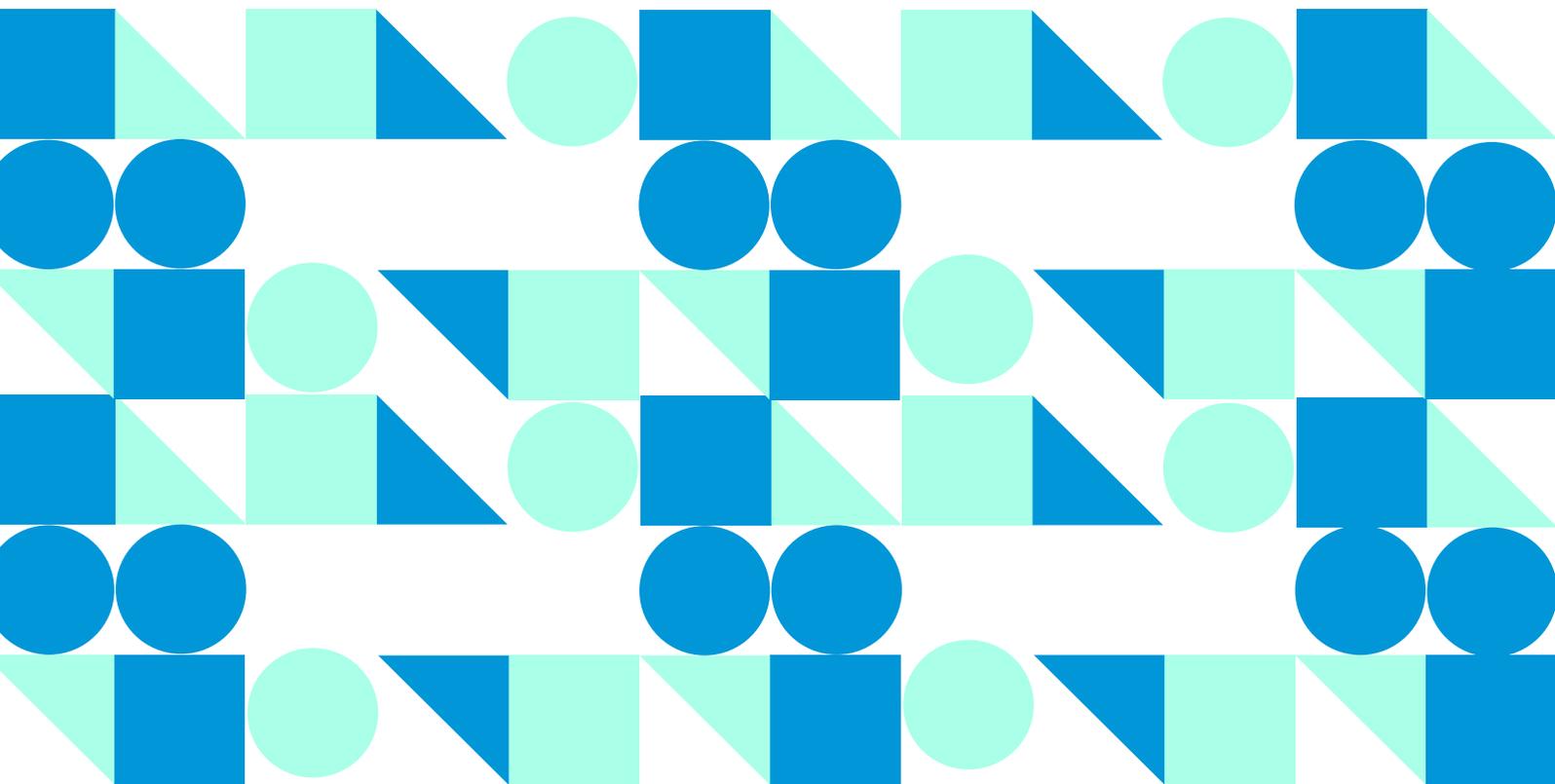




Research paper

Entrepreneurship competence in vocational education and training

Case study: Austria





Entrepreneurship competence in vocational education and training

Case study: Austria

Please cite this publication as:

Cedefop (2023). *Entrepreneurship competence in vocational education and training: case study: Austria*. Luxembourg: Publications Office. Cedefop research paper, No 95. <http://data.europa.eu/doi/10.2801/57841>

A great deal of additional information on the European Union is available on the internet.

It can be accessed through the Europa server (<http://europa.eu>).

Luxembourg: Publications Office of the European Union, 2023

© Cedefop, 2023.

Except otherwise noted, the reuse of this document is authorised under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes made are indicated. For any use or reproduction of photos or other material that is not owned by Cedefop, permission must be sought directly from the copyright holders.

PDF	ISBN 978-92-896-3609-4	EPUB	ISBN 978-92-896-3608-7
	ISSN 1831-5860		ISSN 1831-5860
	doi:10.2801/57841		doi:10.2801/21040
	TI-BC-23-006-EN-N		TI-BC-23-006-EN-E

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 This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

Europe 123, Thessaloniki (Pylea), GREECE
Postal: Cedefop service post, 570 01 Themi, GREECE
Tel. +30 2310490111, Fax +30 2310490020
Email: info@cedefop.europa.eu
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, and crises (pandemic, humanitarian) require adapting to new realities. To manage these changes, we need the right skills and competences. Resilience, flexibility, adaptability, acting on 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 carried out a study to provide VET stakeholders with new evidence on how entrepreneurship competence is embedded in VET.

Entrepreneurship competence in Austria plays an important role especially in the context of VET, because many apprenticeships and other VET qualifications lead to self-employment. However, such competence is not limited to the mechanics of business-creation: as a broader concept it acts on opportunities and ideas and transforming them into value (cultural, social) for others. In VET, entrepreneurship competence is mainly promoted through 'entrepreneurship education' that enables independent thinking and learner initiative. While the Austrian entrepreneurial learning ecosystem has a long tradition with many actors involved, it is also dynamic. The national action plan for entrepreneurship education sets the joint vision for a future-proof Austria by 2025.

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

Jürgen Siebel,
Executive Director

Loukas Zahilas,
Head of Department for VET and
qualifications

Acknowledgements

This research paper was produced by Cedefop, Department of VET and qualifications, under the supervision of Loukas Zahilas, Head of department. The paper is part of the project *Key competences in vocational education and training*. Dmitrijs Kuļšs was responsible for the publication and research conducted under the project.

Cedefop wishes to acknowledge the research and services of its contracted institution, the Fondazione Giacomo Brodolini Srl SB (FGB) (contract No 2021-0089/AO/DSI/DKULSS/Entrepreneurship-competence-VET/001/21) and thank Līga Baltiņa (project leader at FGB) and the following experts for their contribution to drafting the paper: Christina Enichlmair, Karin Petzlberger and Andrea Dorr supported by Iván Diego Rodríguez and Daniele Morselli.

The publication was peer-reviewed by Cedefop expert Philippe Tissot.

Contents

FOREWORD	1
EXECUTIVE SUMMARY	7
1. INTRODUCTION	12
1.1. Research questions and key terms	12
1.2. Methodological note	13
2. OVERVIEW OF THE AUSTRIAN VET SYSTEM	15
2.1. VET forms and levels	15
2.1.1. Secondary level	15
2.1.2. Higher education (tertiary level)	17
2.1.3. Adult education	17
2.2. Participation in VET	18
3. ENTREPRENEURSHIP COMPETENCE	19
3.1. Understanding the competence.....	19
3.2. Opportunity, value and venture creation.....	21
3.3. Explicit and implicit learning outcomes.....	23
3.3.1. Competence frameworks.....	23
3.3.2. Learning outcomes in VET curricula.....	23
3.3.3. Implicit learning outcomes	25
3.4. Transversal competence	27
4. ENTREPRENEURIAL LEARNING ECOSYSTEM	29
4.1. Entrepreneurship policy.....	29
4.2. Key stakeholders and elements	30
4.2.1. Governance	30
4.2.2. VET providers	31
4.2.3. Organisations supporting other target groups.....	33
4.2.4. Learning environments	34
4.2.5. Elements of the entrepreneurial ecosystem in Austria.....	35
4.3. From policy to practice	37
4.3.1. Curriculum documents	38

4.3.2. Policies and support programmes	38
4.3.3. Research	39
5. NURTURING ENTREPRENEURSHIP COMPETENCE: METHODS	
TOOLS AND APPROACHES.....	40
5.1. Curricula of VET schools (upper secondary level)	40
5.2. Teaching.....	42
5.3. Programmes and activities in the school context	43
5.4. Apprenticeship training	54
5.5. Continuing VET	56
5.6. Career guidance and business start-up support in VET	57
5.7. Extracurricular activities.....	59
5.8. Professional development opportunities in entrepreneurship for VET teachers.....	60
5.9. VET entrepreneurial learning environments	61
5.10. Formative and summative assessment	63
CONCLUSIONS.....	65
ACRONYMS	69
REFERENCES.....	71
ANNEX	75

Tables, figures and boxes

Tables

1.	Research in figures.....	13
2.	Selected VET providers in Austria.....	75
3.	Interviewed key stakeholders at national level	76

Figures

1.	TRIO model of entrepreneurship education in Austria.....	20
2.	Scheme of VET entrepreneurial learning ecosystem in Austria.....	35
3.	Elements of an 'entrepreneurship education' ecosystem	36
4.	Competence compass for entrepreneurship teachers	43
5.	Criteria for entrepreneurship schools (national standard ONR 42001).....	46

Boxes

1.	Austrian EntreComp framework.....	23
2.	Entrepreneurship competence at Maygasse Business Academy.....	44
3.	Certified entrepreneurship school Fashion School Hallein	45
4.	Entrepreneurship education in engineering (EEE): certification at the Higher College for Engineering Wolfsberg	47
5.	Junior company at Fashion School Hallein.....	49
6.	Apprenticeship training at Geberit Austria	55
7.	Apprenticeship training at Zumtobel Lighting.....	56
8.	LENA learning model in the entrepreneurship training course at WIFI Austria	57
9.	Performance assessment at Fashion School Hallein	63

Executive summary

Vocational education and training (VET) in Austria is mainly offered as apprenticeship (dual system) as well as in VET schools and VET colleges for higher vocational education ⁽¹⁾. Adult education comprises a broad range of programmes from remedial training and second-chance education to higher education.

Entrepreneurship competence

Austria employs a broad definition of entrepreneurship competence. The education ministry uses the term 'entrepreneurship education', which is understood as 'enabling the individual to take the initiative and think and act independently [...], actively and responsibly [...]'. Entrepreneurship education in a wider sense encompasses all education measures that encourage entrepreneurial attitudes and skills. The development of specific values, attitudes and personal qualifications helps graduates starting up their own businesses but is also essential for finding jobs with existing enterprises.

The interviews with managers, teachers and learners of VET schools and colleges revealed an even broader understanding of entrepreneurship competence, including the generation of ideas, creativity, self-reliance, taking initiatives and responsibility. In the interviews with companies providing VET, entrepreneurship competence is mainly understood as project planning and management, problem-solving and risk assessment, but also personal and social skills.

The VET learners interviewed, including apprentices and graduates, referred to the acquisition of economic know-how, teamwork and management skills when asked about their acquired entrepreneurship competence, but also to their personality development, soft and rhetorical skills ⁽²⁾.

⁽¹⁾ Commercial schools and academies (*Handelsschulen – HAS, Handelsakademien – HAK*), schools and colleges of social and services industries that are active in business, tourism, fashion, art and social affairs (*Humanberufliche Schulen – HUM*), agriculture and forestry, as well as in schools and colleges of engineering, arts and crafts (*Technische Fachschulen und Höhere Technische und Gewerbliche Lehranstalten – HTL*).

