2016), Central Finland region (2011), South-East Finland (2014), City of Helsinki (2014), the South Savo region (2014), the region of Päijät Häme (2013), the Satakunta region (2022) and a joint strategy for the Municipalities of Kolari, Muonio and Pello (2017).

Box 10. Emprén programme, Valencian Community, Spain

Emprén is the regional programme stimulating entrepreneurial culture in VET in the Valencian Community. The programme aims to foster entrepreneurial initiatives and company formation in government-funded VET providers.

Its objectives include promoting an entrepreneurial culture, engaging stakeholders in collaborative projects, supporting teachers, bringing entrepreneurship closer to learners, and promoting creative entrepreneurship.

Emprén aligns with broader regional policies, including the Action plan for the transformation of the Valencian economic model 2027 (Department of Treasury and Economy), the Strategic entrepreneurship plan of the Valencian Community 2019-23 (Department of Sustainable Economy, Productive Sectors, Commerce and Labour), and the Entrepreneurship plan of the General Directorate of Vocational Training and Special Regime Education (Department of Education, Culture and Sport).

Source: [Emprén programme website](#).

4.3. Curriculum frameworks

A curriculum framework is an overarching document (or a set of documents), usually at national or regional level, that includes learning objectives and outcomes for education and training among other items (UNESCO International Bureau of Education, 2013). These outcomes define what a learner should know or be able to do at the end of a learning process, encompassing knowledge, skills, responsibility, and autonomy.

This section focuses on ‘intended learning outcomes’ as referred to in qualifications frameworks, standards and curricula (Cedefop, 2009). How they are acquired in practice is discussed in Chapter 6. The definition and a format of a learning outcome vary, as they are adapted to different policy, teaching and learning contexts (Cedefop, 2009). The coverage of entrepreneurship competence in curriculum frameworks also varies from specific VET qualifications to overarching guidelines for the entire education and training system.

4.3.1. Overarching curriculum frameworks

Croatia and Italy have developed curricula/guidelines for teaching entrepreneurship suitable for all learners, including IVET (Box 11).

Box 11. **Overarching entrepreneurship curriculum frameworks in Croatia and Italy**

Croatia's curriculum for primary and secondary education (including IVET) nurtures entrepreneurial thinking and risk management, offers critical evaluation of career development opportunities, and encourages entrepreneurial actions and financial literacy. Its cross-curricular approach includes cross-curricular topics, extracurricular activity and mandatory/elective subjects. It emphasises the development of an entrepreneurial mindset and financial literacy.

Italy's syllabus for entrepreneurship education (Italy, Ministry of Education University and Research, 2018a) offers nearly 500 teaching and learning activities. These are divided into five sections with the following entrepreneurship learning outcomes:

- understand forms and opportunities of doing business;
- generate ideas from context and social needs;
- turn idea to business considering available resources and competences;
- run an enterprise and operate in the market;
- develop economic citizenship.

Source: Croatia. Ministry of Science and Education, 2011; Italy. Ministry of Education, University and Research, 2018a.

In Finland, the National guidelines for entrepreneurship education (Finland. Ministry of Education and Culture, 2017a) guide entrepreneurial learning and suggest ways to develop and assess activities across all education levels.

4.3.2. **Subject- and module-based curriculum frameworks**

VET qualifications related to commerce, accounting, and marketing often include entrepreneurship competence in their curricula. For example, 'Entrepreneurship – business and management curricula in commercial academies' (HAK) in Austria refers to entrepreneurial thinking, market/industry knowledge, start-up/business management; provision and performance of products and services; strategic and operative planning processes, human resource management, finance and investment management, and corporate accounting.

In France, entrepreneurship competence is included in CVET programmes at EQF level 6 and is listed in the National directory of professional certifications (RNCP) as competence No 34353 (France compétences, 2022a, 2022b). It is mainly related to business creation and takeover.

In Finland, several VET qualifications specifically relate to entrepreneurship, e.g. 'entrepreneur' and 'business management', where learning outcomes are precisely defined.

In Spain, Croatia, Latvia and Sweden, where curriculum frameworks have more than one specific subject covering entrepreneurship competence, the focus

extends from foundational knowledge of entrepreneurship to business creation and management skills. Sweden offers an example (Table 4).

Table 4. **Entrepreneurship learning outcomes in VET subjects in Sweden**

VET subject	Learning outcomes
Entrepreneurship, 100 credits (compulsory in four VET programmes ⁽¹²⁾ and optional in other programmes ⁽¹³⁾)	<ul style="list-style-type: none"> • understanding of what entrepreneurship means for individuals, organisations, companies and society; • ability to transform ideas into practical and goal-oriented activities to launch a project or simulated business; • ability to implement a project or run a simulated business; • ability to complete and evaluate a project or simulated business; • knowledge of how ideas and products are protected by law and other regulations; • ability to apply business economics methods.
Entrepreneurship and business management, 100 credits (optional in four VET programmes where 'Entrepreneurship' is compulsory)	<ul style="list-style-type: none"> • knowledge of the different types of companies and their operating conditions in the form of laws and other regulations and other conditions affecting the companies' operations; • knowledge of how to start and run companies and how the different functions within a company work together to implement a business idea; • knowledge of business concepts, methods, theories and models and ability to apply them; • ability to manage processes and to translate ideas and theoretical knowledge into practical and goal-oriented activities. Ability to evaluate work processes and results.

Source: Skolverket, 2023a, 2023b.

Module-based curriculum frameworks support compulsory modules with entrepreneurship competence irrespective of VET programmes, as in Spain, Latvia and Finland. The learning outcomes often focus on opportunity identification and business creation (Table 5).

⁽¹²⁾ Crafts; Sales and services; Hotel and tourism and Land management.

⁽¹³⁾ The complete VET programme is 2 500 credits.

Table 5. **Entrepreneurship learning outcomes in VET modules in Spain, Latvia and Finland**

VET modules	Learning outcomes
Latvia: Initiative and entrepreneurship (Level 1)	<ul style="list-style-type: none"> • explain the basic concepts of entrepreneurship; • develop a business idea; • choose a product for a specific customer group; • identify the unique features of the product; • use the most important product distribution channels; • choose the most effective relationship format with the customer; • predict income flow; • determine the resources required; • calculate taxes for self-employed people • choose the most effective activities for product creation and marketing; • choose the most appropriate cooperation partners; • calculate the costs; • fill in the documents to register as a self-employed person; • perform basic accounting
Finland: Entrepreneurship and entrepreneurial activities (as part of Citizenship and working life competences)	<ul style="list-style-type: none"> • you act according to the company's goals; • you evaluate the business idea and the possibilities of its implementation; • you come up with a business idea and take the customers' needs into account; • you will find important services and information sources that support the establishment of a company; • you will find out the networks you need to implement the business idea; • you assess what the financial conditions are that allow you to implement the business idea; • you assess your readiness to be an entrepreneur; • you find out what are the risks and opportunities of the company's operations
Spain: Enterprise and Entrepreneurial Initiative module	<ul style="list-style-type: none"> • recognise the abilities associated with entrepreneurial initiative, analysing the requirements derived from the jobs and the business activities; • define the opportunity to create a small business, assessing the impact on the environment of action and incorporating ethical values; • carry out activities for the constitution and start-up of a company, selecting the legal form and identifying the associated legal obligations; • carry out administrative and financial management activities of an SME, identifying the main accounting and fiscal obligations and completing the documentation

Source: Authors based on Latvia, National Centre for Education, 2020a, 2020b; Finland, National Agency for Education, 2022a; Spain, Ministry of the Presidency Relations with the Cortes and Democratic Memory, 2011.

4.3.3. Coherence between national and VET provider curricula

The learning outcomes defined at policy level influence decisions made by education and training providers on content, pedagogical approaches, teaching organisation, and resources for curriculum making (Priestley, 2021).

Translating entrepreneurship competence from policy to practice can be challenging. The coherence is typically better where entrepreneurship learning outcomes suit economics-related vocational profiles, such as marketing and finance. In cases where it is exclusively up to teachers and trainers, the transmission from national policy to practice is often obscure. Due to heavy workload and other factors, teachers/trainers and principals are not always fully aware of the national curricula for nurturing entrepreneurship competence, leading to potential gaps in implementation.

In Spain, the curriculum development for entrepreneurship education involves collaboration among the central government, national and regional education authorities, and IVET providers. The central level defines the basic curricula (sequencing, duration, weekly hourly distribution, and pedagogical guidelines) for the compulsory module Enterprise and entrepreneurial initiative, while regional administrations introduce modifications such as increased hours and additional learning outcomes. IVET providers then tailor the approach to the needs of each programme, considering learner characteristics, education level, and employment prospects. In VET programmes that normally do not lead to self-employment, there is a focus on developing soft transversal skills relevant to employment, with adaptations outlined in teaching, learning, and assessment plans.

In Sweden, CVET providers collaborate with municipalities, regional development organisations and industry boards to design courses and programmes, subject to approval by the National Agency for Higher Vocational Education (NAHVE). Although occupation-specific competences are generally easier to gain approval for, stakeholders have found ways to include leadership, creativity and initiative competences in VET programmes. This is mainly done through project-based courses, such as learners working in teams on authentic tasks (Cedefop, 2023f).

In Austria and Finland, there is a strong coherence between learning outcomes defined at policy and VET provider levels. In Austria, policy-level learning outcomes for entrepreneurship competence translate well into specific VET profiles such as commerce or accounting. However, VET teachers interviewed perceive a lack of guidance on how to interpret and develop entrepreneurship-related learning outcomes. Finnish VET provider representatives suggest that entrepreneurship could be a more cross-cutting theme in all VET, indicating potential for wider policy translation into entrepreneurship-related learning outcomes.

Croatia has a national curriculum for entrepreneurship in place but the relevant VET curricula are still being developed, creating a gap in the learning outcome chain. Similarly, in France, the absence of policy level learning outcomes

for entrepreneurship competence results in an indirect approach to fostering the competence. In Italy, there is a mismatch between entrepreneurship learning outcomes at national level and those in individual VET programmes that often lack these learning outcomes.

4.4. Challenges of translating policies into practice

The process of translating policies ⁽¹⁴⁾ into practice is not straightforward; the policies adopted across the eight countries under scrutiny in this study are diverse, making generalisations challenging.

EU Member States actively examine policy recommendations, cherry-picking measures that align with their objectives, shaping aspects of policies that may conflict with others, and possibly dismissing policy components unsuitable to national interests or timelines (Alexiadou, 2007). Such a trend also exists within countries, where national and sub-national governments collaborate and constantly negotiate within levels (supranational, national, regional, local) (Kohler-Koch and Rittberger, 2006). Hence, top-down models do not always capture the complexity of policymaking in multi-level systems and regional policy developments often precede the related national and European ones, as in the example of Catalonia (Table 6).

Table 6. **Evolution of policies supporting entrepreneurship competence in VET in Catalonia, Spain in 2015-22**

Year	2015	2018	2020	2022
Policy	Programme for the promotion and support of entrepreneurship in VET (Department for Education, Catalonia)	Council Recommendation of 22 May 2018 on key competences for lifelong learning (Council of the European Union)	Plan for Vocational training, economic and social growth, and employability (Ministry of Education and VET, Spain)	Organic Law 3/2022, of 31 March, on the organisation and integration of VET (Head of State, Spain)
Scope	Regional	European	National	National

Source: Authors.

VET providers struggle with numerous policies, policy gaps, many changes and contradictory guidelines. This often results in a challenging policy landscape

⁽¹⁴⁾ Competence frameworks, EU policy, national/regional legislation, strategies, support programmes and curriculum frameworks.

riddled with interdependent, overlapping and occasionally contradictory measures. Keeping track of these continual changes is a challenge for VET principals, and teachers and trainers.

This is particularly challenging in decentralised countries such as Spain, where the alignment of policies at different levels may contradict and confuse, especially due to varying timeframes and overlapping agendas. According to the study, Spanish VET teachers usually understand their regional curricula, as reflected in their teaching, learning and assessment plans. However, awareness of overarching national policies falls significantly.

In Italy, the confusion of VET educators was caused by two simultaneous pieces of legislation. While the syllabus for entrepreneurship education (Italy, Ministry of Education University and Research, 2018b) focused on entrepreneurship as business creation, the guidelines on work experience (*Percorsi per le competenze trasversali e per l'orientamento, PCTO*) (Italy, Ministry of Education University and Research, 2018a) promote entrepreneurship as a broad life competence (key competence).

In Austria, the 2020 national action plan Entrepreneurship education map of actions for children and young adults' (Box 9) outlines steps to future-proof Austria by 2025. However, VET teachers and trainers found the plethora of initiatives perplexing and the funding inconsistency due to changing political commitment a drawback.

Croatia has elements of entrepreneurial learning ecosystems, but these are not fully linked. Strategic views are outlined in policy documents but the translation of strategic approaches into actionable guidelines and measures is not always achieved, often hindering the embedding of entrepreneurship competence in VET. For example, teacher training in entrepreneurship competence is not available. Consequently, some teachers felt they were not ready to embed entrepreneurship competence into the learning process (Cedefop, 2023b).

In Finland, the National guidelines for entrepreneurship education largely coincide with other regional and local entrepreneurship education strategies. However, the interviewees indicated a need for better coordination, implementation and monitoring.

In Latvia, the study also found policy-implementation discrepancies. While policy makers described entrepreneurship competence as a broad concept, the centrally developed curriculum emphasises its narrow definition supporting business start-ups.

