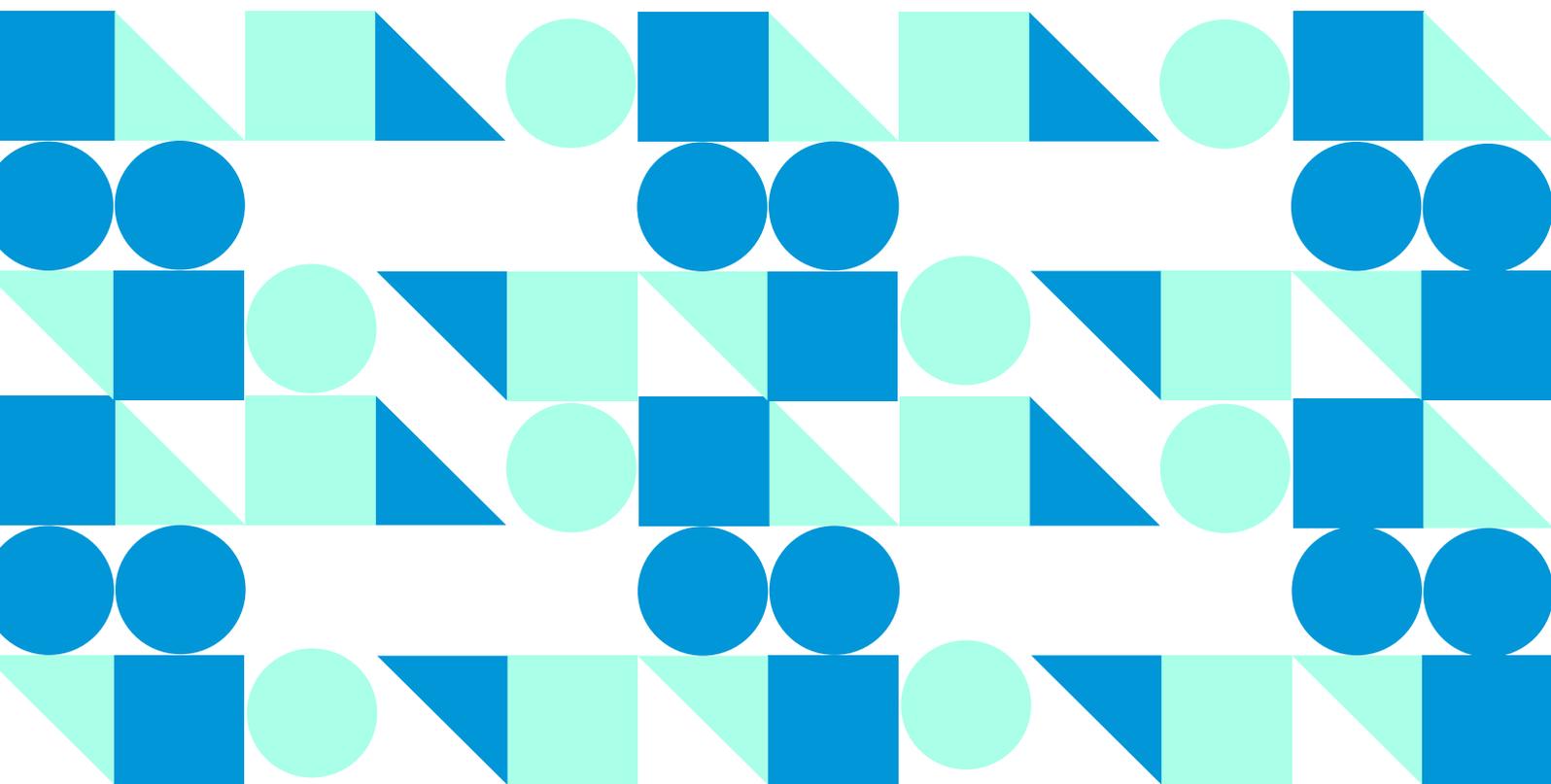




Research paper

# Entrepreneurship competence in vocational education and training

Case study: Spain







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Europe 123, Thessaloniki (Pylea), GREECE  
Postal: Cedefop service post, 570 01 Themi, GREECE  
Tel. +30 2310490111, Fax +30 2310490020  
Email: [info@cedefop.europa.eu](mailto:info@cedefop.europa.eu)  
[www.cedefop.europa.eu](http://www.cedefop.europa.eu)

Jürgen Siebel, *Executive Director*  
Nadine Nerguisian, *Chair of the Management Board*



# Foreword

Modern society is changing rapidly the way we live, work and learn. Technological developments, climate change, demography, crises (pandemic, humanitarian) and other factors 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 a few 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 this EU priority, Cedefop has launched a study to provide VET stakeholders with new evidence on how entrepreneurship competence is embedded in VET. This report presents findings of the research carried out in Spain in 2022, underpinning the dimensions of learning ecosystems that nurture entrepreneurship competence in VET.

The development of entrepreneurship competence in VET in Spain is a complex interplay between State and regional policies and practices. While there are two compulsory modules promoting entrepreneurship competence in all initial VET programmes, regional authorities and VET teachers, in cooperation with other stakeholders, have a crucial role in adapting the curricula to regional, sectoral and learner needs. There are also several national policy initiatives and regional programmes that support the development of entrepreneurship competence in VET. However, as our research shows, entrepreneurial learning ecosystems in VET seem to be mainly functional at local and regional levels, relying on the network of personal contacts.

We hope that this country case study and the others from the series – Croatia, France, [Italy](#), [Latvia](#), Austria, Finland and Sweden – will help policy-makers, social partners and VET providers continue their successful cooperation to nurture entrepreneurship competence in VET, ensuring all learners are equipped with it.

Jürgen Siebel  
Executive Director

Loukas Zahilas  
Head of Department for VET and  
qualifications

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# Executive summary

Entrepreneurship competence in vocational education and training (VET) is an under-researched topic in Spain. Most studies employ a psychometric approach based almost exclusively on self-report measures: these explore the impact of individual initiatives on learner competences, entrepreneurial intention and/or entrepreneurial activity. This scarce research is concentrated in a few geographic regions.

This case study provides evidence on how entrepreneurship competence and education are integrated in VET, and to what extent the dimensions of entrepreneurial learning ecosystems facilitate acquiring entrepreneurship competence in VET in Spain. It also focuses on policies, methods, tools, and approaches that best support embedding entrepreneurship competence in VET.

The study covers six VET providers in six regions of Spain and combines desk and field research (policy and VET provider levels) with a rich collection of primary data.

The definition and development of entrepreneurship competence in VET in Spain is shaped through a complex interplay of State and regional policies and practices. Policy-makers, VET providers, employers and external agents agree that VET must equip future professionals with transversal skills commonly associated with entrepreneurship competence. Yet there is no single and unified national definition of entrepreneurship competence in VET, despite the references to entrepreneurship in policies, curricula, and programmes at State and regional level. Entrepreneurship competence frameworks such as EntreComp remain largely unknown in the VET sector in Spain.

The development of entrepreneurship competence in VET is conceived as a two-level process. The first level focuses on helping all learners to develop a set of generic skills deemed to be useful for their professional and personal lives. The second level aims at equipping learners with the knowledge, skills, and attitudes necessary to identify business opportunities and start up a business.

Entrepreneurship is a transversal competence that is explicitly developed in two compulsory modules common to all IVET qualifications: FOL <sup>(1)</sup> in the first year and EIE <sup>(2)</sup> in the second. FOL puts the focus on intrapreneurship <sup>(3)</sup> and EIE on entrepreneurship and self-employment. The basic curricula are defined at national

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(1) *Formación y Orientación Laboral* [Career Training and Guidance module].

(2) *Empresa e Iniciativa Emprendedora* [Enterprise and Entrepreneurial Initiative]

(3) 'The ability to act like an entrepreneur within a company or other organisation' ([Intrapreneurship: definition, duties, and responsibilities](#)).

level and further modified at regional level. VET teachers introduce occupation-specific adaptations to the curricula, bearing in mind sectoral, regional and learner needs (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2011b).

A set of policy initiatives and plans encourage methodological innovation, the transformation of learning environments, collaboration with external stakeholders and the adoption of whole-school approaches to entrepreneurship competence development in VET. Regional support programmes for entrepreneurship in VET such as EmprènFP (Catalonia, Department for Education, 2015), Emprén (Comunitat Valenciana. Department for Education Culture and Sport, 2022) and Ekingune (Tknika, 2022d) are firmly committed to raising awareness, training and supporting management teams, teachers and learners.

Entrepreneurial learning ecosystems in VET are mainly functional at local and regional levels. Most are ad hoc and rely on the network of personal contacts of teachers. The ecosystems are constantly evolving, and VET providers are engaged in expanding, strengthening and making them more visible.

VET provider management teams, teachers and learners agree that close connection with the world of work makes VET particularly well suited to addressing the development of entrepreneurship competence. However, VET teachers observe that first-year VET learners (in both upper secondary and higher VET) lack basic notions and understanding of entrepreneurship, despite it being a key competence in primary and secondary education and there being optional subjects in secondary education.

Project-based learning stands out as the preferred vehicle for developing entrepreneurship competence. Interdisciplinary projects pave the way for the simultaneous development of entrepreneurship and technical competences. The creation social and cultural values in projects is implicit in the methodological choices (e.g. service-learning<sup>(4)</sup>) and based on the involved stakeholders/target groups (e.g. disadvantaged groups, NGOs). Linking projects with the Sustainable development goals<sup>(5)</sup> is a common practice that opens opportunities to consider the environmental and social aspects of entrepreneurship. Inclusive entrepreneurship is often approached through raising awareness about social economy and social entrepreneurship.

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(4) 'An educational approach that combines learning objectives with community service in order to provide a pragmatic, progressive learning experience while meeting societal needs' ([Wikipedia: service learning](#)).

(5) 'Sustainable development goals (SDGs), also known as the Global goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity' ([UN sustainable development goals](#)).

Approaches and tools supporting the development of entrepreneurship competence in VET vary. They are often linked to service-learning, cooperative learning, challenge-based learning. More recently, design thinking and lean start-up methods started taking centre stage <sup>(6)</sup>. Curricular work is reinforced with a portfolio of extracurricular activities and initiatives such as fairs, contests, competitions, study visits, expert talks, and in-house incubation units.

Assessment of entrepreneurship competence is a challenge for VET providers who are taking steps to tackle this issue in a systematic way: selecting the skills and attitudes to be assessed; collecting a broader range of evidence other than teacher observations; involving learners and VET stakeholders in the assessment; and providing relevant feedback throughout the process. While employers acknowledge the importance of the entrepreneurship competence, they do not seem to be fully aware of their role in promoting and assessing these skills during the VET learner internship period.

Learners and alumni see positive impacts on a series of skills and attitudes that they consider useful for their personal and professional lives. In their opinion, participation in entrepreneurship projects and challenges contributes to consolidating the knowledge and drawing connections between subjects, and improving skills such as teamwork, conflict management, problem-solving, communication, presentation, and project planning skills. Teachers also mention unintended learning outcomes such as increase in self-esteem, motivation, and the degree of participation in the classroom, reduction in absenteeism and dropout rates, and improvements in the academic performance of learners.

In general terms, VET providers consider COVID-19 restrictions had a negative impact on the usual portfolio of activities linked to entrepreneurship, particularly those requiring contact with external stakeholders. On the positive side, the interviewees identified two main impacts on teachers: increased willingness, confidence, and competence to use new technologies and teach in digital learning environments; and strengthened collaboration with other colleagues.

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<sup>(6)</sup> Cooperative learning is the 'instructional use of small groups so that learners work together to maximize their own and each other's learning' ([Co-operation.org: what is cooperative learning](https://www.co-operation.org/)).

Challenge-based learning is a 'learning approach to manage how to put theory to the test in addressing real problems in collaboration with actors of society' (Leijon et al., 2022).

Design thinking is a 'non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test' ([Interaction design: design thinking](https://www.interaction-design.com/design-thinking/))

Lean start-up is a 'methodology for developing businesses and products that aims to shorten product development cycles and rapidly discover if a proposed business model is viable' ([Wikipedia: lean start-up](https://en.wikipedia.org/wiki/Lean_start-up)).

## CHAPTER 1.

# Introduction

This report aims to provide new evidence for policy-makers, social partners, vocational education and training (VET) providers and researchers of how entrepreneurship competence is embedded in VET in Spain. It complements existing knowledge of methods, tools and approaches that support learning, teaching, and assessing entrepreneurship competence.

The findings of the report are based on research carried out in 2022. It is part of a series of eight national case studies (Croatia, Spain, France, Italy, Latvia, Austria, Finland and Sweden).

### 1.1. Research questions and core terms

The study aims to answer the following main research questions:

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

To explore these questions, entrepreneurship competence is conceptualised as a key competence which applies to all spheres of life: from nurturing personal development to participating actively in society, (re-)entering the job market as an employee or as a self-employed person and starting new ventures. The study seeks to explore entrepreneurship competence from this wider perspective rather than as a competence for business creation only.

The concept of an entrepreneurial learning ecosystem paves the way towards embedding entrepreneurship competence in VET as an interplay between elements at policy-making, provider and learning environment levels.

### 1.2. Methodological note

The country case study report describes existing practice and policy within the ecosystem of entrepreneurial learning embedded in VET in Spain. The case study investigates entrepreneurship competence from different perspectives; from policy concept to its practical implications (e.g. assessment of entrepreneurship competence in VET qualification requirements). The findings are rooted in both policy analysis and empiric evidence obtained from VET providers. The case study

report contributes to comparative analysis by answering the research questions on a national level through:

- (a) literature review/desk research at national level;
- (b) field research at policy and stakeholder levels, including VET providers.

The research departs from a literature review to trace progress in embedding entrepreneurship competence in VET, and to identify methods, tools and approaches that support this process. The findings from the literature review are then reinforced with empirical data. For each selected VET provider, field research includes:

- (a) interviews with school management (or, in the case of apprenticeships, company managers or owners, or human resources managers) and VET teachers/trainers (company trainers/mentors in apprenticeships);
- (b) focus groups (or interviews in apprenticeships) with VET learners;
- (c) interviews with alumni;
- (d) where possible, observations of classroom interaction between teachers and learners during the delivery of entrepreneurship programmes.

Desk research was carried out in Spain in autumn 2021 and the field research between April and May 2022. The aim was to gain valuable insights into how entrepreneurship competence is embedded in VET. Case-sampling was selective and is by no means representative of the population of VET providers. The six VET providers selected have advanced understanding of the competence and a diverse portfolio of curricular and extracurricular activities delivered in collaboration with other stakeholders in the entrepreneurial learning ecosystem. Geographic variety in the selection of VET providers was considered. Annex 1 comprises a list of the VET providers who participated in the study, and Annex 2 summarises the main approaches, actions, and insights for each VET provider.

## CHAPTER 2.

# Overview of the Spanish VET system

This chapter briefly presents the main features of the Spanish VET system, providing contextual information for the study findings. More detailed information about the VET system in Spain is available at Cedefop's [VET in Europe database](#) (Cedefop; Fundae, 2022).

VET is divided into initial vocational education and training (hereafter IVET) and continuing vocational education and training (hereafter CVET). Qualifications awarded by both systems take as a reference the occupational standards of the national catalogue (*Catálogo Nacional de Cualificaciones Profesionales*, CNCP) (Cedefop, 2020a). Stakeholders are involved in designing and updating occupational standards for each professional qualification in line with labour market needs.

To date the CNCP includes 756 professional qualifications categorised in 26 occupational sectors (Spain, Ministry of Education and Vocational Training, 2022). Occupational standards consist of a set of competence units reflecting the expected performance of a professional in a given occupation. Each competence unit is associated with a training module that covers the knowledge, skills and competences acquired through learning. These standards are used as reference for designing and updating VET programmes and qualifications (Cedefop and Fundae, 2019).

### 2.1. VET forms and levels

The National strategic plan for the modernisation of VET presented in 2020 focuses on ensuring learning opportunities for the entire population through a unified, flexible, and easily accessible VET system. Thus, IVET and CVET are complementary subsystems with mechanisms for mutual recognition. The shared objective of both systems is to foster lifelong learning from initial training to on-the-job training (Spain. Ministry of Education and Vocational Training, 2020a).

IVET is organised at basic (lower secondary, ISCED 353), intermediate (upper secondary, ISCED 354) and higher (tertiary, ISCED 554) levels (Sancha and Gutiérrez, 2019). School-based VET programmes last 2 years (2 000 hours) and include work-based learning in a company (Cedefop, 2021). All IVET learners must follow a compulsory independent workplace-based module of 400 hours.

Dual VET is essentially a different mode of IVET delivery leading to professional qualifications. In dual VET, the duration of workplace-based learning

is at least 660 hours. Most dual VET regional programmes do not require a training contract, but a collaboration agreement designed together by the employer and VET school. Since its first implementation in 2016/17, participation in dual VET has increased by 62%. However, it is still marginal; only 3.7% of the total VET population are in dual VET (Moso et al., 2021).

CVET programmes leading to a Certificado de Profesionalidad [Professional certificate] are accessible to people above the age of 16. These programmes are delivered by authorised VET providers and may include an apprenticeship contract (Cedefop, 2021). CVET qualifications are awarded by the public employment services at national and regional levels.

## 2.2. VET providers

VET is delivered primarily by VET schools, and sometimes by companies or other types of accredited institution. The three main types of VET providers are:

- (a) secondary education institutes [Institutos de Educación Secundaria] State-funded, they normally offer general secondary education and VET;
- (b) integrated vocational training centres [Centros Integrados de Formación Profesional (CIFP)], which design and deliver IVET and CVET and validate non-formal and informal learning (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2005);
- (c) national reference VET schools [Centros de Referencia Nacional (CRN)], which provide training in innovative and emerging sectors and offer guidance and support for self-employment and entrepreneurship (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2008).

## 2.3. VET in figures

In recent years, IVET has seen a steady increase in enrolments: from 582 576 in 2010 to 974 445 in 2020 (Spain, Ministry of Education and Vocational Training, 2021). In 2017, 35.3% of all upper secondary learners were enrolled in VET, below the 47.8% EU average (Cedefop, 2020b). In 2020, 41.3% of job offers published in Spain required VET qualifications. The demand for VET graduates has surpassed the demand for university graduates, which stands at 33.7% (Infoempleo and Adecco, 2021).

5 years after graduation, the employment rate for intermediate (upper secondary) and higher VET graduates was respectively 74.6% and 79.5% (2019 data). The unemployment rate for these VET graduate groups was 16% and 12.6% (Instituto Nacional de Estadística, 2020).

According to the latest *Global entrepreneurship monitor*, the total early-stage entrepreneurial activity (TEA) rate shows an increasing number of people with secondary education. This process could be linked to the efforts made to promote entrepreneurship in VET (Observatorio del Emprendimiento de España, 2021). The self-employment rate 5 years after graduation is 7% for intermediate VET graduates and 6.3% for higher VET graduates, with substantial variation across professional clusters (Gamboa et al., 2022).

## CHAPTER 3.

# Entrepreneurship competence

### 3.1. Understanding the competence

#### 3.1.1. Policy level

Spanish education legislation incorporates multiple references to entrepreneurship in VET. The new *Education Law* (hereinafter LOMLOE) (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2020a) and the *Organic Law of Vocational Education* (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a) see the development of innovation, applied research and entrepreneurship as part of the remit of initial VET. These three aspects should be explicitly addressed in curricula of all VET programmes and qualifications and encouraged at VET provider level through awareness raising, guidance and training to help all learners acquire and develop entrepreneurship competence.