⁽²⁾ For example, self-awareness, self-improvement, teamwork skills, empathy, communication skills, presentation skills.

When used in the context of education and training, including VET, the term entrepreneurship is particularly understood as the creation of opportunities and values.

Entrepreneurial learning ecosystem

The Austrian entrepreneurial learning ecosystem – as defined for the purpose of this study – comprises different elements to support and promote entrepreneurship competence. The community dealing with promoting and imparting entrepreneurship competence is rather small; the stakeholders involved know each other well and are often active in more than one stakeholder organisation.

Entrepreneurship policy

The key element of the Austrian entrepreneurial learning ecosystem is the 2020 national action plan for entrepreneurship education (*Entrepreneurship education: map of actions for children and young adults*). The plan sets 25 goals for a future-proof Austria by 2025 and provides a map of actions promoting entrepreneurship competence in primary and secondary education.

VET schools and colleges

Entrepreneurship competence is included in the curricula of VET schools and colleges: in compulsory subjects, internships and in non-compulsory subjects, VET commerce programmes lead in offering entrepreneurship competence to learners.

The Federal Ministry of Education, Science and research (BMBWF) has established the Entrepreneurship Education for School Innovation Impulse Centre (*Entrepreneurship Education für schulische Innovationen, e.e.si* pronounced easy) which handles the certification of the so-called Entrepreneurship schools⁽³⁾ of commercial academies (*Handelsakademie, HAK*) and of colleges of social and service industries (*Humanberufliche Schulen, HUM*). The certification confirms that the school has implemented specific entrepreneurship activities in everyday teaching. The *Initiative for teaching entrepreneurship Austria (IFTE)* promotes entrepreneurship education by offering seminars and training for teachers. The Austrian Centre for Training Firms (*Servicestelle für alle österreichischen Übungsfirmen, ACT*) assists schools in the handling of the training firms⁽⁴⁾, that are compulsory in some of the VET schools and colleges (particularly commercial

(3) The certification is called *ONR 42001* and, when awarded to a school, confirms a certain standard in the organisation in the delivery of entrepreneurship education. *National standard ONR 42001: Qualitätskriterien für Entrepreneurship-Schulen.*

(4) Training firms are companies that simulate real businesses and may have real partner companies.

academies). The International Society for Engineering Pedagogy: national section Austria (IGIP Austria) is responsible for the [Entrepreneurship education in engineering \(EEE\) certification](#) of VET colleges of engineering, arts and crafts, promoting learner entrepreneurial thinking and imparting basic economic knowledge in addition to technical knowledge and know-how.

Support measures for careers and start-ups

The Austrian Federal Economic Chamber (*Wirtschaftskammer Österreich, WKO*), with its Business Start-up Service and Junior Chamber Austria (*Junge Wirtschaft Österreich*, focus on young entrepreneurs) provides support for careers and start-ups. The regional branches of the economic chamber usually work closely together with VET schools, with actions such as providing contacts for apprenticeships or internships, jointly organising entrepreneurship days or providing guidance for business start-ups.

[AustrianStartups](#), an independent non-profit platform for innovative entrepreneurship in Austria, focuses on start-ups and jointly organises the Youth entrepreneurship week, a countrywide initiative to boost entrepreneurship education. The Youth entrepreneurship week is open to all upper secondary schools, companies providing apprenticeship and education institutions that support young people.

Companies

Companies are important stakeholders in the Austrian entrepreneurial learning ecosystem because they train apprentices. In the context of apprenticeships (dual system), the teaching of entrepreneurship competence (i.e. project planning, problem solving, personal and social skills) takes place directly as part of daily work. Further, in the companies visited during the field research, entrepreneurial thinking, social and personal competences are promoted through extra activities such as internal project work, participation in social projects and rotation opportunities in different departments of the company.

Learning environment

The curricula in VET schools and VET colleges generally refer to entrepreneurship and entrepreneurial thinking and action. The relevant learning outcomes are mainly integrated in business-related subjects. Alongside compulsory internships in companies, practical training is possible through work in the so-called training firms, which is also a compulsory subject in all commercial schools and academies as well as in other types of schools with commercial-economic training areas.

These training firms are companies that simulate real businesses and sometimes even have real partner companies.

Teachers of economics in VET schools and colleges have usually completed a master degree in business education; teachers of other subjects require further training in this field.

In initial VET, learning takes place in the classroom (e.g. business administration, accounting), via teamwork and project work, while continuing VET uses more the competence-oriented LENA learning model, as for example at the Institute for Economic Promotion of the Austrian Federal Economic Chambers, WIFI Austria (*Wirtschaftsförderungsinstitut der Wirtschaftskammer Österreich*), and focuses on the learners, their learning processes and strengthening self-learning competences. The LENA learning model is competence-oriented, focusing on practical orientation and practical experiences in the frame of the courses.

Performance assessment in Austrian schools is generally carried out according to the performance assessment regulation (*Leistungsbeurteilungsverordnung, LBVO*). The requirements of the curriculum – that often includes entrepreneurship competence – are the benchmark for performance assessment. In the individual subjects, the teacher must obtain the assessment by ascertaining the learners' participation in class as well as by special oral, written and practical performance assessments integrated into the class work or in other forms of work. To assess the performance of learners in training firms, the teachers also use tests, work samples and work reports in grading.

Methods, tools and approaches supporting the development of entrepreneurship competence

In VET schools and colleges dedicated to or addressing the skill, entrepreneurship competence is nurtured through compulsory subjects in the curricula as well as curricular and extracurricular projects and activities.

Alongside training firms, examples of projects implemented in schools are the junior companies that offer learners the opportunity to set up their own real company for the duration of a school year. Pupil cooperatives (*Schülergenossenschaften*) can be established for learning purposes, carrying out real business activities within a defined framework. In the school context, learners can also obtain the Entrepreneurial skills pass (ESP) or the Entrepreneur's skills certificate (ESC), participate in the female entrepreneur at school initiative, or in talent internships, and acquire practical experience in the research and development (R&D) department of a company or research institution to gain insight in businesses.

Besides the professional development opportunities described above, a key success factor for teaching entrepreneurship competence in VET is the commitment of teachers. This also applies to apprenticeship training, where teaching entrepreneurship competence needs to be further promoted through appropriate training of apprenticeship trainers, both in the pedagogical area and regarding entrepreneurship competence.

CHAPTER 1.

Introduction

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

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

Entrepreneurship education is particularly relevant in VET because many graduates of apprenticeship, VET school and college become self-employed. Nearly every third self-employed person has an apprenticeship degree as highest completed education, another 15% have graduated from a VET school and around 12% from a VET college. In contrast, only 7% have completed a general education path while 6% have completed compulsory education before becoming self-employed (Institut für Bildungsforschung der Wirtschaft, ibw Austria, 2022).

1.1. Research questions and key terms

The study aims to answer the following main research questions:

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

For this study, entrepreneurship competence is defined as a key competence which applies to all spheres of life: from nurturing personal development to actively participating 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

This country case study report describes existing policy and practice within the entrepreneurial learning ecosystem, including VET provision and learning environments in Austria. It investigates activities that take place at each of these layers, how they interact and what are the underlying reasons behind the findings. The case study contributes to comparative analysis and to answering the research questions 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.

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 former graduates;
- (d) observations, where possible, of class interactions during the delivery of entrepreneurship programmes.

Table 1. **Research in figures**

Research activity	Total
Interviews with policy-makers, VET experts and social partners	8
Interviews with school managers / director of adult education institute	4
Interviews with teachers and trainers	15
Interviews with work tutors / apprenticeship trainers	4
Interviews with company (HR) managers	3
Interviews with VET graduates	14
Focus groups with teachers	2
Focus groups with learners	6
Class observations	5
Policy documents analysed	60
School documents analysed	59

Source: Authors.

Desk research was carried out between February and May 2022 and the field research was carried out from June to October 2022. The list of the VET providers that took part in the study is provided in the Annex. Case-sampling was

purposeful and is by no means representative of the population of VET providers. The aim was to gain valuable insights into how entrepreneurship competence is embedded in VET. Information-rich cases were selected: VET providers with advanced understanding of this specific competence and a diverse portfolio of curricular and extracurricular activities delivered in collaboration with other stakeholders in the entrepreneurial learning ecosystem (see Annex).

CHAPTER 2.

Overview of the Austrian VET system

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

2.1. VET forms and levels

Compulsory schooling in Austria starts at the age of six and lasts for 9 years. Every child's education starts with 4 years at primary school (Cedefop, 2021; Federal Ministry of Education Science and Research, 2021; Institut für Bildungsforschung der Wirtschaft, ibw Austria, 2019).

2.1.1. Secondary level

2.1.1.1. Lower secondary level (*Sekundarstufe I*)

At the age of 10, schoolchildren have a choice between two types of school that last for 4 years each: these are the middle school (MS) and the lower cycle of academic secondary school (AHS) (both ISCED 244).

2.1.1.2. Upper secondary level (*Sekundarstufe II*)

At upper secondary level, learners can choose a vocational or a general education pathway. General education is imparted in the upper cycle of academic secondary schools. VET programmes are provided in the framework of apprenticeship training (dual system), at VET schools (3 to 4 years) and at VET colleges (5 years).

Apprenticeship training combines training in an enterprise (practical training, which makes up some 80% of the training period), and in a vocational school (ISCED 354). Vocational schools supplement the training received within the company and focus on general education. Apprenticeship training lasts between 2 and 4 years (generally 3 years). In Austria, there are around 200 skilled trades. At the end of the apprenticeship, learners must pass practical and theoretical exams.

Schools for intermediate vocational education (*Berufsbildende mittlere Schulen*, BMS) offer another upper secondary, school-based VET pathway (ISCED 354), lasting between 3 and 4 years. These VET schools offer a school leaving certificate of vocational training in a variety of fields, such as engineering,

arts and crafts, commercial schools, schools of management and service industries.

Learners who have completed a lower secondary programme have access to a VET college or colleges for higher vocational education (ISCED 354-554) that provide in-depth general education, specific vocational qualifications as part of an upper secondary level vocational apprenticeship, and a practical apprenticeship. They last for 5 years and conclude with the VET college/school leaving certificate (*Reife- und Diplomprüfung*). These types of schools include colleges of engineering, arts and crafts, commercial academies, colleges of social and service industries, and colleges of agriculture and forestry. Students acquire both professional qualifications and a general higher education entrance qualification with the *Reife- und Diplomprüfung* (double qualification).

Entrepreneurship education is mainly implemented in colleges for higher vocational education, such as commercial academies (HAK) ⁽⁵⁾. As a cross-curricular education goal, the acquisition of entrepreneurship competence is increasingly integrated into subjects such as business administration, business accounting/accounting, economics, business and law, project management, quality management, case studies, business management exercises, personality development and social competence. However, special consideration is given to entrepreneurship in the subject cluster of 'entrepreneurship – business and management'. In the framework of education in commercial academies, from the third year onwards, in-depth special training is offered in the form of different education focal points which can be selected autonomously by the schools or created by themselves. One of these is entrepreneurship and management.

VET schools and VET colleges of social and services industries (HUM), especially in the field of management and service industries, attach particular importance to entrepreneurship competence ⁽⁶⁾ ⁽⁷⁾. Their education objectives are oriented towards active citizenship, employability and entrepreneurship. Besides general education subjects, these schools and colleges teach economic and specific vocational subjects. According to the curriculum, the focus on 'setting up a business' is dealt with in the second year as part of business administration and project management: simple business ideas are developed in the form of a business plan and discussion on the process and framework conditions of setting up a business. Compulsory internships at enterprises are foreseen for students (BDO Consulting, 2019).