In the countries participating in this study, a comprehensive impact assessment of entrepreneurship policies in VET was not available, with few exceptions. In Austria, the 2020 National action plan introduced the Metering the

effect measure, developing indicators to quantify entrepreneurship competence. These indicators may be input-focused, such as the youth share receiving entrepreneurship education, or output-focused, examining self-evaluated entrepreneurial skills.

Spain employs mostly quantitative, output-based indicators through regional support programmes for VET entrepreneurship. These capture activity counts like participants, projects, and companies initiated. Satisfaction levels of learners and teachers are gauged through surveys. Despite vigorous policy activity, research on entrepreneurship competence in VET in Spain remains sparse, according to (Echeverria Samanes and Martinez Clares, 2019), with existing studies focusing largely on self-reported measures of learner competences and entrepreneurial intention.

Finland and Sweden have taken steps in assessing the implementation of entrepreneurship education policies. Finland's assessment (Finland, Education Evaluation Centre, 2018) highlighted the development of entrepreneurial pedagogy but also identified multiple shortcomings. Articulation of the competence posed difficulties for educators and the assessment report indicated room for improvement in developing evaluation methods, interdisciplinary approaches, and entrepreneurial ecosystems.

In Sweden, a working group led by the Royal Swedish Academy of Engineering Sciences (Iva, 2022) pointed out several challenges in the national strategy of entrepreneurship education, such as the absence of governance and financing guidelines, lack of clear definitions, missing comprehensive guiding principles, and undeveloped procedures for measurement, evaluation, quality assurance, and follow-up. They also found that teacher training colleges lacked equal education in entrepreneurship and there was no implementation plan, leaving leadership, teachers, and principals to figure out how to foster entrepreneurship in schools.

CHAPTER 5.

The role of VET providers

5.1. Organisational choices and culture

Gaining insight into how VET providers embed entrepreneurship competence requires understanding the choices their management makes regarding its delivery, considering some autonomy in curriculum delivery, and the importance they attach to entrepreneurship competence (or their interpretation of it).

Moving from isolated, teacher-driven initiatives towards more holistic and structured approaches in nurturing entrepreneurship competence in VET takes time. It requires systematisation, resulting from a conscious, collective process of reflection and action at the VET provider level. Case studies on entrepreneurship competence in VET in Austria (Cedefop, 2023a), Finland (Cedefop, 2023c), Latvia (Cedefop, 2022b) and Spain (Cedefop, 2023e) underlined the need to adopt organisational measures at the VET provider level to maintain a constant focus on entrepreneurship as a key/transversal competence. Measures to facilitate the transition towards a more holistic approach to entrepreneurship competence development in VET have been observed in these four countries.

The leadership, steering and support of management teams are crucial in this process. VET principals and management teams play a significant role in prioritising entrepreneurship in teaching agendas. In Austria, for example, school principals set priorities related to entrepreneurship competence. In Italy, VET provider leadership support is vital in securing more time for interdisciplinary projects, industry relations, and securing resources for entrepreneurship-related initiatives.

In Spain, the leading role of principals and management teams was consistently observed across the six VET providers visited. The VET principals play a significant role in reallocating teachers' routine time towards collaboration with colleagues to create a comprehensive and coherent agenda, addressing entrepreneurship through curricular and extracurricular activities. They take steps towards systematising these activities by reflecting, planning, and documenting actions in strategic documents (e.g. VET provider policy), subsidiary plans (e.g. quality assurance), work plans for entrepreneurship, and VET provider websites.

In Latvia, long-term planning is evident in the 2021-17 Development and investment strategy of Liepaja State Vocational Technical School, a VET provider (Box 12).

Box 12. **Development and investment strategy, Liepaja State Vocational Technical School, Latvia**

Development and investment strategy nurtures entrepreneurship competence among learners through:

- business plan development in education programmes. In 2016-21, 115 student training companies were established and operated for at least the school year. Since 2017/18, the VET provider has been organising nationwide and regional student training company fairs;
- leading the methodological centre of the 'business' industry and supporting other VET providers with their methods;
- active participation in the Three-level centres of professional excellence project: qualification, entrepreneurship and innovation in the green economy, upgrading skills sustainably, securing the need for young professionals/managers and entrepreneurs, and strengthening the competitiveness of SMEs in the green economy;
- setting objectives for 2021-27, to establish a student business incubator to develop entrepreneurship in cooperation with national and regional partners.

Source: Liepaja State Vocational Technical School.

Making entrepreneurship competence a priority often results in appointing a dedicated teacher or a team of teachers as coordinators or ambassadors. This practice was observed in several VET providers in Spain and Finland.

In Finland, the National guidelines for entrepreneurship education (Finland, Ministry of Education and Culture, 2017b) highlight the importance of entrepreneurial management and culture as an enabling factor, in addition to entrepreneurial pedagogies, staff competences, and suitable learning environments. Further, the Finnish Education Evaluation Centre (Finland, Education Evaluation Centre, 2018), in its evaluation of entrepreneurship in VET, characterised the main practices of an entrepreneurial VET provider (Box 13).

Box 13. Characteristics of entrepreneurial VET provider in Finland

The Finnish Education Evaluation Centre in its evaluation of entrepreneurship in VET characterised the main practices of an entrepreneurial VET provider:

- disseminates entrepreneurship studies;
- stresses versatility, multidisciplinary and multi-methodology in entrepreneurship studies;
- encourages school-business cooperation;
- strengthens team entrepreneurship and practices real entrepreneurship;
- verbalises entrepreneurship skills, attitudes and knowledge;
- develops and monitors partnerships, networks and cooperation;
- follows-up and evaluates business activities and sets quantitative and qualitative aims for business cooperation, and monitors their implementation.

Source: Finland. Education Evaluation Centre, 2018.

In Spain, the Professional entrepreneurship classrooms programme (*Aulas Profesionales de Emprendimiento*, APE), initiated by the central government in 2020, motivates IVET providers to adopt a comprehensive school approach to entrepreneurship. In order to support the programme, the guide *Creating entrepreneurship classrooms in VET (Creando aulas de emprendimiento en Formación Profesional)* (Díez Picón, 2021) sets out the following goals for VET providers: raising awareness about entrepreneurship; developing soft skills; creating a physical space that stimulates creativity, innovation, and entrepreneurship; generating both initial and tangible experiences of entrepreneurship; organising events and enlarging the school's entrepreneurial ecosystem.

Some regional programmes supporting entrepreneurship in VET had already foreseen this approach and incorporated measures and targets to cultivate an entrepreneurial culture at VET provider level. For example, the EmprènFP programme (Box 10) helps VET providers create a favourable environment for developing entrepreneurial attitudes; it also supports them in establishing a structure that identifies VET learner projects with the potential to reach the market and help bring them to fruition. The programme helps VET provider management to reflect and take necessary steps towards a whole-school approach to entrepreneurship.

VET providers can participate in the EmprènFP programme through annual public calls. The programme also includes a VET provider recognition scheme, which offers an annual report of activities, compared with the initial work plan submitted at the start of the school year. The different levels of recognition obtained through these schemes convey the concept of a specific, long-term process for each VET provider.

Similar recognition schemes are available in Austria, such as the Entrepreneurship school certification (Lindner, 2019), which encourages schools to confirm that entrepreneurship activities are implemented in a holistic, goal-oriented and long-term manner in everyday school life. This certification is mainly popular among commercial academies (HAK) ⁽¹⁵⁾. To strengthen entrepreneurship at VET colleges of engineering, arts and crafts, the federal working group Entrepreneurship HTL has developed the training concept Entrepreneurship for engineers. VET schools have the opportunity to acquire an Entrepreneurship education in engineering (EEE) certification through the International Society for Engineering Pedagogy (IGIP) Austria.

In terms of developing entrepreneurial culture, VET providers are advancing at different paces. They are switching from isolated teacher initiatives to more holistic and integrated approaches. The most advanced cases have created a coherent portfolio of curricular and extracurricular activities and support services, incorporated entrepreneurship as a key area in VET provider strategies and plans, and made these developments and their impact known inside their organisations and to external stakeholders.

5.2. Stakeholder engagement

Entrepreneurial learning ecosystems function particularly well at local level. They involve public, private and third sector stakeholders as in Spain, France, Italy, Latvia and Finland (Box 14), including public authorities, companies, business incubators, foundations, entrepreneurship programme promoters, VET providers, universities and other research institutions. VET providers generally have the autonomy to establish their own networks, although national and regional policies have an impact on them.

⁽¹⁵⁾ Commercial academies (Handelsakademie, HAK) are a type of VET provider in Austria.

Box 14. VET entrepreneurial learning ecosystem at Ogre VET provider in Latvia

The entrepreneurial activities and initiatives at Ogre VET provider include interaction with local, national and international actors:

- career education centres, a cooperation network with employers and associations, for developing VET learner careers;
- cooperation with Junior Achievement Latvia supporting business simulations;
- international student training company contests;
- the Dare-to-win conference, including opportunities for learners to job-shadow in enterprises, and a hackathon with enterprises;
- the Latvian rural advisory and training centre's business contest, with a scholarship for the best idea; and Latvia State forests scholarship for excellence in entrepreneurship;
- a VET convention, where government, industry and municipality representatives work together to develop entrepreneurship skills for learners;
- opportunities for graduates to share their experience on how they have developed their enterprises.

Source: [Case study Latvia](#) (Cedefop, 2022b).

The profile of the organisations involved in the ecosystem and their roles mainly rely on the personal and professional networks of teachers. Exchanges between teachers and learners around knowledge networks trigger new connections with external stakeholders. Alumni involvement can contribute to network development within the learning community.

Collaborating with external stakeholders adds relevance to content and increases VET learner motivation, contributing to the development of entrepreneurship competence. In Spain, learners and alumni appreciate the efforts of VET providers to facilitate interactions with companies. They also emphasise the role of companies and other external stakeholders in providing relevant learning experiences that contribute to their entrepreneurship competence development.

Cooperation with business is a common feature in VET, although not every instance of school-business collaboration contributes to the development of entrepreneurship competence. VET providers often consider themselves knowledgeable about local business life, and many have established networks with enterprises and business organisations, such as regional chambers of commerce. National and regional policies often encourage and support such cooperation, as illustrated in Box 15, which discusses the support to school-enterprise relations in France.

Box 15. Supporting VET school and enterprise relations in France

The Ministry of National Education encourages the development of school-enterprise relations (*relation école-entreprise*) in VET. The Directorate General for School Education (DGESCO) facilitates the development of school-enterprise relations through offering services of school-business officers, engineers, and business advisors for the school. The business advisors are professionals proposed by professional organisations. One of their tasks is to bring the education world closer to the economic environment with a view to promoting entrepreneurship.

Source: France. Ministry of National Education, Youth and Sports, 2022.

While cooperation with businesses is a longstanding tradition in the VET sector, not all partnerships actively contribute to the development of entrepreneurship competence. In France, the training officer of an IVET provider in the construction sector listed 780 potential partner companies, but not all were actively involved in fostering entrepreneurship competence. VET providers primarily liaise with companies for purposes other than developing entrepreneurship competence.

External providers of entrepreneurship education often become influential key players in the VET entrepreneurial learning ecosystem. National and regional authorities endorse their work. For example, Junior Achievement plays a role in shaping and delivering entrepreneurial learning in VET through its national branches in Italy, Latvia, Austria, Finland and Sweden. In Italy, its Enterprise in action programme is one of the two nationally recommended methods⁽¹⁶⁾ for promoting entrepreneurship education in upper secondary schools, including VET. The final selection of methods and support programmes rests with VET providers. According to the Head of Junior Achievement Latvia, joining the programme is voluntary but VET providers often include it in their curricula. In Sweden, the programme complements the two entrepreneurship-specific subjects in VET, providing extra opportunities for learners to practice entrepreneurial skills and receive feedback.

In Austria, organisations such as the e.e.si Impulse Centre and the International Society for Engineering Pedagogy (IGIP) aid the certification of entrepreneurship schools, and provide resources and support. The Initiative for teaching entrepreneurship Austria (IFTE) promotes entrepreneurship education, and the Austrian Centre for Training Firms (ACT) helps manage training firms in VET schools.

In Finland, a network of 17 YES-centres is pivotal in helping all regions improve entrepreneurship education and nurture entrepreneurial ecosystems.

⁽¹⁶⁾ Another organisation often involved in change-making programmes is Ashoka.

Funded by Junior Achievement Finland and several other bodies, the network encourages competence development and collaboration between municipalities, education institutions, and other stakeholders in entrepreneurship education.

The development of VET entrepreneurial learning ecosystems varies within countries. VET providers leverage territorial resources and create opportunities for learning in collaboration with companies, external service providers, institutions and other ecosystem participants. Such ecosystems are continually evolving, but in many cases the systematisation of relationships with external stakeholders ⁽¹⁷⁾ remains an area for improvement. In Spain, for instance, VET providers are focused on enlarging, strengthening, and making known their ecosystems, with support from grassroots movements and policy initiatives promoting the formation of networks and communities of practice (Box 16).

Box 16. Entrepreneurship teacher communities in Spain

Entrepreneurship teacher working groups and interschool networks function as communities of practice that contribute to the professional development of VET provider management teams and teaching staff. Sometimes these communities originate as grassroots movements to address common interests or concerns of a group of teachers or VET providers; in others they are encouraged by national or regional authorities.