According to LOMLOE, entrepreneurship competence is defined as the ability to act on opportunities and ideas that generate social, cultural or economic value for other people. By the end of basic education, learners are expected to be able to analyse needs and opportunities, self-assess their strengths and weaknesses, and generate innovative ideas and valuable solutions through thoughtful planning and project management.

All intermediate (upper secondary) and higher VET qualifications define a list of professional, personal, and social competences. Personal and social competences are problem solving, autonomy, teamwork, and communication in the workplace. The ability to create and manage a small business (entrepreneurship) and to show initiative in professional activity (intrapreneurship) are also found consistently across VET programmes (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2011c), (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2020b). These competences are not aligned with the European key competences framework and do not adhere to the knowledge-skills-attitude structure (Council of the European Union, 2018).

Despite the many references to entrepreneurship in the curriculum and education policies at the State level, a single definition and a common reference framework that lists and describes in detail the set of knowledge, skills and attitudes for the entrepreneurship competence in VET does not exist. European level entrepreneurship competence frameworks such as EntreComp remain

largely unknown in the VET sector in Spain. At the State level, the most recent legislative developments and plans do not explicitly mention the European framework of entrepreneurial competences (European Commission, 2018).

The lack of precise definition of this competence and its constituent elements is also a common pattern at regional level. Few regions have identified a set of skills and attitudes. For example, in the Basque vocational training system, entrepreneurship is part of a framework of transversal competences in VET alongside a broader set of personal, communication, digital and collaborative competences (Tkніка, 2022b).

**Box 1. Entrepreneurship in the VET transversal competences framework in the Basque Country**

In Basque Country, VET learners are encouraged to develop a set of transversal competences. Entrepreneurship is included as a personal skill alongside autonomy, engagement, and communication skills. Collaborative and digital skills like teamwork, problem solving, decision-making, information and data literacy, creation of digital content, security and digital communication are also part of the framework. This framework is not prescriptive and gives VET providers autonomy in determining which competences to prioritise.

*Source: Based on *Trabajando las competencias transversales en FP Euskadi* (Tkніка, 2022h).*

### **3.1.2. VET provider level**

The promotion of entrepreneurship is a priority area that is frequently mentioned in strategic documents of the VET providers visited during the field research. Entrepreneurship is considered conducive to the professional and personal development of learners by training them to become adaptable to technological change, have an open mind, and be autonomous.

Teamwork, creativity, communication, problem solving, and initiative are frequently mentioned by learners, teachers, and VET provider management teams who were asked to characterise the entrepreneurship competence. However, they admitted that the competence is often defined in quite generic terms and concepts vary by VET provider. Some VET providers have taken steps to equip themselves with a common competence framework.

**Box 2. Entrepreneurship competence framework (Institut Escola del Treball)**

The Strategic plan of Institut Escola del Treball encourages learners to become self-aware of their skillset by learning to observe their environment through a different perspective. This VET school has created a dictionary of complementary skills to be used as a reference by the entire teaching team in the design, delivery and assessment of teaching and learning activities that contribute to the acquisition and development of these skills. These include initiative, planning and organisation; leadership, teamwork, and cooperation; commitment to the organisation, flexibility, and change management; creativity, innovation, versatility, proactivity and analytical thinking, and extracurricular technical skills.

*Source:* Institut Escola del Treball Strategic Plan.

From a terminological point of view, it is important to note that these skills and attitudes are not grouped under the umbrella concept of entrepreneurial competence. They are more frequently referred to as complementary, transversal, or soft skills. The frameworks are also more indicative than prescriptive, leaving it up to the teaching staff to select which ones they would like to develop, based on the needs of learners and the characteristics of the specific VET programme.

**3.1.3. Employer perspective**

The employers and other stakeholders interviewed agree that VET must equip future professionals with a series of transversal skills that are in high demand in the labour market. Employer demands are also evident in feedback collected at the end of the compulsory internship period of learners as well as in informal conversations.

Employers generally place special emphasis on attitudinal aspects related to punctuality, professionalism and work performance, mixed with references to skills such as initiative, communication, teamwork, or the ability to solve problems.

However, employers tend to consider these skills to be intrinsic to learners and do not seem to be fully aware of employers' own role in promoting or assessing these skills during internships.

**Box 3. Soft skills valued by Spanish employers**

Feedback collected from internship reports as well as employer surveys by several VET providers (Institut Escola del Treball, CIFP Imagen y Sonido, and CIFP Nicolás Larburu) provides an insight into the soft skills demanded by employers.

For example, the reports and surveys describe learners as ‘*bon xiquet*’, ‘*bon xaval*’, or ‘*jatorra*’ which loosely translate as ‘learners with good attitude’ or ‘good lad’. Employers appreciate proactive people who are willing to get involved, show interest in acquiring new knowledge and strive towards self-improvement.

One employer described the soft (transversal) skills as ‘...issues of attitude and not so much of aptitude. There are highly educated learners who, upon reaching the labour market, are not equipped with adequate attitudes for professional performance.’

In 2013, the CIPFP La Costera tried to go a step further and held a round of meetings with local companies providing internships to identify more precisely which skills were most relevant to them. They concluded that the most valued competences were the transversal – which later informed their development of entrepreneurship competence.

*Source:* Based on teachers’ and headteachers’ interviews.

**3.1.4. Entrepreneurship competence in dual VET and CVET**

Entrepreneurship is a transversal element in dual VET. Article 56 of the Organic Law of Vocational Education specifies that work placement periods should contribute to ‘the development of an entrepreneurial and motivated professional for lifelong learning and adaptation to changes in the productive or service sectors’ (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a).

Similarly, entrepreneurship competence is integrated into CVET. Since 2011, the *National directory of professional certificates* has included a level 3 certificate called Creation and management of micro-enterprises (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2011d); this targets self-employed professionals and employees carrying out administrative, financial, and labour advisory and management functions for small businesses or micro-enterprises. The certificate requires the completion of 540 hours of training but only one 40-hour training unit is dedicated to aspects related to entrepreneurship competence in a broad sense. However, the unanimous opinion of experts, trainers, management teams and teachers interviewed is that the development of entrepreneurship competence is not an explicit aim of CVET.

One of the learners at CIFP Imagen y Sonido had a slightly different opinion on the matter. He considered that CVET teaching staff, who are mainly professionals from the audiovisual sector, implicitly acted as reference models, enabling a better understanding what it means to be self-employed in this sector.

Overall, VET providers try to ensure that CVET learners are informed and engaged in entrepreneurship through extracurricular activities organised at schools and programmes supporting the creation of companies.

Entrepreneurship competence in VET is understood as a broader concept, its development conceived as a two-level process. The first level focuses on helping all learners to develop a set of generic skills deemed to be useful for their professional and personal lives (e.g. problem-solving, teamwork, communication). The second level aims at equipping learners with the knowledge, skills and attitudes necessary to identify business opportunities and start up a small business. This two-pronged approach is consistently found across curricula and policies at national, regional and VET provider level. In VET programmes where self-employment is not an option, greater emphasis is placed on the development of soft skills useful for employment (intrapreneurship).

### 3.2. Opportunity, value, and venture creation

The creation of value in other areas beyond the economic and business sphere is a central element in the definition and descriptors of the competence adopted by the LOMLOE for primary and secondary education but not in VET.

The analysis of curricula, policies, VET provider documents, and interviews with management teams and teachers shows the development of entrepreneurship competence in VET is conceived as a two-level process. The first level puts the focus on helping all learners develop a set of generic skills that are useful for both their professional and personal lives; the second emphasises the identification of business opportunities and venture creation.

The creation of social and cultural value is evident in some of the entrepreneurship projects cited by VET providers. This can be observed in the methodological choices (e.g. service-learning) and through stakeholders/target groups they collaborate with (e.g. disadvantaged groups, NGOs).

### 3.3. Explicit and implicit learning outcomes

IVET programmes in Spain are modular in nature, structured into theoretical-practical professional modules. Each module includes a series of learning outcomes, evaluation criteria and contents that contribute to the acquisition of some of the skills defined in the professional profile.

The professional profile of all VET programmes incorporates a set of personal and social skills that directly refer to aspects such as problem solving, autonomy,

teamwork, communication, and initiative in the workplace, in addition to skills connected to the creation and/or management of a small business.

Entrepreneurship competence in VET curricula is mainly promoted in four common IVET modules (learning outcomes explicitly related to entrepreneurship competence):

- (a) *Formación y Orientación Laboral* [Career training and guidance module] henceforth, FOL;
- (b) *Empresa e Iniciativa Emprendedora* [Enterprise and entrepreneurial initiative] henceforth, EIE;
- (c) *Módulo de Proyecto* [Project module] <sup>(7)</sup>;
- (d) *Formación en Centros de Trabajo* [Work-based learning] henceforth, FCT.

FOL is a first-year module where learners are expected to explore employment and self-employment skills with special attention to teamwork. In the second year, EIE directs its attention to a broader group of entrepreneurial skills where initiative, creativity and innovation take centre stage. The Project module seeks to develop skills associated with the design, planning, management, and monitoring of projects, while the work-based learning module represents another opportunity to assess, recognise and justify the mobilisation of skills acquired in the previous modules during the compulsory internship period. The curricular learning outcomes are replicated verbatim in the teaching, learning and assessment plans at VET provider level.

Table 1 summarises the learning outcomes that are most directly related to entrepreneurship competence in these professional modules. The recognition and assessment of entrepreneurial aptitudes and attitudes is concentrated in the FOL and EIE modules.

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<sup>(7)</sup> At present this module is only offered in higher VET programmes but it will be extended to intermediate VET qualifications according to the new Law on Organisation and Integration of VET (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a).

Table 1. Learning outcomes related to entrepreneurship competence

|                   | First year   | Second year  |  |   |
|-------------------|--|--|--|---|
| Module            | FOL  | EIE  | Project module   | Work-based learning   |
| ECTS credits      | 5  | 4  | 5  | 22  |
| Learning outcomes | <p>1. Selects employment opportunities, identifying the different insertion possibilities and lifelong learning alternatives</p> <p>2. Work as a team, assessing its effectiveness and efficiency in achieving the organisation's objectives</p> | <p>1. Recognises the skills associated with entrepreneurial initiative, analysing the requirements derived from jobs and business activities.</p> <p>2. Defines the opportunity to create a small business, assessing the impact on the environment and incorporating ethical values.</p> <p>3. Carries out activities for the constitution and start-up of a company, selecting the legal form and identifying the associated legal obligations.</p> <p>4. Carries administrative and financial management activities for an SME, identifying the main accounting and tax obligations and completing the documentation.</p> | <p>1. Identifies the needs of the productive sector, relating them to typical projects that can satisfy them.</p> <p>2. Designs projects related to the skills expressed in the title, including and developing the phases that comprise it.</p> <p>3. Plans the execution of the project, determining the implementation plan and the associated documentation.</p> <p>4. Defines the procedures for monitoring and control in the execution of the project, justifying the selection of variables and instruments used</p> | <p>1. Identifies the structure and organisation of the company relating them to the type of services it provides.</p> <p>2. Applies ethical and work habits in the development of their professional activity in accordance with the characteristics of the job and in compliance with the procedures established in the company.</p> |

Source: Based on national core curricula.

During the interviews, teachers and VET provider management teams also referred to a set of unintended learning outcomes or attitude changes observed in the learners. However, their input was solely based on subjective perceptions and informal observations made in the classroom. The unintended learning outcomes can be divided into:

- (a) improvements in self-esteem, motivation, and the degree of participation in the classroom;
- (b) the reduction of absenteeism, dropout rates and improvements in the academic performance of learners.

### 3.4. Entrepreneurship as a transversal competence

The entrepreneurship competence is clearly a transversal element in VET. The LOMLOE specifies that VET should ensure that learners acquire a broad set of transversal skills, including entrepreneurship. In similar terms, the Organic Law on the organisation and integration of VET contemplates among its objectives the incorporation of entrepreneurship in the training offer of vocational training (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a).

The transversal nature of the entrepreneurship competence is also evident in VET provider documents, strategies and curricula. The curricula of all intermediate and higher VET programmes include a series of mandatory modules that place special emphasis on the development of skills commonly associated with entrepreneurship competence, particularly FOL and EIE.

The process of curriculum-making is completed at VET provider level. Teachers adapt the approach to the needs of each VET programme according to the characteristics of learners, education level, and employment prospects for future professionals in particular sectors. In VET programmes where self-employment is not an option, greater emphasis is placed on the development of transversal skills useful for employment (intrapreneurship).

### 3.5. Sustainable, inclusive, and digital

#### 3.5.1. Sustainable entrepreneurship in VET

VET providers show concern for sustainability with a commitment to initiatives and projects of different scope (e.g. recycling schemes). This section concentrates more specifically on initiatives demonstrating clear links between entrepreneurship and the sustainability agenda.

**Box 4. Examples of sustainable entrepreneurship in VET**

There are classroom initiatives led by individual (enthusiastic) teachers who seek the involvement of an external organisation to undertake different classroom activities related to sustainable entrepreneurship. For example, at CIFP Imagen y Sonido, several service-learning actions have been carried out with Ecologistas en Acción NGO.

Sustainability is integrated into entrepreneurship training through idea contests, challenges, and hackathons. The V Innovative and sustainable ideas contest, organised by CIPFP La Costera, is an example. Participation is open to all learners and the six shortlisted ideas are pitched in front of a jury made up of several local and regional entities. The winner of the last edition was the Igloo Project, an innovative project for the construction of sustainable houses by 3D printing (CIPFP La Costera, 2022).

Oftentimes these projects transcend the boundaries of the VET provider and are part of innovation projects involving other VET providers and are financed through regional, national or European calls (e.g. Erasmus +, H2020). As a response to the 2030 Agenda and the objectives of vocational training, staff at CIFP Río Tormes detected the need to create a programme, CircularFP, that includes pedagogical innovations on entrepreneurship adapted to the evolution of technology and the circular economy (CIPF Río Tormes, 2022a).

*Source:* Based on interviews, documentation and online information suggested by the VET providers interviewed.

**3.5.2. Social entrepreneurship in VET**

Linking projects with the Sustainable development goals and raising awareness of social economy and social entrepreneurship open up opportunities to consider the social aspects of entrepreneurship. VET providers engage different external stakeholders to address this issue (e.g. NGOs, workers' cooperatives). Cooperative principles and values also inspire the design of activities and entrepreneurial projects that go beyond awareness-raising and training, such as service-learning projects in collaboration with entities that work in the social field.

Box 5. **Examples of social entrepreneurship in VET**

**CIFP Río Tormes**

Mnemos is an inter-modular service-learning project involving two modules: Enterprise and entrepreneurial initiative and Video equipment maintenance. The project aims to support therapies for Alzheimer's patients. In the first phase, the learners contacted AFA (Association of Relatives of Alzheimer's Patients) and interviewed a team of therapists from the Alzheimer's National Reference Centre to detect needs. The fruit of this work was the recording of 360° scenarios in which 3D scanned objects are inserted to help patients fix memories through virtual reality. This project won the regional call of the StartInnova contest (Rodríguez, 2022).

**IES Francisco Tomás y Valiente**

IES Francisco Tomás y Valiente mentions Scoop Conss (Social cooperative contest for secondary schools), a H2020 project whose main objective was to set up a community of practice for teachers interested in incorporating entrepreneurial methodologies based on the cooperative principles of help, responsibility, democracy, equality, equity, and solidarity (Scoopconss, 2020). A team of higher VET learners in electrotechnical and automated systems won third place in a European competition with a project for the creation of hydroponic gardens on the roofs of buildings and their commercialisation in local markets.

**CIFP Nicolás Larburu**

CIFP Nicolás Larburu in collaboration with the NGO Economistas Sin Fronteras offers learners awareness talks on social entrepreneurship, addressing concepts related to SDGs, sustainable economy, circular economy, and responsible consumption.

**Institut Escola Del Treball**

Institut Escola del Treball schedules a voluntary 2-hour workshop named *BizSocial: Coneixem les cooperatives del nostre territori* [knowing the cooperatives in our territory]. The session is delivered by a representative of a local cooperative to introduce VET learners to the values, operation, and activities of this type of company.

**CIPFP La Costera**

In CIPFP La Costera, social economy stakeholders are engaged in delivering a portfolio of activities, completed with training courses on cooperation, and specialised start-up support and mentoring schemes.

*Source:* Based on interviews, documentation and online information suggested by the VET providers interviewed.

These examples highlight the growing importance of environmental and social values in entrepreneurial projects and initiatives promoted at VET provider level. In some cases, this sensitivity is also reflected in the VET provider strategic documents. Some VET providers show a longstanding commitment to social entrepreneurship. In the case of CIPFP La Costera, its trajectory was already

recognised in 2014 with the award *Center Educatiu Emprenedor* [Entrepreneurial VET school] for its programme Social entrepreneurship and its contribution to the common good. The 2021-25 strategic plan of this VET provider reaffirms their commitment to these values.

### 3.5.3. Digital and technological entrepreneurship in VET

Digitalisation is a global trend that affects production processes, service provision and teaching and learning in VET. However, digital entrepreneurship and digitalisation are not equivalent concepts. Digital entrepreneurship must be associated with the generation of business ideas linked to products and services created, marketed, and distributed mainly online and not only with the use of digital tools. Certain IVET programmes provide more fertile ground for the development of activities and projects related to digital entrepreneurship. However, most of the examples in this study are best categorised as technological entrepreneurship. These projects are deemed to be an opportunity for the simultaneous development of entrepreneurship and technical competences. The social dimension is another key ingredient in some cases, as observed in the EMERFRIO project at CIFP Río Tormes.

#### Box 6. Example of technological entrepreneurship in VET

##### EMERFRIO project at CIFP Río Tormes

This project arises from the experience of a learner who volunteered for the Red Cross. His knowledge of the system for transferring organs for transplantation enabled the team to detect an opportunity for improving the preservation of organs during transfer.

The objective was to replace the camping coolers of the vehicle used for this transfer with a refrigerated cooler that would also offer information to the ambulance driver every 30 minutes on the storage temperature of the organ: 4°C.

Source: Rodríguez, 2021.

In this project, the learners in two VET programmes (Refrigeration and air conditioning installations and Electronic maintenance) collaborated with the coordinator of Salamanca Transplant Unit to learn about the entire protocol on organ transplants, and with Tafrisa, a company providing advice on the calculations for the design of the refrigeration system.

Technological entrepreneurship in VET is further reinforced with initiatives promoted by administrations and other entities at a regional level. For example, the Provider Awards for innovative and technological business projects in VET is a joint initiative promoted by Bizkaia Provincial Council and the Basque VET

Applied Research Centre (henceforth, Tknika). This competition taps into the talent of VET learners to promote a network of service companies for Industry 4.0 sector in the Basque Country (Tknika, 2021).

The provider engages companies to introduce latest technological developments in the sector (e.g. additive manufacturing, artificial intelligence, automation 4.0) and inspire VET learners to develop smart-factory oriented business ideas. Winners are offered a 6-month stay in the Entrepreneurship Lab of Bizkaia Business Innovation Centre, a prize of EUR 1 000 for the development of the project, and the advice of the technical team of the Provincial Council of Bizkaia.