⁽⁵⁾ [BMBWF. Entrepreneurship Education.](#)

⁽⁶⁾ [BMBWF. Federal Ministry of Education, Science and Research](#)

⁽⁷⁾ [HUK. Humanberufliche Schulen und Höhere land- und forstwirtschaftliche Schulen](#)

VET colleges of engineering, arts and crafts (*Höhere technische und gewerbliche Lehranstalt*, HTL) provide high-quality theoretical and practical training. General and social qualifications are taught in addition to technical education, along with the necessary business and legal knowledge for the independent management of a business. These VET colleges offer around 30 subject areas that enable specialisation in various fields of technology. Compulsory internships in enterprises are also part of the programmes. After a few years of work experience, it is possible to obtain an engineer certification after a technical interview with experts. The qualification engineer (*Ingenieur* or *Ing.*) corresponds to level 6 of the national qualifications framework (NQF) and to level 7 of the European qualifications framework (EQF).

The permeability of the education system in Austria is guaranteed through the vocational matriculation exam (*Berufsmaturitätsprüfung*, BRP), the higher education entrance examination (*Studienberechtigungsprüfung*, SBP) or completing add-on courses (ISCED 554) as an entrance qualification for higher education programmes.

2.1.2. Higher education (tertiary level)

Universities in Austria offer Bachelor (ISCED 665), Master (ISCED 767) and doctoral or PhD programmes (ISCED 864). In [universities of applied sciences](#) (*Fachhochschulen*), the focus is on a scientifically rigorous professional education at a higher education level. Universities of applied sciences specialise in various vocational fields, ranging from agricultural technology to multimedia art, from physiotherapy to industrial engineering. Students receive practical training that prepares them for the labour market. These offer both Bachelor (ISCED 665) and Master programmes (ISCED 767). Universities, universities of applied sciences and university colleges of education also offer continuing VET (CVET) programmes as post-graduate continuing training programmes or specialisation for graduates.

2.1.3. Adult education

Adult education in Austria comprises a variety of education and training programmes and courses, ranging from general education, second-chance education to management and personal development, through to university courses and university education.

2.2. Participation in VET

The VET system is highly attractive in Austria, as reflected by high levels of participation in initial VET (IVET) and lifelong learning. Around 70% of learners at the end of compulsory education continue in VET (Cedefop, 2021). The share of upper secondary learners enrolled in VET programmes (68.8%) is well above the EU average (48.4%) (Cedefop and ibw Austria, 2022).

To accommodate the requirements of the labour market in the future, and to tackle the skills mismatch, the new 2023/24 curricula are being designed for primary schools, lower secondary schools and the lower cycle of secondary academic schools. The curricula focus on competence orientation in both learning and assessment. In addition to subject-specific competences (*fachliche Kompetenzen*), generic competences (*überfachliche Kompetenzen* such as motivation, confidence, social and learning method) and interdisciplinary competences (*fächerübergreifende Kompetenzen* such as languages, informatics, economics as well as financial, consumer, political, environmental and entrepreneurship competences) will be emphasised. With continuous changes in the curricula, attempts are being made to teach more future-relevant skills so that children are better prepared for the demands of the future of work.

CHAPTER 3.

Entrepreneurship competence

3.1. Understanding the competence

Entrepreneurship competence in VET is mainly acquired through entrepreneurship education. According to the Education Ministry (BMBWF), the term entrepreneurship education stands for 'enabling the individual to take the initiative and think and act independently as an entrepreneur, employee and as a consumer, to act actively and responsibly and thus help shape the economy and society'. It includes all education measures to develop entrepreneurial skills, values, and attitudes as well as personal skills and knowledge that allow establishing a business or are essential for the so-called 'intrapreneurship' (entrepreneurship activity by an employee within a company). In a broader sense, it includes all skills and abilities for an independent, self-reliant life.

The interviews with VET providers, including enterprises, showed a broad understanding of entrepreneurship competence through generating ideas and pursuing them without getting distracted. Creativity, openness to innovation and perseverance were also cited as key entrepreneurial attributes. Entrepreneurial thinking and acting were associated with identifying opportunities, taking initiatives and acting upon them. According to the interviews, entrepreneurship competence also relates to independence, self-reliance, motivation, a sense of responsibility and organisational skills. One teacher emphasised the importance of autonomy and taking responsibility: 'We try to teach the students to take their private and professional success into their own hands'. For some learners, graduates and school personnel, the economic context was more in the foreground. For them, the recognition of market needs was also an essential characteristic.

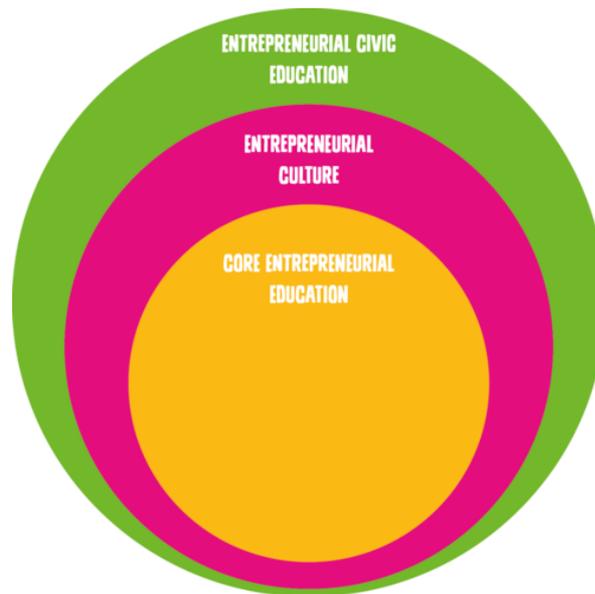
In the enterprises interviewed, which offer training to VET learners, entrepreneurship competence is understood mainly as project planning and management as well as problem-solving and risk assessment. It also includes decision-making, personal, social and presentation skills. In this context, the interviewees indicated a stronger focus on planning, management, and teamwork skills than VET school respondents.

The entrepreneurship experts interviewed (see Annex) emphasised that 'entrepreneurs are people who create new ideas and values'. For them, the key is to 'develop and implement ideas' and to 'show initiative, to create something and have their own drive'. The experts also noted that every person can make use of such an 'entrepreneurial mindset', either as an entrepreneur or as an intrapreneur.

Austria follows the TRIO model of entrepreneurship education, i.e. teaching entrepreneurship competence. Based on the work of Gibb (1983), it was established by Aff and Lindner (2005) as a combination of the intentions of education:

- (a) FOR entrepreneurship: learning to become an entrepreneur;
- (b) THROUGH entrepreneurship: learning to become entrepreneurial;
- (c) ABOUT entrepreneurship: learning to understand entrepreneurship.

Figure 1. **TRIO model of entrepreneurship education in Austria**



Source: [IFTE. Entrepreneurship](#)

According to the TRIO model, entrepreneurial education is structured along three levels.

- (a) Level I (Core entrepreneurial education) focuses on the acquisition of core competences for entrepreneurial and professional independence as well as for an independent private lifestyle. Business models for ideas of entrepreneurial, professional, and private challenges are developed and implemented.
- (b) Level II (Entrepreneurial culture) promotes a culture of independence, openness to innovation, empathy, and sustainability, as well as relationships and communication.
- (c) Level III (Entrepreneurial civic education) strengthens a culture of maturity, autonomy and responsibility for social challenges (e.g. societal goals, sustainable development, environmental goals).

Based on these intertwined clusters of entrepreneurial skills, entrepreneurial culture and entrepreneurial civic education, Lindner (2019) advocates for a

transversal feature of entrepreneurial competence that should be in-built in everyone's education.

In terms of entrepreneurship competence, Austria generally follows the European [EntreComp](#) framework developed by the Joint Research Centre (JRC) of the European Commission in 2016 (European Commission, JRC and Bacigalupo et al., 2017). During the creation of this framework, JRC referred to the Austrian framework (Section 3.3.1), so the content and competences included overlap considerably (BDO Consulting, 2019).

To nurture entrepreneurship competence, the BMBWF has commissioned e.e.si Impulse Centre to be responsible for the entrepreneurship certification of commercial academies (*Handelsakademien*, HAK) and VET colleges of social and services industries (Section 5.3); IFTE is briefed to 'strengthen the entrepreneurial spirit' in Austria. The centre has been awarding entrepreneurship school certification to HAKs since 2011/12.

3.2. Opportunity, value and venture creation

In Austria, the term entrepreneurship, used in the context of education (including VET), is particularly understood as the creation of opportunities and values. This has also been confirmed in the interviews with the key stakeholders, VET providers and learners. Every learner should have the chance to participate and contribute to society (value creation).

Value creation pedagogy is about developing and implementing one's own ideas, as in the TRIO model (Section 3.1). Lackéus et al. (2016) define it as learning through creating value for others. This means letting learners learn by applying their current and future competences to create something that should be novel and valuable for at least one stakeholder outside of their school or group. Success through the implementation of activities has a self-enhancing effect: VET learners learn how to create opportunities for themselves, for example, by developing and implementing ideas within the framework of entrepreneurship projects, such as competitions set around ideas and business plans.

This form of pedagogy also helps discover the potential and talent of young people. One teacher, however, stressed during the interview: 'An entrepreneurship competence is that you find out what you are good at. For example, in presenting, and then strengthening this talent in all subjects'. The focus on developing personal strengths is important for learners.

Value creation is particularly important in VET, because many professions lead to self-employment. In the same way, employees who act and think in an

entrepreneurial way are in demand by companies. The application of this pedagogical approach, however, depends on the individual teacher.

According to the stakeholders interviewed, it is important to apply 'idea generation to social or environmental issues', in line with the [United Nations sustainable development goals](#). Competitions on ideas and business plans are often steered towards social and environmental issues to kick-start social change processes in Austria.

Stakeholders see ecologisation and sustainability as essential drivers for entrepreneurship, both for teachers as door openers and for learners who have many ideas. Fair trade training firms emphasise sustainability.

Several interviews in VET colleges, such as the Business Academy Maygasse (Vienna), also show the importance attached to sustainability and digitalisation in addition to entrepreneurship; these aspects are linked to entrepreneurship and are further promoted in the form of projects.

But entrepreneurship takes priority and teaching such competence is provided by supporting the learners to become proactive (in projects, voluntary work), to generate business ideas, to develop business plans and – in some cases – to set up companies while still at school. Teachers interviewed report innovative business ideas in digital matters and regarding sustainability, but also point out the focus on economic factors in the students' business ideas.

Enterprises like [Geberit Austria](#), attach importance to instilling a sense of social or ecological responsibility. This company carries out international aid and social projects and offers one lower-performing apprentice per year the opportunity to complete apprenticeship training. [Zumtobel Austria](#) has a programme to support people with disabilities as well as specific projects (including social and sustainability initiatives) and leisure activities (excursions, promotion of sports activities). The company group global mission statement is 'passion, performance, partnership (PPP)'. Promoting entrepreneurship competence through apprenticeship training contributes to securing the success of the company (e.g. through process optimisation). It also highlights career opportunities within the company (via further training, cross-department cooperation). At Geberit, the focus of apprenticeship training is on securing skilled workers for the company's own site, too. Around two thirds of former apprentices are still working in the company and hold various managerial positions.

Young people also learn to develop business ideas that are economically successful, ideally in combination with the creation of added value. However, it is not only entrepreneurs that are in demand but employees in general who have entrepreneurial skills and think entrepreneurially.

3.3. Explicit and implicit learning outcomes

3.3.1. Competence frameworks

There are many entrepreneurial skills that can be learned according to the European entrepreneurship competence framework (EntreComp) and the Austrian reference framework on entrepreneurship competence.