At regional level, the implementation of the State-level initiative Entrepreneurship Classrooms (*Aulas de Emprendimiento*) programme encourages the creation of networks of VET providers involved in the programme, an action valued by the teachers interviewed. By the same token, regional support programmes for entrepreneurship in VET stimulate networking among VET providers. The network of promoters of the *Ikasenpresa* and *Urratsbat* programmes in the Basque Country and the *Xarxa EmprènFP* in Catalonia are examples of communities of practice of this kind.

Source: [Case study Spain](#) (Cedefop, 2023e)

In Finland, systematic cooperation between education institutions and companies has grown but VET providers concede that further work is needed to expand the local entrepreneurial learning ecosystem, particularly in engaging small and medium-sized companies. Efforts towards systematisation can be bolstered by local and regional administrations, as illustrated by the EduFutura example (Box 17).

⁽¹⁷⁾ Establishing, maintaining, updating, monitoring and updating the list of external stakeholders.

Box 17. **EduFutura: an example of an extended local entrepreneurial learning ecosystem in Finland**

EduFutura is an example of a strategically guided and managed entrepreneurial ecosystem that has been built over a longer period in Jyväskylä. It is a collaboration model between the Jyväskylä University of Applied Sciences, the University of Jyväskylä and Gradia, a local cluster of general and VET upper secondary schools ⁽¹⁸⁾.

Gradia learners have the opportunity to acquire entrepreneurial skills according to their needs as an integrated part of their studies and by participating in training and events provided by EduFutura. EduFutura organises joint studies, shares experts and facilities across organisation borders and develops education and training.

All learners can gain entrepreneurship skills, irrespective of the education sector, either by setting up a mini-company or by joining a multidisciplinary pedagogical cooperative.

The entrepreneurship ecosystem provides every learner with either sectoral or multidisciplinary entrepreneurial training and coaching. Further, the learners who start their own company can participate in pre-incubator and incubator activities provided by Jyväskylä Start Up Factory, jointly owned by EduFutura institutes and the city of Jyväskylä.

Gradia's entrepreneurial models are highly distinguished and have received awards, e.g. from the European Commission VET Excellence Award 2019, the Federation of Finnish Enterprises and the Ministry of Education and Culture.



Source: Gradia, 2022; image from internal material provided by EduFutura (adapted).

⁽¹⁸⁾ Gradia includes VET institutions Gradia Jyväskylä and Gradia Jämsä; general upper secondary schools Jyväskylän Lyseo Upper Secondary School, Schildt Upper Secondary School and Jyväskylä Upper Secondary School for Adults; Gradia Internal Services, Gradia Properties, and Gradia Restaurants. Gradia Jyväskylä also provides basic education and basic arts education.

In Italy, since 2020, regional policies have been increasing the development of local entrepreneurial learning ecosystems, largely connected to districts in the north of the country, with Emilia-Romagna as a prominent example. This growth in ecosystems developed in parallel with the European centres of vocational excellence (COVEs) initiative, aiming to provide high-quality vocational skills, support entrepreneurial activities, promote innovation, and act as hubs for companies and SMEs.

5.3. Learning environments

Learning environments extend beyond traditional classrooms and encompass various physical locations, contexts, cultures, and interaction styles between learners and teachers (Great Schools Partnership, 2013). The diversity is visible in VET, where instruction occurs in classrooms, workshops, companies, and at external events like industry fairs.

In recent years, the design of innovative physical learning spaces and their role in fostering new teaching and learning practices has gained attention (Augeri and Kajita, 2017). VET providers focus on creating dynamic and effective learning environments. Their goal is to design spaces that support smooth curriculum implementation (Nordquist and Watter, 2017) and promote:

- (a) interdisciplinary, cross-curricular teaching, joint teaching;
- (b) active, hands-on teaching and learning approaches;
- (c) creativity and innovation;
- (d) teamwork and collaboration;
- (e) networking with the external environment;
- (f) use of information technologies.

Learning environments directly and indirectly influence VET learner engagement, motivation, and participation, impacting their sense of well-being, belonging, and personal safety. In Finland, for instance, VET learning environments have evolved from traditional classes and workshops to authentic work-life settings. This shift enhances discipline-specific knowledge and work-life skills as well as entrepreneurship and networking skills. National policies promote the creation of innovation labs, makerspaces or laboratories specifically designed to develop an entrepreneurship competence.

In Austria, these modern settings encourage non-traditional teaching methods and boost learner creativity (BDO Consulting GmbH, 2019). Interdisciplinary and cross-curricular teaching in these modern environments is already commonplace

in certified Entrepreneurship schools. The national Entrepreneurship education strategy foresees that, by 2025, all education institutions will have incorporated entrepreneurship education, featuring flexible spaces and open learning arrangements for entrepreneurial and civic initiatives (Austria. Federal Ministry for Digital and Economic Affairs (BMDW), 2020).

In Spain, transforming learning environments is deemed a catalyst for modernising national and regional VET systems. Two of the five strategic actions outlined in the VET plan for economic and social growth and employability (Spain. Ministry of Education and Vocational Training, 2020) entail the establishment of ‘entrepreneurship labs’ and the conversion of classrooms into ‘applied technology labs.’ These changes aim to support digitalisation, innovation, and entrepreneurship within the Spanish VET system (Box 18).

Box 18. Promoting entrepreneurship labs in Spain

The programme Professional entrepreneurship classrooms (*Aulas Profesionales de Emprendimiento*, APE), supported by the Ministry of Education and Vocational Training in conjunction with regional governments, is accelerating the transformation of entrepreneurship learning environments in VET. The Entrepreneurship classroom guide outlines the design of these collaborative spaces as ‘versatile, dynamic and easily adaptable to both physical and virtual environments’ (Díez Picón, 2021). The guide promotes a multifunctional space featuring areas designed to develop diverse skills such as teamwork, joint working, design, communication, and prototyping, equipped with mobile furniture, technology, and supplies. Operational rules are recommended to ensure the space’s optimal utilisation, reflecting a common concern among educators.

Source: [Case study Spain](#) (Cedefop, 2023e).

While the emergence of innovative learning environments represents a significant advancement, it also presents challenges. VET teachers in Spain and Finland are learning how best to plan and implement teaching activities that maximise these spaces’ resources and pedagogical potential. As a solution, some VET providers are focusing on widespread access, extensive training, and offering relevant activities. In both countries, several VET providers have appointed coordinators, often members of the teaching staff to assist in training, equipment maintenance, and maximising technology use. In Spain, many VET provider representatives involved in this study have cited the creation of these spaces as a crucial milestone in their journey towards fostering entrepreneurship competence.

The learning environments are designed to support changing work dynamics that improve specific and cross-cutting entrepreneurial skills. They promote innovative, action-based, and collaborative methodologies, boost learner interest

and motivation and nurture their competences. Simultaneously, proper learning environments enable teachers and learners to transform entrepreneurial ideas into tangible projects at different stages: idea generation, prototyping, and business start-up.

5.4. Support for business start-up in VET

Business creation is part of entrepreneurship competence (Chapter 2Chapter 2). Every definition of entrepreneurship competence involves equipping VET learners with the skills to establish and manage a business venture. Projects, work placements, mini-companies, and virtual firms cater to this, but the degree and form of available support for learners and graduates hoping to convert ideas into businesses remain uncertain.

Despite their importance, support and guidance for entrepreneurship and business creation are seldom offered by VET providers. For instance, no such services were found in France, Croatia, Italy, and Sweden during field research. French alumni reported that business creation knowledge is primarily acquired outside VET, post-graduation, and often through personal networks. Some VET providers have established relationships with external entities such as chambers of commerce, regional agencies, and higher education institutions to offer such support. For example, the Spanish VET provider CIFP Comunicación, Imagen y Sonido (CISLAN) collaborated with Valnalon, a public regional agency that provided business start-up advice. In Austria, Junior Chamber Austria, the Austrian Federal Economic Chamber's Business Start-up Service, and federal province business and location agencies offered courses, advice, and networking opportunities for start-ups, and even contributed to entrepreneurship days organised by VET providers.

In-house business incubators, designed to support entrepreneurial VET learners and alumni are a desired development. They cater to VET learners, alumni, and occasionally, local community residents, providing a physical space and tailored support to realise their business ideas (Box 19). They are, however, a reality in only a few countries. In Latvia, this is a policy goal, outlined in the 2021-27 education strategy (National Education Guidelines 2021-27). Based on this policy, the Liepaja VET provider included a student business incubator in its 2021-27 strategy.

Box 19. **Entrepreneurship café: an advisory service in entrepreneurship at Samiedu in Finland**

Samiedu, a highly regarded upper secondary VET provider in Savonlinna, Finland, has won the National quality award four times (in 2003, 2007, 2011 and 2017) for its exemplary practices in VET. Among its 2 000 learners of all ages, it offers a unique Entrepreneurship café.

This advisory service, facilitated by teachers and a business advisor, offers learners a combination of comprehensive guidance and online training on entrepreneurship. Learners can freely book 20-minute guidance sessions to discuss any entrepreneurship-related questions. Coaches work collectively to provide answers or redirect queries to the appropriate person.

These sessions offer learners multifaceted guidance while coaches learn about trending business topics and operations.

Source: [Case study Finland](#) (Cedefop, 2023c).

VET providers are strategically positioned to identify entrepreneurial talent and nurture ideas. However, there are limitations. In Spain, some VET teachers feel inadequately prepared to guide learners through the process of business creation. Several Italian VET teachers found the task of selecting the most promising ideas challenging due to a lack of business world experience.

While VET providers can maintain relationships with external start-up support entities, referral to these bodies might not always yield sector-specific advice provided by VET schools.

The pace of business advice delivery varies significantly across VET providers and countries. While some countries (e.g. Finland and Spain) have recorded substantial progress, others are yet to incorporate this topic into their agendas. This also suggests a potential for cross-country learning.

CHAPTER 6.

Teaching, learning and assessment

This chapter discusses the delivery and content of entrepreneurship competence within VET programmes, its assessment and outcomes.

6.1. VET teacher attitudes towards entrepreneurship

Teachers' and trainers' views on the integration of entrepreneurship in VET are diverse, revealing different understandings of its definition, implementation, and relevance in different contexts. Some teachers believe entrepreneurship education reinforces the professional profile, employability, and future career prospects of VET learners by simultaneously building technical, personal, and social competences. In Finland, VET teachers underlined the relevance of entrepreneurship competence in shaping learner future orientations and resilience, regardless of the professional qualification.

However, not all teachers share this sentiment. In Italy, some argued that learners naturally develop entrepreneurship competence during their work experience, suggesting they do not need to focus on its development. Prioritisation of this key competence also varies by VET programme. Many VET teachers and trainers prioritised the implementation of the central curriculum, leaving the development of entrepreneurship competence to those teachers responsible for the relevant modules or courses.

In Spain, curricular and extracurricular actions and initiatives around entrepreneurship at VET provider level are mainly steered and implemented by teachers of two compulsory entrepreneurship subjects. Entrepreneurship is mostly discussed in the subjects they teach (EIE and FOL). Teachers also decide the extracurricular activities available on entrepreneurship. The support of management teams was essential to overcoming feelings of isolation among teachers and trainers and fostering collaboration with colleagues teaching vocational subjects.

The term 'entrepreneurship' itself carries ideological connotations or biases, which can make some VET teachers and school leaders hesitant about including it, sometimes even avoiding the use of the word. In Croatia, even though entrepreneurship is a cross-curricular topic, teachers conduct numerous activities contributing to the development of this competence but refrain from labelling them as entrepreneurship.

In Italy, entrepreneurship competence is often nurtured but seldom appears explicitly in curricula. Many VET teachers perceive the term 'entrepreneurship' to be implicitly or explicitly linked to capitalism, international corporations, and business creation solely aimed at profit-making. Broadening the definition of entrepreneurship seems to be a strategy to overcome this resistance.

The study identified several inconsistencies in defining and interpreting entrepreneurship across policy and implementation documents, which can create uncertainty and confusion among teachers and trainers (Section 2.1). In addition, awareness of national and European definitions (EU key competences framework and the EntreComp framework) (Table 2, Section 2.1) was only partially confirmed through the field research at VET provider level.

Industry experience and motivation among VET teachers are perceived as critical to the successful integration of entrepreneurship competence. Teachers with prior industry experience are uniquely positioned and willing to help develop this competence. Their industry knowledge and network enrich the design of teaching and learning activities, improving the development of entrepreneurship skills. Such teachers are better equipped to understand industry-required skills: they tend to invite experts from companies to teach, use companies as case studies, and are better equipped to evaluate entrepreneurial ideas.

While VET teachers and trainers of occupation-specific subjects often have a stronger connection to the business world than teachers of general subjects, the extent of industry experience among VET teachers varies significantly across countries. In Croatia, the lack of industry experience was identified as a major obstacle to nurturing entrepreneurship competence, as VET teachers often start teaching immediately after graduating from university. In contrast, Finland's VET teacher qualification regulations value industry and other working life experience, resulting in many VET teachers having entrepreneurial experience.

Teacher motivation is another key enabler. Most teachers interviewed expressed a keen interest and motivation to develop entrepreneurship competence, often voluntarily. However, relying solely on teachers' drive and goodwill might not be sustainable in the long term. Motivation is most effective when coupled with additional support measures to ensure progress towards more systematic, sustainable, and coordinated approaches to fostering the competence (see Chapter 4 and Chapter 5).