## CHAPTER 4.

# Entrepreneurial learning ecosystem

This chapter describes to what extent the main elements of entrepreneurial learning ecosystem(s) are in place in Spain and how they help embed entrepreneurship competence in VET.

### 4.1. Main elements

The importance of strengthening ties with stakeholders in the development of entrepreneurship competence has recently been highlighted in the new Organic Law 3/2022 on the organisation and integration of VET (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a). VET providers often include the establishment of alliances or cooperation with companies and other local actors as objectives in their strategic documents. Even though these cooperation relationships are mostly established within the context of work-based learning, some VET providers also set out to engage external actors in a wider range of actions linked to the promotion of an entrepreneurial culture.

Entrepreneurial learning ecosystems in VET are mainly at the local level and are made up of a constellation of actors from the public, private and third sectors. The ecosystems include public authorities, companies, business incubators, foundations, entrepreneurship programme promoters, VET providers, universities and other research institutions.

Public authorities (usually VET units within education departments) are the basis of the ecosystem in those autonomous communities that have programmes to support entrepreneurship in VET <sup>(8)</sup>. They set common objectives and actions, and maintain close contact with VET providers and teachers. Also, public authorities actively encourage networking, exchange of good practices and transfer of knowledge among participating VET providers.

Companies also contribute to the development of entrepreneurship competences in VET. They sponsor initiatives on entrepreneurship, provide training and participate as juries in business ideas contests. Employers identify learner internships as the starting point of the relationship with the VET provider from which other opportunities arise.

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<sup>(8)</sup> Five of the six VET providers acknowledged support provided by the General Directorates for VET (Catalonia, the Valencian Community, Castilla y Leon, Madrid) or other types of public bodies such as Valnalón (Asturias) or Tknika (Euskadi).

VET providers organise visits to business incubators and start-up support agencies in their area to make learners aware of the services they offer. Besides hosting visits to their premises, incubators and agencies offer VET providers awareness-raising discussions and business idea competitions in their local areas. For example, CIFP Nicolas Larburu has been participating in the ideas and projects competition *Empresari* organised by the provincial Employment and Entrepreneurship Agency (Agencia Foral de Empleo y Emprendimiento de Bizkaia, 2022). This gives the learner teams individual and specialised support in their start-up business idea development.

Foundations and similar entities offer extracurricular programmes and activities supporting entrepreneurship competence development. Often, they help convey a more diverse vision of entrepreneurship to VET learners through talks and training both at local and national levels. For example, IES Francisco Tomás y Valiente has joined forces with Fundación Orange to create a maker space pursuing a two-fold objective: to promote innovative entrepreneurship and to reduce absenteeism and school dropout. Although the work of these entities is generally valued positively, some teaching staff have expressed that the interventions sometimes seem to question their professional competence.

Although less prevalent, universities are also part of the ecosystem of some of the VET providers visited during this study. Often, the university institutions are seen as providers of lectures and training. However, the relationship can go beyond a mere transfer of knowledge. For example, at CIFP Río Tormes, learners can participate in business idea competitions at the Pontifical University as well as undertaking internships at the University of Salamanca research centres.

VET providers also proactively seek to establish collaborations with other VET providers and education institutions either informally or through calls for projects and initiatives at regional, state, and international levels as shown in Table 2.

Table 2. **Examples of collaboration with other VET providers at different levels**

| Regional level   | State level  | International level   |
|--|--|---|
| <p><b>FP Emprande Fair (IES Francisco Tomás y Valiente)</b></p> <p>In 2018, IES Francisco Tomás y Valiente proposed to five VET providers in the Community of Madrid the creation of a 1-day entrepreneurship fair (FPEmprende) with pitches and prizes. The management team considers this a possible foundation in creating a network of VET providers, sharing and making good work visible, and, ultimately, having a very positive effect on teachers and learners as they are able to verify the real value of their work.</p> | <p><b>SINCRONIZA Network (CIFP Imagen y Sonido) <sup>(9)</sup></b></p> <p>The partners of this network made up of the CIFP Imagen y Sonido and six other specialist Audio and Visual Media VET Providers from other Autonomous Communities have presented a project to a call for proposals from the Ministry of Education and Science that proposes the creation of an entrepreneurship network, teacher training and participation in methodological and technological innovation projects with learners. (CIFP Imagen y Sonido, 2022)</p> | <p><b>Erovet+ Project (Institut Escola del Treball) <sup>(10)</sup></b></p> <p>In May 2022, VET providers from France, Greece, Italy, Lithuania, Portugal, Turkey and the United Kingdom met in Lleida to design and pilot an entrepreneurship course aimed at VET teachers (E2BM).</p> |

*Source:* Based on interviews, documentation and online information suggested by the VET providers interviewed.

Learners and alumni acknowledge VET school efforts to facilitate interactions with external agents. Learners highlight the role of companies and external agents in aiding relevant learning experiences, contributing to the development of their entrepreneurship competence.

These ecosystems are mainly configured and shaped through the network of personal contacts of teachers. The profile of the organisation, and the nature of the professional relationship, are determined on a case-by-case basis and depend on the motivation of the teacher. Some regions have created platforms to facilitate contacts between VET providers and companies and entrepreneurs in their local area, like Red Emprendedora [Entrepreneurship Network] <sup>(11)</sup> in Asturias.

The ecosystems described in this section are constantly evolving and VET providers are looking to expand, strengthen and make them more visible. Entrepreneurship education ecosystems are not watertight compartments. Both actors and objectives overlap to a great extent with other ecosystems in place at VET provider level, such as knowledge and technology transfer, and methodological innovation.

<sup>(9)</sup> [Sincroniza Network](#) [accessed 24.1.2023].

<sup>(10)</sup> [EROVET entrepreneurship and self employment](#) [accessed 24.1.2023].

<sup>(11)</sup> [Red Emprendedora](#) [accessed 24.1.2023].

## 4.2. From national policy to local practice

The high degree of decentralisation in the education system in Spain requires paying attention to national and regional policies and the interrelationships between the two. This section analyses curriculum policies, and additional plans and strategies at national and regional levels that reinforce or complement them.

Curriculum-making in Spain is a complex interplay involving the central government, education administrations at national and regional levels and VET providers. LOMLOE outlines the governance structure, defines roles, and allocates responsibilities between State and regional authorities in the design and development of the curriculum. This governance model grants VET providers a certain pedagogical and organisational autonomy to develop and complete the curricula for different levels and courses.

The following sections examine basic curricula<sup>(12)</sup>, regional curricula, documentation at VET provider level, and teaching, learning and assessment plans. Document analysis is supplemented with the opinions of management teams, teachers and learners that participated in the study.

### 4.2.1. Basic curricula

As already mentioned, entrepreneurship competence in VET is mainly addressed in four professional modules common to all IVET programmes: FOL (career training and guidance), EIE (enterprise and entrepreneurial initiative), FCT (work-based learning), and a project module. EIE plays a prominent role in the development of this competence in all VET programmes. The example of EIE illustrates the interplay of central government, national and regional education authorities, and VET providers in the curriculum-making process.

The basic curriculum, defined by the State Government outlines the objectives, skills, learning outcomes, evaluation criteria and contents.

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<sup>(12)</sup> Also known as national core curricula, defined by the State Government and outlines the objectives, competences, learning outcomes, evaluation criteria and contents. The national core curriculum provides a uniform foundation for the development of regional curricula. It is the first step in the curriculum-making process.

**Box 7. Learning outcomes and content blocks in EIE basic curriculum**

Upon completion of the module (minimum workload 35 hours, 4 ECTS), the learner is expected to be able to:

- (a) recognise the abilities associated with entrepreneurial initiative, analysing the requirements derived from the jobs and the business activities;
- (b) define the opportunity to create a small business, assessing the impact on the environment of action and incorporating ethical values;
- (c) carry out activities for the constitution and start-up of a company, selecting the legal form and identifying the associated legal obligations;
- (d) carry out administrative and financial management activities of an SME, identifying the main accounting and fiscal obligations and completing the documentation.

Each of these learning outcomes is associated with a set of evaluation criteria and basic contents that are divided into four thematic blocks:

- (a) entrepreneurship;
- (b) the company and its environment;
- (c) creation and start-up of a company;
- (d) administrative tasks.

*Source:* Based on EIE basic curricula.

**4.2.2. Regional curricula**

The transfer of competences in education allows authorities to expand and develop the contents of the curriculum defined at central level, considering the socioeconomic reality and the qualification needs of the socio-productive sectors in their territory. The Ministry of Education and Vocational Training specifies the order, duration and general pedagogical guidelines for each application module in the territories under its jurisdiction. The regional educational administrations exert their right to introduce modifications that imply, among other things, an increase in the allocation of hours and the incorporation of additional learning outcomes.

All the regions have increased the duration of the EIE module. Commonly, 60 teaching hours are allocated to the module, which represent 3% of the total duration of a VET programme (2 000 hours). However, there are significant differences across regions, ranging from 53 hours in Galicia to 88 hours in Asturias. The module is generally offered in the second year of all intermediate (ISCED 354) and higher IVET (ISCED 554) programmes during the first two terms with a weekly workload of 3 hours (Gamboa et al., 2022).

Some regional curricula introduce additional learning outcomes to the EIE module. For instance, the Comunidad Foral de Navarra adds one more learning outcome to the four established in the basic curriculum at the State level. This is

the recognition and application of personal skills related to communication, leadership, creativity, and commitment (Navarra. Regional Government, 2015).

#### 4.2.3. Teaching, learning and assessment plans

Although the learning outcomes, evaluation criteria and content of EIE are common to all VET programmes, the teaching staff often adapt curricula according to the education level, occupational sector and geographic context. The contextualisation of the EIE module is linked to approach, competences, methodology and contents.

#### Box 8. Four ways of contextualising the EIE module

##### **Approach**

Depending on the VET programme and regional context, the emphasis is on self-employment and business creation or on intrapreneurship. For example, in hairdressing, most learners will be self-employed. Also, promoting entrepreneurial skills helps generate job opportunities in small localities. In contrast, in industry-related VET programmes, the focus is on intrapreneurship because the initial investment to create a company would be very high.

##### **Competences**

For the same reasons, the nature of VET programmes informs teachers' decisions to prioritise the development of certain competences. For example, at CIFP Río Tormes, the VET electricity programme focuses more on creativity, while in the automotive programme they promote teamwork and communication.

##### **Methodology**

Methodological choices are also influenced by the education level and the characteristics of the VET programme. This means that the intermediate VET programmes focus on challenge-based learning linked to personal development, teamwork, and motivation, whereas in higher VET the focus is more on real-life projects with a greater market orientation linked to the near future.

##### **Content**

VET modality also determines the amount of content covered. This is particularly visible in contextualisation of EIE in dual VET programmes where theoretical contents are reduced to a minimum.

*Source: Authors.*

EIE teaching, learning and assessment plans incorporate a set of complementary activities that put learners in contact with experts and companies that support entrepreneurship. These extracurricular activities range from roundtables with local entrepreneurs and visits to local companies to participation in workshops and employment fairs.

The creation of specific subjects on entrepreneurship is usually part of the package of proposed measures that allegedly contribute to developing this competence in the education system. This has been a reality in Spain for more than 10 years. Yet, there are still several challenges as summarised below, based on the testimonies of VET provider management teams, teachers, and learners.

**Box 9. Five challenges of EIE, an entrepreneurship module in VET in Spain**

**EIE credit recognition policy**

VET learners who have previously completed another IVET qualification can apply for credit recognition of EIE and FOL modules earned in previous VET programmes. Especially in higher VET, the percentage of learners applying for credit recognition of these modules can be very high. According to the VET teachers interviewed, by receiving credits, learners miss an opportunity to update skills for entrepreneurship and employability within a curriculum contextualised to the needs of the sector (Solsona Solé, 2015). Thus, some VET providers implement strategies at the beginning of the school year to prevent them from missing out on opportunities highlighting the differential aspects of the methodological approach.

**Status of transversal modules**

Compared to the technical modules, the contents covered in EIE and FOL are often considered less relevant by learners who sometimes question their inclusion in the curriculum. One way to legitimise the status of transversal skills is to strengthen collaboration with technical modules in global projects.

**Time allocation and overburdened curricula**

Part of the faculty interviewed considers they lack time to address all the contents of an overloaded curriculum. The excessive content is expected to be delivered in a limited amount of time, which hinders the adoption of new methodological approaches.

**Excessive orientation towards the creation of a business plan**

The achievement of learning outcomes is often linked to the theoretical development of a rigid business plan that generates disinterest in many learners. Methodological change is central to overcoming this problem. Teachers interviewed leave behind business planning in favour of business modelling and agile methodologies and focus on the identification of opportunities, generation of ideas and validation of concepts with real users.

**Lack of conditions to transform ideas into real business projects**

Although teachers and learners alike point out this is not the only objective of EIE, transforming ideas generated by learners into viable real projects and/or companies is a recurrent challenge. Entrepreneurship is encouraged in training but, after the end of the VET programme, it is not continued.

*Source:* Based on interviews.

#### **4.2.4. Policies at VET provider level**

According to TodoFP online portal, the entrepreneurship agenda of IVET providers should aspire to fulfil three key objectives. First, it should promote the transversal skills of research, entrepreneurship, and innovation. Second, the agenda should simulate putting acquired skills into practice with the aim of starting a small business. Third, it should create a dynamic framework between all stakeholders in the ecosystem (Spain, Ministry of Education and Vocational Training, 2022b).

The six VET providers visited address all these three aspects explicitly through a wide range of curricular and extracurricular activities. More important, they are taking steps towards systematisation of all these activities by reflecting, planning and documenting all these actions in strategic documents (e.g. Educational project), subsidiary plans (e.g. Quality assurance plans), specific work plans for entrepreneurship and VET providers websites (CIPF Río Tormes, 2022b; Institut Escola del Treball, 2022).

### **4.3. Plans, policies, and support programmes**

This section focuses on other policies and programmes at regional and national levels that further support the work carried out by the VET providers to promote entrepreneurship competence.

#### **4.3.1. Regional programmes promoting entrepreneurship in VET**

Several regional administrations have deployed additional policies and support programmes that seek to support the work of VET providers and teachers in this field. In some regions, VET entrepreneurship measures are embedded in broader plans. This is the case in the *5<sup>th</sup> Basque plan for VET* (Basque Country. Regional Government, 2019) or in *Asturias entrepreneurship programme 2021-23* (Asturias. Department for Employment, 2021). But three of the six regions visited during this study have put in place specific programmes to support and promote entrepreneurship in VET: *EmprènFP* (Catalonia), *Emprén* (Valencian Community) and *Ekingune* (Basque Country). These initiatives are created with the remit of supporting VET providers to promote the development of an entrepreneurial culture.

As a rule, these policy initiatives are designed and coordinated by the general directorates of VET but they are informed by broader policies promoted by other government departments as observed in the following example.

Box 10. **Emprén programme: establishing links with other regional policies**

Emprén is the regional programme for the promotion and support of entrepreneurship in VET in Valencian Community. The programme aims to stimulate entrepreneurial culture in VET through the implementation of entrepreneurial initiatives and the creation of companies in the government-funded VET providers of this autonomous regions.

The Emprén programme is linked with 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 2019-2023* (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).

The programme has the following general objectives:

- (a) promote an entrepreneurial culture at VET provider level using active educational methodologies and promoting aspects such as creativity, innovation and self-management of learners who are enrolled in intermediate or higher vocational training courses;
- (b) engage learners, teachers in collaborative projects with actors of the regional entrepreneurial ecosystem;
- (c) consolidate a support network for teaching staff, which allows the exchange and optimisation of experiences and resources;
- (d) bring entrepreneurship closer to VET learners;
- (e) involve learners in the design and development of entrepreneurial projects that will enable them to develop their own business, promoting cooperation, solidarity, teamwork, an investigative and innovative spirit, among other values;
- (f) collaborate with other Autonomous Communities in new experiences that promote creative entrepreneurship;
- (g) generate a work team made up of teaching staff for research and the development of teaching materials that promote entrepreneurial skills in VET.

Source: Based on <https://ceice.gva.es/es/web/formacion-profesional/empren>.

Regional programmes for the promotion and support of entrepreneurship in VET use a two-level structure. The first level pays attention to the development of entrepreneurial skills in a broad sense while the second level focuses on stimulating the creation of companies and self-employment among VET learners and graduates. VET providers join the programmes on a voluntary basis through annual public calls that determine access requirements. Providers need to submit an annual work plan and create a coordination unit made up of teachers to oversee the design, execution, and monitoring of the work plan. These units act as catalysts to involve the greatest number of teachers and learners in the actions they propose.

The programmes cater for the needs of learners, teachers and VET provider management teams. Learners are offered a wide array of activities (e.g. training,

fairs, hackathons) as a complement to the contents and skills developed in curricular modules such as EIE. These extracurricular activities represent learning situations to continue developing and strengthening entrepreneurship competence.

The teaching staff are fundamental to the mechanism. Thus, programmes offer professional development opportunities to equip teachers with a set of methodologies and tools to support the development of these skills among learners.

The most innovative aspect is the work with the management teams to reflect strategically and take the necessary steps towards a whole-school approach to entrepreneurship. Networking between VET providers is also encouraged. Interviewed teachers see these networks as communities of practice that facilitate the exchange of knowledge and promote collaboration.

Regional programmes incorporate VET provider and teacher recognition schemes <sup>(13)</sup>. For VET providers, such recognition is obtained by presenting an annual report of activities compared with the work plan submitted at the beginning of the school year. The different levels of recognition that can be gained through these schemes convey the idea that this is a long-term process for each VET provider. A conscious effort is also made to disseminate all these actions through specific web portals such as Ekingune (Tknika, 2022d) or EmprènFP (Catalonia. Directorate-General for Vocational Training, 2022.). These online platforms offer information on the programme and its objectives, a resource bank for teachers and VET providers, news, indicators, and participation data.

In Catalonia and the Valencian community, entrepreneurship support programmes form part of broader support schemes that cater for the needs of VET providers in a host of other areas: methodological innovation, career guidance, technology transfer, quality or skills forecasting as observed in the following example.

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<sup>(13)</sup> Recognition of contribution and engagement and time invested in the implementation of the programme at VET provider level.

Box 11. **ImpulsFP programme and sub-programmes, Catalonia**

ImpulsFP is the innovation unit of the General sub-directorate of VET programmes and projects in Catalonia. The remit of this unit is to respond to the increasingly complex and changing reality of the labour market and equip VET graduates with the necessary skills and tools to navigate this uncertain environment.

ImpulsFP has created specific programmes to promote innovation in five key areas:

- (a) EmprènFP – entrepreneurship
- (b) ActivaFP – methodological change
- (c) OrientaFP – career guidance
- (d) InnovaFP – knowledge transfer and cooperation with companies
- (e) FuturaFP – skills forecasting

VET providers join one or more programmes on a voluntary basis and commit to embark on a journey to develop the chosen topic (e.g. entrepreneurship) as a strategic area.

*Source:* Catalonia. Directorate-General for Vocational Training, 2022.

Far from being conceived as silos, these programmes present a high degree of complementarity among themselves. Thus, a VET provider may be involved in more than one programme.

**4.3.2. State-level programmes promoting entrepreneurship in VET**

State authorities also provide, coordinate and finance policies promoting entrepreneurship competence in VET.