Box 1. Austrian EntreComp framework

The Austrian EntreComp framework provides an overview of competence acquisition in entrepreneurship. The three main categories and the six competences of the Austrian EntreComp framework are:

- (a) developing ideas, with the competences attitude and recognising opportunities
- (b) implementing ideas, with the competences organising and working together
- (c) thinking sustainably, with the competences acting future-oriented and ABC of finance.

For these six competences, the respective requirements are listed in learning levels (ascending from A1 to C2) with learning objectives (BDO Consulting, 2019). The learning objectives range from 'I develop ideas and recognise their value', 'I develop ideas for a business model and evaluate case studies' to 'I understand and create a business plan'.

Source: YouthStart: framework of references for entrepreneurship competences, version 15.

The schools interviewed use exercises, approaches and challenges developed in the context of the Austrian EntreComp during their lessons. However, the comprehensive curricula, which also contain a very precise list of the skills and knowledge to be acquired, are more likely to be used to determine learning outcomes.

3.3.2. Learning outcomes in VET curricula

Learning outcomes of entrepreneurship competence are included in curricula of different VET programme types: VET colleges (ISCED 354-554), i.e. commercial academies (HAK), VET schools and colleges of social and service industries (HUM) and colleges of engineering, arts and crafts (HTL).

The commercial academies (HAK) as economic-oriented types of VET college see themselves as competence centres of the economy and impart in-depth economic and financial education under the aspect of value attitudes and a sense of responsibility. They cover five grades and are designed in accordance with the School organisation act, Article 65 and 74, point 1 (*Schulorganisationsgesetz*, SchOG) to acquire higher economic education and training for all economic sectors. VET pays equal attention to the employability of graduates and their access to university. Comprehensive entrepreneurship education aims to enable

students of commercial academies to act as entrepreneurs, employees and consumers in an active and responsible way, shaping the economy and society. In studying entrepreneurship business and management topics, learners should acquire personal and social competence, entrepreneurship competence and various professional competences (e.g. in marketing, management, finance, accounting, law, information and communication technology) (Section 5.1) (Republik Österreich, 2014).

As well as commercial academies, VET schools and VET colleges of social and services industries (schools and colleges of management and service industries, of tourism, of fashion, of social occupations and colleges of agriculture and forestry) promote active citizenship (active participation in society), employability, entrepreneurship (entrepreneurial thinking and action), and empowerment for higher qualification and lifelong learning.

Fashion schools are an example of a social and services industry where entrepreneurship competence is mainly taught within the framework of compulsory economic subjects, such as economic geography, economics, business administration, fashion marketing and sales management, accounting and office management. These economic subjects help learners perceive the economy as a positive and actively shapeable part of society and contribute to a liveable, democratic and cooperative community. They should be able to explain international and national economic and spatial contexts, in order to understand their interrelationships, act responsibly in different roles, structure economic facts and issues, understand and communicate economic and political information and use sector-specific information and communication technologies in an efficient way in compliance with the law. Entrepreneurial thinking and entrepreneurship education is also given special consideration in subject enterprise management, especially through the connection with the other subjects. Cooperation with and the use of subjects in economics, product development and production is also of great importance (Republik Österreich, 2015a).

Graduates of VET colleges of engineering, arts and crafts should possess a good knowledge of private, commercial, company, labour and social law. Further learning outcomes include skills regarding the organisation and management of companies, that are required for independent entrepreneurial activity or for the exercise of an advanced profession in the technical or commercial (including arts and crafts) field. Graduates must also have the necessary economic knowledge. They can provide market-adequate services in the sense of entrepreneurial competence and lead employees responsibly; they can plan and manage projects, develop innovative solutions in the respective subject area, supervise and control complex technical or professional activities – also under unpredictable changing

framework conditions – in a specific subject area, and assume decision-making responsibility.

In the compulsory subject economy and law, graduates shall be able to explain the process of setting up a company and how marketing instruments work, characterise key business areas and processes in the company, and describe the strengths and weaknesses of the individual forms of organisation. They can also explain the different theories of motivation, compare different styles of leadership and use them in relation to the situation (Republik Österreich, 2015b).

The 2017 education reform in Austria (*Bildungsreform 2017*) introduced more pedagogical, organisational and personnel autonomy, to help individual schools set their own priorities. They can implement innovative education offers, create regional education concepts, and carry out school-autonomous further education activities for teachers.

The apprenticeship training regulations of different professions do not refer directly to entrepreneurship, but rather to the personality development of the apprentices. As skilled workers, they should acquire the necessary key competences with regard to social competence (such as openness, ability to work in a team, ability to deal with conflicts), self-competence (such as self-assessment, self-confidence, independence, ability to work under pressure), methodological competence (such as presentation skills, rhetoric in German, ability to communicate in basic English) and competence for self-directed learning (such as willingness, knowledge of methods, ability to select suitable media and materials) ⁽⁸⁾.

3.3.3. Implicit learning outcomes

Implicit learning is about building a mindset to identify possibilities, develop ideas and implement them. Conceptual thinking is required for the idea development. For this, learners acquire techniques such as design thinking on how to approach problems and find solutions. By teaching this mindset, the young people should internalise that they themselves can create value and make their own contributions to society.

However, it should not only be a matter of developing ideas, but also of implementing them. It is important that young people can implement projects in the various learning contexts and acquire competences through activities. Examples for this are training firms and lessons on project implementation, which often achieve better learning effects than direct instruction. One stakeholder explained: 'If you give pupils the opportunity to implement something and acquire

⁽⁸⁾ [BMAW. Liste der Lehrberufe von A bis Z \[List of professions from A to Z\]](#).

competences through activities, it works much better [than direct instruction]. Sometimes students who are rather inconspicuous in regular classes become frontrunners.'

Implicit learning outcomes are also well covered in apprenticeship training: during the in-company placement, apprentices repeatedly encounter challenging situations in which they can gain experience from the direct effect of their actions.

According to the field research, the acquisition of personal competences is perceived as an implicit learning outcome. These include seeing opportunities, being open to new things, acting independently and on one's own responsibility, recognising one's personal strengths, further self-development and remaining motivated and ambitious. According to the stakeholders: 'students are strengthened in their self-confidence, their attitudes and their autonomy' through entrepreneurship activities. For the teachers, it is important that young people are 'taking responsibility for themselves' and 'find out what you [they] are good at', so that they can reveal their talent during the entire training path.

Learners and graduates have stated that they had also benefited from entrepreneurship education in soft skills and personal development. A graduate pointed out that she has 'learned a lot in the area of personality development and how to present oneself'. Organisational skills were also encouraged. Students and graduates discovered that 'many aspects of entrepreneurial competence are important in all areas of life: efficiency and cost saving thinking, time management as well as goal orientation and problem-solving skills'. 'Planning ahead helps in further life and facilitates the job search', they said. They also benefited in independent thinking and sometimes an entrepreneurial interest was awakened.

Apprentices have good learning environments through day-to-day learning, project work and job rotation, where trainees are encouraged in their personal development. The apprentices interviewed learned the 'importance of teamwork during projects and for the preparation of the apprenticeship-leaving exam'. They saw that 'individual initiative and motivation can lead to new pathways and possibilities' and that job rotation demonstrates development perspectives in the company for them. The trainers support 'young people in becoming good skilled workers, both professionally and personally'. Apprentices benefit from independence, teamwork, creativity, project management, communication and self-reflection. During their apprenticeship, young people become self-confident and responsible specialists who can work independently and behave in a socially competent manner. Independent work is encouraged in the enterprises interviewed by giving apprentices more freedom and scope for decision-making over the course of their training. They experienced that 'support is provided when necessary' while having confidence in themselves, 'to keep things in order, stick to

deadlines and economic specifications' in projects. An entrepreneurial-oriented education can lead to many useful implicit learning outcomes in professional and private life.

3.4. Transversal competence

In the curricula of VET schools and colleges, entrepreneurship is a key competence. While it is also visible in general education (individual subjects like geography and economics), Austrian entrepreneurship education experts agree that entrepreneurship competence should generally be a topic in schools from primary to upper secondary level.

From 2023/24, new curricula for primary schools, lower secondary schools and the lower cycle of secondary academic schools will be in place (Section 2.2). Soon entrepreneurship will also be an interdisciplinary competence at primary and lower secondary levels, communicated and conveyed in a way that is suitable for various learner groups.

Overall, entrepreneurship competence is already understood as a cross-curricular education goal and as a key competence whose elements can be found at all education levels and subjects. However, more emphasis is placed at upper secondary level, especially in schools with an economic focus with subjects such as business administration, accounting, project management and training firm.

The stakeholders interviewed see entrepreneurship as a cross-sectional competence that should be linked with the job-related aspects specific to the individual qualifications (technical, commercial, social). In Austria, many qualifications, especially those acquired through apprenticeships, often lead to self-employment: it could be important to increasingly teach this target group entrepreneurship skills in the form of conceptual thinking and idea development. The companies interviewed point out that entrepreneurship competence is not explicitly included in the training regulations for apprenticeship; these only refer to the personality development of apprentices through the acquisition of social and methodological key competences and self-directed learning. Managers, trainers, learners and graduates of the companies interviewed generally see these as key competences relevant for all professions and in everyday life.

There is a consensus among the schools interviewed on the interdisciplinary nature of entrepreneurship competence. In the [Higher College for Engineering Wolfsberg](#) (*Höhere Technische Lehranstalt Wolfsberg*), there is interdisciplinary teaching between laboratory and workshop. When working in the workshops, learners must create a workpiece; to do so, they must develop an idea for it and conduct a market analysis of demand and sales channels. Another example is

foreign language classes, where teachers cover topics such as business planning or accounting. At the [Hallein Fashion School](#) (*Modeschule Hallein*), entrepreneurship is also understood as an interdisciplinary project involving all subjects. Here, the departments of fashion hairstyling, make-up and make-up artistry work together in different subjects, for example, by depicting linguistic stylistic devices as clothes in German lessons, designing them, producing them, presenting them and creating a catalogue from them. Another example is the Start-Up-Academy of the [Business Academy Maygasse](#), which established interdisciplinary, project-oriented lessons during competence days in year one and business days in year two. Graduates interviewed state: 'At the Start-Up Academy, you learn for the rest of your life. It is definitely also for students who want to achieve more.' Many graduates of the schools interviewed start their own business during or after completion of their VET programme.

CHAPTER 4.

Entrepreneurial learning ecosystem

4.1. Entrepreneurship policy

Entrepreneurship education in Austria is primarily regulated through the *Austrian strategy on lifelong learning* (Federal Ministry of Education, 2011), where it is one of eight key competences, and through the curricula of schools and prevocational schools, accompanied by a set of well-established support mechanisms for implementation. There is a diverse range of entrepreneurship programmes available at national and regional levels, as well as initiatives targeting learners, teachers and the schools themselves. Both government institutions and social partners play an important role in fostering entrepreneurship competence. As a cross-curricular education goal, elements of entrepreneurship education are taught in all school subjects ⁽⁹⁾.

Based on the objectives and initiatives of the European Union in strengthening and promoting entrepreneurship education, in 2020, a national action plan for entrepreneurship education (*Entrepreneurship education: map of actions for children and young adults*) was developed. This resulted from cooperation between the Federal Ministry for Digital and Economic Affairs (BMDW) and the Federal Ministry of Education, Science and Research (BMBWF), together with other ministries (the Federal Ministry of Labour, Family and Youth (BMAFJ), the Federal Ministry of Finance (BMF), the Federal Chancellery and about 65 other stakeholders, including the Austrian Federal Economic Chamber (WKÖ), the Federation of Austrian Industries (IV), the Austrian National Bank (OeNB), universities, initiatives and foundations such as ISB and MEGA Bildungsstiftung). Together, they developed a common vision/objective for a sustainable and future-proof Austria by 2025 (Federal Ministry for Digital and Economic Affairs and Federal Ministry of Education Science and Research, 2020).