Lack of time, overwhelming curricula and excessive workload often limit VET teacher efforts to promote entrepreneurship competence. These constraints, cited in all countries of this study, make it challenging for teachers to find time for interdisciplinary cooperation and can result in entrepreneurship being perceived as an additional burden to an already crowded curriculum. Contextual factors, like

time spent on administrative tasks, high student-teacher ratios, catering to diverse learners, rigid timetables, low salaries, and high turnover rates, compound these difficulties.

Teachers stressed that literacy, numeracy, socio-emotional, and technical skills should precede the development of entrepreneurship competence. For instance, in Latvia, the VET teachers interviewed considered entrepreneurship competence is best learned in the last 2 years of a 4-year VET programme, once learners have some work experience. In Finland and Spain, they emphasised learner wellbeing and self-confidence as foundational to fostering an entrepreneurial mindset.

Confidence and pedagogical content knowledge among VET teachers vary across the study countries. In many instances, teachers reported feeling under-equipped to integrate entrepreneurship competence into their teaching, partly due to a lack of clear guidelines, training, or resources. Assessment also posed a significant challenge in all countries, including Finland where educators feel adequately trained to deliver entrepreneurship education.

VET teachers and trainers are largely unaware of efforts, relating to education at levels up to secondary, to develop entrepreneurship competence. This suggests a need for better communication and coherence in the approach to competence development across different education levels. In Spain, for instance, despite entrepreneurship being a key competence in primary and secondary education, VET teachers reported that first-year VET learners lack basic entrepreneurial understanding. Similarly, in Finland, while there is a belief that entrepreneurship education should start in lower grades, VET providers often lack awareness of such efforts in previous education programmes. To address these gaps, progression should be a focus, to ensure a coordinated approach to competence development across education levels.

6.2. Cross-curriculum approach and dedicated subjects

Entrepreneurship is frequently regarded as a cross-curricular element in VET (Section 4.34.3), although this often poses challenges for teachers. In Finland, practitioners suggested entrepreneurship competence should be more thoroughly integrated across all VET, whereas in Latvia they were sceptical about integrating entrepreneurship as a transversal element. In Croatia, teachers have the option to include entrepreneurship in their teaching plans for any subject, but many admitted that they lack confidence, training and support to handle this topic. This view is consistent with the results of the evaluation report on the implementation of the

comprehensive curriculum reform in Croatia (Croatia, Ministry of Science and Education, 2020) where respondents ranked entrepreneurship and ICT as the cross-curricular elements least likely to be embedded in their teaching activities. VET teachers in Austria felt the lack of guidance about entrepreneurship activity that could suit their learning environment best, given the vast offer of training opportunities.

Creating specific entrepreneurship subjects with a strong focus on business creation and management has been a common response for embedding entrepreneurship competence in VET. Five out of the eight countries studied – Spain, Croatia, Latvia, Finland and Sweden – offered specific subjects in entrepreneurship ⁽¹⁹⁾.

In Finland ‘entrepreneurship and entrepreneurial activities’ are part of the compulsory common studies for all VET programmes in upper secondary education. Spain’s approach to entrepreneurship education has two facets, focusing on employability and intrapreneurship in the first year and business creation in the second year. Similarly, in Latvia and Croatia, the central emphasis is on business creation.

Despite the common use of entrepreneurship-specific subjects, their inclusion in VET curricula is not always smooth. For example, the decision to include two dedicated subjects in Sweden was generally well received. However, this led to entrepreneurship being perceived as the sole responsibility of the entrepreneurship teacher, instead of a cross-disciplinary endeavour involving teachers from different subjects.

In Finland, many VET teachers view entrepreneurship as crucial mainly for VET programmes where self-employment is a likely outcome after graduation. They usually request further support to foster entrepreneurship competence as a cross-cutting theme in VET curricula. In Spain, entrepreneurship-specific modules are often seen as less important than technical/occupation-specific ones, and engaging learners remains a challenge.

The strong emphasis on business creation and/or management in entrepreneurship-specific subjects or specific VET programmes often overshadows critical attitudinal and behavioural aspects of the competence. In Spain, where such a module has been available since 2011, the subject is often approached through the theoretical development of a rigid business plan. According to VET teachers, this method can generate disinterest among learners, as it fails to engage them in identifying opportunities, generating ideas, and validating concepts with real users.

⁽¹⁹⁾ In Spain, Latvia and Finland entrepreneurship is a compulsory subject in IVET.

The absence of entrepreneurship as a distinct subject does not eliminate the potential for this competence, or its elements, to be taught through other subjects. In Italy, entrepreneurship competence can be embedded in VET through the mandatory work-based learning programme known as the guidelines for work experience (Italy, Ministry of Education University and Research, 2018a). However, this largely depends on the teacher, and these pathways can work with a variety of key competences, not necessarily limited to entrepreneurship. In Austria, due to the numerous specialisation options at VET colleges within higher technical institutions, entrepreneurship is not explicitly marked as a separate subject in the curriculum. In France, entrepreneurship competence does not formally appear in policy documents but the official national curriculum includes compulsory subjects designed to develop cross-cutting competences, some of which align with entrepreneurship competence (Box 20).

Box 20. **Entrepreneurship acquired through non-distinct subjects: example of *Chef d'œuvre* programme in France**

Although the concept of entrepreneurship competence is not explicitly mentioned in national official documents, some learning objectives targeting the development of entrepreneurship competence are present in some VET programmes, particularly those related to trade and sales.

For example, the *Chef d'œuvre* programme, is part of the national curriculum in VET (EQF levels 3 and 4). It is based on multidisciplinary activity, mobilises transversal competences and targets the ability to present a project and its approach; produce a critical approach to the project; present the added value of the project; and adapt to partners and situations.

Source: Cerpeg, 2022; France. Ministry of National Education, Youth and Sports, 2022; Galli and Paddeu, 2021.

6.3. Teacher training and support

In the countries covered by this study, explicit presence of entrepreneurship competence in initial teacher training was scarce, with a few exceptions. In Finland, entrepreneurship competence is an integral part of the VET teacher qualification (Finland, Ministry of Education and Culture, 2009). Spain has a few university master degrees in teaching in secondary schools, and a vocational training offer with dedicated subjects in entrepreneurship (e.g. Universidad Complutense de Madrid, 2022).

Continuing professional development (CPD) of teachers and trainers in entrepreneurship competence varies from country to country. The offer is quite limited in France, Croatia, Italy and Sweden. In France, out of 249 official IVET

teacher training courses in 2022/23, only five were associated with entrepreneurship competence development (France, Ministry of National Education, Youth and Sports, 2021) ⁽²⁰⁾.

The range of training opportunities is wider in Spain, Latvia, Austria and Finland. However, it does not always cover the needs of VET teachers and trainers.

In Spain, continuing professional development (CPD) varies by region, VET provider and subject. VET providers establish their unique portfolio of professional development opportunities, and VET teachers and trainers decide their own training preferences. Table 7 shows an example of the variety of courses attended in recent years by teachers and trainers from three VET providers.

Table 7. **Examples of CPD courses for VET teachers at CIFP Río Tormes, CIPFP La Costera and CIFP Nicolás Larburu, Spain**

CIFP Río Tormes	CIPFP La Costera	CIFP Nicolás Larburu
- Agile methodologies;	- Challenge-based learning;	- Improvement of communication between teaching teams;
- Design thinking;	- Entrepreneurship Classroom;	- Flipped classroom;
- Transformation of learning spaces;	- Embedding entrepreneurship into teaching, learning and assessment plans;	- Migrant entrepreneurship;
- Visual thinking;	- Social entrepreneurship;	- Digital marketing;
- Canva;	- Sustainable development goals;	- Finance;
- Lego serious play;	- Gamification	- Introducing the gender perspective in entrepreneurship subjects
- Entrepreneurship training		

Source: [Case study Spain](#) (Cedefop, 2023e)

CPD for teachers and trainers is a cornerstone of most entrepreneurship education strategies and action plans. In Finland, the National guidelines for entrepreneurship education (Finland, Ministry of Education and Culture, 2009, 2017b) stress the importance of teaching staff entrepreneurship competence.

⁽²⁰⁾ For example, Building cooperation in project management, and Mobilising and federating your team.

Spain prioritises teacher training in its regional VET entrepreneurship support programmes (e.g. Catalonia, Directorate-General for Vocational Training, 2022). In Sweden, the national strategy for entrepreneurship education (Regeringskansliet, 2009) did not address entrepreneurship competence development and training of VET teachers (Iva, 2022).

In Austria, the University College for Teacher Education of Christian Churches Vienna/Krems provides a comprehensive CPD programme for VET teachers, aiming primarily at promoting and fortifying social entrepreneurship. Similarly, the J.J. Strossmayer University's Faculty of Economics in Osijek offers the programme Developing entrepreneurial skills of teachers. This 30-hour programme helps VET teachers understand entrepreneurship competence, leaning on the EntreComp framework to encourage teachers to embed entrepreneurship competence without altering the subject content.

Teacher training opportunities are often complemented by support measures, including teaching resources and tools. In Austria, the e.e.si Impulse Centre has developed a competence compass for entrepreneurship teachers to use both as a self-assessment tool and a monitoring element. In Spain, regional support programmes for entrepreneurship in VET coordinate and stimulate networking among VET providers. The exchange of experiences and resources on entrepreneurship was a highly valued outcome of participation in these networks by the teachers interviewed.

Despite the recognised value of apprenticeships and company placements in fostering entrepreneurship competence, opportunities for professional development in these areas for apprenticeship tutors and company trainers was limited in VET providers that participated in this study. This gap suggests a need for better equipping these professionals with the necessary content and pedagogical knowledge to nurture entrepreneurship competence in work-based learning environments.

The recognition of teachers and VET providers for their commitment to entrepreneurship competence development was often informal or absent, according to the field research. However, VET providers try to compensate for this through allocating time and recognising entrepreneurship activities of teachers and trainers. For example, the Institut Escola del Treball, a VET provider in Spain, has reorganised school schedules and established Entrepreneurship coordination units/commissions to foster teacher collaboration and advance entrepreneurship (Box 21).

Box 21. **Entrepreneurship commission at Institut Escola del Treball in Spain**

In 2014, the VET provider management team sought to eliminate unnecessary routine duties, freeing up 3-4 hours per week per teacher. This time was redirected towards developing work in strategic areas: entrepreneurship, communication, labour guidance, and innovation, through the formation of stable commissions. The Entrepreneurship commission comprised eight teaching team members who organised actions to promote entrepreneurial culture and met regularly to coordinate their efforts.

Both the management and teaching staff of this VET provider acknowledged the advantages of having these structures, as the following comments illustrate: 'Without these committees, it would be impossible to cover all the work that is carried out' (management team). 'Devoting time to these missions rather than routine work is a recognition of our work' (teacher).

Source: [Case study Spain](#) (Cedefop, 2023e).

6.4. **Methods, tools, and approaches**

Approaches, methods, and tools ⁽²¹⁾ of entrepreneurship education evolve. A systematic review by Hägg and Gabrielsson (2020) offers a comprehensive understanding of the evolution of entrepreneurship education research and pedagogy ⁽²²⁾ from 1980 to 2018. The review identified a transition from teacher-guided instructional models dominant in the 1980s to contemporary, constructivist, learner-centric approaches that prioritise experiential learning in real-world environments.

To gain insight into current entrepreneurship education practices, Hägg and Gabrielsson (2020) proposed investigating four key questions. Who serves as instructors? Who is the target audience for entrepreneurship education? What is the content of entrepreneurial education? How are teaching methods deployed in entrepreneurship education?

They concluded that instructors often serve as facilitators, indicating a shift towards learner-centred approaches. While the exact role of instructors in entrepreneurship education remains under debate, they are increasingly seen as designers of engaging learning environments.

⁽²¹⁾ An approach describes the theory or philosophy underlying how entrepreneurship competence should be taught (e.g. learning about/for/through entrepreneurship, action-based, student-centred); a method or methodology describes, in general terms, a way of implementing the approach (e.g. lessons, case studies, projects, mini-companies); tools and techniques describe specific practical classroom tasks and activities (e.g. elevator pitch) (adapted from (Hoque, 2016).

⁽²²⁾ Pedagogy is viewed as the interaction among teachers, learners, and the learning environment, including the tasks involved (Hägg and Gabrielsson, 2020).

Learners are responsible for their learning, which develops through interactions with peers, teachers, and the environment (Higgins; Smith and Mirza, 2013; Warhuus; Blenker and Elmholdt, 2018). Entrepreneurship education addresses two types of learners: those aspiring to entrepreneurial careers, and the entire student population.

As entrepreneurship education addresses a broader student population and adopts learning about, for, and through approaches, its content has expanded considerably (Hoppe; Westerberg and Leffler, 2017). No longer constrained to a specific subject domain, discussions on 'what to teach' have shifted towards engaging students and stimulating their learning through teaching methods (Balan; Maritz and McKinlay, 2018).

All pedagogical methods emphasise learning from and through experience, focusing on real-world opportunities for developing and demonstrating actionable knowledge, creativity, and collaboration. Teachers are responsible for designing such learning environments.

Eurydice (Eurydice, 2016) defines practical entrepreneurial experiences as student-led initiatives, executed individually or in small teams, which involve learning-by-doing and produce tangible outcomes. These experiences develop learner skills, confidence, and ability to identify opportunities and implement their ideas.