The *Aulas Profesionales de Emprendimiento* [Professional entrepreneurship classrooms, hereinafter APE] programme is promoted by the central government and encourages VET providers to embrace a whole-school approach to entrepreneurship. To achieve this goal the guide *Creando aulas de emprendimiento en Formación Profesional* [Creating entrepreneurship classrooms in VET] (Díez Picón, 2021) outlines objectives for VET providers: raise awareness about entrepreneurship; develop and consolidate soft-skills; create a physical space that encourages creativity, innovation and entrepreneurship; generate initial and real experiences of entrepreneurship; organise events and expand the entrepreneurial learning ecosystem of the school. The box below outlines its main features.

Box 12. **State-wide support policy: *Aulas Profesionales de Emprendimiento (APE)* programme**

This programme is one of the five strategic actions defined by the Ministry of Education and Vocational Training to meet the objectives set out in the Plan for Vocational Training, Economic and Social Growth, and Employability (Spain, Ministry of Education and Vocational Training, 2020a). This plan is one of the measures included in the national Recovery, transformation and resilience plan (Spain, Ministry of Education and Vocational Training, 2020b) prepared by the Government of Spain to access funding from the NextGenerationEU recovery plan for Europe.

In some regions the APE programme is integrated as a complementary element to existing initiatives and programmes. For example, in the case of Galicia, APE is included in the regional network of VET in-house incubators of the EduEmprende programme. Similarly, the implementation of the programme in Comunidad Valenciana becomes an action of Emprén, the regional support programme for entrepreneurship in VET.

To cover for the staff costs, training, mobilities, acquisition of products and services, feasibility studies, teaching materials and dissemination, each VET provider is eligible for EUR 5 000 per year (coefficients apply) (Spain, Ministry of Education and Vocational Training, 2020b, 2020c).

Taking the guidelines of the Ministry of Education as a reference, regional governments outline their calls. The competent body may include a list of preselected VET providers according to criteria in the call. Most regional calls require VET providers to submit a 3-year work plan. In other regions, the only requirement is a letter of intent stating that the faculty has been duly informed and that an APE coordinator has been appointed. VET providers commit to participate for 3 years and they are expected to establish relationships with a wide range of external stakeholders in their local area.

The APE programme should favour the systematisation of actions to support entrepreneurship at VET provider level. The management team is obliged to appoint an APE programme coordinator, preferably a teacher from the Department of Career Training and Guidance (EIE and FOL). Besides funding, regional authorities offer a higher level of support to implement the programme through a portfolio of actions.

VET providers have the autonomy to propose teacher training actions as part of the Entrepreneurship Classroom projects submitted to regional authorities (e.g. Castilla La Mancha, Department for Education Culture and Sports, 2021). In other cases, specific training linked to APEs is crafted by regional Directorates for Vocational Training in collaboration with VET providers and other agents of the regional entrepreneurial learning ecosystem.

Encouraging networking among VET providers is a key ingredient in the APE support system offered by some regional administrations. The possibility of sharing experiences and knowing what other VET providers are doing is an initiative well received among the teachers interviewed.

*Source:* Based on APE documentation.

The translation of policies into practice is not always straightforward and linear. The complex interplay between State and regional level policies shaping the development of entrepreneurship competence in VET poses challenges for policy-making.

At national level, the basic curricula aim at developing entrepreneurship-related skills through transversal modules common to all VET programmes. However, the creation of specific modules on entrepreneurship (e.g. EIE) is not enough. These modules are seen to play second fiddle to technical ones and overcoming learners' initial reluctance remains a major hurdle. Also, teachers believe that the curriculum requires updating. Strategies deployed by VET providers to overcome these issues favour the adoption of new methodological approaches and better integration with technical subjects.

At regional level, support programmes for entrepreneurship in VET such as EmprènFP, Emprén, and Ekingune are firmly committed to relevant actions: raising awareness, training and supporting management teams, teachers and learners encouraging methodological innovation, and the systematisation of processes at VET provider level so that the development of entrepreneurship competence is nurtured through a coherent portfolio of curricular and extracurricular activities. The appearance of state-level initiatives such as the APE is reinforcing the curricula and regional support programmes already in place.

The six VET providers visited during this study are immersed in the process of designing and setting up their APEs; three of them benefit from existing entrepreneurship support schemes in place at regional level. However, the impact of individual initiatives may be difficult to isolate, particularly in regions with existing and well-developed VET entrepreneurship support programmes in place.

## CHAPTER 5.

# Nurturing entrepreneurship competence in VET

### 5.1. Methods, tools, and approaches

Interviewees mentioned a diverse array of activities <sup>(14)</sup> related to the development of entrepreneurship competences that put learners at the centre of the learning process and provide opportunities for experiential learning. The choice of methods and tools is adapted to the needs of each VET provider and has been configured progressively over time. This section explores the nature of these methodological choices, describes the main activities and tools used and discusses steps taken at VET provider level to give them meaning and coherence.

#### 5.1.1. Methodologies

Project-based learning stands out as the preferred method for developing entrepreneurship competence in VET. Projects create real learning scenarios where learners can simultaneously acquire and develop a set of transversal skills. In this sense, the delivery of a tangible result that adds value to external clients or end users is seen as a key ingredient for increasing the relevance of projects.

Project work is enriched with approaches and tools from other methodologies with a long history in education, such as service-learning, cooperative learning, challenge-based learning and, to a lesser extent, cooperative learning and game-based learning. For example, service-learning is deployed to develop actions linked to social entrepreneurship at CIPFP La Costera.

A set of methodologies originated in business or design fields have gained attention in entrepreneurship education in recent years. For example, a guide published by the Ministry of Education and Vocational Training, encourages teachers to become familiar with agile and active entrepreneurship methodologies, such as Design thinking, Blue oceans, design of innovative business models, and Lean start-up (Díez Picón, 2021).

#### 5.1.2. Tools

The State curricula of FOL and EIE modules offer basic pedagogical guidelines and lines of action in the teaching-learning process.

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<sup>(14)</sup> Technical projects, business plans, business models, prototyping activities, challenges, contests, hackathons, talks, training pills, visits, business incubation, simulated job interviews.

Table 3. **Pedagogical guidelines in the FOL and EIE curricula (15)**

| FOL  | EIE   |
|--|---|
| <p>Managing information sources on the education and labour system, especially in relation to companies.</p> <p>Carrying out orientation and dynamic tests on one's own personality and the development of social skills.</p> <p>Preparing and completing a curriculum vitae (CV) and job interviews.</p> <p>[...]</p> | <p>Handling sources of information on the sector [...], including the analysis of ongoing sectoral innovation processes.</p> <p>Carrying out cases and group dynamics that allow understanding and assessing entrepreneurship attitudes and adjust their needs to the sector [...].</p> <p>Using administrative management programmes for SMEs in the sector.</p> <p>Carrying out a business plan project [...] that includes all the facets of starting up a business, as well as the justification of its social responsibility</p> |

Source: Based on FOL and EIE curricula.

These pedagogical guidelines are extended at the regional level with additional suggestions about the sequencing of activities, the methodology, the evaluation, the participation of external agents and the complementarity and coordination with teachers of other subjects. The guidelines are incorporated into the teaching, learning and assessment plans of FOL and EIE, together with a mix of additional activities and methodologies.

Table 4. **Portfolio of methodologies and activities mentioned by different VET providers**

| <i>CIFP Río Tormes</i>  | <i>CIFP Imagen y Sonido</i>  | <i>CIFP La Costera</i>  |
|---|--|---|
| <p>Design thinking</p> <p>Lean start-up and agile entrepreneurial methodologies</p> <p>Business model canvas</p> <p>Routines and thinking skills</p> <p>PLE: personal learning environment for learners</p> | <p>Design thinking</p> <p>Agile methodologies.</p> <p>Empathy map.</p> <p>Business model canvas</p> <p>Project management tools</p> <p>Group dynamics.</p> | <p>Search for real reference models (companies) and stimulate activities through talks and visits.</p> <p>Readings and analysis and observation of companies from the perspective of the principles of gender equality and involvement in the social economy.</p> <p>Work in the line of feminist economics</p> |

Source: Authors.

(15) This document informs the development of regional curricula, and subsequently the teaching, learning and assessment plans drafted by VET teachers.

### 5.1.3. Approaches

FOL and EIE modules include the development of entrepreneurship competence in a complementary way (Box 13). FOL provides a first foray into entrepreneurship but the EIE module puts entrepreneurial methodologies, activities and tools into practice. The EIE module usually entails the preparation of a business plan throughout the school year, adapted to the education level and the professional sector. Yet most teachers agree that the EIE curriculum needs methodological update since its current format of producing a business plan fails to motivate learners.

#### Box 13. Entrepreneurial pathway, CIFP Río Tormes

The entrepreneurial pathway proposed by CIFP Río Tormes seeks simultaneously to develop transversal and digital skills in learners. The process begins in FOL in the last term of first year with a series of activities aimed at the identification and self-assessment of entrepreneurial skills. The journey is resumed in the second year in EIE with the identification of opportunities and the development of a business model using agile methodologies.

*Source:* Based on interviews with EIE and FOL teachers at CIFP Río Tormes.

Introducing agile methodologies, linking business planning to prototyping activities or working with the concept of a business model instead of a business plan, are other usual alternatives to traditional business plan writing to prevent learners losing interest in the module. Solving real problems in the shape of challenges is another methodological approach covering the contents of the subject while keeping learners motivated.

Table 5. A challenge-based learning journey for EIE module (CEDEC)

| Phase                         | Challenges   |
|-------------------------------|--|
| Ideation-definition           | <ul style="list-style-type: none"> <li>- Entrepreneurial training;</li> <li>- Our business idea;</li> <li>- What does our business environment look like?</li> </ul>                   |
| Empathy                       | <ul style="list-style-type: none"> <li>- Who is our client?</li> <li>- What do we sell and how?</li> <li>- What is our contribution to society?</li> </ul>                             |
| Legal-administrative contents | <ul style="list-style-type: none"> <li>- What steps do I have to follow to start my business?</li> <li>- How much money do I need?</li> <li>- How do I organise my finance?</li> </ul> |
| Prototyping                   | <ul style="list-style-type: none"> <li>- Which taxes do I have to pay?</li> <li>- Business plan;</li> <li>- Elevator pitch.</li> </ul>   |

*Source:* Based on Centro Nacional de Desarrollo Curricular en Sistemas no Proprietarios, 2022.

This challenge-based itinerary for EIE is an open educational resource (OER) of the EDIA project (National Centre for Curricular Development of Non-Proprietary Systems) that taps into project-based learning methodology as well as design thinking strategies and cooperative work (Centro Nacional de Desarrollo Curricular en Sistemas no Proprietarios, 2022). Another source of open education resources is the Retolab portal, a collective laboratory of challenges in which VET actors across the country share ideas, challenges, and classroom experiences (Retolab, 2015).

Mini-company programmes allow for a more experiential approach to entrepreneurship, but this format has only been found in the Basque Country. In the 2020-21 edition of the mini-company *Ikasenpresa* programme, 80 VET providers, 6 000 learners and 230 teachers participated (Tkніка, 2022c).

**Box 14. Ikasenpresa, a mini-company programme for VET schools, Basque Country**

Learners set up a small company in which they carry out all the activities of corporate image, administration, marketing, buying, and selling. Their products are real, made by themselves or marketed. Throughout the course, two cooperative assemblies are held where two representatives of each company participate in the meeting. In the first assembly, they present their company to the rest; in the second they talk about its progress. In the first part of these meetings, they are given communication and point of sale workshops. During February, a fair is organised for learners to work at the point of sale and offer their products to the public.

*Source:* Based on input from Ikasenpresa project coordinator and CIFP Nicolas Larburu teachers.

These methodological innovations also seek to prevent learners who have previously completed other VET programmes from applying for automatic credit recognition of the EIE module. EIE teachers acknowledge that methodological change requires time, as it is a slow and gradual process. However, there is already evidence of curricular changes taking place to give relevance to the EIE module. One of the strategies is to find connections with other technical modules. This results in inter-modular projects in which the contents related to entrepreneurial skills and the business plan are covered by EIE teachers in coordination with technical teachers who take the lead in the development of the technical part.

Combining content from two modules into a single project is a challenge. It is not easy to overcome the initial reluctance of technical teachers and make resources, including time and facilities available. Technical workshops and labs are in high demand, and it is difficult to find slots to develop this type of project in such learning environments.

Despite the difficulties, projects involving two or more modules create learning situations that help learners acquire and develop various skills associated with entrepreneurial initiative, such as communication, teamwork, creativity, and management and planning skills.

**Box 15. The ETHAZI model: inter-modularity in high performance VET programmes**

Inter-modular learning is a key aspect in high performance VET programmes. This delivery format, based on the ETHAZI model (Tkніка, 2022e) <sup>(16)</sup> is implemented in three of the six VET providers visited: CIFP Nicolás Larburu, CIFP Río Tormes and Institut Escola del Treball.

The methodology of the ETHAZI model is based on collaborative, challenge-based learning which allow teams of learners simultaneously to develop 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 inter-modular challenges throughout the course, allowing learning outcomes to be achieved. Each challenge is an opportunity for learners to achieve a mix of learning outcomes from different subjects. On the practical side, this requires reorganisation of timetables and creation of flexible, open, and interconnected learning spaces.

At the Institut Escola del Treball the ETHAZI model was first implemented in the higher VET programme on renewable energies in 2016-17. The teaching team reorganised the whole VET programme around a set of inter-modular challenges while making sure they covered all the learning outcomes defined in the curriculum. As a result, this programme leaves behind the traditional subject-based structure, and curricular learning outcomes are achieved through 10 interdisciplinary projects or challenges in 2 years (Castilla Corsà and Gonzalez Hidalgo, 2018).

*Source:* (Tkніка, 2022e).

In addition to the projects that engage two or more modules of the same VET programme, a further step in inter-modularity connects modules from different VET programmes. This entails coordination of schedules between different teachers so that learners from different VET programmes may share the same learning spaces. This type of project seems to be more easily accommodated between VET programmes of the same professional sector. For example, CIFP Imagen y Sonido, a specialist VET provider for the audiovisual sector, engages learners of different VET programmes in the same project because work in this sector often requires interdisciplinary collaboration.

To conclude, the development of entrepreneurship competence is carried out mainly through projects or challenges. In its most common configuration, this work is basically circumscribed to EIE and FOL modules. However, VET providers are

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<sup>(16)</sup> [ETHAZI Learning and high performance: high performance cycles.](#)

currently undertaking methodological change, mainly driven by the need to blur the boundaries between transversal and technical subjects through ever more interdisciplinary approaches.

#### **5.1.4. Extracurricular activities**

The curricular work for the development of entrepreneurship competence is complemented or further reinforced with a range of extracurricular activities and events: fairs and contests, visits, and training workshops.

Fairs and contests represent an opportunity to put into practice some of the transversal skills developed through the projects. Learners and alumni see these events as opportunities to mobilise and showcase the knowledge and communication skills acquired throughout the course as they present to a jury.

Some VET providers organise in-house contests with the aim of improving the visibility of learner projects, as in the Innovative and sustainable business ideas contest at CIPFP La Costera, where projects are submitted on a voluntary basis (CIPFP La Costera, 2022). Other VET providers choose to participate in competitions at regional level (e.g. Entrepreneurial Initiatives Competition, Salamanca City Council), State (e.g. StartInnova, FP-company) or European level (e.g. ScoopCons). Participation in contests is not the driving factor but a consequence of the development of projects.

Study visits enable contact with a wide range of actors in the local and regional entrepreneurship ecosystem.

Companies and entrepreneurs are regularly invited to give motivational talks. A particularly interesting case, due to its highly structured nature, is the programme Píndoles Emprendedores [entrepreneurial pills] at the Institut Escola del Treball.

#### **Box 16. Píndoles Emprendedores [Entrepreneurial workshops], Institut Escola del Treball**

The programme consists of 12 workshops delivered by external experts to raise interest in entrepreneurship. During 1 to 2 hours, each participant explores aspects related to the development of: personal skills (e.g. leadership and teamwork), technical skills (e.g. prototyping techniques) or entrepreneurial skills (e.g. social and sustainable entrepreneurship).

Learners receive an entrepreneurial card that is stamped each time they attend one of these voluntary workshops. At the end of the school year, the learners who have participated in the six activities receive a certificate of 12 hours of training issued by the Catalan Department of Education and Global Lleida.

*Source:* Based on interviews and <https://www.escoladeltreball.cat/les-pindoles-emprendedores-del-curs-21-22/>.

Learners interviewed consider that extracurricular activities reinforce and complement the topics covered in the curriculum. However, finding a common thread for such diverse actions and ensuring alignment with curricula can be a challenge from an organisational point of view. Some VET providers have gone to great lengths to schedule, implement and monitor these actions on a regular basis. For instance, CIFP Nicolás Larburu defines a precise schedule of awareness talks, contests, fairs and events and some related achievement indicators with the number of activities offered, attendance and degree of satisfaction of the participating learners.

Another notable effort in this sense is found at the Institut Escola del Treball. Since 2015-16, all extracurricular activities are grouped in the *Roda de la Gestió del Talent* [Talent Management Wheel] (Institut Escola del Treball, 2022). This is a circular model that reflects the connection and integration of all activities. The actions are classified according to their typology into four groups: entrepreneurial training (e.g. training pills), collaboration and work strategies (e.g. Networking fortnight), project dissemination platforms (e.g. ET Emprén Contest), and employment promotion (e.g. job dating).

## 5.2. Curriculum differences from general education

The Organic Law of Education considers entrepreneurship as one of the key competences to be obtained. It introduced the module *Introducción a la actividad emprendedora y empresarial* [Introduction to entrepreneurial and business activity] (henceforth, IAEE) (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2013). IAEE is an optional module offered in the final year of compulsory secondary education. It can be approached differently, ranging from a theoretical focus on models of economic entrepreneurship to more practical project-based work.

The 2022 curriculum for compulsory secondary education incorporates three new modules linked to entrepreneurship in the curriculum for secondary education:

- (a) *Economía y Emprendimiento* [Economics and entrepreneurship] (Lower Secondary, year 4);
- (b) *Economía, Emprendimiento y Actividad Empresarial* [Economics, entrepreneurship and business activity] (Upper Secondary, year 1, General stream);
- (c) *Empresa y Diseño de Modelos de Negocio* [Business and design of business models] in (Upper Secondary, year 2, Humanities and social sciences stream) (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022b).

Some regional education authorities have proposed additional optional modules. In Asturias, the new curriculum for Compulsory Secondary Education includes the module *Proyecto de Emprendimiento Social o Empresarial* [Social or business entrepreneurship project] (Asturias. Department for Education, 2022). Such modules encourage the adoption of active methodologies but ultimately this decision depends on the intention, interest, and motivation of individual teachers.

VET teachers interviewed consider that first year VET learners lack basic notions and understanding of entrepreneurship, even when this has been part of the curricula in education programmes preceding VET. VET teachers also admit they remain largely unaware of the work undertaken in primary and lower secondary schools. Some acknowledge the existence of entrepreneurship-related subjects, individual initiatives, or the adoption of active methodological approaches in primary and secondary education but these efforts do not seem aligned with the entrepreneurship competence agenda in VET. Besides the low level of competence development, teachers consider that learners start VET studies with a very narrow vision and unrealistic values about entrepreneurship. After analysing secondary education curricula and textbooks, Ferri Ramírez (2017) found strong bias towards economic entrepreneurship with examples and reference models taken mainly from corporate entrepreneurship.