Entrepreneurship education aims to achieve the following goals by 2025:

- (a) accept challenges and solve them constructively;
- (b) create framework conditions and expand networks;
- (c) strengthen potentials and implement ideas;
- (d) assure process quality (Section 4.3).

These stakeholders have also compiled a package of measures usable in different school-types from primary to upper secondary levels, including VET, to

⁽⁹⁾ [European Commission's Youth Wiki](#)

achieve this vision. That package comprises both established measures and pilot projects and includes various private and public initiatives to train young entrepreneurs. They include interesting activities at schools, new didactic-methodical approaches in existing subjects, activities with focus on digitalisation, sustainability and human resources and new subjects. They also range from developing entrepreneurial challenge-based learning, as an interdisciplinary approach usable in different subjects, to comprehensive entrepreneurship school concepts with certification options. Certification as an entrepreneurship school is illustrated in Section 5.3 and some of these initiatives are presented in Chapter 4 (Federal Ministry for Digital and Economic Affairs and Federal Ministry of Education Science and Research, 2020).

4.2. Key stakeholders and elements

4.2.1. Governance

The **BMBWF** is responsible for the entire education system, from early childhood education and primary schools to the higher education entrance examination (*Matura*), university colleges of teacher education and adult education. Entrepreneurship is a key priority for the ministry, which supports numerous measures in cooperation with other ministries and institutions.

The Austrian Federal Ministry for Labour and Economy (**BMAW**, formerly Austrian Federal Ministry for Digital and Economic Affairs (BMDW)) – and specifically the Department for Enterprises – is also active in entrepreneurship education. BMAW published the national action plan for entrepreneurship education in cooperation with BMBWF and several other ministries and institutions with a joint vision for a future-proof Austria and a map of measures to achieve this vision.

In the Federal Chancellery (*Bundeskanzleramt*), the State Secretariat and the Section VI deal with family and the young. The topic of entrepreneurship is also addressed, for example in the initiative **Your projects** (*Eure Projekte*): between 2015 and 2021, young people between the ages of 14 and 24 had the possibility to realise their project ideas in social engagement, music, environment, technology, media, culture and sport. During the *European Year of Youth 2022*, a new initiative (*Jugend*) was launched, offering financial support for activities and projects on environmental and climate protection, digital change, inclusion, participation or EU youth goals.

In the school sector, the regional education directorates (*Bildungsdirektion*) are important administrative authorities in which the administrative tasks of the

Federal State (*Bund*) (responsible for federal schools) and the nine federal provinces (responsible for compulsory schools) are combined. The education directorates are responsible for the comprehensive enforcement of school law in Austrian regions (*Länder*). This includes the implementation of quality assurance, supervision and monitoring as well as employment law and staff representation law for public schools and the external organisation of public compulsory schools (structure, forms of organisation, establishment, maintenance, closure). The entire area of elementary education and after-school care remains under the direct responsibility of the federal provinces, so these are also important actors in giving more space to entrepreneurship education in schools. However, regions have the option of transferring these areas of responsibility to the Regional Directorates of Education (*regionale Bildungsdirektionen*).

The 2017 education reform increased the autonomy of schools; school directors have taken more responsibility in setting priorities, for example regarding entrepreneurship. The schools interviewed welcome this possibility to set priorities more easily but, according to their opinion, even more autonomy would be beneficial.

4.2.2. VET providers

4.2.2.1. Schools and their supporting organisations

Relevant actors in this field are VET schools and VET colleges for higher vocational education as well as the administrative authorities, such as the education directorates. VET programmes in the school context are mainly implemented in VET colleges for higher vocational education with a commercial focus, as well as in pre-vocational schools, part-time vocational schools, schools of intermediate vocational education and VET colleges with other thematic focuses.

Specific institutions have been established to support imparting entrepreneurship competence and strengthen the entrepreneurial spirit in schools. These are the Entrepreneurship Education for School Innovation ([e.e.si – Impulse Centre](#)) and the International Society for Engineering Pedagogy: national section Austria ([IGIP Austria](#)), which handle the certification of entrepreneurship schools. Other examples are the Initiative for Teaching Entrepreneurship Austria ([IFTE](#)) to promote entrepreneurship education and the Austrian Centre for Training Firms (ACT), which assists in the handling of training firms in the different schools. e.e.si, IFTE and ACT have been commissioned by BMBWF.

The aim of e.e.si, together with their multipliers in the nine Austrian regions (*Länder*), is to trigger entrepreneurship education and positive attitudes towards

entrepreneurial activity in school among learners and teachers. e.e.si aims to multiply the experiences of the model experiment *Schumpeter Handelsakademie* in the BHAK Wien 13 Maygasse Business Academy by offering counselling and training, providing teaching materials and supporting schools on their way to their certification as entrepreneurship school. In each of the nine federal provinces, e.e.si organises working groups for entrepreneurship education for vocational schools.

The certification as an entrepreneurship school, established in 2011, aims to confirm that the school (commercial academies and schools, and schools and colleges of social and service industries) has implemented entrepreneurship activities in a holistic, goal-oriented and sustainable manner in everyday school life. A competence compass (profile for entrepreneurship teachers) was developed; this is available to schools and teachers and can be used for self-testing and as a control element (Section 5.3 for details) ⁽¹⁰⁾.

IGIP Austria is responsible for the certification of entrepreneurship schools for schools and colleges of engineering, arts and crafts; this is called Entrepreneurship education in engineering (EEE) certification. It also offers the English Engineering certificate to demonstrate the language competence of graduates in a technical field. IGIP Austria is a national association supporting engineering pedagogy.

Another initiative promoting entrepreneurship education is IFTE, on behalf of BMBWF. The objective is to 'turn young people into shapers of the future through entrepreneurship education'. This helps young learners actively participate in society by setting goals, learning to deal with setbacks and challenges, and working creatively to find new solutions. IFTE was involved in the YouthStart entrepreneurial challenges project (Hueber, 2018) and was responsible for the methodology as well as teaching and learning materials. Since 2018, IFTE has been further developing the materials created in the project and continuously adding new challenges to the offer. Based on the experiences from the field test, they have developed school-level-specific programmes that include not only teaching and learning materials but also training programmes for teachers and offers for students.

The ISO 9001-certified Austrian centre for training firms (ACT) was founded in 1993 on behalf of BMBWF. It is the service point for all Austrian training firms and the Austrian headquarters and representation in the international umbrella organisation PEN worldwide. ACT is currently in charge of about 750 active training firms in different types of schools and institutions (November 2022); these provide a realistic environment for training firms and simulate real business activity. They

⁽¹⁰⁾ [European Commission's Youth Wiki](#)

also support quality certification for training firms according to the technical rule (standard ONR 42000) which takes place in the framework of a quality audit.

4.2.2.2. *Enterprises and their supporting organisations*

Enterprises are important players in the Austrian entrepreneurial ecosystem, given that apprenticeship is an important education pathway. This training is organised in the dual system, taking place both in the company and at the part-time vocational school. About 80% of the training time is spent at the training company, 20% at the vocational school. Thus, companies that train apprentices are also important players in the VET system, teaching the young people entrepreneurial skills primarily in the context of their daily work.

The [Austrian Federal Economic Chamber](#) (*Wirtschaftskammer Österreich*, WKO) speaks for the interests of entrepreneurs. It represents more than 540 000 member companies, with membership compulsory for companies and entrepreneurs. Within the WKO, the [Junior Chamber Austria](#) (*Junge Wirtschaft Österreich*) is active as an association of young entrepreneurs between the age of 18 and 40 years. Junior Chamber Austria acts as an interest group for young entrepreneurs, it offers start-up classes, which provide advice on how to start a business as well as an opportunity to network. The WKO [business start-up service](#) offers targeted support in setting up a business.

Support for business start-ups is also provided by the business and location agencies of the federal provinces (e.g. the [Tyrolean Location Agency](#) or the [Vienna Business Agency](#)), which offer founders financial support, e.g. with start-up grants, or help in finding investors. They also offer counselling and coaching opportunities and establish contacts to relevant networks.

4.2.3. **Organisations supporting other target groups**

The Public Employment Service ([Arbeitsmarktservice](#), AMS) in the framework of its [business start-up programme](#) (*Unternehmensgründungsprogramm*), supports unemployed persons who wish to become self-employed and start their own business. A potential young entrepreneur may take advantage of start-up counselling with a qualified consulting firm and acquire the requisite qualifications (project management, business development) in training courses and continuing education measures paid by the AMS. In addition, the programme also includes a feasibility check of the business idea and follow-up counselling after the business has been successfully launched. As a rule, the programme extends over a period of 6 to 9 months at the most ⁽¹¹⁾.

⁽¹¹⁾ [European Commission's Youth Wiki](#)

Entrepreneurship is also promoted in the academic and tertiary sector. For example, experts at the [Austrian Research Promotion Agency](#) (*Österreichische Forschungsförderungsgesellschaft*, FFG) offer advice to young technology-sector entrepreneurs whose business ideas are still in the development stage.

Another key stakeholder is the [Austrian Promotional Bank](#) (*Austria Wirtschaftsservice*, AWS) of the Austrian federal government that offers support programmes for becoming self-employed and setting up a business. [INiTS](#) (Vienna's high-tech incubator) provides advice and support for graduates, employees and students at universities and universities of applied sciences in Vienna who want to start a company to put their business idea into practice. Since its foundation in 2002, INiTS has established itself as the high-tech business incubator of the City of Vienna.

4.2.4. Learning environments

4.2.4.1. Curricula

The curricula in VET schools and VET colleges generally refer to entrepreneurship and entrepreneurial thinking and action. Entrepreneurship competence is taught mainly in business-related subjects (Section 5.1).

4.2.4.2. Teaching and learning

Teachers are guided by detailed curricula, though these also offer opportunities for individual focal points and school-autonomous activities. The curricula of different types of VET schools and academies, that include imparting entrepreneurship competence, provide the basis for many of these projects and activities (e.g. compulsory training firm, compulsory internships in companies, elective subjects, non-binding exercises⁽¹²⁾). Teachers who are committed to entrepreneurship include specific entrepreneurship measures in their lessons or take part in central entrepreneurship activities.

4.2.4.3. Assessment

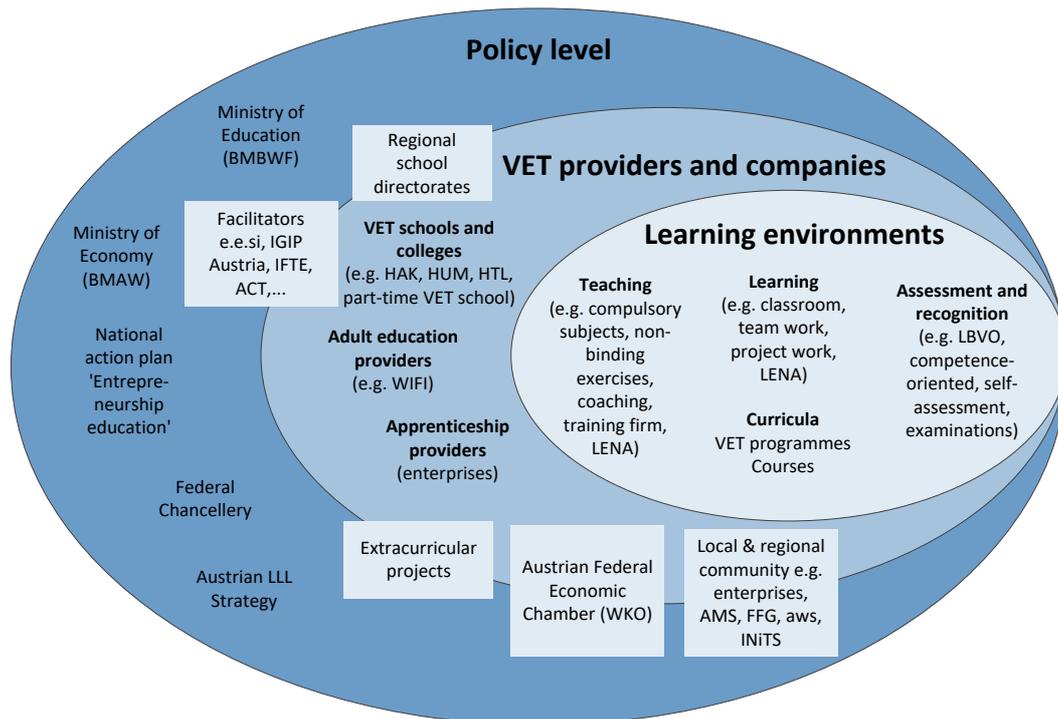
Performance assessment in Austrian schools is generally carried out according to the [performance assessment regulation](#) (*Leistungsbeurteilungsverordnung* – LBVO). The teacher must obtain the assessment by ascertaining learner participation in class as well as by special oral, written and practical performance assessments integrated into the class work or based on other forms of work.