Various methods are utilised in entrepreneurship education. Samwel Mwasalbiba (2010) discovered 26 methods in 21 articles, classifying them as 'traditional' (lectures) or 'innovative' (action-based). Despite the belief that active methods are better suited to fostering entrepreneurship competence, traditional methods remain prevalent. The most frequently used methods included lectures, case studies, and group discussions, while active methods such as games, competitions, and workshops ranked lower.

Maritz and Brown (2013) echoed Hytti and O'Gorman's (2004) findings that the staple pedagogical tools in entrepreneurship education are lectures, seminars, workshops, and case studies. The expert group Entrepreneurship in Vocational Education and Training (European Commission, 2009) highlighted additional methods including computer simulations, business games, student-led companies, project work, group work, company visits, and work placements as prevalent within VET. The report drew attention to a significant gap between the most effective teaching methods and those currently used. A subsequent study by Eurydice (2016) of national policies and curricula across the EU Member States highlighted a trend favouring active learning and real-world engagement, such as company visits, as preferred teaching methods.

Table 8 provides a summary of the main methods and tools in implementing entrepreneurship education within VET, as identified in the literature.

Table 8. **Advocated teaching methods and tools in implementing entrepreneurship education in VET**

Mwasalbiba	Maritz and Brown	EC VET expert group ⁽²³⁾	Eurydice
Lectures; case studies; group discussions; business/computer or game simulations; video and filming; role models or guest speakers; business plan creation; project works; games and competitions; setting of real small business ventures, workshops, presentations, and study visits.	Lectures, seminars, workshops, and case studies; group work; guest speakers, interviews with real entrepreneurs. Action learning; project-based learning; blended learning; technology-enhanced learning.	Lectures; computer simulations and business games; student companies; project work and group work; company visits; work placements; coaching and mentoring; role play; discussions; brainstorming; and case studies.	Active learning; activities outside the classroom/school; linking students with the local community or businesses; project-based learning; experiential learning.

Source: Authors based on (European Commission, 2009; Eurydice, 2016; Maritz and Brown, 2013; Samwel Mwasalwiba, 2010).

Emerging content and pedagogical initiatives, such as the business model canvas, lean start-up, design thinking, and business model generation (Maritz, 2017), are beyond the scope of the reviews and reports mentioned above. The field research carried out as part of this study investigated how these methodologies have been adopted in VET.

According to the research, the learner-centred approach prevails in VET teaching and learning, with learners granted a high degree of autonomy to tackle real-world, complex problems. This approach supports social constructivist teaching and learning, a critical component of developing entrepreneurship competence.

Project-based learning is often implemented in developing entrepreneurship competence in VET. It is 'an active student-centred form of instruction which is

⁽²³⁾ The expert group was composed of 27 members from entrepreneurship education with a mix of profiles (ministerial officers, intermediary organisations, universities, and employer organisations) appointed by 24 national authorities, coordinated by the European Commission's DG Enterprise and Industry.

characterised by students' autonomy, constructive investigations, goal setting, collaboration, communication, and reflection within 'real-world' practices' (Kokotsaki; Menzies and Wiggins, 2016). This approach offers a platform for other methodologies and tools, including inquiry-based learning, cooperative learning, problem-based learning, design thinking, and agile methodologies, as observed in Spain. In France, project-based learning includes pedagogical tools: questioning to help the learner reflect, analyse a situation and make decisions on the basis of their own learning experience; the search for information; testimonies from entrepreneurs, business leaders and their participation in the juries; debates; case studies; education games; project management software and collaborative platforms, and social networks for internal and external communication; company visits, participation in fairs, competitions; internship and work experience. These tools can be implemented individually, yet, in most cases, it is a collaborative endeavour involving learners working in small groups with the support of teaching staff. Project-based learning also encourages collaboration with the school's internal and external ecosystem.

Interdisciplinarity is often seen as an essential ingredient in project-based learning. Interviewees in all countries under review referred to interdisciplinary projects as an additional strategy contributing to the simultaneous development of technical competences as well as entrepreneurship competence. In some countries this was expressed as a desire (e.g. Croatia) but in others it is already becoming a reality. The study found numerous examples of projects encouraging greater collaboration between technical/occupation-specific, entrepreneurship and general subject teachers for developing VET learner transversal skills (and particularly entrepreneurship competence) (Box 22).

Box 22. **Mnemos, an interdisciplinary project at CIFP Río Tames, VET provider in Spain**

Mnemos is a project involving two subjects: Enterprise and entrepreneurial initiative and Video equipment maintenance. It aims to support therapies for Alzheimer's patients. In the first phase, learners contacted the Association of Relatives of Alzheimer's Patients and interviewed a team of therapists from the Alzheimer's National Reference Centre to detect their needs. The fruit of this work was the recording of scenarios in which 3D scanned objects were inserted to help patients fix memories through virtual reality. This project won the regional call for the [StartInnova contest](#).

Source: [Case study Spain](#) (Cedefop, 2023e).

In Austria, certified entrepreneurship schools⁽²⁴⁾ offer project-oriented lessons delivered in modern teaching settings that enable interdisciplinary, cross-curricular teaching of the topic that is also helpful for teaching entrepreneurship skills.

Despite many examples, there is still room to develop interdisciplinary approaches. Interviewed teachers mentioned lack of time and silo-based structure of curricula as major constraints for the deployment of interdisciplinary projects, including developing entrepreneurship competence. For example, in Italy, a VET reform of curricula beyond disciplinary approach to more competence-based approach might be an opportunity for more flexibility and space for optional subjects, multidisciplinary projects, and shared teaching, cultivating key competences such as entrepreneurship (Cedefop, 2022a). Interdisciplinarity is a key feature in the *Chef d'œuvre* programme in France (Box 20, Section 6.2).

Interdisciplinarity can also be achieved through other regional policy initiatives as in the following example (Box 23).

Box 23. ETHAZI, a model for full-scale interdisciplinarity in VET programmes, Spain

The ETHAZI model developed by the Centre for Investigation and Applied Innovation in VET in the Basque Country (TKNIKA) proposes a process of methodological change to leave behind the traditional subject-based structure of VET programmes. As a result, the whole curriculum of a 2-year VET programme is restructured around a set of collaborative interdisciplinary learning challenges that allow students to develop simultaneously a set of technical and transversal skills.

A key element in the ETHAZI model is the creation of self-managed teaching teams that meet regularly to design, implement, and assess a set of intermodular challenges, throughout the course, that allow learning outcomes to be achieved. Each challenge is an opportunity for learners to achieve a combination of learning outcomes from different subjects. This requires reorganisation of the timetable and transformation of classrooms into flexible, open, interconnected learning spaces that favour active learning and collaborative work.

The model has been transferred to other regions. Three of the six VET providers visited during the field research have deployed it.

Source: Tknika, 2022.

The opportunities to engage in interdisciplinary project work were explicitly appreciated by VET learners and graduates as a chance to link disciplines and subjects in Spain, France, Italy and Sweden.

⁽²⁴⁾ Most certified schools are commercial academies (a type of VET provider) (Cedefop, 2023a)

VET provider representatives considered work-experience and apprenticeships key to acquiring entrepreneurship competence in all study countries, yet they rarely explicitly target or assess the competence. During traineeships and apprenticeships, VET learners observe and experience entrepreneurship. In Finland, VET graduates stated that their entrepreneurship skills have improved during work-related projects and practice placements. In Italy, VET teachers noted that work experience was the main approach for nurturing entrepreneurship competence. By saying so, however, they also implied that they did not consider this key competence needed to be intentionally nurtured.

In the context of apprenticeships, the development of entrepreneurship related knowledge, skills and attitudes takes place directly in the context of daily work, as the following case study shows (Box 24).

Box 24. Examples of entrepreneurship competence development through apprenticeship in Austria

In Austria, committed companies, such as Geberit and Zumtobel Lighting set up activities to promote the personal and social skills of their apprentices. They offer the opportunity for job rotation through different divisions of the company so that the apprentices get to know the entire production process.

After the first year of their apprenticeship at Zumtobel Lighting for example, apprentices are given the task of designing, planning, and implementing a lighting project as part of a team ('TechCube' project). Each team receives a budget to implement the respective idea. The project aims to promote various entrepreneurial skills: creativity, team and individual work, project management and planning (dealing with time and financial resources), problem-solving, understanding of potential challenges that may arise in a company, and dealing with mistakes.

The companies encourage independent work also by giving apprentices more freedom and decision-making scope over the course of their apprenticeship. Support is provided when it is needed. During their training, apprentices also learn to keep everything in order, to have confidence in themselves, and to meet deadlines and economic targets in projects.

Source: [Case study Austria](#) (Cedefop, 2023a).

In the context of CVET in Sweden, both company placements and in-house projects, where students work with stakeholders on practical tasks, are deemed to be efficient for learning entrepreneurship competence.

Work experience helps learners develop entrepreneurship competence but often it is neither explicitly targeted nor assessed during in-company training. When asked to elaborate on the entrepreneurship-related knowledge, skills, and attitudes they value in VET graduates, employers gave broad-brush depictions or mentioned indicators like punctuality, keeping order and technical knowledge;

connection with entrepreneurship competence may be described as dubious. In the case of apprenticeships, in Italy, both employers and learners found it difficult to think about developing an entrepreneurship competence in the workplace, since they thought primarily of technical skills acquired during in-company training.

In Spain, several employers highlighted the importance of VET apprentices showing initiative, teamwork, and problem-solving skills during their workplace periods, but work-placement company supervisors played a minor role in the formative assessment of transversal skills; they rarely used tools or protocols to assess the degree of development of each of them separately. This pattern is also found in France, where the assessment of soft skills in apprenticeships was described as 'tacit'.

In Austria, apprentices at Zumtobel Lighting company receive feedback from their supervisors and trainers at the end of each job rotation period. This is based on nine assessment criteria but, other than teamwork, keeping order, punctuality, comprehension, and technical knowledge, show little overlap with the skills and behaviours commonly included in the domain of entrepreneurship competence.

Overall, the contribution of work placements to nurturing entrepreneurship competence is taken for granted, yet its potential explicitly to address its development and assessment remains unclear. The areas with potential for improvements are modifying assessment protocols; training of apprenticeship trainers and company tutors; and equipping them with appropriate tools to support and follow-up learner development of entrepreneurship competence at work.

Business creation and management-related activities loom large in entrepreneurship education in VET. Desk and field research yielded several references to initiatives and programmes where VET learners are engaged in 'a practical experience by means of running a complete enterprise project, and on interaction with the external environment (i.e. the business world or the local community)' (European Commission, 2005). Such programmes fall into two broad categories:

- (a) learner-run companies producing and selling real products or services;
- (b) virtual or practice firms simulating economic activity.

For the former, more than 20 years after the release of the report *Mini-companies in secondary education* (European Commission, 2005), mini-companies (also known as student companies) continue to prevail as the choice of pedagogical tool for stimulating entrepreneurial attitudes and skills. These formats are frequently recommended and endorsed by national or regional authorities while the design and delivery are normally commended to external actors from the private or third sector.

Junior Achievement programmes seem to keep their dominant position in the mini-company market in five out of the eight study countries (the exceptions are Spain, France and Croatia). In Sweden, for example, entrepreneurship courses are built around running a project or a (fictitious) business, partly because Junior Achievement provides a concept (UF-företag) that fits these courses well. Junior Achievement Sweden provides material, coaching and structure in the form of a competition and fairs at local, regional, national, and international levels. New initiatives, however, have also come into play. Programmes raising awareness about the cooperative model and engaging VET learners in the creation and management of a workers' cooperative in contact or under supervision of real cooperatives are an alternative to the traditional mini-company approach in Austria (Schülergenossenschaften Programme), Croatia (school cooperatives), Finland (multidisciplinary pedagogical cooperatives), Italy (social cooperative programme) and Spain (*Ikasenpresa*) display (Box 25).

Box 25. Student cooperatives in Austria

At the beginning of 2020/21, the concept of student cooperatives – which already existed in Germany and South Tyrol (Italy) – was initiated at four pilot schools ⁽²⁵⁾ in Austria under the project 'Genossenschaft macht Schule – Schülergenossenschaften' [Cooperatives become a thing – pupils' cooperatives].

The aim of this measure was to get to know the legal form of a cooperative as a participatory, regional, and sustainable legal form, to promote entrepreneurship competence and to acquire initiative, creativity, collaboration, innovative spirit and understanding of the market. In the non-binding exercise called 'pupils' cooperatives', learners established and operated cooperatives for learning purposes, which carried out real business activities. A key feature of the pupils' cooperatives was close cooperation with regional real-life partner cooperatives, which not only provided input in the form of workshops and hosting student visits but were also represented on the supervisory board of the learner cooperative and provided advice and support in daily business operations. The cooperatives can also be run on a class-wide basis and are designed to last for several teaching years.

As non-binding exercises within the curriculum ⁽²⁶⁾, learner cooperatives do not compete with established training firms. It is a voluntary project realised through great commitment of the actors involved.

Source: [Case study Austria](#) (Cedefop, 2023a).

⁽²⁵⁾ HBLA Forstwirtschaft Bruck/Mur, HBLA St. Florian, BHAK Völkermarkt, HBLFA Wieselburg.