When asked to recollect past experiences linked to entrepreneurship, learners perceive that the learning linked to the development of this competence in VET is more relevant, useful, and directly applicable to their professional future.

Learners also appreciate a greater commitment to active methodologies on the VET side. This entails a higher level of autonomy and initiative in the decision-making process but also more responsibility, aspects that some of them find challenging and demanding at the beginning because they are used to traditional lectures.

### 5.3. VET characteristics nurturing entrepreneurship competence

This section aims to determine whether the nature and features of the VET system and VET learning environments are particularly suited to embedding the entrepreneurship competence. VET provider management teams and teachers agree that VET's mission is particularly suited to addressing the development of this competence, for two main reasons: the close connection between VET and the world of work, and the interests and profile of VET learners. It is easier to promote entrepreneurship in VET, because learners are aware that they are training to become future professionals.

### 5.3.1. Learning environments

The transformation of learning environments is considered a key driver in modernising national and regional VET systems in Spain.

Two of the five strategic actions defined in the *Plan de Formación Profesional para el crecimiento económico y social y la empleabilidad* [VET plan for economic and social growth and employability] (Spain, Ministry of Education and Vocational Training, 2020a) contemplate the 'creation of Aulas de Emprendimiento' and the 'conversion of classrooms into applied technology spaces' in order to support the agenda for digitalisation, innovation and entrepreneurship in the Spanish VET system.

All the VET providers interviewed agree on the importance of creating adequate learning environments to support the methodological innovation processes. In the case of entrepreneurship competence, VET providers are equipping themselves with specific spaces such as the Entrepreneurship classrooms (APEs) and in-house incubation units alongside technology-oriented environments such as Makerspaces and Applied technology labs (ATECA). These open and flexible spaces help raise the interest and motivation of learners and favour the deployment of active and collaborative methodologies.

All these learning environments are expected to nurture different work dynamics that contribute to the development of transversal and specific skills related to entrepreneurship. Far from being conceived as silos, each of these spaces is expected to contribute to turning entrepreneurial ideas into real projects at different stages of the process: idea generation, prototyping, business start-up.

VET providers are striving to make the most of these spaces by securing access to as many teachers and learners as possible and offering relevant activities. Several VET providers have been immersed in this process for some time and cite the year of creation of these spaces as one of the milestones in the promotion of entrepreneurship competence.

IES Francisco Tomás y Valiente started the process in 2017 with the creation of the Entrepreneurship classroom as a pillar of the new school strategic project. The strategic importance of learning environments is perfectly encapsulated in the Twitter hashtag *#elespacioimporta* [physicalspacematters] through which they disseminate all action taking place in their social networks.

- The sections below analyse the contribution of three learning environments:
- (a) *Aulas Profesionales de Emprendimiento* [Professional entrepreneurship classrooms];
  - (b) In-house incubation units;
  - (c) Makerspaces and *Aulas de Tecnología Aplicada* [Applied technology labs] (ATECA).

5.3.1.1. *Aulas Profesionales de Emprendimiento [Professional entrepreneurship classrooms]*

The renewal of entrepreneurship learning environments in VET has been accelerated by the initiative *Aulas Profesionales de Emprendimiento* [Professional Entrepreneurship Classrooms] (APEs), promoted by the Ministry of Education and Vocational Training in collaboration with regional governments.

The guide *Guía del Aula de Emprendimiento* [Entrepreneurship classroom Guide] <sup>(17)</sup> sets the guidelines for the design of the collaborative spaces as ‘versatile, dynamic and easily adaptable to face-to-face and virtual environments’ (Díez Picón, 2021).

Facilitating individual and group work is another of its defining features. The guide proposes the creation of a multifunctional space with well-defined areas devoted to the development of different skills: teamwork, joint working, design, communication, and prototyping. These spaces are equipped with furniture such as mobile chairs and tables, lecterns, benches, laptops and other technological devices (e.g. Chromas, 3D printers) and consumables for prototyping. The guide insists on the need to provide this multifunctional space with organisational and operational rules with the objective of ‘prioritising its effective full-time occupation’, a concern echoed by management teams and teachers.

The teaching staff emphasises the creation of these physical spaces is not an end, but rather a means to support methodological change and community engagement.

5.3.1.2. *In-house incubation units*

VET providers are putting different measures into place to identify, stimulate, and support learners to develop their ideas into feasible business projects. One of the most common responses is the creation of in-house incubation units. This service is normally open to learners, alumni and, in some cases, residents of the local community. Users benefit from a physical space and personalised support to bring their business ideas to fruition.

These units are coordinated by a member of the teaching staff. The coordination role entails raising awareness about the service among VET learners, detecting ideas with potential and tutoring the projects.

In some cases, this space has been recently refurbished and equipped and the challenge is to attract users; some learners in the discussion groups were not aware of the existence of this service in their VET schools. Those who were,

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<sup>(17)</sup> [Creando aulas de emprendimiento en Formación Profesional. Una guía para empezar a emprender.](#)

consider it as a positive development, because they can work, meet with clients and faculty there.

VET providers are in an ideal position to detect entrepreneurial talent and support the initial development of ideas, but management teams and teachers are also conscious of their limitations. Most advanced projects are forwarded to local or regional entities and agencies providing more specialised start-up support. However, referral to external providers for specialist advice on start-up support may have some drawbacks. Sometimes local incubators cannot provide the sector-specific advice that exists in VET schools.

In the Basque Country, Urratsbat <sup>(18)</sup> is one of the most widely implemented support programmes for business start-up in VET (Tknika, 2022i). According to data provided by Tknika since its launch in 2012/13, 70 VET providers have joined the programme and more than 1 000 companies have been created, of which 699 are still running today. Of the 151 business projects developed during the last academic year, 35 became a reality.

The companies created in the context of this programme become part of Urratsbatsarea, a 'community made up of all the companies that have been created [...] with the aim of improving their competitiveness through the exchange of experiences and encouraging collaboration to generate new projects and access new markets and customers' <sup>(19)</sup> (Tknika, 2022a).

In Catalonia, EmprènFP the regional support programme for entrepreneurship in VET offers VET providers a menu of actions to set-up and deliver this service divided into three thematic blocks:

- (a) Talent detection system (BizTalent) preincubation;
- (b) Training programme (BizNest);
- (c) Incubation programme (BizFly). (Catalonia, Directorate-General for Vocational Training, 2020).

VET providers in EmprènFP have the final say in the configuration of the service and submit a workplan to the regional Department of Education identifying and describing the actions they wish to implement as observed in the following example.

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<sup>(18)</sup> [Urratsbat: programme for company creation.](#)

<sup>(19)</sup> [Urratsbat de la Formación profesional vasca.](#)

Table 6. **Start-up support action plan, Institut Escola del Treball**

| Biz Talent   | BizNest  | BizFly   |
|--|--|--|
| Project detection system;<br>Project dissemination platform;<br>Assessment committee;<br>External partner detection system;<br>Map of talent hunters in the territory. | Mentor;<br>Technical training programme for project promoters;<br>Monitoring platform;<br>Training programme individual. | Portfolio of incubation services;<br>Map of the entrepreneurial ecosystem;<br>Networking event;<br>Map of financial entities<br>Training programme for Open space incubator (Prototyping space). |

Source: EmprènFP Work Plan 2021-2022 level 2, Institut Escola del Treball.

### 5.3.1.3. *Makerspaces and Aulas de Tecnología Aplicada [Applied technology labs] (ATECA)*

Makerspaces and applied technology labs complete the picture of the landscape of new learning environments enabling the development of entrepreneurship competence in VET. This space is coordinated by a member of the teaching staff. Besides equipment maintenance, his/her main duties entail training and assisting teaching staff and learners to get the most out of these technologies. These spaces provide learners, teachers, and VET start-up promoters with complementary skills in digital design and manufacturing, as in this example.

#### Box 17. **Maker Workshop, IES Francisco Tomás y Valiente**

‘Maker Workshop: an applied technology workshop to train learners in design and digital manufacturing. The space is also available to start-ups in our incubator to make prototypes, models, and presentations. [...] All VET programmes have a certain number of subjects and lessons delivered in this space so that learners are trained in the use of these tools so that they can apply it to their professional field’.

Source: APE Workplan, (IES Francisco Tomás y Valiente, 2021).

The creation of Aulas de Tecnología Aplicadas [Applied technology labs] (ATECAs) in VET is another strategic action of the *Plan de Formación Profesional para el Crecimiento Económico y Social y la Empleabilidad* [VET plan for economic and social growth and employability]. VET providers can apply for funding to incorporate a broad set of technologies. In addition to 3D printing and scanning devices, ATECAs are equipped with immersive reality systems, cameras and microphones for streaming classes, digital and collaborative whiteboards and specific equipment for each VET programme (Spain, Ministry of Education and Vocational Training, 2022a) <sup>(20)</sup>. The implementation of this programme follows a pattern like that described for the Professional entrepreneurship classrooms.

<sup>(20)</sup> [Aulas tecnologicas Ateca empresas.](#)

The recent implementation of many of APEs, ATECAs and other measures and the lack of research make it impossible to determine the real impact on the teaching-learning process and on the acquisition and development of the skills they are intended to stimulate.

### 5.3.2. Teacher training

This section describes the main professional development opportunities for VET teachers in relation to the promotion of entrepreneurship competence in initial and in-service teacher training.

#### 5.3.2.1. Initial teacher training

The Master degree in teaching for secondary education prepares university graduates as competent professionals in the field of pedagogy and didactics so that they can carry out their teaching work in various contexts. Entrepreneurship is part of the syllabus of some master degrees in teaching, as part of specialist modules for prospective teachers of *Formación y Orientación Laboral* (FOL) [Career Training and Guidance].

Box 18. **Empleo y Empresa: a compulsory subject on Entrepreneurship in initial teacher training, Universidad Complutense.**

#### **Empleo y Empresa (5 ECTS) <sup>(21)</sup>**

##### Brief description

‘Specific knowledge about employment policies, the company, its organisation and, particularly, entrepreneurship. All of this oriented towards its impact on the future employment of learners in vocational training and secondary education.’

##### Goals

‘Provide learners with precise and up-to-date knowledge about public policies on employment and the labour market, the creation of companies, instruments for their organisation and entrepreneurship, as well as to enable them to transmit all of this effectively.’

Source: Universidad Complutense de Madrid, 2022.

Additionally, some universities offer specialist courses on entrepreneurship for students of the Master degree in teaching with no previous knowledge or training in business creation and management.

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<sup>(21)</sup> [Master Formación del Profesorado de ESO y Bachillerato, FP y Enseñanzas de Idiomas.](#)

Box 19. **Initial teacher training course on entrepreneurial culture, UGR Emprendedora**

**Formación en Fomento de la Cultura Emprendedora para Profesorado de Enseñanza Secundaria** <sup>(22)</sup>

‘The main objective of this course is to improve teaching and educational innovation among future secondary education teachers through training for the promotion of entrepreneurial culture in the classroom.

Objectives

- (a) To introduce the basics of entrepreneurship, self-employment and business creation and their transversal application in education.
- (b) To identify the characteristics, skills and motivations associated with entrepreneurs.
- (c) To learn about active tools and methodologies to generate an entrepreneurial culture through teaching.
- (d) To know various sources of information related to entrepreneurship and entrepreneurship education.
- (e) To be able to manage, search for and generate teaching resources for the development of entrepreneurial spirit and behaviour among learners.’

Source: Emprendedora, 2022.

Until recently, higher VET graduates could become technical VET teachers by obtaining the *Pedagogical accreditation for VET trainers* issued by the Ministry of Education. Entrepreneurship competence is not referenced in the goals or contents of the programme (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2011a).

The certification of professional experience used to be the only requirement to become a CVET trainer, but this is no longer the case. Now, CVET trainers need to obtain pedagogical accreditation by completing five training modules of vocational qualification *Docencia de la formación profesional para el empleo*. Entrepreneurship competence is neither part of the competence units nor training modules (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2011e).

5.3.2.2. *In-service teacher training*

Continuing professional development (CPD) is both a right and a professional duty for VET teachers and trainers (Cedefop and Fundae, 2019). The *Organic Law on the organisation and integration of VET* highlights entrepreneurship as a key topic for the continuing professional development of VET teachers. Supporting entrepreneurship and innovation is also one of the responsibilities of career

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<sup>(22)</sup> [Formación en Fomento de la Cultura Emprendedora para Profesorado de Enseñanza Secundaria.](#)

guidance and counselling staff in VET. The law declares it is the remit of public administrations to improve the skills and competences of teachers in order to lay the foundations for entrepreneurship culture in VET (Ministerio de la Presidencia Relaciones con las Cortes y Memoria Democrática, 2022a).

At national level, the Ministry of Education and Vocational Training has offered state-wide training programmes through the Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado [National Institute of Educational Technologies and Teacher Training] (INTEF) and the now defunct Centro Nacional de Innovación e Investigación Educativa [National centre for educational research and innovation] (CNIIE). Both institutions developed interactive and digital education resources and training opportunities for teachers in different curricular areas and educational levels, including VET (Servicio Público de Empleo Estatal, 2016).

In March 2016, INTEF launched the MOOC *Sentido de la iniciativa y emprendimiento en el aula* [Sense of initiative and entrepreneurship in the classroom].

The Ministry of Education in cooperation with the Higher Council of the Chambers of Commerce carried out another State-wide training course in entrepreneurship for VET teachers, *Vuelta Emprendedora* [Tour of entrepreneurship] (Cedefop, 2020a). The programme consisted of a set of tools designed to develop entrepreneurship-related skills in VET learners and to stimulate their curiosity about the world of business.

*REA Empresa e Iniciativa Emprendedora* [OER Enterprise and Entrepreneurial Initiative] is an open educational resource with 11 challenges linked to one of the curricular content blocks of the EIE module. The challenges take learners on a journey covering all key aspects of business planning. They are grouped in four main blocks: identifying opportunities/generating ideas, empathy, legal and administrative aspects, and prototyping. Other training opportunities for VET teachers and trainers are offered by private entities or non-profit organisations operating at State level.

In-service training is mainly managed by regional education authorities. The training offer is channelled through regional networks of centres for the continuing training and educational support for teachers that organise and develop a diverse portfolio of actions such as in-service courses, conferences, seminars, working groups, networks to expand good practices and placements for VET teachers in companies (Ros-Garrido and Marhuenda-Fluixá, 2019).

Teacher professional development is also a fundamental aspect in the regional programmes to support entrepreneurship in VET. These programmes usually propose teacher training on two levels. The first level focuses on equipping teachers with a series of methodological strategies for the development of

entrepreneurship skills in the classroom; the second level concentrates more specifically on business start-up support. This two-tier structure is evident, for example, in the goals of EmprènFP, the regional VET entrepreneurship programme in Catalonia (Catalonia. Directorate-General for Vocational Training, 2022; Ros-Garrido and Marhuenda-Fluixá, 2019).

The implementation of the professional entrepreneurship classrooms programme at regional level has opened new opportunities for professional development.

**Box 20. Professional development opportunities, CPIFP La Costera**

In the case of CPIFP La Costera, the coordinators of the entrepreneurship classroom are simultaneously training with these three entities:  
CEEI Valencia (European Centre for Business and Innovation) hybrid training itineraries (online and face-to-face workshops);  
CEFIRE (Teacher training centre, regional Department for Education) course on entrepreneurship classrooms;  
FEVECTA (Valencian Federation of Associated Work Cooperative Companies) that teaches courses and mentoring aimed at promoting cooperative values and the social economy in education as well as training on cooperative start-ups for learners who consider starting a business venture.

Source: Authors.

All the above actions are mainly attended by EIE and FOL teachers. Widening participation to teachers from technical subjects remains a challenge. To address this imbalance, the *Irekin* initiative in the Basque Country launched calls for good practices to showcase entrepreneurship projects promoted by teachers from other subjects and disciplines. These inspiring practices informed the development of *Irekin* teacher training proposal.

**Box 21. *Irekin*: interdisciplinary teacher training for entrepreneurship in VET**

*Irekin* (Ekingune Program, Tknika)

'[...] we have developed an entrepreneurship training itinerary that consists of different stages working on entrepreneurial initiative with the teaching staff so that they can act [...] in an entrepreneurial and innovative way. This training action is made up of six stages and some of them are delivered by teachers who are already working in an entrepreneurial way in our schools. In order to locate this group of teachers, a competition has been organised to identify and disseminate the good practices already developed as an example to the rest of the teaching staff.'

Source: Tknika, 2022f.

Depending on their needs, VET providers configure their own portfolio of professional development opportunities and tap into a mix of external training providers at both State and regional levels. Teachers also make their own training choices on an individual basis. When asked to recall the professional development courses attended in connection with the entrepreneurship competence, teachers mention a host of themes and topics.

Table 7. **Professional development courses attended by VET teachers**

| <i>CIFP Río Tormes</i>   | <i>CIFFP La Costera</i>   | <i>CIFFP Nicolás Larburu</i>   |
|--|---|--|
| Agile methodologies;<br>Design thinking;<br>Transformation of learning spaces;<br>Visual thinking;<br>Canva;<br>Lego serious play;<br>Entrepreneurship training. | Challenge-based learning;<br>Entrepreneurship classroom programming;<br>Social entrepreneurship;<br>Sustainable development goals;<br>Gamification. | Improving communication between teaching teams,<br>Flipped classroom;<br>Migrant entrepreneurship;<br>Digital marketing;<br>Finance;<br>FOL and EIE from a gender perspective. |

Source: Authors.

#### 5.3.2.3. *Teacher perceptions of professional development opportunities*

Professional development opportunities on entrepreneurship are perceived unevenly among teachers. Perceptions vary depending on the modules and subjects they teach, and the conceptualisation of entrepreneurship at regional and VET provider levels. For urgent training needs, the teaching staff interviewed requested training to make the most of the technological equipment of the Professional entrepreneurship classrooms, Makerspaces and Applied technology labs.

In this sense, CIFP Río Tormes participated in September 2021 in a collaborative exercise to detect training needs together with all VET providers in Castilla y León that had been granted a professional entrepreneurship classroom (APE). The table below summarises the main topics grouped into six categories: methodologies, communication with stakeholders, global legal responsibility, digital training, funding, and issues related with the set-up and management of professional entrepreneurship classrooms.

Table 8. **Teacher training needs for the implementation of *Aulas Profesionales de Emprendimiento* programme (EmprendeCYL, Castilla y León)**

| Training needs       | Topics  |
|----------------------|---|
| <b>Methodologies</b> | Agile;<br>Active methodologies;<br>Gamification;<br>Other methodologies |

| Training needs   | Topics   |
|--|--|
| <b>Communication with stakeholders</b>                         | Stakeholder engagement: companies, social partners and others;<br>Training in specific communication;<br>Training in social skills and communication skills.   |
| <b>Global legal responsibility</b>                             | Use of social networks;<br>Corporate social responsibility, social media marketing, data protection;<br>Civil and criminal liability of companies;<br>Personal and company image rights;<br>Business ethics. |
| <b>Digital training</b>  | Video creation and editing;<br>3D printing and projection in the classroom;<br>Personal branding and networking skills.  |
| <b>Funding</b>   | Marketing techniques;<br>Collaborative economy networks;<br>Crowdfunding.  |
| <b>Application of the standard and allocation of resources</b> | Use of the budget allocation assigned to APEs;<br>General information on how to start an APE: foundations of the classroom.  |

Source: Peñalver et al., 2021.