⁽¹²⁾ Non-binding exercises: classroom events within the curriculum that require registration for each year of instruction and that are not subject to a formal assessment.

4.2.5. Elements of the entrepreneurial ecosystem in Austria

From the key stakeholders and elements mentioned above, the Austrian entrepreneurial learning ecosystem – as defined for the purpose of this study – can be mapped as follows, considering the policy level, the level of VET providers and companies as well as the learning environments.

Figure 2. Scheme of VET entrepreneurial learning ecosystem in Austria



Source: Authors, based on the field research.

The field research showed that the elements of the VET entrepreneurial learning ecosystem are strongly interrelated and connected.

For instance, the community dealing with entrepreneurship competence education is small, as was also confirmed in the stakeholder interviews. The stakeholders involved know each other well and are often active in more than one stakeholder organisation (e.g. e.e.si and IFTE). Pursuing the topic of entrepreneurship competence is based on the commitment of a small group of dedicated people from the ministries and support/facilitating organisations such as e.e.si; this is also of high importance for networking.

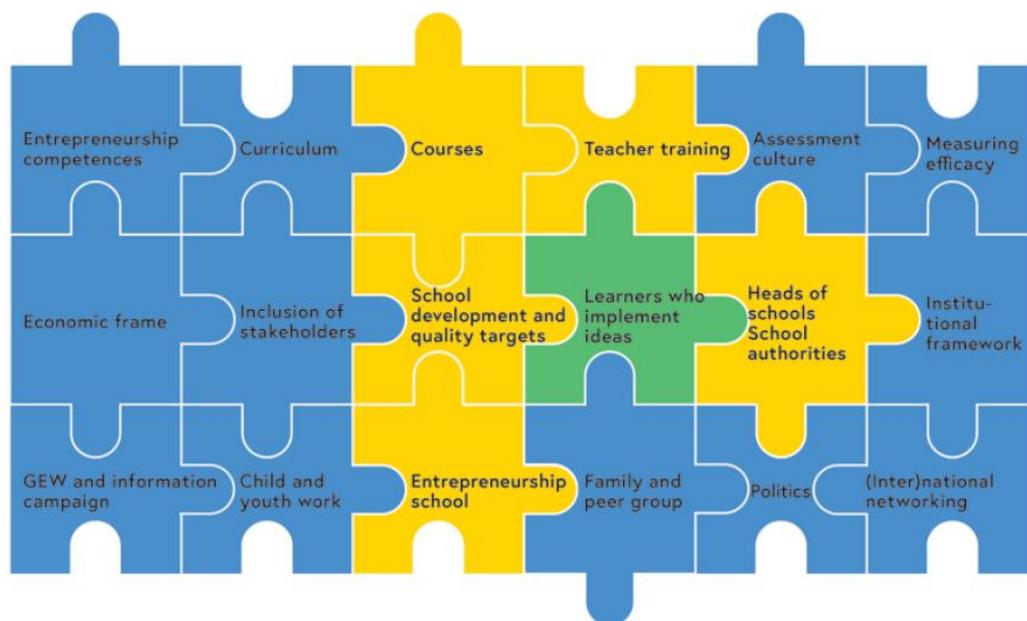
In schools, the regional education directorates are responsible for the comprehensive enforcement of school law (including IVET), including education supervision and monitoring as well as the enforcement of employment law and staff representation law for teachers and other federal employees at public schools.

The interviews with school directors and teachers revealed that school bureaucracy can sometimes be challenging, particularly when activities with entrepreneurship learners do not take place at the school location (e.g. competitions, events, extracurricular activities) or when implementing interdisciplinary teaching activities. Sometimes, teachers implement such activities voluntarily.

4.2.5.1. *Entrepreneurship education ecosystem*

With a focus on schools (including VET), Lindner (2018) developed a model of an 'entrepreneurship education' ecosystem, illustrating the drivers of such a system (Figure 3). The learners (marked in green) are the heart of a system responsible for developing and fostering an entrepreneurial mindset. They are surrounded by their immediate learning environment (marked in yellow) in the schools, in courses, with their teachers and competences as well as their heads of schools. An appropriate education level among teachers, a culture of testing, school directors and the authorities responsible for education are essential for entrepreneurship education. Further, the ecosystem needs to be integrated in the whole economic and social community (marked in blue). This model is included in the *Austrian national action plan on entrepreneurship education*, with the aim of integrating the system in the economic and social community in Austria (Federal Ministry for Digital and Economic Affairs and Federal Ministry of Education Science and Research, 2020).

Figure 3. **Elements of an 'entrepreneurship education' ecosystem**



Source: BMBWF, 2020, p.9.

4.3. From policy to practice

Entrepreneurship skills are the prerequisites and an important contribution to a society in which citizens feel self-confident. Target-specific entrepreneurship education is necessary to foster individual responsibility and social innovation: it is essential that entrepreneurial education is accessible with a low threshold. All children and adolescents in Austria are expected attend activities for entrepreneurship education in order to experience how their own ideas can produce results (Federal Ministry for Digital and Economic Affairs and Federal Ministry of Education Science and Research, 2020).

An essential policy document for the implementation of entrepreneurship education is the national action plan or the *Entrepreneurship education map of actions for children and young adults*. This map was developed from a cooperative venture between the different Federal Ministries, the Federal Chancellery and about 65 relevant stakeholders. Together they have set up a joint vision for a future-proof Austria by 2025 and have compiled a map of measures to achieve this vision.

The following goals shall be achieved by 2025 (Federal Ministry for Digital and Economic Affairs and Federal Ministry of Education Science and Research, 2020).

- (a) Accept challenges and tackle them constructively:
 - (i) entrepreneurship education is present in everyone's culture, attitude and competence as a consistent thread with a clear profile;
 - (ii) humans can constructively handle the opportunities and challenges of an (enlightened) society;
 - (iii) positive effects are felt by all participants in society and business.
- (b) Create framework conditions and widen networks:
 - (i) sustainable and social entrepreneurship education is anchored in the curricula and in child/youth work;
 - (ii) entrepreneurship education is implemented in all education institutions; they have free spaces and open learning arrangements where entrepreneurial and civil society ideas are implemented;
 - (iii) entrepreneurship education has an interdisciplinary approach and can be easily combined with digital skills and STEM;
 - (iv) schools are part of a network that comprises business, organisations, public facilities and committed individuals.
- (c) Strengthen potentials and implement ideas:
 - (i) the potential of children, adolescents and teachers are identified and specifically fostered;
 - (ii) all children and adolescents have developed ideas and implement them proactively;

- (iii) each pupil has tested an idea in actual practice;
 - (iv) the school system has been opened for entrepreneurship education and performance assessment is focused on children's potentials;
 - (v) schools develop into entrepreneurship schools.
- (d) Secure process quality:
- (i) an action plan of sustainable process quality and financial stability exists or is being implemented, which ranges from consent through implementation to evaluation and continuation;
 - (ii) to improve its efficiency, it requires stable partners and networks;
 - (iii) teachers and youth workers can learn alongside children and young people according to the principles of entrepreneurship education.

4.3.1. Curriculum documents

Entrepreneurship is included in the curricula of the various VET colleges; in commercial academies, with their focus on economic education, entrepreneurship education is of central importance. The overarching education goal is that the comprehensive entrepreneurship education enables students of commercial academies to act as entrepreneurs, employees and consumers in an active and responsible way; to shape the economy and society is of central importance (Republik Österreich, 2014) (Section 5.1).

Also, VET schools and VET colleges of social and service industries are oriented towards active citizenship (active participation in society), employability and entrepreneurship (entrepreneurial thinking and action) as well as empowering learners for higher qualification and lifelong learning (Republik Österreich, 2015a).

Graduates of VET colleges of engineering, arts and crafts are expected to possess knowledge of private, commercial, company, labour and social law. They should also understand the organisation and management of companies required for independent entrepreneurial activity or for the exercise of an advanced profession in technical or commercial fields (including arts and crafts), and have relevant economic knowledge (Republik Österreich, 2015b).

4.3.2. Policies and support programmes

The *National action plan on entrepreneurship education* sets 25 goals. Entrepreneurship is also included in the Austrian government programme. Political commitment is considered by the stakeholders interviewed to be very important for the implementation of entrepreneurship education.

In the national action plan and the national map of actions, a variety of entrepreneurship measures and activities are listed. Teachers involved in teaching entrepreneurship competence are aware of this map and use it to select possible activities. According to the experts, however, there is a lack of an underlying,

formulated national strategy. The national map of actions contains objectives for a future-proof Austria by 2025 (Section 4.3) and an overview of numerous entrepreneurship activities. Building on this means defining concrete implementation steps in the sense of a national strategy. Continuous cooperation of all stakeholders would also be helpful to push the implementation of entrepreneurship education more strongly.

A variety of different public and private entrepreneurship initiatives and activities can be found in the national map and online. Stakeholders suggested that the extensive offer of diverse activities seems relatively confusing for those implementing them, such as teachers and trainers. Teachers must pick out individual activities they want to implement. It is also problematic that the financing of the individual activities is not always secure in the medium or long term.

4.3.3. Research

Austria participated in one of the largest entrepreneurship research activities in Europe in the framework of the [YouthStart entrepreneurial challenges project](#). In that project, education ministries from Luxembourg, Austria, Portugal and Slovenia worked together from 2015 to 2018 to develop an entrepreneurship programme and study its effects. This programme is based on the TRIO model and the European entrepreneurship competence framework (EntreComp) and includes different challenges to teach a variety of key competences.

During the [YouthStartforschung](#) project, around 20 000 learners from 175 schools and 15 different school types were surveyed. In Austria, about 10 000 students and 500 teachers at primary schools, lower secondary schools, VET schools, commercial schools and commercial academies, as well as schools/colleges of social and services industries and schools/colleges of engineering, crafts and arts, were reached from 2015 to 2018.

Research results show that:

- (a) the designed entrepreneurship programme is suitable for students from primary to upper secondary level and can be integrated into existing curricula;
- (b) the programme can be taught by teachers of different subjects;
- (c) students who learn with the programme show higher planning, economic, financial and entrepreneurial competence than students in the control group;
- (d) students in the experimental group are more creative, have higher intrinsic motivation, are better able to cope with uncertainty and are more engaged in school compared to the control group.

CHAPTER 5.