⁽²⁶⁾ Non-binding exercises: classroom events within the curriculum that require registration for each year of instruction and that are not subject to a formal assessment.

Although not fully aligned with the definition of mini-companies, some VET providers referred to other real-life experiences supporting VET learner careers. A typical example of this is a student-run café or shop located inside the VET provider premises but open to the public. The Italian Ministry for Education recommends activities such as 'farm-schools' or 'didactic restaurants' especially for the State IVET (*istituti professionali*, (Italy. Ministry of Education, University and Research, 2015). In France, engaging IVET learners in the management and steering of a multi-stakeholder enterprise (e.g. running the grocery shop) is seen to favour the development of entrepreneurial behaviours and attitudes as well as relationships with entrepreneurs and business leaders (mainly SMEs).

As a virtual or practice firm simulating economic activity, students work in a team within the organisational structure of a fictitious company, reproducing the functions, processes, and objectives of a real firm. All the training enterprises are connected through a simulation centre, and buy services and goods from each other, thus potentially simulating any entrepreneurial activity.

This format is widespread in Business Management and Administration VET programmes in Austria, where *Übungsfirmen* are a compulsory subject in commercial academies (HAK), and Italy where an example of a simulated company, the *Simulimpresa* model, has been listed in the best practices for entrepreneurship education in Europe (Komarkova et al., 2015).

While this method provides a first-hand experience in business management (e.g. handling orders, communicating with customers) and promotes entrepreneurship related skills such as problem-solving, learning by doing, group work and role-playing, it does not nurture knowledge and attitudes, such as the identification of opportunities and the generation of ideas. This could be the reason why some VET providers in Spain did not consider simulated companies as a method supporting entrepreneurship competence development.

Both formats, mini-companies, and virtual firms, are offered as curricular or extracurricular activities. In Finland the general implementation methods for the optional component of VET programmes include the Junior achievement year, as an entrepreneur programme, and the education institution's cooperative businesses. In Latvia, the optional or compulsory nature of the activity is decided by VET providers, while in Croatia school cooperatives are widespread as an extracurricular activity.

VET providers interviewed also complemented the development of entrepreneurship competence with a range of extracurricular activities and events: mini company fairs, business idea contests (in-house, regional, national), company visits, training workshops or coaching sessions. Extracurricular activities usually involve interaction with different actors of the entrepreneurial learning ecosystem

both inside and outside the education institution. Local companies, entrepreneurs and alumni are involved in delivering guest lectures, workshops, or act as mentors of projects developed by VET learners (Box 26).

Box 26. *Biti Bolji – Be better project in Croatia*

The secondary school of tourism and hospitality Osijek, a VET provider, offers entrepreneurship education as an extracurricular activity – through the NGO project *Biti bolji – Be better*, started by the business journal *Poduzetnik* [Entrepreneur] in 2013.

Since its launch, more than 50 schools with around 20 000 learners across Croatia have participated in the project. The school selects learners for that project and coordinates project activities in the school, but the exposure of the students to entrepreneurship competence is organised by the project's experts. Learners are introduced to the concepts of entrepreneurship, entrepreneurial culture, and new venture creation. The activity is organised through panel discussions, guest lectures and projects

Source: [Case study Croatia](#) (Cedefop, 2023b).

When asked about activities connected to entrepreneurship development, VET learners and graduates in Austria, Latvia and Spain tended to refer mainly to participation in extracurricular activities, including business competitions, contests and hackathons. Spanish VET learners also noted extracurricular activities that reinforce the topics covered in the curriculum.

Participation in projects is an opportunity for VET providers to develop learner entrepreneurship competences in collaboration with international partners. In Austria, such projects and other initiatives have been mapped at national level, yet VET teachers and trainers admitted feeling confused by such a broad offer of activities (Box 27).

Box 27. *Entrepreneurship education: map of actions for children and young adults in Austria*

The National action plan for entrepreneurship education (BMDW and BMBWF, 2020) in Austria includes a compilation of measures to achieve this vision. It comprises both established measures and pilot projects and includes various private and public initiatives that educate, train and skill young entrepreneurs. These include interesting activities at schools, new didactic-methodical approaches in existing subjects, activities with their priorities on digitalisation, sustainability and human resources, and new subjects. Initiatives range from the development of 'entrepreneurial challenge-based learning', an interdisciplinary approach, to comprehensive entrepreneurship school concepts.

Source: [Case study Austria](#) (Cedefop, 2023a).

The only example of extracurricular activity for apprenticeships was found in Austria, where committed companies offered social activities, workshops/seminars, company visits, social and cultural projects in cooperation with non-profit organisations. Activities were also offered in an international context, with internships abroad and exchange projects, as well as through the integration of underperforming apprentices or integrative apprentices (Box 24).

The field research reveals the transition from traditional class-based, knowledge-based, and teacher-led teaching towards more participatory, competence-based, learner-centred approaches is the chosen formula found in each country and with VET providers. This includes, when targeted intentionally, entrepreneurship competence. Interviews reveal methodological change is a long and challenging journey fraught with difficulties, where VET providers are crafting their own methodological mix of approaches at different speeds.

When compared with general education, VET seems a more natural basis for entrepreneurship-related methodologies. Cooperation with the business world and the local territory is more natural for VET providers, so work-based learning takes centre stage in VET whereas in general secondary this approach is absent or delivered to a much lesser extent. This is the case in Italy where the number of hours dedicated to work experience (PCTO, through which entrepreneurship competence can also be developed) is bigger in IVET than in general education: 90 hours in lyceums, 150 in technical education, and 150 in professional education. Learning environments in VET are also better suited to recreating professional environments and promoting the use of project-based learning and other work-based pedagogies. Nevertheless, flagship methodologies like mini-companies and/or student cooperatives seem to be more popular in primary and general secondary education.

6.5. Summative and formative assessment

Assessment is crucial in education and training as it drives learner perception on what it is worth learning (Biggs; Tang and Kennedy, 2022). A formative assessment is used during the period of instruction to steer learning, so that both learners and instructor know how learning is going and can take consequent measures. In this regard, structured feedback from teacher to student is essential, for example in form of the sandwich technique. A summative assessment at the end of the period of instruction appraises through a mark how well learners have learned what they were expected to learn. These assessment forms are complementary.

Competence is a complex construct related to performance and self-development. Competence assessment calls for assessment programmes with multiple tasks (Baartman et al., 2007). Hence, while a multiple-choice test can be part of an assessment programme, it cannot be the exclusive source of information, because it tends to measure only the knowledge component. Another popular kind of in competence assessment is authentic tasks, for example reproducing work situations. Authentic tasks are important as they allow for the expression of competence in context as a holistic construct, rather than single skills or bits of knowledge. An assessment programme implies using a variety of tools for formative and summative tasks, with the use of multiple sources of information and multiple stakeholders (not only instructors), including the learner, as with self and peer-assessment tasks. The active involvement of the learner in the assessment process (in giving feedback, self-reflecting on own performance, writing the rubrics, establishing assessment criteria) is a requisite of competence-based assessment.

Another important step for competence assessment is scoring. In this, scoring rubrics ⁽²⁷⁾ are better than scoring grids, as they privilege the qualitative nature of learning over its quantity (Comoglio, 2012). While rubrics and grids are based on criteria, rubrics are characterised by descriptions of levels of performance, while scoring grids display how many points a task is worth.

Assessment of competence should be aligned with the intended learning outcomes and the teaching and learning activities (Biggs; Tang and Kennedy, 2022). According to our research, Croatia is transitioning towards this model, but knowledge-based learning still prevails. Italy employs active pedagogies, although teachers often struggle with curriculum design alignment. France and Finland have made significant progress in implementing a competence-based approach, and Latvia and Spain are also adopting this model.

The study shows that summative assessments with single tasks and scoring grids are common, but formative tasks are often overlooked. Table 9 summarises evidence from eight countries.

Table 9. **Comparison of assessment tools by country**

Country	Assessment tools	Notes
Austria	Oral and written summative tests	Assessment of performance
Croatia		Assessment of learning outcomes based on performance is being progressively applied

⁽²⁷⁾ [Scoring rubrics, Entreassess](#)

Country	Assessment tools	Notes
Finland	Use of grids with assessment criteria; sometimes use of peer evaluation	Assessment of learning outcomes
France	Observation and scoring grids for summative assessment	Authentic tasks
Italy	Oral feedback Scoring grids Oral presentations	Authentic tasks Use of single tasks Predominance of summative assessment
Latvia	Sometimes self-assessment	Single assessment tasks Use of authentic tasks Target: creativity and entrepreneurship
Spain	Informal observations Scoring rubrics Self and peer assessment	Non systematic Selection of a reduced number of skills to be assessed Involvement of the learner in the learning process
Sweden	Grids with assessment criteria	Use of formative assessment practices

Source: Authors.

These findings provide an initial understanding of the assessment practices in eight country VET providers, but they are not entirely representative or conclusive. The prevailing method seems to be summative assessment using competence-based single tasks rather than assessment of programmes. The active involvement of learners in formative assessment requires more emphasis, and the provision of formative feedback needs further investigation. Assessment grids appear to dominate over scoring rubrics.

In Latvia, the assessment and recognition of learner achievements are mandatory for each VET programme and module. As of 2020, VET providers are transitioning to the State VET standards based on the competence approach. The assessment focuses on learners' developed entrepreneurship competence.

Sweden does not explicitly include entrepreneurship competence development in the assessment of learning outcomes, focusing more on technical competences. However, formative assessment practices are found to cultivate entrepreneurship competence. In contrast, Italy's syllabus for entrepreneurship education in upper secondary school (Italy, Ministry of Education University and Research, 2018b) does not mention assessment, yet the guidelines for work experience (Italy, Ministry of Education University and Research, 2018a) offer insights into making the module competence-based in terms of assessment and provide marginal information on formative feedback and self-assessment, without peer-assessment. This implies that Italian policy may have overlooked the active involvement of learners, a key feature of a fully competence-based assessment.

On-site visits to IVET providers revealed that formative assessment was mainly oral and often unstructured. The prevalent use of scoring grids over rubrics indicates that a fully operational competence-based approach is yet to be implemented. However, an innovative assessment form incorporating both formative and summative tasks was found at a CVET provider, with entrepreneurial project work (Box 28).

Box 28. Assessment of project work in CVET programme Circular economy for food, in Italy

I.I.S.T.A.S. Spallanzani, an Italian VET provider delivers an 800-hour CVET course (in partnership with the regional VET provider IAL Emilia Romagna) on valuing local food and wine, based on circular economy and the UN 17 sustainable development goals (SDGs). Coached by a former graduate, the learners brainstorm, select the best project-work ideas, and elaborate and write an abstract in groups; the result is progressively enriched, and in the process, the learners apply many things they have learned during the 'traditional' lessons. This group project work is the main topic discussed during the final exam and is considered as preparation for the business plan of which learners will potentially seek implementation after graduation.

The project work was assessed: formatively, with blind peer assessment of the idea to be developed, and feedback from a graduate who chose never to impose an opinion (when the coach felt something was missing, the learners had just to justify the choice they had made); and summatively, during the graduation exam, by an external commission nominated by the region. The products assessed were diverse: a report; oral presentation; and a concept food event, where the learners had to turn their food concept into a menu.

Source: [Case study Italy](#) (Cedefop, 2022a).

In Austrian IVET, teachers mainly assess learner performance in entrepreneurship competence through appraisal interviews, peer-to-peer, and self-assessments. For apprenticeships, summative assessment is predominant, focusing on knowledge gained, learner participation, and improvement. In France, competence-based approaches are used for assessment, with emphasis on entrepreneurial mindset and competences assessed through simulation or real-life activities. Learners are also assessed using observation grids, a spreadsheet or log that enable teachers to record observable events and learner actions in relationship to the technical competences of the programme. Assessment methods include multiple perspectives, including self-assessment and experts. Some educators use special workshops for simulated tasks where learners, teachers, and entrepreneurs collaborate, as outlined in Box 29.

Box 29. Example of assessment of authentic tasks in VET in France

For the final exam, pastry programme learners submit a thematic project (e.g. the typical cakes of Venice) requiring technical skills, mastery of the process, as well as skills related to project management. The learner prepares the pastries in a laboratory under the supervision of professionals in the trade, entrepreneurs, and trainers, and presents the outcome as a buffet.

The assessment criteria are project presentations; creativity; ability to develop a network around the project; budgeting; self-organisation; initiative, autonomy, taking responsibility; the ability to lead a team; reflexivity and critical thinking (concerning the project and its implementation); adaptation to different contexts.

Source: [Case study France](#) (Cedefop, 2023d).

In Finland, assessment of entrepreneurship competence aligns well with a competence-based approach, with both teaching and assessment criteria matching the qualification requirements. The mandatory common study unit of upper secondary VET, Entrepreneurship and entrepreneurial activities, is assessed summatively within a specific framework, as illustrated in Table 10.

Table 10. Assessment grid of learning outcome 1 (promoting the company's objectives in work) of the Finnish common VET programme unit Entrepreneurship and entrepreneurial activities

Result	Learner
Satisfactory 1	<ul style="list-style-type: none"> recognises the importance of being enterprising in society describes the organisation's business model with some guidance works cost-effectively, recognising the importance of own activities as part of the work community
Satisfactory 2	<ul style="list-style-type: none"> n/a
Good 3	<ul style="list-style-type: none"> describes the importance of business in society describes the organisation's business model acts cost-effectively and in a customer-oriented manner in own tasks, recognising the importance of own activities as part of the work community
Good 4	<ul style="list-style-type: none"> n/a
Excellent 5	<ul style="list-style-type: none"> describes the importance of business in their vocational field in society and anticipates prospects in the field describes the organisation's business model independently takes initiative in their tasks and works in a cost-effective and customer-oriented manner, recognising the impacts of own work on the organisation's performance.