#### 5.3.2.4. *Teacher support and recognition*

Teacher working groups and interschool networks function as communities of practice that contribute to the professional development of management teams and teaching staff. Sometimes these communities of practice originate as grassroots movements to address common interests or concerns of a group of teachers or VET providers. The National Association of FOL Teachers (ANPROFOL) is a non-profit association whose objectives include the promotion of entrepreneurship in VET and the organisation of professional development actions for FOL and EIE teachers. ANPROFOL organises national conferences and offers on its website a section of entrepreneurship teaching resources developed and shared by teachers from across the country (ANPROFOL, 2022). Resources touch on topics such as critical perspectives on entrepreneurship, social entrepreneurship, challenges, flipped learning and visual tools for entrepreneurship among others. At regional level, the implementation of the Entrepreneurship classrooms programme entails the creation of interschool networks, an action highly valued by 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 two examples of communities of practice of this kind.

The availability of suitable learning environments alongside training and networking opportunities are fundamental in stimulating the development of entrepreneurship competence in VET. However, they may be insufficient if they are not accompanied by another series of teacher support measures.

Two basic demands were flagged up in teacher interviews: greater stability of teaching teams and freeing up some of the teachers' time spent on routine duties to collaborate with other colleagues.

The development of entrepreneurship competence in VET is mainly led and steered by FOL and EIE teaching staff. Although they take a proactive approach to engaging colleagues from other modules, this is not always easy; the support of the management team is essential. The commitment to entrepreneurship as a strategic line at VET provider level is a first step to preventing the feeling of isolation of the FOL teaching staff. Management teams can also make a difference in the optimisation of school schedules and the creation of structures that aid and improve teacher collaboration.

In other cases, education administrations facilitate the creation of similar structures. In Asturias, for example, integrated VET providers are able to create coordination units with the aim of 'improving information and academic and professional orientation and for employment as well as favouring the entrepreneurial culture' (Asturias. Department of the Presidency, 2015).

VET teacher training and support is coupled with a series of certification measures. Regional support programmes for entrepreneurship in VET stand out in this area as they contemplate staff recognition schemes to certify the participation of programme coordinators and other teachers involved at VET provider level. Besides freeing up time, the APE programme in some regions recognises the work done by the appointed coordinator with a salary incentive (Madrid, Department for Education and Youth, 2021). Some of these programmes extend this recognition to VET providers by means of plaques or labels <sup>(23)</sup> that identify them as members of the network. For example, the Emprén programme acknowledges the level of achievement of VET providers on the evaluation of the activity report (Comunitat Valenciana. Department for Education Culture and Sport, 2022).

Learners and alumni interviewed note the high levels of engagement, motivation and support provided by teachers. The efforts of the teaching staff to introduce methodological changes nurtures a closer and less hierarchical relationship between teachers and learners. In this context learners perceive teaching staff act mainly as guides who grant autonomy and put them at the steering wheel of the learning process.

The work of teachers and VET providers is also valued by interviewed learners and alumni. Learners acknowledge this supporting role requires extra effort on the side of teachers as regards the coordination of different learner teams in the classroom and the interaction with external agents. This positive perception does not prevent learners from observing certain imbalances, especially at the level of coordination between teachers.

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<sup>(23)</sup> They recognise VET provider engagement in the network and its efforts in the area of entrepreneurship. Labels may be showcased at the entrance of the premises and used in promotional and informational materials from the VET provider.

## 5.4. Assessing entrepreneurship competence

The assessment of entrepreneurship competence poses a serious challenge to teachers. Several teacher comments refer to the sheer complexity of the task at hand, which relies mainly on informal observations. The lack of precise definitions and of a clear list of the skills and attitudes associated with this competence hampers systematic assessment. The generous number of references to entrepreneurship in the documentation consulted at State, regional and VET provider levels, is seldom backed up with consistent competence frameworks that clearly and unequivocally establish which are its key components and levels of progression.

VET providers are taking steps to tackle the assessment of this competence in a systematic way: selecting a limited number of skills and attitudes to be assessed; collecting a broader range of evidence other than informal teacher observations; involving learners in the assessment process; and providing relevant feedback.

VET providers tend to concentrate assessment efforts on a reduced number of skills like teamwork, communication, and creativity in combination with more generic attitudinal aspects such as the level of attendance, participation, and engagement.

The teaching staff seeks the involvement of the learners in the process through a set of self- and peer-assessment activities considered particularly suitable for assessing this competence. The incorporation of these assessment approaches is part of a broader process of methodological change.

The potential contribution of work placements to developing and assessing entrepreneurship competence remains largely untapped. Employers highlight the importance of learners showing initiative, teamwork, and problem-solving skills during their workplace periods but work placement company supervisors play a minor role in the formative assessment of transversal skills, and they rarely use tools or protocols to assess the degree of development of each of them separately.

The assessment toolbox of interviewed teachers consists mainly of rubrics, checklists, portfolios, and project diaries. Checklists and rubrics are used for a variety of assignments such as group projects, portfolios, and presentations. Project assessment rubrics tend to combine process and output-related criteria and, at times, include a few items to assess certain transversal skills. Interviewed teachers and learners also report the use of rubrics for specific skills like creativity, teamwork, or oral communication. Digital portfolios and team logs aid assessment as they require learners to document the process, showcase outputs and reflect on their individual and team performance.

At Institut Escola del Treball, all learners craft their own individual portfolio throughout the 2-year VET programme following the guidelines and checklist provided by FOL and EIE teaching staff (Castilla Corsà, 2022). Besides facilitating learning and assessment, the e-portfolio fulfils another vital role as it helps learners gradually to build their professional identity. The e-portfolio is expected to incorporate a short bio, a competence-based CV, a list of completed projects and a competence development report issued by the teaching team upon completion of the training programme. Learners are requested to upload links to their portfolios in an online repository managed by the teachers. Web spaces of this kind facilitate assessment and offer additional resources and guidance on how to design a portfolio.

The protocols observed in this study include various assessment points. Normally, assessment is undertaken at the end of term or upon completion of a project milestone. These checkpoints are an opportunity to provide feedback to teams and/or individual learners, identify areas for improvement and establish a work plan that will be checked again at the next measurement point. At the end of the course, some VET providers accompany summative evaluation with reflection at group and individual levels on the competences developed throughout the year.

The two practices described below encompass a large part of the aspects addressed in this section. Both have gone at great lengths to systematise the assessment of entrepreneurship competence at VET provider level. Both share a set of salient features:

- (a) clear definition of the competences (or elements of) to be assessed;
- (b) participation of learners and other stakeholders through peer- and self-assessment;
- (c) use of rubrics;
- (d) consideration of different assessment points in time;
- (e) regular delivery of constructive formative feedback to learner teams and individuals;
- (f) assessment and evaluation results are agreed by the teaching team;
- (g) delivery of learner competence assessment reports.

**Box 22. Skills evolution tool, CIFP Nicolás Larburu**

*CIFP Nicolás Larburu* assesses transversal competences with the SET tool developed by *Tknika*. All VET providers in Ekingune programme in the Basque Country have access to this tool which allows teachers to select the transversal skills they want to work on.

- (a) Possibility of working with rubrics.
- (b) Record, in an agile way, evidence on the actions and behaviours of the learners.
- (c) Possibility of choosing different competences to measure for each period of time.
- (d) It allows all kinds of measurements, such as appraisal by the teaching team, learner self-measurement, peer evaluation, external evaluations.
- (e) It allows showing the results of the evaluation to the learners in different formats, including a graphic format that invites reflection and evolution.
- (f) Teaching team accompanies the results of the evaluation with feedback that helps learners to understand them better and find the path to constant improvement;
- (g) Learners are invited to enter commitments on their next actions to be carried out and that will allow them to evolve in the degree of acquisition of their skills.

*Source:* (Tknika, 2022g).

**Box 23. Follow-up protocol for complementary skills, Institut Escola del Treball**

Institut Escola del Treball has developed its own protocol for the assessment and monitoring of transversal competences with three main components.

- (a) Dictionary of competences that includes transversal skills and complementary technical skills. Each competence is accompanied by a brief description that acts as a common reference for the entire teaching team.
- (b) Tracking kit. The kit consists of a template that allows weekly recording of the observations made about competences, as defined in the dictionary.
- (c) Learner competence assessment report. At the end of the VET programme, the teaching team agrees on the level of acquisition for each competence and drafts an individualised report to each learner with a brief description of the competences in which they excel. This document is added to the learner e-digital portfolio.

Learners see having this competence assessment report validated by the VET provider in their individual e-portfolio as a plus in the recruitment process as it allows employers to have a more complete view of their professional worth.

*Source:* Based on VET provider documentation.

## 5.5. Expected and acquired learning outcomes

### 5.5.1. Impact perceived by the learners

Part of the conversation with learners and alumni gravitated around the changes experienced in their ways of thinking and acting after participating in these actions.

Learners perceive positive impacts on a series of skills and attitudes that they consider useful for both their personal and professional lives. They see the value in changing the way they think, getting a sense of direction, gaining a sense of maturity. The collaborative nature of projects and challenges translates into perceived improvements in teamwork, and conflict management skills. Participation in projects has also contributed to enhancing the development of management, planning and problem-solving skills. The multiple opportunities to pitch their ideas to their peers and external agents have helped in overcoming fear of public speaking and they notice their communication and presentation skills have substantially improved.

As these perceptions are highly subjective, rigorous research is needed to elucidate the real impact on learning outcomes and the underlying mechanisms and contextual factors.

### 5.5.2. Impact indicators at VET provider level

The development of entrepreneurship competence and the promotion of entrepreneurship is a strategic area in the six VET providers observed in this study.

As such, school documentation describes protocols and identifies indicators and targets with a view to systematising, monitoring and assessing the quality and impact of actions undertaken in this area.

Table 9. Examples of impact indicators at VET provider level

| Strategic Plan<br>(CIFP R o Tormes)   | Annual Operating Plan<br>(CIFP Nicol s Larburu)   | Annual General Plan<br>(Institut Escola del Treball)   |
|---|---|--|
| <b>Indicator</b><br>Number of entrepreneurship projects developed<br>Number of calls for entrepreneurship presented<br>Number of awards received<br>Number of activities carried out for the development of soft skills | <b>Awareness activities</b><br>Number of sessions<br>Number of hours per session<br>Number of attendees per year/centre<br>Degree of learner satisfaction<br>Number of companies that follow<br>Number of companies that do not follow<br>Number of business projects during the course | <b>Indicators</b><br>44 I-PS01-06 Degree of satisfaction with entrepreneurial activities (learner)<br>45 I-PS01-07 Degree of satisfaction with entrepreneurial activities (teacher t)<br><br><b>Annual indicators</b><br>12 entrepreneurship training workshops<br>Entrepreneurship Week, satisfaction level >80%<br>ET Empr n Awards (+15 projects/category, 2 projects for regional awards)<br>Upskilling of teaching staff to improve the management of entrepreneurial projects, (>8 participants, 90% places offered) |

Source: Based on documentation provided by VET providers.

Table 9 shows that indicators are mostly quantitative and output-based and collect data on the number of activities, participants, projects, and companies created. Outcome-based indicators tend to capture the degree of satisfaction of participating learners and teachers through surveys.

None of these indicators is suitable for evaluating the contribution of all these activities to the development and acquisition of entrepreneurship competence. However, this is not a criticism of efforts undertaken at VET provider level, as we consider objective impact assessment is only possible through the conduct of rigorous research studies that will be discussed in the next section.

### 5.5.3. Research

*Diagnóstico de la investigación sobre la Formación Profesional Inicial en España (2005-2017)* [Diagnosis on IVET research in Spain 2005-2017] offers an exhaustive analysis of scholarly research in VET in Spain from 2005 until 2017. The authors conclude that entrepreneurship education in VET is an under-researched topic (Echeverría Samanes and Martínez Clares, 2019).

This section gives an overview of relevant articles published in peer-reviewed journals and other academic publications during the last decade. The list is not exhaustive, but it is meant to give readers an idea of the main research topics of VET entrepreneurship education literature in Spain.

In the Basque Country, (Ulacia Aramendi, 2013) used a quasi-experimental design to evaluate the impact of programme aimed at promoting personal initiative in IVET. The sample consisted of 160 learners. The author developed and validated a scale to assess whether the programme had an impact on a set of variables related to personal initiative. The results showed that the programme had a positive influence on self-initiation, entrepreneurial attitude, academic performance, self-efficacy and the clarity and regulation dimensions of emotional intelligence.

In Navarra, (Fernández Solo de Zaldívar, 2016) applied a similar research design in the evaluation of the impact of *Equilicua* programme in a sample of 122 IVET learners and 16 teachers. *Equilicua* is a regional programme that promotes entrepreneurial culture among learners, aiming to increase entrepreneurial activity in the Navarra region. In this case, the author found no significant impacts of the programme on the VET learner perception of competences. VET teachers showed high levels of satisfaction and appreciated the resources and training on agile methodologies they received.

In Catalonia, (Lafuente, 2014) used global entrepreneurship monitor regional data to characterise the entrepreneurial activity of 13 962 VET graduates. The data show that discovering entrepreneurial role models has exerted a strong positive effect on the entrepreneurial activity of VET graduates since 2010. The report

highlights how companies created by entrepreneurs with VET qualifications create more jobs and show higher levels of innovation than others.

Researchers (Eizagirre; Altuna and Fernandez-Fernandez, 2017) described successful practices in embedding cross-curricular competences (CCC) in IVET Schools in the Basque Country. Through a mixed methods approach, the paper identified three levels of embeddedness: at VET teacher level, the development of cross-curricular competences is in the hands of teachers working in isolation; at VET programme level, teachers work as a team and led the process within a context of methodological change; and at VET provider level, developing cross-curricular competences becomes an institutional endeavour involving all members of the teaching staff.

Researchers (Gorostiaga et al., 2019) developed and examined the psychometric properties of the Entrepreneurial orientation scale (EOS) in a sample of 411 VET learners. The instrument comprises 32 items assessing six dimensions: innovativeness, risk-taking, proactiveness, competitiveness, achievement orientation, and learning orientation. A second research goal was to study the relationships between entrepreneurial orientation and gender, self-efficacy, and personal initiative. The EOS showed good psychometric properties and found that proactiveness, competitiveness and willingness to learn explained a considerable part of the variance in self-efficacy.

Researchers (Monzón Campos and Torres-Ortega, 2021) tried to identify the main personal attributes related to the configuration of entrepreneurial intentions in 5 767 VET learners in the Basque country; more specifically, which traits are most directly related to social entrepreneurship. The results revealed that solidarity is the only variable that significantly increased the likelihood of social entrepreneurship.

Most of the studies outlined in this section employed a psychometric approach based almost exclusively in self-report measures to explore impact on learner competences, entrepreneurial intention and/or entrepreneurial activity. Besides this single-method bias, research remains concentrated in a few geographic regions. Despite the intense policy-making activity in VET entrepreneurship in Spain, research has paid little or no attention to the analysis of policy reforms, the contextual enabling factors and their interpretation and enactment by VET teachers.

## 5.6. Impact of digitalisation

The digitalisation of teaching, learning and assessment processes continues to affect all education levels, including VET, so question responses largely referred

to general digitalisation strategies. Teachers underline that technology plays a prominent role in most VET qualifications, especially in those linked to highly digitalised professional sectors, like the audiovisual that is taught at CIFP Imagen y Sonido.

VET providers and teachers tap into a wide range of digital technologies to support teaching, learning and assessment of entrepreneurship competence, including digital tools, platforms, and technology devices. Learners reported being familiar with a set of digital tools in their entrepreneurship projects. These tools serve different purposes in the planning, implementation, monitoring and evaluation phase of entrepreneurship projects such as preparing documents, presentations, and spreadsheets (Google Docs), carrying out collaborative tasks (Google Classroom, Teams, Miro Padlet), designing and prototyping (Canva, Inkscape and Tinkercard) and project management (Trello, Gantt).

VET provider documentation and interviews reveal the use of various types of digital platform in relation to teacher training, project management, and entrepreneurship. At national level, third-party providers cater for the needs of VET teachers to promote the development of entrepreneurship. Teachers at CIFP Río Tormes and CIFP Imagen y Sonido mentioned the e-FP web platform, an entrepreneurial space, where methodologies, teaching resources and prizes are offered to encourage innovation among young people (Fundación Créate, 2022).

Regional support programmes for entrepreneurship in VET are usually backed by powerful online platforms offering a broad range of teaching resources, teacher training, support, and networking opportunities to participant schools. Ekingune (Tkніка, 2022d) and EmprènFP (Catalonia, Directorate-General for Vocational Training, 2022) are two examples. In Asturias, the coordinators of the incubation unit at CIFP Imagen y Sonido have been trained to use Valnaloncrea <sup>(24)</sup>, a specialised platform used to provide start-up support by all regional incubators (Valnalon, 2022).

Makerspaces and applied technology labs are becoming common in VET provision. Getting familiar with 3D printers, laser vinyl cutters, audiovisual equipment and other devices is deemed to have a positive impact in learner motivation, and it is also seen as an opportunity to gain a new set of complementary skills that reinforce their employability.

The synergies between entrepreneurship and digitalisation in VET are beyond question. Digital technologies are considered as powerful allies in nurturing the entrepreneurship competence, so both agendas are meant to converge sooner than later.

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<sup>(24)</sup> [CREA Centros de Referencia de Emprendimiento de Asturias.](#)

## 5.7. Impact of the COVID-19 pandemic

This section deals with the impact of the COVID-19 related measures in the development of entrepreneurship competence among VET providers participating in this research. Most of the decisions and actions put in place are not exclusive to issues related to the development of entrepreneurial competence.

The COVID-19 outbreak in March 2020 forced education authorities to adopt different social and health measures to limit the spread of the pandemic in schools. As a result, VET providers saw their activity substantially modified during the final stretch of the 2019/20 academic year. Impact continued to be felt throughout the 2020/21 and 2021/22 academic years at different levels of intensity due to the adoption of different protocols that were modified as the disease evolved.

In general terms, VET providers consider that COVID-19 restrictions have negatively impacted the usual portfolio of activities linked to entrepreneurship. This impact was particularly acute in activities requiring social contact both inside and outside the VET provider premises.

One of the most negative consequences was the complete halt of face-to-face interactions with external agents. This new scenario elicited new responses. Efforts concentrated on the generation and digitisation of content as well as the adoption of tools and processes to facilitate virtual work. The digitalisation agenda was boosted.

Teachers feel this abrupt and forced transition into hybrid learning lost much of the social and emotional aspects of learning. All efforts were geared towards preserving as much as possible the essence of face-to-face work dynamics in an online scenario.

On the positive side, the interviewees identify two main impacts. The first is linked to a perceived increase in the teacher's willingness, confidence, and competence to use new technologies and teach in digital learning environments. The second has to do with the strengthening of collaboration with other colleagues.

None of the impacts and actions differ substantially from the general strategies deployed by education providers at different levels to mitigate the effects of COVID-19 pandemic in the teaching and learning process.