Nurturing entrepreneurship competence: methods tools and approaches

5.1. Curricula of VET schools (upper secondary level)

In upper secondary VET schools, such as commercial academies (HAK), VET schools and colleges of social and service industries (HUM) and colleges of engineering, arts and crafts (HTL), teaching entrepreneurship competence is included in the curricula. However, depending on the school type, entrepreneurship competence is addressed to varying degrees. It is taken into account in compulsory subjects (including training firms) or compulsory internships, but can also be addressed in non-compulsory subjects (e.g. junior company, pupils' cooperatives).

The curriculum of commercial academies embeds entrepreneurship competence specifically in general education objectives (Republik Österreich, 2014): 'The education and training is equally based on the aims of employability and studiability. A comprehensive entrepreneurship education, which enables students to act as entrepreneurs, employees and consumers in an active and responsible way and, therefore, to shape the economy and the society, is of central importance'.

In terms of teaching and learning objectives, the approach is designed as a spiral curriculum in which core contents are repeatedly covered in an increasing level of detail and rising complexity during the 5 school years. This happens both within a specific subject and in a cross-curricular approach.

Education and training particularly focus on business administration. For consolidating and cross-linking the competences acquired in the different clusters (e.g. entrepreneurship – economy and management, personality and career planning, society and culture), the didactical concept of the training firm serves for the acquisition of a holistic-integrative capacity to act.

The curriculum of the commercial academies consists of the following subjects:

- (a) compulsory subjects:
 - (i) personality and education career;
 - (ii) languages and communication;
 - (iii) entrepreneurship – economy and management;
 - (iv) business administration;
 - (v) corporate accounting;

- (vi) business training, project management, training firm and case studies;
- (vii) business informatics;
- (viii) office management and applied informatics;
- (ix) law;
- (x) political economics;
- (xi) society and culture;
- (xii) mathematics and natural sciences;
- (b) school-autonomous curriculum regulations;
- (c) compulsory exercises;
- (d) compulsory internship;
- (e) non-compulsory subjects;
- (f) non-obligatory practice, e.g. competence-oriented, independent learning;
- (g) remedial instructions.

The compulsory subject Business training, project management, training firm and case studies, provides the basis for the implementation of the education principle entrepreneurship education in all school years by its cross-linkage with all other subjects. The didactic concept of the 'training firm' promotes the students' individualisation and the development of their professional, methodological, social and self-competence. The training firm is the place where competence- and practice-oriented teaching in terms of the commercial education objective takes place.

The compulsory internship has to be prepared and evaluated in the subjects business administration, business training, project management, training firm and case studies, as well as in business behaviour from the point of view of career management referring to the practice portfolio. The students must keep appropriate records; these must be analysed in the respective subjects. The students must be informed about the rights and duties of an intern right from the start. If possible, the teachers of the respective subjects must keep contact with the companies (the practice place) where the students do their internship.

Similar to commercial academies, VET schools and colleges of social and service industries (economic professions; hairstyling, make-up and make-up artistry; fashion; tourism) have included teaching and imparting entrepreneurship competence in their curricula. Their respective general education objectives include that 'The holistically-oriented education is based on the goals of active citizenship (active participation in society), employability (ability to stay in employment and to progress during one's career) and entrepreneurship (entrepreneurial thinking and action) as well as the ability for higher qualification and lifelong learning' (Republik Österreich, 2015a).

To give entrepreneurial thinking special consideration, the didactic principles of the compulsory subject business management (the term may vary among the different schools and may consist of different subjects related to business administration) are based on the combination of all school subjects with this subject. The curriculum envisages 'cooperation with companies and experts within the framework of possibilities'. The curricula of some VET schools (e.g. fashion), state that 'The establishment of a company structure and the embedding of the entire teaching [...] in an entrepreneurial context are essential. By planning and carrying out assignments that are primarily real but also simulate the real situation; the learners are to be given the opportunity to carry out practical and organisational activities relevant to the subject'.

Apart from compulsory subjects related to economy, business administration, business management and personal development and communication, the curricula also include compulsory internships. Further, there is the possibility of school autonomous distribution of lessons. The VET school for fashion has school autonomous extensions of school lessons in the following fields:

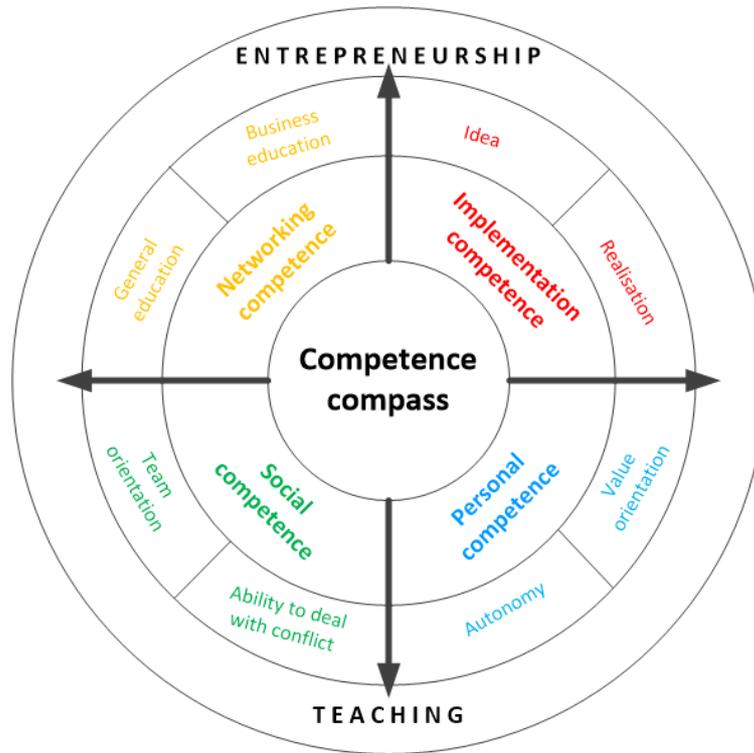
- (a) commerce and design;
- (b) fashion styling;
- (c) trade and creative manufacturing technology;
- (d) applied business management.

Another VET school type at upper secondary level are the colleges of engineering, crafts and arts (HTL). In the field of entrepreneurship competence, the curricula include compulsory subjects such as business management as well as social and personal competences, but also optional subjects such as 'entrepreneurship and innovation'. The latter deals with business plans and business start-ups (terms entrepreneur and entrepreneurship, goals and contents of a business plan, steps of a business start-up, subsidies); innovation management (innovation, innovation management, innovation process, product development process); and methods and tools of innovation management (theory of inventive problem solving (TRIZ), value analysis, portfolio techniques).

5.2. Teaching

The e.e.si Impulse Centre has developed a competence compass for entrepreneurship teachers. This is available to certified entrepreneurship schools and their teachers and can be used both as a self-test and as a control element. The following figure illustrates the elements of this competence compass.

Figure 4. **Competence compass for entrepreneurship teachers**



Source: eesi Impulszentrum Unterricht

IFTE also offers information materials, training courses for teachers, such as the Kitzbühel summer school or Teachers into business, and promotes events and activities to strengthen the entrepreneurship mindset of young people.

5.3. Programmes and activities in the school context

This section presents good practice examples for the implementation of entrepreneurship education in VET schools, their programmes and projects.

Box 2. Entrepreneurship competence at Maygasse Business Academy

The Maygasse Business Academy in Vienna can be used as a good practice example. The development of entrepreneurship schools in Austria began there in 1999 with the creation of an innovative school type, the *Schumpeter-HAK*. This school type – currently named the Start-Up Academy – considers entrepreneurship education to a greater extent than the other commercial academies.

The Start-Up Academy classes are run as laptop classes from the first year onwards: students mainly work with their laptops instead of books and paper. From the third year onwards, the education focus on entrepreneurship and management is implemented. Commercial academies can offer in-depth special training from the third year onwards in the form of individual education focal points.

One of these is entrepreneurship and management, which is implemented in the Start-Up Academy of the Maygasse with additional entrepreneurship-related activities and an increased use of entrepreneurship education methods. The school has a special selection procedure to identify particularly motivated students, because this school-type is more challenging than other commercial academies.

In the first year students are taught in the cross-curricular Competence Day once a week, with focus on presentation skills and improvisation. In the second year they have an interdisciplinary Business Day with a stronger business focus. These days are implemented by specific subject combinations and their teachers (German, personal education, geography, ethics and history). On these days, the class works on interdisciplinary, complex tasks in teams in a project-oriented way and is accompanied by the teacher team involved.

The apprentices interviewed described it as 'one day a week without direct teaching with work assignments for individual and group work on various topics'. They receive special coaching offers (individually and in teams) by appropriately trained teachers. The apprentices explained: 'We had coaching in groups of three or four and we had regular meetings with coaches to develop personalities and agree on targets'. As in all commercial academies the students of the Start-Up Academy also participate in the compulsory subject of training firms, with 3 hours per week in year four, and participate in compulsory internships at companies.

Students of the Start-Up Academy are also required to participate in extracurricular activities (workshops) and certain optional subjects. They carry out annual subject work and annual class projects and document their performance progress in a digital portfolio. They increasingly participate in excursions and internships, as well as in work experiences abroad.

The Maygasse participates in various entrepreneurship activities like entrepreneurship night, the changemaker programme, the debating club, speech competitions, business plan/idea competitions and actions related to the international Global Entrepreneurship Week.

Source: Authors, based on the field research.

Box 3. **Certified entrepreneurship school Fashion School Hallein**

Another good practice example is the Fashion School Hallein in Salzburg which supports entrepreneurship in many ways. It is a certified entrepreneurship school that particularly promotes the independence and personal responsibility of its students. Projects, practice-oriented teaching and relevant additional qualifications contribute to this, such as entrepreneurship days, company explorations, competitions, ecological projects, social projects, mentoring (learner to learner), and tutoring exchange (learner to learner). The school promotes the creative development of its students and, as a vocational secondary school, it works closely with leading companies in the industry. The school has committed teachers and focuses on Christian, social, team-oriented, individual but also cooperative values.

Source: Authors, based on the field research.

Certification as an entrepreneurship school

Within the framework of the upper secondary level, an important initiative contributes significantly to entrepreneurship education in Austria: certification as an entrepreneurship school. The e.e.si Impulse Centre accompanies schools in the certification process and offers in-school training seminars tailored to the needs of the schools.

Certification as an entrepreneurship school ⁽¹³⁾ was established in 2011 and aims to confirm that the school location has implemented entrepreneurship activities in a holistic, goal-oriented and sustainable manner in everyday school life (BDO Consulting, 2019).