Source: (Finland. National Agency for Education, 2022b).

The above example indicates a transition to scoring rubrics. Competence is assessed through demonstration, with additional tools including digital learning environments, essays, learning diaries, portfolios, and exams. Typically, educators assess entrepreneurship-related knowledge, skills, and attitudes such as creativity, innovation, risk-management, goal setting, planning, teamwork, entrepreneurial thinking and actions, responsibility, business ideas, personal development, and working life skills.

VET providers are largely taking steps to assess entrepreneurship competence systematically: gathering evidence beyond informal teacher observations; involving learners in the assessment process; and providing pertinent feedback. Assessments often focus on a limited set of skills like teamwork, communication, and creativity, along with general attitude such as attendance, participation, and engagement.

While policy and practice have advanced in teaching and assessing entrepreneurship through a competence-based approach, there is room for improvement, particularly in formative assessment with the systematic use of feedback and learner involvement via self and peer assessment. For summative assessment, further development is required in the use of rubrics and incorporating multiple perspectives, including experts and fellow teachers.

Learning outcomes acquired are context-dependent by nature, making generalisation challenging across heterogenous vocational training. Through participation in entrepreneurship programmes, VET learners achieve a broad set of context-dependent learning outcomes. To describe these, the study applied the formula 'verb + context + content' (Biggs; Tang and Kennedy, 2022) to provide examples of recurring learning outcomes related to entrepreneurship competence, acquired by VET learners based on their self-assessment during study focus groups (Box 30).

Box 30. Recurring learning outcomes related to entrepreneurship competence developed by VET learners based on their self-assessment

- Teamwork and conflict management;
- Communication and presentation;
- Project management;
- Reflect on relevance and connections of the acquired knowledge;
- Self-reflection on experience, autonomy, responsibility, maturity, self-confidence.

Source: Authors.

In Austria, VET learners interviewed appreciated teacher commitment, practical lessons, and entrepreneurship events. Besides economic knowledge, they developed self-esteem and presentation skills. Practical work within apprenticeship training helped them acquire entrepreneurial skills.

In Finland, learners highlighted gains in self-confidence, courage, and improved capacity to give and receive feedback, all of which enhance interaction and communication competences. Through the focus groups, learners connected their learning with entrepreneurship education studies. The importance of entrepreneurship competences as work life skills was frequently discussed.

In France, teachers, students, and alumni identified eight themes around their learning in the context of entrepreneurship programmes (Box 31).

Box 31. Themes related to entrepreneurship competence acquired by VET learners in France

The following themes emerged during the focus groups with VET learners during the study in France.

- Strengthening professional skills and self-confidence: for example, an alumnus explained that learning to express himself, establish a relationship and argue through entrepreneurial situations has enabled him to develop and appreciate customer relations.
- Discovering how companies and entrepreneurs work through specialised courses in human resources, communication, accounting, team management, legal and commercial relations.
- Taking responsibility. A group of learners stated that VET allowed them to take on roles and responsibilities in the management of a business activity.
- Team learning, including learning and debating and developing critical thinking skills, sharing problems, expressing oneself, listening, respecting others.
- Reflection in action. For example, learners mentioned: 'you don't even realise when you are being assessed because that [being continuously assessed] is what you usually do'.
- Networking through company visits, exchanges.
- Professional integration. An entrepreneurial alumnus of an apprenticeship training provider explained that her training was a 'springboard to responsibilities in the company'. Many learners and alumni emphasise internships as an essential springboard for the practice of entrepreneurship competences. A simple fact of looking for an internship and contacting the manager of the company or one of its employees requires entrepreneurship, according to a VET learner.

Source: [Case study France](#) (Cedefop, 2023d).

Participation in work environment related activities primarily leads to the development of employability skills rather than entrepreneurship competence. In the context of apprenticeships, both employers and learners tend to associate work-based learning with technical/occupation-specific skills. Employability skills

acquired in the workplace include understanding company operations and effective cooperation and communication with colleagues.

In Spain, conversations with learners and alumni revolved around the changes they experienced in their thinking and behaviour after participating in these actions. Learners noted positive impacts on skills and attitudes that they considered valuable for their personal and professional lives. They observed improvements in teamwork and conflict management skills resulting from collaborative projects and challenges. Participation in projects also improved their management, planning, and problem-solving skills. Multiple opportunities to pitch ideas to peers and external stakeholders helped overcome the fear of public speaking, resulting in substantial improvements in communication and presentation skills.

6.6. Digitalisation and the impact of COVID-19

The digital transition and the ongoing effects of the COVID-19 pandemic have the potential to impact the provision of entrepreneurship competence in VET.

While technology plays a significant role in most VET qualifications, digital entrepreneurship and digitalisation⁽²⁸⁾ are not synonymous. Digital entrepreneurship involves generating business ideas tied to products and services created, marketed, and distributed primarily online, rather than solely relying on digital tools. Certain VET programmes provide a more fertile ground for the development of activities and projects related to digital entrepreneurship. For example, in Austria, a special form of the commercial academy (Handelsakademie, HAK) called DigbizHAK focuses on developing skills and competences in information technologies and new media, with an emphasis on promoting the entrepreneurial spirit, based on a general education and classic business subjects.

In France, ICT IVET programmes expect learners to create websites and market their ideas through social media. In Finland, VET reform has led to the renewal of further vocational qualifications in entrepreneurship, with a specific focus on digital competences and sustainable business development.

Teachers express mixed feelings regarding the enabling role of digital technologies in nurturing entrepreneurship competence. While digital tools offer new perspectives, and increase learner employability when combined with technical and entrepreneurship competences, there are also some limitations to

⁽²⁸⁾ 'When applied to social systems or organisations, digitalisation refers in a broad way to the transformation brought about by the widespread adoption of digital technologies (robotics, machine learning, sensors, virtual reality and so on)'. *Source*: Eurofound, EurWORK [Digital economy](#)).

consider. Digital technologies are incorporated into entrepreneurship-related activities in various ways.

- (a) Making subjects more compelling and appealing to young people, although some teachers express concerns about potential reduction in student motivation and engagement, which are crucial for project-based pedagogy conducive to entrepreneurship competence development.
- (b) Enabling collaboration and networking with companies and other actors in the ecosystem, provided that face-to-face interaction is not compromised.
- (c) Serving as an important marketing and sales channel, particularly through social media, which allows targeting customers at low expense. Online environments are also utilised in connection with the promotion of entrepreneurship competences, as seen in the activities of student cooperatives and mini-companies implementing online store-based sales and training.

VET teachers employ a wide range of digital technologies to support teaching, learning, and assessment processes. However, their digital competences vary depending on their training context and personal interest in such technology. Different generations of teachers exhibit varying levels of confidence in using digital technologies for educational activities. Digital learning environments, online applications, social media, and other tools are widely used in teaching, from individual study materials to entire courses and degrees.

Participation in entrepreneurship projects exposes learners to a variety of digital apps and devices that support different phases of entrepreneurship projects, such as document preparation, collaboration, design and prototyping, and project management. Access to makerspaces equipped with 3D printers, laser vinyl cutters, audio-visual equipment, and other devices has a positive impact on learner motivation and provides an opportunity to acquire complementary skills that increase employability. A Spanish teacher commented: 'Digital manufacturing confers a plus to entrepreneurial projects'.

The COVID-19 pandemic has accelerated the digital transformation in education. Education authorities across Europe responded similarly, providing tablets, vouchers for internet access, and teacher training to mitigate the effects of the pandemic. VET teachers and learners were quickly forced to transition to online learning, adapting to the use of digital tools. Entrepreneurship-related activities, for example, emphasised the delivery of online products and viewed the digital environment as an opportunity for entrepreneurship.

However, the pandemic has also hindered the development of entrepreneurship competence in VET. Providers acknowledged that running entrepreneurship programmes became more challenging due to COVID-19

restrictions. Interaction with external partners came to a halt, making it difficult to conduct entrepreneurship programmes and activities. Finding placements for learners and recruiting apprentices became challenging as school visits and fairs were restricted. Additionally, work-based, and project-based learning, which are integral to VET programmes, faced difficulties transitioning into a digital format. Practical aspects suffered, as theoretical teaching could be delivered online but practical application was limited. The sudden shift to hybrid learning also posed challenges in terms of the social and emotional aspects of learning. Learners exhibited passive behaviour due to cognitive fatigue and lack of motivation in online activities. Opportunities for creating enterprises were limited to computer use, potentially reducing learner motivation.

One learner summarised the pros and cons of the effect of COVID-19 on the development of entrepreneurship competence as follows:

'It [online learning during the pandemic] has both hindered and helped me. On the one hand, it is harder to find motivation. On the other hand, it has been an ideal time to collect information. Now I am much more into accounting and business management than before. I enjoyed distance learning; the most challenging part was being removed from life outside home, but the studies went well for me. That is when I created my enterprise. Nobody was able to change my mind or make me afraid of doing it. We could still do the same [design] things at school, and I was more creative when I wasn't distracted by other people. It was easier for me because my future profession – designer – will be remote work' (VET Learner, Latvia) (Cedefop, 2022b).

CHAPTER 7.

Conclusion: five paradoxes

The process of embedding entrepreneurship competence in VET presents both opportunities and challenges for VET stakeholders. Five transversal paradoxes summarise the findings of this study.

The first paradox relates to the conceptualisation of entrepreneurship competence. Key insights from eight country case studies reveal national definitions of competence vary in terminology and focus but they are mostly influenced by the European definition of entrepreneurship as a key competence useful in diverse contexts. However, the broad definition of entrepreneurship competence has not yet fully managed to distance itself from its business origins. As a result, it is a contested and politically charged concept whose nature, definition and purpose generates mixed feelings among VET teachers who still see it as linked to money-making and informed by corporate business values.

The second paradox of entrepreneurship concerns the curriculum. The study revealed that the creation of stand-alone subjects on entrepreneurship has been a common policy response to embed this competence in VET, but these subjects are often seen to play second fiddle to technical subjects. The 'siloed' approach to implementing entrepreneurship in the curriculum as stand-alone subject may lead to significant neglect of cross-curricular approaches as teachers of other subjects may think developing this competence is somebody else's duty. The cross-curricular approach, however, is also challenged by insufficient training, support and guidance.

VET teachers express a lack of confidence and pedagogical expertise in designing and delivering teaching and learning activities that promote entrepreneurship competence. This is mainly due to limited initial teacher training and inconsistent access to continuing professional development opportunities that are delivered by a range of actors in the entrepreneurial learning ecosystem. Professional development opportunities, when available, are often inconsistent and rely on individual teachers' willingness to engage in training. Many courses are narrowly focused on entrepreneurship as business creation and fail to appeal to a wider audience of VET teachers. Widening participation of technical/occupation-specific subject teachers remains a challenge. Professional development opportunities for apprenticeship or company tutors are also scarce.

Access to training needs to be coupled with additional support measures for teachers. The pressure to deliver an overloaded curriculum, excessive workload

and the lack of time to coordinate efforts with other colleagues could make VET teachers wary of embedding entrepreneurship competence in their subjects. Strong leadership and support from senior management teams is essential to overcome these constraints and secure the conditions that facilitate the adoption of multidisciplinary in teaching. The study found interesting examples of recognition schemes acknowledging the efforts of VET providers and VET teachers to embed entrepreneurship competence.

The third paradox relates to implementation. It considers the gap between the intention to deliver entrepreneurship competence as a broad transversal skill (rather than just for starting up a business) and how it is actually implemented through narrow actions (mainly mini-companies and virtual firms). Portfolios of curricular and extracurricular activities and initiatives gathered during the field research show a clear inclination towards activities and initiatives where business creation and management take centre stage. The dominant presence of mini-companies, simulated firms, business planning and pitching activities reveals a gap between the broad definition and narrow implementation. In contrast, business incubation is rarely implemented in VET. The study found limited examples of start-up support for VET learners and alumni.

Business creation and management-related activities remain prevalent. However, the study also found that project- and problem-based learning, often with interdisciplinary elements integrating the development of transversal and technical competences, are becoming favoured methodological choices in developing entrepreneurship competence in VET.

Learning is increasingly taking place in hybrid learning environments encompassing classroom, workshops, labs, companies and online spaces. The creation of new learning environments such as innovation labs, makerspaces or laboratories is encouraged by policies in some countries to support the shift towards learner-centred approaches and the adoption of active methodologies. These learning scenarios are seen to facilitate the embedding of entrepreneurship competence in VET but their emergence is not without its challenges, mainly concerning training VET teachers to take full advantage of the opportunities provided by the space and equipment.

While VET is transitioning across Europe towards full competence-based teaching and learning, according to the study, the assessment of entrepreneurship competence is often overlooked, as the emphasis is mainly on technical competences specific to particular qualifications. As part of the assessment development, establishing clear assessment criteria for entrepreneurship competence is crucial; this calls for a discussion on the goals and outcomes of

entrepreneurship education. VET providers tend to concentrate assessment efforts on a smaller number of skills such as teamwork, communication, and creativity.