## CHAPTER 6.

# Conclusions

This case study shows that the development of entrepreneurship competence in the field of VET in Spain is shaped through a complex interplay of State and regional level curricula, policy initiatives and practices. The translation of policies into practice does not fit the linear models that assume a cascading effect from higher levels of policy-making into classroom practice.

Entrepreneurial learning ecosystems in VET mainly exist at the local level and involve a wide range of actors from the public, private and third sectors. Collaboration with external stakeholders is central to contributing to the development of this competence. These ecosystems are mainly configured and shaped through the network of personal contacts of teachers, albeit sometimes supported by regional administrations. The profile of the organisations involved and the relationship that unfolds are determined on a case-by-case basis: systematisation of these relationships is pending. Entrepreneurial learning ecosystems are constantly evolving, and VET providers are engaged in expanding, strengthening and making their ecosystems more visible.

Entrepreneurship is often mentioned but seldom defined in VET curricula and policies. Despite the abundant references, Spain lacks a single reference framework that defines and describes in detail the constituent elements of this competence in VET. Development of entrepreneurial competence in VET is conceived as a two-level process. The first level focuses on helping all learners to develop a set of generic skills deemed to be useful for their professional and personal lives (e.g. problem-solving, teamwork, communication). The second level aims at equipping learners with the knowledge, skills, and attitudes necessary to identify business opportunities and start a small business. This two-pronged approach is consistently found across curricula and policies at national, regional and VET provider levels.

Irrespective of sector, all IVET curricula consider developing personal and social competences connected to entrepreneurship through transversal modules (e.g. EIE, FOL) common to all VET programmes. Despite the transversal nature of these two modules, VET providers and teachers must tailor their approach to the needs of each VET programme according to the characteristics of the learners, the educational level, and the employment prospects for future professionals in particular sectors. In VET programmes where self-employment is not an option, greater emphasis is placed on the development of soft skills useful for employment (intrapreneurship).

Project-based learning stands out as the preferred methodology for developing the entrepreneurship competence, often incorporating sustainability, inclusivity, and digitalisation agendas. Project work is enriched with approaches and tools sourced from other methodologies like service-learning, cooperative learning, design thinking and agile methodologies. Interdisciplinary projects stimulating the simultaneous development of technical and transversal skills are increasingly becoming commonplace but full-scale adoption should go hand in hand with organisational measures to secure the stability of teaching staff, professional development opportunities and flexible schedules enabling collaboration with other colleagues.

The entrepreneurship agenda at VET provider level is spearheaded by EIE and FOL teachers. The support of management teams is crucial to overcoming feelings of isolation and aiding collaboration with teachers of technical subjects. Teacher professional development is a fundamental feature in national and regional initiatives to support entrepreneurship in VET. Teachers show mixed feelings about the quantity and quality of professional development opportunities, with some of the criticisms directed at the narrow and biased concept of entrepreneurship. Grassroots teacher groups (e.g. ANPROFOL) and institutional interschool networks (e.g. xarxa EmprènFP) function as communities of practice. Regional support programmes for entrepreneurship in VET envisage staff recognition schemes to certify the participation of programme coordinators and the other teachers involved.

The VET providers in this case study are progressing towards a systematic approach to nurturing the development of the entrepreneurship competence through a coherent portfolio of curricular and extracurricular activities and other support services. They have gone to great lengths to incorporate entrepreneurship as a key area in VET provider strategic documents and subsidiary plans (e.g. quality). In some regions this work is encouraged and supported by education administrations. Regional support programmes for entrepreneurship in VET (e.g. EmprènFP, Emprén, Ekingune) are firmly committed to raising awareness, training and supporting management teams, teachers and learners, encouraging methodological innovation, the transformation of learning environments and exchange of experiences. The recent launch of State-level initiatives like *Aulas Profesionales de Emprendimiento* [Professional Entrepreneurship Classrooms] is seen as an additional support to strengthen the entrepreneurship agenda in VET.

The assessment of entrepreneurship competence poses a serious challenge to teachers; difficulties stem in part from the lack of precise definitions. Some regions and VET providers are taking steps to tackle this issue in a systematic way. These approaches entail selecting the skills and attitudes to be assessed; collecting a broader range of evidence; involving learners and other agents in the

assessment process; and providing relevant feedback. VET providers tend to concentrate assessment efforts on a smaller number of skills like teamwork, communication, and creativity. Self- and peer-assessment activities are considered particularly suitable for assessing this competence. Employer engagement in the development and assessment of entrepreneurship competence remains low.

Learners feel entrepreneurship projects and challenges contribute to consolidating knowledge and drawing connections between the subjects while developing valuable skills for work such as problem-solving, teamwork, conflict management, communication and project planning. Teachers and management confirm that the learning outcomes go beyond curricula to include improvements in self-esteem, motivation, and the degree of participation in the classroom, reduction in absenteeism and dropout rates, and improvements in the academic performance of learners. Notwithstanding these positive reactions, the impact of the many actions in entrepreneurship competence development is still not clearly established in the literature. Central and regional administrations could help to further anchor entrepreneurship in VET by funding scientific-monitored pilots and endorsing transfer and upscaling of successful initiatives.

This case study shows policy-making in multi-level systems is a complex undertaking. The substantial policy-making capacities of regions in Spain has resulted in the implementation of a wide array of policy solutions based in socioeconomic and territorial priorities and specificities. Approaches, resources, timing, and degree of development vary across regions, but field research has also revealed some common issues around entrepreneurship competence development in VET in areas like curriculum, assessment, teacher training or impact evaluation. Strengthening interregional cooperation at policy and VET provider level can serve as a powerful instrument for mutual learning and helping tackle the main common challenges of anchoring the development of entrepreneurship competence in VET. Central government could take an activating role as moderator through participative strategies (e.g. stakeholder conferences or VET entrepreneurship round table) that could inform future curricular reforms and the development of a suitable set of indicators that can systematically and continuously record the development of solutions to the implementation problems of entrepreneurship in VET.

## Acronyms

|          |   |
|----------|---|
| ANPROFOL | <i>Asociación Nacional de Profesorado de FOL</i><br>[National association of FOL teachers].   |
| APE      | <i>Aulas Profesionales de Emprendimiento</i><br>[Professional entrepreneurship classrooms]  |
| ATECA    | <i>Aula de Tecnología Aplicada</i><br>[Applied technology labs]   |
| CIFP     | <i>Centro Integrado de Formación Profesional</i><br>[Integrated vocational training centre]   |
| CNCP     | <i>Catálogo Nacional de Cualificaciones Profesionales</i><br>[National catalogue of occupational standards]   |
| CNIE     | <i>Centro Nacional de Innovación e Investigación Educativa</i><br>[National Centre for Educational Research and Innovation]                                 |
| CPD      | continuing professional development   |
| CVET     | continuing vocational education and training  |
| ECTS     | European credit transfer and accumulation system  |
| EIE      | <i>Empresa e Iniciativa Emprendedora</i><br>[Enterprise and entrepreneurial initiative]   |
| EOS      | entrepreneurial orientation scale   |
| ETHAZI   | <i>ETekin HAndiko Zikloak</i><br>[high-performance VET programmes based in challenge-based collaborative learning model for VET]                            |
| FCT      | <i>Formación en Centros de Trabajo</i><br>[work-based learning module]  |
| FEVECTA  | <i>Federación Valenciana de Empresas Cooperativas de Trabajo Asociado</i><br>[Valencian federation of associated work cooperative companies]                |
| FOL      | <i>Formación y Orientación Laboral</i><br>[career training and guidance]  |
| IES      | <i>Instituto de Educación Secundaria</i><br>[secondary education school]  |
| INTEF    | <i>Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado</i><br>[National institute of educational technologies and teacher training] |
| ISCED    | International standard classification of education  |
| IVET     | initial vocational education and training   |
| LOMLOE   | <i>Ley Orgánica por la que se modifica la LOE de 2006</i><br>[Organic law, which amends 2006 Organic law on education]                                      |
| MEYFP    | <i>Ministerio de Educación y Formación Profesional</i><br>[Ministry of education and vocational training]   |
| MOOC     | massive open online course  |
| VET      | vocational education and training   |

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## Annex 1

### VET providers selected for the field research

| Name   | Region, city, number of learners               | Type of VET | Curricula addressed by the research  |
|--|--|-------------|--|
| <b>CIFP Comunicación, Imagen y Sonido (CISLAN)</b> | Asturias, Langreo<br>468 learners              | IVET+ CVET  | Audiovisual industries   |
| CIFP Nicolás Larburu                               | Basque Country, Barakaldo<br>1 500 learners    | IVET+ CVET  | Personal image<br>Electricity and electronics<br>Building and civil works<br>Health<br>Mechanical manufacturing<br>Sociocultural and community services<br>Computing and communications<br>Textile, clothing and leather |
| CIFP Río Tomes                                     | Castilla y León, Salamanca.<br>600 learners    | IVET + CVET | Electricity and electronics<br>Installations and maintenance<br>Transport and vehicle maintenance  |
| CIPFP La Costera                                   | Comunidad Valenciana, Xátiva<br>1 100 learners | IVET + CVET | Electricity and electronics<br>Trade and marketing<br>Health<br>Printing technologies and production<br>Sociocultural and community services<br>Vehicle transport and maintenance  |
| <b>IES Francisco Tomás y Valiente</b>              | Madrid, Madrid.<br>545 learners                | IVET        | Administration and management<br>Electricity and electronics   |
| Institut Escola del Treball                        | Catalonia, Lleida<br>760 learners              | IVET        | Administration and management<br>Chemistry<br>Electricity and electronics<br>Energy and water<br>Wood and furniture<br>Trade and marketing<br>Safety and environment   |

## Annex 2

### VET provider descriptions

#### A1.1. Institut Escola del Treball

##### VET provider data

|                        |                             |
|------------------------|-----------------------------|
| <b>Name</b>            | Institut Escola del Treball |
| <b>Location</b>        | Lleida                      |
| <b>Teachers</b>        | 74                          |
| <b>Learners</b>        | 760                         |
| <b>VET type</b>        | IVET                        |
| <b>Sector branches</b> | 7                           |
| <b>VET diplomas</b>    | 14                          |

##### Sector branches and diplomas

| Sector branches                      | VET diplomas   |
|--------------------------------------|--|
| <b>Administration and management</b> | CFGM Administrative management<br>CFGM Administrative management in the legal field<br>CFGS Administration and finance<br>CFGS Management assistance |
| <b>Trade and marketing</b>           | CFGM Commercial activities<br>CFGS International trade<br>CFGS Transport and logistics<br>CFGS Marketing and advertising                             |
| <b>Electricity and electronics</b>   | CFGM Electrical and automatic installations<br>CFGS Industrial automation and robotics   |
| <b>Energy and water</b>              | CFGS Renewable energies  |
| <b>Wood and furniture</b>            | CFGS Carpentry and furniture   |
| <b>Chemistry</b>                     | CFGS Laboratory analysis and quality control   |
| <b>Security and environment</b>      | CFGS Environmental education and control   |

### Major milestones in entrepreneurship

| Year                    | Description  |
|-------------------------|--|
| 2012-13                 | Institut Escola del Treball joins EmprènFP (pilot experience), the Catalanian programme to support entrepreneurship in VET. They consider it 'a fundamental milestone, a way of looking up and seeing what others are doing in order to share and undertake actions around entrepreneurship'.  |
| 2013-14                 | Organisation of first Entrepreneurship Week. The event continues to be held annually and is fully planned and managed by VET learners.   |
| 2014-15                 | The Espai eLab, which in the future will become the Entrepreneur's Office, is set up. In this same year, the Open Space (multi-purpose classroom) is also created. The Píldora Emprendedora programme is launched. The programme includes 12 short training actions delivered by external experts, either in school or out of school hours. They are voluntary and are certified.  |
| 2014-16                 | Timetables are restructured to eliminate shifts and superfluous hours. This move freed up time for teachers to engage in the identification of needs and key improvement areas (e.g. entrepreneurship)   |
| 2015-16                 | Creation of the Talent Management Wheel, which brings together, unifies and gives coherence and continuity to all the actions carried out in the field of entrepreneurship.  |
| 2016-17                 | First pilot experience in the implementation of high-performance VET diplomas in the Higher VET diploma on renewable energies. This entails a conviction-led change towards the adoption of new methodological strategies.   |
| 2017-19                 | Participation in Erovet, an Erasmus + project to improve the employability of VET learners and with strands of work focused on career guidance, internationalisation, dual training, entrepreneurship and team management.   |
| 2019-22                 | Participation in Erovet+, this time with a stronger focus on working on team management. A third edition is planned, focusing on the topic of microcredentials   |
| 2021-22                 | Set up of necessary structures and protocols (Entrepreneur's Office) to support the creation of companies by learners and alumni (Level 2 of the EmprènFP programme).  |
| <b>Challenges ahead</b> | <ul style="list-style-type: none"> <li>- Increase the portfolio of strategic actors to reinforce the entrepreneurship ecosystem and generate contacts with key associations that also promote actions through financial support;</li> <li>- Raise the profile of VET bringing it closer to the concept of profession and moving away from the cliché of trade;</li> <li>- Become a relevant actor in the RDI Ecosystem at local and regional level.</li> </ul> |

### A coherent portfolio of actions accompanied by organisational and methodological changes.

The incorporation of Institut Escola del Treball into the regional programme to support entrepreneurship in VET, EmprènFP, in 2012 was a starting point in developing, in a gradual and progressive way, a wide array of curricular and extracurricular actions in the following years; this included the Entrepreneurship Week (2013-14) and the Entrepreneurial training pills programme (2014-15). In

order to expand and give greater coherence to the portfolio, all actions were grouped in the Talent management wheel in 2015-16.

After careful consideration, the management team committed to facilitating the work of the teaching staff through a series of significant organisational changes: elimination of shifts and superfluous hours, which culminated in the creation of an entrepreneurship committee in 2016. A year after, 2016-17, a massive methodological change was introduced with the implementation of high-performance VET diplomas.

Networking with other education centres through regional programmes (EmprènFP) or European projects (e.g. 2017-22, EROVET, EROVET+) helps consolidate actions and meet challenges. Action is currently focused on providing the necessary structures and protocols (Entrepreneur's Office) to support the creation of companies by learners and alumni (Level 2 of the EmprènFP programme). The main challenges for the future are to increase the portfolio of strategic actors to create a solid ecosystem, to raise the profile of VET and to position Institut Escola del Treball as a relevant actor in the regional RDI ecosystem.

## A1.2. IES Francisco Tomás y Valiente

### VET provider data

|                 |                                     |
|-----------------|-------------------------------------|
| Name            | IES Francisco Tomás y Valiente      |
| Location        | Madrid                              |
| Teachers        | 26                                  |
| Learners        | 545 (325 face-to-face / 220 remote) |
| Type            | IVET                                |
| Sector branches | 2                                   |
| VET diplomas    | 6                                   |

### Sector branches and diplomas

| Sector branches                      | VET diplomas  |
|--------------------------------------|---|
| <b>Administration and management</b> | FPB Administrative services<br>CFGM Administrative management<br>CFGS Administration and finance  |
| <b>Electricity and electronics</b>   | FPB Electricity and electronics<br>CFGM Electrical and automatic Installations (Dual and distance learning)<br>CFGS Electrotechnical and automation systems |

### Major milestones in entrepreneurship

| Year                    | Description   |
|-------------------------|---|
| 2015-16                 | The incorporation of Jesús Fernández de Vera, is considered the key milestone in the deployment of the entrepreneurship agenda in IES Francisco Tomás y Valiente  |
| 2017-18                 | The new educational project foresees the creation of an Entrepreneurship Classroom, financed through a regional call for proposals. The first project in the Entrepreneurship Classroom is launched, to enable the development of entrepreneurial skills and facilitate pedagogical innovation.   |
| 2018-19                 | Organisation of the Entrepreneurship Fair had a very positive effect on teachers and learners as it allowed them to see the real value of their work and share experiences with another five VET providers in the Madrid region.  |
| 2019-20                 | Launch of the GarageLab project, a highly transformative initiative that seeks to motivate and empower Basic VET learners through collaborative work on digital fabrication projects for real users. Fundación Orange [Orange Foundation] finances the classroom equipment with 3D printers and other devices and trains teachers in SCRUM and Design Thinking methodologies. |
| 2020-21                 | Inauguration of the MakerSpace and the Business Incubator. Both spaces were completed in May 2021. While teachers and learners have started using these spaces for specific activities, an ambitious programme is being designed to make the most of these learning environments.   |
| <b>Challenges ahead</b> | Manage and make proper use of the incubator as a resource shared by VET learners from all sector branches and to help learner-led start-ups succeed. Have a transforming effect on the local community and consolidate as a flagship VET provider in the field of entrepreneurship.   |

### Space matters: learning environments where digital manufacturing and entrepreneurship go hand in hand.

The founding milestone was the incorporation of Jesús Fernández de Vera to its staff in 2015. This teacher in the FOL department, and currently Head of Studies, was commissioned to create a classroom that would allow the development of entrepreneurial skills and pedagogical innovation.

The creation of this space, financed through a regional call for proposals, was one of the objectives included in the new Educational Project approved in 2017. One year later (2018-19) the centre organised the First Entrepreneurship Fair in collaboration with 5 other VET centres in the Community of Madrid to give visibility to the projects developed in the classroom.

In 2019-20 a 3D and 2D prototyping laboratory was set up in the frame of the GarageLab project (2019). This Makerspace was created with a two-fold objective. On the one hand, to motivate and reduce absenteeism among Basic VET learners and, on the other, to promote the joint development of entrepreneurship and digital

manufacturing skills through collaborative projects with community-based organisations.

This VET providers' motto is 'space matters' and two additional learning environments were set up in 2020-21: a maker workshop and a business incubator. The main challenges ahead for this VET provide revolve around making full use of the incubator as an open learning environment and to position themselves as an agent of change in its environment and an inspiring example in the field of entrepreneurship for other VET providers.

### A1.3. CIFP Comunicación, Imagen y Sonido

#### VET provider data

|                 |   |
|-----------------|---|
| Name            | CIFP Comunicación, Imagen y Sonido (CISLAN) |
| Location        | Langreo                                     |
| Teachers        |   |
| Learners        | 468   |
| Type            | IVET + CVET                                 |
| Sector branches | 1   |
| VET diplomas    | 6   |

#### Sector branches and diplomas

| Sector branches        | VET diplomas   |
|------------------------|--|
| <b>Imagen y Sonido</b> | CFGM Video, disc jockey and sound;<br>CFGS Lighting, image capture and image processing;<br>CFGS Production of audiovisuals and shows;<br>CFGS Production of audiovisual projects and shows;<br>CFGS Sound for audiovisuals and shows;<br>CFGS 3D Animation, games and interactive environments. |

#### Major milestones in entrepreneurship

| Year           | Description   |
|----------------|---|
| <b>2008-09</b> | They begin to focus on Project-based learning (PBL) and interdisciplinary projects with the aim of recreating the real working conditions of interdisciplinary teams in the audiovisual sector. |
| <b>2013-14</b> | They incorporate Challenge-based learning (CBL). Challenges are proposed by external collaborators and clients and linked to delivering real products and services.                             |

| Year                    | Description  |
|-------------------------|--|
| 2015-16                 | Creation of an in-house support service for the creation of companies in collaboration with the Valnalón incubator (later known as CISLAB).  |
| 2015-16                 | Launch of the SincronizaFP Network, which facilitates links with other VET providers in the audiovisual sector and a network of contacts with companies.   |
| 2016-17                 | Creation of the Entrepreneurial Culture Unit and CISLAB.   |
| 2018-19                 | CIFP Imagen y Sonido joins FPEmpresa, a network of 80 VET providers offering activities related to entrepreneurship.   |
| 2019-20                 | Award 'Asturias Most Entrepreneurial VET provider'   |
| 2021-22                 | Design and implementation of Entrepreneurship classroom.   |
| <b>Challenges ahead</b> | <ul style="list-style-type: none"> <li>- Create a technology-based Business incubator in order to tackle population decline in post-industrial areas and attract companies that provide audiovisual services linked to leisure and technology;</li> <li>- Free up time for teaching staff to work on these issues;</li> <li>- Establish greater and better collaboration with the regional administration to strengthen network of contacts with other VET providers and companies.</li> </ul> |

### **Interdisciplinary projects and business creation in collaboration with external agents.**

The commitment to project-based learning and projects involving learners from different VET diplomas in 2008 paved the way for the deployment of the entrepreneurship agenda. Since 2013, this work has been reinforced with the participation in challenges promoted by external agents and the intermediation work of Valnalón, a public entity of the Government of the Principality of Asturias.

Collaboration with Valnalón also led to the creation in 2015-16 of CISLAB, a laboratory to promote the creation of companies among VET learners and alumni.

Avowing the importance of the organisational side, all actions related to entrepreneurship are programmed and monitored by the Entrepreneurial Culture Unit coordinated by teachers from the FOL department. The existing offer is further enriched through the exchange of experiences with other VET providers in networks such as Sincroniza *FP* (since 2015) and FPEmpresa (2018).

In 2019 the regional government acknowledged CIFP Imagen y Sonido outstanding contribution to the development of entrepreneurship in VET with the Asturias Entrepreneurial Centre award.

At present this VET provider is currently involved in the creation of the Entrepreneurship classroom and in the future envisages the creation of a Technology-based business incubator to attracting companies that provide

audiovisual services and creating collaborative networks with regional administration and other key stakeholders in the ecosystem.

#### A1.4. CIFP Rio Tormes

##### VET provider data

|                        |                 |
|------------------------|-----------------|
| <b>Name</b>            | CIFP Río Tormes |
| <b>Location</b>        | Salamanca       |
| <b>Teachers</b>        | 61              |
| <b>Learners</b>        | 600             |
| <b>Type</b>            | IVET + CVET     |
| <b>Sector branches</b> | 3               |
| <b>VET diplomas</b>    | 12              |

##### Sector branches and diplomas

| Sector branches                           | VET diplomas   |
|---|--|
| <b>Electricity and electronics</b>        | FPB Electricity and electronics;<br>CFGM Telecommunications installations;<br>CFGM Electrical and automatic installations;<br>CFGS Electrotechnical and automated systems;<br>CFGS Electronic maintenance. |
| <b>Installation and maintenance</b>       | CFGM Refrigeration and air conditioning installations;<br>CFGS Prevention of professional risks.   |
| <b>Transport and vehicles maintenance</b> | CFGM Vehicle bodywork;<br>CFGM Electro-mechanical mechanics of motor vehicles;<br>CFGM Electromechanics of machinery;<br>CFGS Automotive;<br>CFGS Aeromechanical maintenance of turbine-engine aeroplanes. |

### Major milestones in entrepreneurship

| Year                    | Description  |
|-------------------------|--|
| 2007-08                 | CIFP Río Tormes becomes an integrated VET provider, which allows it to further promote entrepreneurship, as this is one of the remits set out in the regulations applicable to this type of VET provider.  |
| 2008-09                 | Two strategic lines are defined: applied innovation (Tormes Innova) + entrepreneurship (Tormes Emrende).   |
| 2011-12                 | CIFP Río Tormes joins <i>FPEmpresa</i> , a network of more than 80 VET providers across the country, to share experiences, create synergies and collaborative projects in entrepreneurship with other VET providers.<br>Organisation of First career guidance and entrepreneurship seminars, which include visits to companies, talks from former learners.  |
| 2014-15                 | Design and implementation of inter-modular projects that combine the technical side with the entrepreneurial side is encouraged.   |
| 2015-16                 | Participation in the First national congress of FOL teachers.<br>Teacher training in agile methodologies and Challenge-based learning in order to boost methodological change.   |
| 2016-17                 | Participation in entrepreneurship competitions and hackathons.<br><br>Collaboration agreement with the University of Salamanca that grants VET learners access to the Science Park incubator under the same conditions of use and prices as university learners.   |
| 2020-21                 | Launch of the educational innovation project, From problem to challenge: a team for each situation. This aims to spread Challenge-based learning to all VET diplomas.  |
| <b>Challenges ahead</b> | <ul style="list-style-type: none"> <li>- Receive support from the administration to keep a stable team of teachers;</li> <li>- Free up time for teaching staff team meetings in order to discuss and coordinate actions related to entrepreneurship in the school;</li> <li>- Promote collaboration with other VET providers (inter-school networks) in order to share resources, concerns, interests, motivations, problems, solutions in the area of entrepreneurship competence development.</li> </ul> |

### Applied innovation and entrepreneurship as strategic and complementary lines.

In 2003-04 the centre (along with four others in the province) ceased to be a secondary school and became a specific vocational training centre, although it was in the academic year 2007/08 when it acquired the status of integrated vocational training centre. This allowed it to promote entrepreneurship further, as this is one of the objectives set out in the regulations applicable to this type of centre. In 2008 the centre defines two strategic lines that will point the way forward: applied innovation (Tormes Innova) and entrepreneurship (Tormes Emrende).

Joining the FPEmpresa network in 2011, opened opportunities to learn about other experiences, create synergies and design projects in entrepreneurship in collaboration with other VET providers. That same year, the centre organised the

Career guidance and entrepreneurship conference under the slogan I work on my own.

From 2014 onwards, the implementation of inter-modular projects that combine the contribution of the technical modules and the transversal modules (Career guidance and training, and Enterprise and entrepreneurial Initiative) began to be promoted.

In 2015, some teachers attended the First national congress of FOL teachers and began to receive training in agile methodologies and Challenge-based learning, influencing changes in the methodological approach.

Since 2016, CIFP Río Tormes has successfully participated in competitions and hackathons organised by other entities. Above and beyond recognition, these events are seen as a good way to disseminate projects developed by learners. That same year an agreement was signed with the University of Salamanca so that CIFP Río Tormes VET learners could access business incubation services offered at the Science Park.

In 2020 FpAR project was launched, which seeks the systematic implementation of a new learning model based on the challenge-based collaborative learning model for VET first developed in the Basque Country (ETHAZI). The challenges for the future include having a stable team of teachers with the idea of creating a structure, freeing up time for team meetings on issues related to entrepreneurship and promoting collaboration with other VET providers (interschool networks) with the aim of sharing resources, concerns, interests, motivations, problems, solutions, etc.

### A1.5. CIFP Nicolás Larburu

#### VET provider data

|                 |  |
|-----------------|--|
| Name            | CIFP Nicolás Larburu   |
| Location        | Barakaldo  |
| Teachers        | 160  |
| Learners        | 1300 (supera los 1500 sumando el resto de oferta formativa más allá de los ciclos) |
| Type            | IVET + CVET  |
| Sector branches | 12   |
| VET diplomas    | 26   |

## Sector branches and diplomas

| Sector branches                                    | VET diplomas   |
|--|--|
| <b>Administration and management</b>               | CFGM Administrative management;<br>CFGS Administration and finance.  |
| <b>Personal image</b>                              | CFGM Aesthetics and beauty;<br>CFGM Hairdressing and hair cosmetics;<br>CFGS Integral aesthetics and well-being.   |
| <b>Electricity and electronics</b>                 | CFGM Electrical and automatic installations;<br>CFGM Electromechanical maintenance;<br>CFGS Electrotechnical and automated systems;<br>CFGS Industrial automation and robotics.        |
| <b>Construction and civil work</b>                 | CFGS Building projects;<br>CFGS Civil engineering projects.  |
| <b>Health</b>                                      | CFGM Auxiliary nursing care;<br>CFGS Dietetics;<br>CFGS Oral hygiene.  |
| <b>Metal working</b>                               | CFGM Welding and boilermaking;<br>CFGM Machining;<br>CFGS Metallic constructions;<br>CFGS Mechanical manufacturing design;<br>CFGS Production programming in mechanical manufacturing. |
| <b>Installation and maintenance</b>                | CFGS Industrial mechatronics.  |
| <b>Physical and sports activities</b>              | CFGS Social and sports animation and teaching.   |
| <b>Sociocultural and community services</b>        | CFGS Early childhood education;<br>CFGS Promotion of gender equality.  |
| <b>Information and communications technologies</b> | CFGS Telecommunications and computer systems   |
| <b>Wood, furniture and cork</b>                    | CFGM Installation and furnishing   |
| <b>Textile, clothing industry and leather</b>      | CFGS Pattern making and fashion  |

### Major milestones in entrepreneurship

| Year                    | Description  |
|-------------------------|--|
| <b>2005-06</b>          | CIFP Nicolás Larburu joins Urratsbat, a VET incubation programme promoted by Tknika.<br><br>Participation in the initiatives of DEMA (Bizkaia Provincial Council's Regional Employment and Entrepreneurship Agency).   |
| <b>2006-07</b>          | CIFP Nicolás Larburu joins Empresa Joven Europea (EJE), a mini-company programme promoted by Tknika. Within the frame of this programme, the First EJE Cooperatives conference was hosted on its premises.   |
| <b>2014-15</b>          | Teacher training in ETHAZI methodology (Challenge-based collaborative learning model for VET developed by Tknika).   |
| <b>2015-16</b>          | Implementation of ETHAZI methodology.  |
| <b>2017-18</b>          | CIFP Nicolás Larbur Action Plan [ <i>Plan de Actuación de Centro</i> ] prescribes participation in Ikasenpresa (formerly known as EJE) for all learners in Intermediate VET diplomas irrespective of sector branch.  |
| <b>2021-22</b>          | Hosting organisation of the regional Ikasempresa Fair and business ideas competition.  |
| <b>Challenges ahead</b> | <ul style="list-style-type: none"> <li>- Improve the relationship and strengthen collaboration between entrepreneurship teachers and technical teaching staff.</li> <li>- Offer stability to the teaching team.</li> <li>- Further improve competence-based assessment and communication with learners.</li> <li>- Raise the profile and value of VET in the VET society.</li> <li>- Increasing the budget.</li> </ul> |

### Mini-companies, business incubation and methodological change under the tutelage of Tknika

CIFP Nicolás Larburu's journey in the field of entrepreneurship began with the creation of the in-house business incubator within the framework of the Urratsbat programme promoted by the Basque VET Applied Research Centre (Tknika) in 2005. A year later, the centre joined another of Tknika's proposal, a mini-company programme for first year VET learners (EJE, Ikasenpresa).

From the outset, both programmes have had a coordinator appointed at VET provider level who is responsible for raising awareness, programming, monitoring and evaluating the quality of the actions undertaken throughout the year.

In 2014-15 CIFP Nicolás Larburu decided to embrace the Challenge-based collaborative learning model for VET proposed by Tknika and began to plan the deployment of the ETHAZI model with teacher training as a prior step to the implementation of the methodology in 2015-16.

Since 2017, the Ikasempresa programme has been scaled up and the annual action plan prescribed that all intermediate VET learners must participate in this programme.

For the moment, the latest milestone in this journey has been the organisation of the regional Ikasempresa Fair and the business ideas competition in 2021-22.

In addition to the programmes promoted by Tknika, CIFP Nicolás Larburu continues its longstanding collaboration and participation in entrepreneurship initiatives proposed by with DEMA, the regional Employment and Entrepreneurship Agency of Bizkaia. The relationship with this organisation dates back to 2005.

Future challenges include improving the relationship and teamwork between Ikasempresa teachers and technical teachers, securing greater stability in teaching teams, improving competence-based assessment and communication protocols with learners, working to raise the profile and value of VET in the VET society and achieving a larger budget allocation.

## A1.6. CIFP La Costera

### VET provider data

|                        |                 |
|------------------------|-----------------|
| <b>Name</b>            | CIFP La Costera |
| <b>Location</b>        | Xàtiva          |
| <b>Teachers</b>        | 110             |
| <b>Learners</b>        | 1100            |
| <b>Type</b>            | IVET + CVET     |
| <b>Sector branches</b> | 6               |
| <b>VET diplomas</b>    | 18              |

### Sector branches and diplomas

| Sector branches                          | VET diplomas  |
|--|---|
| <b>Transport and vehicle maintenance</b> | PQFPB Auxiliary maintenance operations in vehicle electromechanics;<br>CFGM Vehicle bodywork;<br>CFGM Vehicle electromechanics;<br>CFGS Automotive. |
| <b>Trade and marketing</b>               | CFGM Commercial activities;<br>CFGS Sales and commercial space management;<br>CFGS Marketing and advertising.                                       |

| Sector branches                             | VET diplomas   |
|---|--|
| <b>Electricity and electronics</b>          | CFGM Electrical and automatic installations;<br>CFGS Electrotechnical and automated systems;<br>Partial offer Industrial robotics module.  |
| <b>Health</b>                               | CFGM Auxiliary nursing care;<br>CFGM Pharmacy and parapharmacy;<br>CFGM Health emergencies;<br>CFGS Clinical and biomedical diagnostics laboratory;<br>CFGS Diagnostic imaging and nuclear medicine. |
| <b>Sociocultural and community services</b> | CFGS Socio-cultural and tourism animation;<br>CFGS Early childhood education;<br>CFGS Promotion of gender equality.  |
| <b>Graphic arts</b>                         | CFGM Graphic printing.   |

### Major milestones in entrepreneurship

| Year           | Description   |
|----------------|---|
| <b>2013-14</b> | Stable team of teachers at FOL Department. The stability of the teaching staff is a great support for the continuity of the projects.<br><br>Organisation of the first Common Good Fair in 2014. This activity continues to be held renamed as Solidarity Fair and involving other VET providers.   |
| <b>2014-15</b> | Entrepreneurial VET provider regional award.  |
| <b>2015-16</b> | Organisation of the Entrepreneurial ideas contest. Winning projects received a start-up grant from the City Council while advice and guidance was provided by teachers. It didn't take long for this VET provider to discontinue the business start-up support service due to a lack of time, means and resources. The activity was renamed as the Innovative and sustainable ideas competition with a stronger focus on idea generation. |
| <b>2021-22</b> | CIPFP La Costera joins Emprén, the regional programme to support entrepreneurship in VET.<br><br>Funding received to set up and equip an Entrepreneurship classroom.<br><br>Organisation of fifth Innovative and sustainable ideas competition.   |

| Year                    | Description   |
|-------------------------|---|
| <b>Challenges ahead</b> | <ul style="list-style-type: none"> <li>(a) Expand and reinforce collaboration with other VET providers at regional and State level;</li> <li>(b) Actively engage a greater number of companies in entrepreneurship-related activities;</li> <li>(c) Increase the social impact of all the work undertaken so that the project contributes to real change in the local community.</li> </ul> |

### **A commitment to innovative, inclusive and sustainable entrepreneurship at a local level**

CIPFP La Costera strives to give its learners a more diverse and inclusive vision of entrepreneurship. The ball started rolling in 2014 with the organisation of the Fair for the common good. Supported by the Xàtiva City Council, the activity was well received and is still held today reframed as a Solidarity Fair open to other VET providers in the local area.

That same year it received the Entrepreneurial Centre award and shortly after, in 2015, it launched the First entrepreneurial ideas competition. Winning projects received a start-up grant from the city council while advice and guidance was delivered by teachers. It didn't take long for this VET provider to discontinue the business start-up support service due to a lack of time, means and resources.

The activity was renamed as the Innovative and sustainable ideas competition and focused on the generation of ideas. Winning projects were referred to institutions such as the Valencian Federation of Worker Cooperatives (*FEVECTA*) for specialist business start-up support.

In 2021 CIPFP La Costera joined Emprén, the freshly launched support programme for entrepreneurship in VET. Currently, this VET provider is also involved in the creation of the Entrepreneurship classroom with which they hope to give new impetus to entrepreneurial projects of their learners by generating audiovisual material and also working on the prototyping of ideas.

The main challenges ahead revolve around expanding and improving collaboration with other VET providers at regional and State levels. It also seeks the active engagement of a greater number of companies in entrepreneurship-related activities. Another of the challenges for the future is to increase the social impact of all the work undertaken so that the project contributes to real change in the local community.

## **Conclusions**

### **Timeframe and progression**

The portfolio of activities has been progressively expanded and consolidated over long periods of time, in many cases exceeding 10 years. Organising or participating in specific activities such as fairs or business ideas competitions is considered as a starting point giving way to the deployment of a wider and more coherent range of actions.

### **Entrepreneurship, applied innovation and methodological change**

The roadmap for the development of entrepreneurial competence is closely linked to processes of methodological change. Real challenges, projects, competitions are seen as a vehicle towards a seamless integration of the agendas of entrepreneurship and applied innovation, but this is an ongoing challenge.

### **Learning environments**

The creation of suitable learning environments for the development of entrepreneurial competence is another recurrent pattern. Makerspaces and in-house incubation units were already in place in some of the VET providers visited but this trend has been reinforced and accelerated in the last 2 years by government-funded calls to equip entrepreneurship classrooms and applied technology classrooms in practically all VET providers visited.

### **Business start-up**

In addition to stimulating the development of entrepreneurial skills in a broad sense among all learners, VET providers are keen to encourage the creation of companies among VET learners and alumni. All VET providers had, or plan to, set up some sort of start-up support service in collaboration with specialist support agencies and incubators. For the time being the level of activity at these incubation units remains low, except in the case of CIFP Nicolás Larburu.

### **Organisational issues**

The active involvement and support from the management teams has been key in introducing organisational changes that facilitate the work of the teaching staff. The availability of time for joint planning with other colleagues and the coordinating role played by some members of the teaching team has improved the quality of the process of designing, implementing and monitoring all these actions. The concern to systematise and consolidate all these actions is reflected in various school documents.

### **Ecosystem**

VET providers are shaping their own ecosystem, seeking the support of institutions, companies and foundations in their environment. Wherever they exist, the regional programmes to support entrepreneurship in VET promoted by education administrations aid the process of implementation and consolidation.

### **Networking and communities of practice**

VET providers identify their decision to join various networks and communities of practice as another key step and underline their importance in terms of getting to know other experiences and establishing contacts that pave the way for closer collaboration. These communities of practice are particularly well established in the Autonomous Communities that have programmes to support entrepreneurship in VET (Catalonia, Valencian Community, Basque Country).



# Entrepreneurship competence in vocational education and training

Case study: Spain

This report describes how entrepreneurship competence is embedded in vocational education and training (VET) in Spain. 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 from Cedefop's study Entrepreneurship competence in VET. It is part of a series of eight national case studies (Spain, France, Croatia, Italy, Latvia, Austria, Finland and Sweden) and the forthcoming final report.

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Europe 123, Thessaloniki (Pylea), GREECE  
Postal: Cedefop service post, 570 01 Themi, GREECE  
Tel. +30 2310490111, Fax +30 2310490020  
Email: [info@cedefop.europa.eu](mailto:info@cedefop.europa.eu)  
[www.cedefop.europa.eu](http://www.cedefop.europa.eu)