Self- and peer-assessment activities are particularly suitable for assessing entrepreneurship competence but the active involvement of learners in such formative assessment is challenging in many countries covered by this study. Similarly, employer engagement in the development and assessment of entrepreneurship competence remains low. However, VET learners report acquiring a diverse set of learning outcomes through participating in entrepreneurship projects and developing employability skills in work environments.

The discussion on the impact of digitalisation and the COVID-19 pandemic on the embedding of entrepreneurship competence in VET shows that digital technologies play a prominent role. Sometimes digital competences tend to overshadow entrepreneurship competences but digitalisation should not be confused with digital entrepreneurship, where digital tools are not just used during entrepreneurship learning: digital innovation is a learning outcome. The COVID-19 pandemic accelerated the digitalisation of education in general, but it also hampered the development of entrepreneurship competence given the increased difficulty in cooperating with external partners.

The fourth paradox questions whether entrepreneurship competence improves employment prospects. The link between entrepreneurship competence development and employability is taken for granted but the insights from field research prompt some caution. Comments from VET teachers put into question the real demand for entrepreneurship competences from employers who are primarily more interested in the development of occupation-specific competences. In such a scenario, the promotion of entrepreneurship could be even considered a threat to the interests of employers, a concern aired by some apprenticeship providers. Work experience and apprenticeships are essential in nurturing entrepreneurship competence, but the field research showed the competence is seldom explicitly developed or assessed in work-based learning contexts.

The fifth paradox relates to the imbalance between policy and evidence. While many policies are put forward, their impact is rarely evaluated. European, national and regional level pile up in a Tetris-like, but not always orderly, way and this results in an overwhelming and fragmented policy landscape. The translation of European and national policies into practice is complex and non-linear, with a wide range of legislation, curriculum reforms and supporting policies and programmes at national and regional levels. VET teachers remain largely unaware or simply confused about the national and regional policy measures in place. At the same time, policy implementation is not always sufficiently monitored, and impact

evaluation is a challenge. Monitoring and evaluation tend to concentrate on a limited set of indicators capturing the degree of satisfaction of participating learners and teachers through surveys that are rarely suitable for evaluating the contribution of all these activities to the development and acquisition of entrepreneurship competence by VET learners.

Evidence-based policies need to tap into robust research but most entrepreneurship education research is undertaken at non-VET levels, allowing VET to fall into a research void (Liguori et al., 2019). The study literature review highlighted the importance of embedding entrepreneurship competence in VET through understanding the entrepreneurial learning ecosystem, identifying effective approaches, and addressing knowledge gaps. It showed that further evidence is needed on external moderators, contextual factors, and specific pedagogies for diverse learners. While consensus on effective teaching methods in research remains elusive, continued collaboration among stakeholders and instructors can help determine the best approaches for different learner profiles.

Acronyms

BMDW	<i>Bundesministerium für Digitalisierung und Wirtschaftsstandort</i> [Federal Ministry for Digital and Economic Affairs (Austria)]
CPD	continuing professional development
CVET	continuing vocational education and training
EC	European Commission
EQF	European qualifications framework
ESCO	Classification of European skills, competences, and occupations
HAK	<i>Handelsakademie</i> [commercial academy] (Austria)
IVET	initial vocational education and training
NGO	non-governmental organisation
PCTO	<i>Percorsi per le competenze trasversali e per l'orientamento</i> [Pathway for transversal skills and orientation]
VET	vocational education and training

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Annex 1. Participating VET providers

Country	Name	Area	Type of VET (field research focus)
Austria	Geberit	Lower Austria	Company providing apprenticeship training
Austria	Zumtobel Lighting GmbH	Vorarlberg	Company providing apprenticeship training
Austria	Business Academy Maygasse, Wien 13 (HAK)	Vienna	Initial VET provider
Austria	Higher College for Engineering Wolfsberg (HTL Wolfsberg)	Carinthia	Initial VET provider
Austria	Fashion School Hallein (Modeschule Hallein)	Salzburg	Initial VET provider
Austria	Institute for Economic Promotion of the Austrian Federal Economic Chambers – WIFI (Wirtschaftsförderungsinstitut der Wirtschaftskammer Österreich)	Vienna	Continuing VET provider
Croatia	Secondary school of tourism and hospitality Osijek, Osijek, manager	Osijek-Baranja County	Initial VET provider
Croatia	Commercial School Istituto professionale Buje, Buje	Istria	Initial VET provider
Croatia	Varaždin School of Economics	Varaždin County	Initial VET provider
Croatia	Technical School Ruđer Bošković Zagreb	Zagreb	Initial VET provider
Croatia	Harburg-Freudenberger Belišće ltd	Osijek-Baranja County	Company providing apprenticeship training
Croatia	Hotel Waldinger Osijek	Osijek-Baranja County	Company providing apprenticeship training
Finland	Jyväskylän Education Consortium Gradia	Central Finland	Upper secondary VET
Finland	The Finnish Institute for Enterprise Management	National	Upper secondary school for adults
Finland	Vamia	Ostrobothnia	Upper secondary VET
Finland	Turku Vocational Institute	South-West Finland	Upper secondary VET

Country	Name	Area	Type of VET (field research focus)
Finland	Stadin AO, Helsinki Vocational College and Adult Institute	Helsinki-Uusimaa region	Upper secondary VET
Finland	Savo Municipal Federation of Education Samiedu Vocational College	Eastern Savo	Upper secondary VET
France	Lycée professionnel Saux-Marais	Normandie	Initial VET provider delivering vocational and technical education
France	Ecole de Production de Besançon	Bourgogne-Franche-Comté	Initial VET provider delivering vocational and technical education
France	CFA	Nouvelle-Aquitaine	Initial VET provider providing apprenticeship training
France	Chamber of commerce and industry	Nouvelle-Aquitaine	Continuing VET provider
France	Lycée Saint-Bégnine	Bourgogne-Franche-Comté	Initial VET provider
France	Lycée Les Marcs d'Or	Bourgogne-Franche-Comté	Initial VET provider
Italy	IAL FVG	Friuli-Venezia Giulia	Apprenticeship schemes
Italy	I.C. Primiero	Autonomous Province of Trento	IVET delivering technical education (istituto tecnico)
Italy	I.I.S. Lancia	Piedmont	IVET delivering vocational (istituto professionale) and technical education (istituto tecnico)
Italy	I.I.S.T.A.S. Spallanzani	Emilia-Romagna	Continuing VET provider
Italy	I.S.I.S. Facchinetti	Lombardy	Apprenticeship schemes
Italy	IST.T. Costa	Apulia	Initial VET provider
Latvia	Riga State Vocational Technical School	Riga	Initial VET provider
Latvia	Ogre Vocational Technical School	Ogre	Continuing VET provider
Latvia	Ventspils Vocational Technical School	Ventspils	Initial VET provider
Latvia	Liepāja State Vocational Technical School	Liepāja	Continuing VET provider
Latvia	Rimi Baltic	Riga	Company providing apprenticeship training
Latvia	Liepājas Papīrs	Riga	Company providing apprenticeship training
Spain	CIFP Comunicación, Imagen y Sonido (CISLAN)	Asturias, Langreo	Initial VET provider Continuing VET provider
Spain	CIFP Nicolás Larburu	Basque Country, Barakaldo	Initial VET provider Continuing VET provider

Country	Name	Area	Type of VET (field research focus)
Spain	CIFP Río Tomes	Castilla y León, Salamanca	Initial VET provider Continuing VET provider
Spain	CIFFP La Costera	Comunidad Valenciana, Xàtiva	Initial VET provider Continuing VET provider
Spain	IES Francisco Tomás y Valiente	Madrid	Initial VET provider
Spain	Institut Escola del Treball	Catalonia, Lleida	Initial VET provider
Sweden	Luleå kommun Gymnasium	Luleå	Initial VET provider
Sweden	Praktiska gymnasiet i Luleå	<i>Luleå</i>	Initial VET provider
Sweden	Malmö lärlingscenter	<i>Malmö</i>	Initial VET provider
Sweden	Peab-skolan	<i>Malmö</i>	Initial VET provider, apprenticeships
Sweden	Changemaker Educations	<i>Boden</i>	Continuing VET provider
Sweden	Lärlingsakademin	Scania	Initial VET provider Continuing VET provider

Annex 2.

Main methodology steps

Desk research

The desk research involved reviewing key strategy and policy documents, as well as other relevant literature, at both national and pan-European levels. When appropriate, depending on the governing structures for VET provision, the analysis also encompassed sub-national developments. The scope of the study included a variety of documentation, ranging from those related to the overall strategy for developing entrepreneurship competence within secondary education, including VET, to more detailed information and analysis about the content, rationale, and delivery methods.

The desk research covered a period between 2010 and 2021. It aimed at identifying changes in the intensity and focus of entrepreneurship learning in VET within each country. When necessary, the timeframe was extended to report on significant developments that had occurred. National researchers adhered to literature review guidelines, gathering data from various sources such as policy documents, government action plans, evaluation reports, research papers, educational initiatives, employer surveys, and statistical data published in the respective national languages. This information was primarily obtained from national and regional authorities, external providers, and repositories like Cedefop and UNESCO-UNEVOC, ensuring a comprehensive understanding of the VET landscape and country context.

Field research and construction of national case studies

Data collection in each of the selected eight countries involved gathering information from six VET providers in each country, including companies. The objective was to examine in detail how entrepreneurship competence was delivered within VET. This required focusing on specific VET programmes offered by a provider. The research team relied on the judgement of VET providers to select programmes that would yield the most valuable insights for the research. A set of guiding criteria informed the selection of VET programmes, such as a specific focus on entrepreneurship, explicit incorporation of entrepreneurship competence development in the syllabus, extra-curricular entrepreneurship learning activities, and employer engagement with the entrepreneurship education agenda.

In each selected country, six separate case studies of VET providers contributed to the overall national case study. Each country case study investigated the practical aspects at the policy/entrepreneurial learning ecosystem, VET provider and learner layers. The country case studies contributed to the comparative analysis and helped to answer the research questions.

The following research participants were involved in the study:

- (a) policy makers, social partners, experts, and researchers with different roles in the VET and entrepreneurship learning ecosystem;
- (b) management of VET providers (e.g. school principals, staff responsible for entrepreneurship education/work experience, coordinators of VET programmes; counsellors providing guidance to learners, company, and HR managers);
- (c) school teachers and work tutors;
- (d) learners participating in specific entrepreneurship programmes;
- (e) VET graduates.

The triangulation method was used in analysing the country case study data, enabling consideration of diverse perspectives and validation of information gathered from various sources.

Data collection was conducted sequentially. It began with document analysis, followed by field research, which included interviews with school managers and VET teachers, as well as focus groups with learners. Interviews with graduates and observations were also carried out to provide a comprehensive view. The strength of this sequential method of data collection was the ability to triangulate the data and conduct preliminary validation.

The case studies in eight countries concluded with online participatory workshops conducted in the respective national languages. These involved presenting the results, gathering feedback, and discussing potential implications and future directions.

To test and recalibrate the data collection methodology, two pilot case studies in Italy and Latvia were conducted during June 2021 - January 2022. In February 2022, Cedefop organised a European workshop to discuss the initial study results (from the two pilot countries) and reach a consensus on the methodology to be employed in conducting the country studies in Spain, France, Croatia, Austria, Finland and Sweden. These studies were completed in 2022.

The findings presented in this report are based on the field research conducted in all eight case study countries with the comparative analysis completed in 2023.

Comparative analysis

The comparative analysis of the eight country cases was based on two research questions examining the diverse dimensions of the VET entrepreneurial learning ecosystem. The first question addresses the dimensions of the eco-system concerning:

- (a) national and, when possible, regional policies;
- (b) VET provider level.

This research question, therefore, explores the definitions and learning outcomes, not only how they vary from country to country and to what extent the EU definition permeates each individual case, but also how they transition from the policy level to the VET provider level, culminating in the learning outcomes that learners ultimately develop. The second research question examines the third dimension of the entrepreneurial learning ecosystem, which is the learning environments. It does so by analysing tools, methods, and approaches for entrepreneurship competence in the eight countries, including how an entrepreneurship competence is assessed, and the strengths of VET in nurturing this key competence.

This qualitative analysis is the result of data collection in the eight participating countries. This study involved the analysis of national (and, when possible regional) policy documents, as well as interviews with experts, policy makers and other stakeholders. Data were gathered through visits to 48 selected VET providers (six in each country) and included:

- (a) observation of the learning environments;
- (b) interviews with teachers, work tutors, school principals and company managers, as well as apprentices and alumni;
- (c) focus groups with learners;
- (d) analysis of school documents such as course offerings, teaching and assessment plans, scoring grids and assessment rubrics.

Country reports were structured to provide a comprehensive understanding of entrepreneurship education in each country surveyed, including key conclusions, evidence, a holistic presentation of findings, as well as gaps and challenges.



Entrepreneurship competence in vocational education and training in Europe

Synthesis report

This report describes how entrepreneurship competence is embedded in vocational education and training (VET) in Europe. It complements existing knowledge with examples of methods, tools and approaches that can help policy makers, VET providers and other stakeholders build better entrepreneurial learning ecosystems.

The report is based on the research of Cedefop's study *Entrepreneurship competence in VET* and eight national case studies covering Spain, France, Croatia, Italy, Latvia, Austria, Finland and Sweden.

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