Certification of a school takes place at two levels, basic (level 1 criteria) and advanced (level 2 criteria), and includes criteria from the following areas ⁽¹⁴⁾:

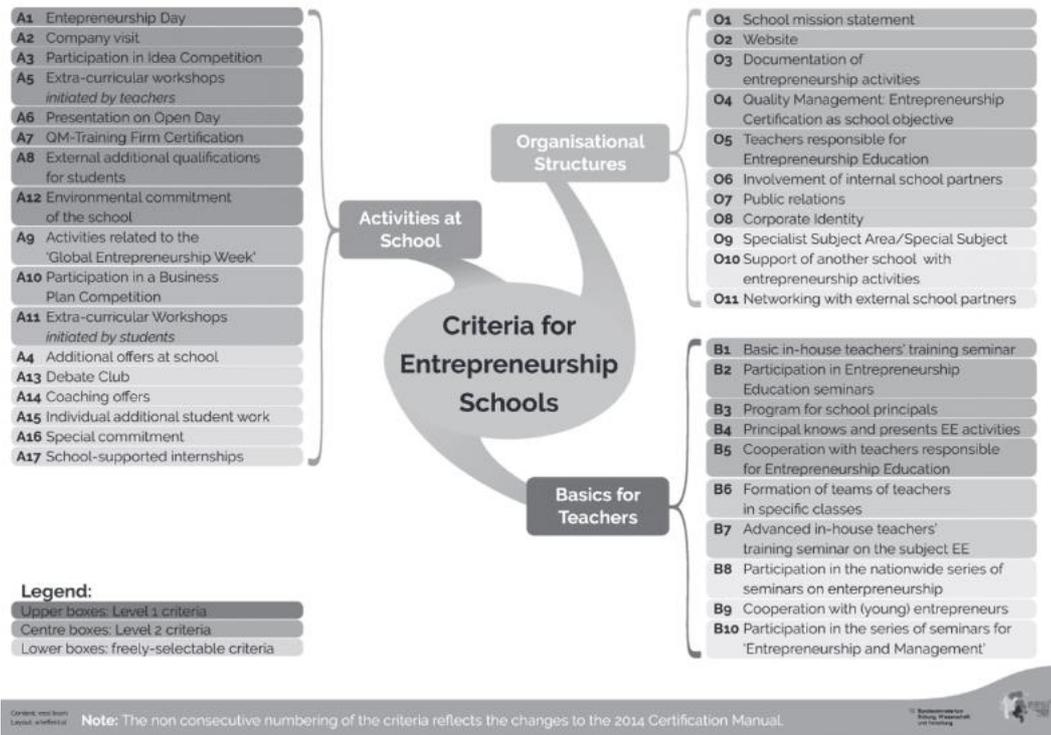
- (a) activities at school (e.g. participation in and organisation of events and competitions related to entrepreneurship);
- (b) basics for teachers (e.g. further training offers in the field of entrepreneurship education);
- (c) organisational structures (e.g. external image of the school and public relations in the field of entrepreneurship);
- (d) additional freely selectable optional criteria, which can be chosen by the schools.

The following figure illustrates the criteria for entrepreneurship schools by level of advancement (basic – level 1, advanced – level 2).

⁽¹³⁾ National standard quality criteria for entrepreneurship schools [ONR 42001](#) (*Qualitätskriterien für Entrepreneurship-Schulen*)

⁽¹⁴⁾ [eesi Impulszentrum](#)

Figure 5. Criteria for entrepreneurship schools (national standard ONR 42001)



Source: Lindner (2019), p. 9.

The certification requires the school to submit documentation supporting entrepreneurship activities over a period of 1.5 years. The certificates are then valid for 2 years (Lindner, 2019).

In November 2022, 45 schools were certified and another 26 schools were in the re-certification process. **Most certified schools** are commercial academies. It is also possible for VET schools and colleges of social and service industries to make entrepreneurship a focus and to be certified as an entrepreneurship school by the e.e.si Impulse Centre. For example, some tourism schools and the **Fashion School Hallein** are entrepreneurship schools. The latter is the first certified entrepreneurship fashion school in Austria, as entrepreneurial thinking is strongly required in both the fashion and hair styling sectors.

Teaching entrepreneurship competence is one of the general education goals of VET colleges of engineering, arts and crafts and is generally taught in the subjects of business and law, as well as construction and project management. According to the curriculum, entrepreneurial competence includes business and economic, legal and environmental knowledge, knowledge and experience in project management and employee leadership. However, entrepreneurship is not explicitly anchored as a separate subject in the curriculum due to the large number

of specialisation options at VET colleges of engineering, arts and crafts ⁽¹⁵⁾ (BDO Consultung, 2019).

To strengthen the entrepreneurship idea at VET colleges of engineering, arts and crafts, the federal working group Entrepreneurship HTL (founded in 2012) developed the training concept entrepreneurship for engineers. The schools have the possibility to acquire an Entrepreneurship education in engineering (EEE) certification through [IGIP Austria](#). These certified entrepreneurship schools promote the entrepreneurial thinking of the students and impart basic economic knowledge, in addition to technical knowledge and know-how. In this way, the schools emphasise their proximity to real business life, they can use networks with companies and other institutions and award their students an additional certificate.

Box 4. Entrepreneurship education in engineering (EEE): certification at the Higher College for Engineering Wolfsberg

Among VET colleges of engineering, arts and crafts it is possible for the schools to acquire an Entrepreneurship education in engineering (EEE) certification. As a pioneer in that field, the Higher College for Engineering Wolfsberg (HTL Wolfsberg) became a competence centre for this certification in 2016. The HTL Wolfsberg is in a rural area of Austria and provides students not only with knowledge, but also with enthusiasm and the ability to shape the future and their environment.

Entrepreneurship education plays an important role at the school and excellent cooperation with regional companies is a characteristic for this HTL. This gives students the opportunity to carry out internships or project and diploma work at the relevant school partner companies and in this way to get to know the companies more closely. Graduates later work for companies, which further expands the network since it is a rural region and 'people know each other'.

A teacher explains: 'The network grows continuously because learners later become project supervisors in the companies themselves and they have ongoing contact with their graduates'. Entrepreneurs also act as class mentors and role models and report on their careers, which should serve as an inspiration for the students. A company day once a year provides an opportunity for dialogue between students and regional companies.

Teachers emphasise that gamification is one way to implement entrepreneurship competence: business games teach business processes in a playful way. A teacher explained that 'business games like the factory game are very entertaining and promote entrepreneurial thinking'.

Participation in competitions (e.g. Moonshot Challenge / entrepreneurial Bootcamp) is also important, since it helps to get to know the perspective of outsiders and enables exchange with people having the same mindset. The school offers junior companies and entrepreneurship weeks where the students learn to implement ideas and benefit in teamwork and presentation techniques.

⁽¹⁵⁾ [BMBWF](#)

All these activities/tools/methods are an important part of school life at the VET-college of engineering, arts and crafts in Wolfsberg and are applied regularly. Participation in (international) projects helps students gain practical experience and combine it with school knowledge, thus promoting entrepreneurial understanding.

Source: Authors, based on the field research.

JA junior company programme

The project is implemented by [Junior Achievement Austria](#) (JA Austria) and is mainly funded by the WKO, the BMBWF and the BMK. The junior company programme is carried out as a school event, often as part of an elective subject.

Junior company offers pupils the opportunity to set up their own real company for the duration of a school year: students aged 15 to 19 can offer self-developed products and services to the real market. They independently develop their own business idea and go through all the phases of a real business project, from brainstorming and team building to planning, setting up a business plan (not obligatory), production, marketing and sales to closing the deal. By working independently, young people learn about the challenges of the working world, acquire basic economic knowledge and social skills that are important for professional life. A junior teacher coaches each junior team. Business professionals are available to advise the pupils as experts, thus guaranteeing the project's realism and practical relevance. Junior teams can register their companies in the junior database each year until the end of November. For successfully starting their business, the teams receive share certificates worth a maximum of EUR 800, which they can sell to build up their start-up capital ⁽¹⁶⁾.

⁽¹⁶⁾ [European Commission's Youth Wiki](#)

Box 5. **Junior company at Fashion School Hallein**

Apart from training firm and compulsory internship, Fashion School Hallein also offers junior companies. Here, learners can realise contemporary ideas that, for example, also take sustainability aspects into account. A junior company is founded by one class for a school year. The learners take on certain roles within the company, including managing director, marketing, production. For example, the junior companies produce earrings and bags or hats. These are produced sustainably from fabric scraps from Austrian textile companies. The learners work 4 hours a week in the junior company.

They do all the work themselves, such as writing to companies for fabric scraps, posting on Instagram for marketing, and producing the garments. The learners feel that everyone has a part to play within the junior company.

The learners sell their products online or at events, such as the fashion show of the Fashion School Hallein at the end of the school year.

From the learners' point of view, this gives everyone the opportunity to identify their own strengths and weaknesses in this environment, and to learn something that they will exploit in the future. Learners can refer problems and challenges to teachers at any time, but they are responsible for the success of their own company.

Source: Authors, based on the field research.

Pupil cooperatives (*Schülergenossenschaften*)

At the beginning of the school year 2020/21, the concept of student cooperatives – which already exists in Germany and South Tyrol (Italy) – was initiated at four pilot schools (HBLA Forstwirtschaft Bruck/Mur, HBLA St. Florian, BHAK Völkermarkt and HBLFA Wieselburg) under the project title *Genossenschaft macht Schule – Schülergenossenschaften*. The aim of this measure is to get to know the legal form of a cooperative as a participatory, regional and sustainable legal form, to promote entrepreneurial competences and to acquire initiative, creativity, collaboration, innovative spirit and understanding of the market. In the non-binding exercise called pupils' cooperatives, learners establish and operate cooperatives for learning purposes, which carry out real business activities within a defined framework. A key feature of the pupils' cooperatives is close cooperation with regional real-life partner cooperatives, which not only provide input in the form of workshops and excursions, but are also represented on the supervisory board of the pupils' cooperative and provide advice and support in daily business operations. The cooperatives can also be run on a class-wide basis and are usually designed to last for several teaching years.

As non-binding exercises within the curriculum, pupils' cooperatives do not compete with the established training firms (although in Austria, there are five to eight training firms in the form of a cooperative, but this is a niche). It is a voluntary project that is realised through commitment of the actors involved.

Entrepreneurial skills pass

The [Entrepreneurial skills pass](#) (ESP) has been developed with support from the European Commission, under the Leonardo da Vinci programme. It is an international qualification that certifies students (15 to 19 years old), who have had real entrepreneurship experience in the framework of the JA junior company programme and have gained the necessary knowledge, skills and competences in order for them to start a business or to be successfully employed.

ESP includes a full-year in-school mini-company experience, self-assessment of entrepreneurial competences, an examination of business, economic and financial knowledge and the possibility to access further opportunities offered by small and large businesses, top higher institutions and international organisations across Europe ⁽¹⁷⁾.

Entrepreneur's skills certificate (*Unternehmerführerschein*)

The [Entrepreneur's skills certificate](#) (ESC) goes back to an initiative of the WKO and is offered as a supplementary qualification from the eighth grade onwards in school. It is based on the firm belief that entrepreneurship and business knowledge can already be fostered during school years ⁽¹⁸⁾. The ESC consists of four modules (module A – basic economic concepts, module B – political economy, module C – business basics and module D – entrepreneurial training), each of which is completed with a standardised examination and a certificate. If you pass all four entrepreneurial driving licence examinations, you do not have to take the commission-based entrepreneurial examination required by law in Austria for trades subject to licensing and restricted trades.

The ESC was recognised as a best-practice example of entrepreneurship education by the European Commission in 2006 and the umbrella association of European Chambers of Commerce ([Eurochambres](#)) in 2011. Tens of thousands of students are annually ESC trained and certified in Austria, Germany and Switzerland.

Global entrepreneurship week

Austria takes part in the [Global entrepreneurship week](#). This is a massive campaign to celebrate and empower entrepreneurs in every country and community around the world. It is operated by the Global Entrepreneurship Network (GEN) and is powered by the Ewing Marion Kauffman Foundation, a

⁽¹⁷⁾ [European Commission's Youth Wiki](#)

⁽¹⁸⁾ [Ibid.](#)

diverse collection of national host organisations in 180+ countries and 25 000 local partner organisations.

In Austrian schools, the whole month of November is dedicated to the Global entrepreneurship week. During this time, entrepreneurs, changemakers, potential mentors, investors and teachers meet up with learners through events, workshops and entrepreneurship weeks. The idea is to give young people the possibility to develop their own ideas and to find new ways. Young people and teachers should be inspired to develop the entrepreneurial spirit. In Austria, IFTE is the host of the [Global Entrepreneurship Week](#) in cooperation with the e.e.si Impulse Centre. During the week, some 40 000 events with 10 million participants take place in 180 countries.

Youth entrepreneurship week (Entrepreneurshipwoche)

The Austrian [Youth entrepreneurship week](#) is a joint project of the BMBWF, the WKO, Austrian Startups and IFTE. It was piloted in Vienna and Kitzbühel (Tyrol) in 2020 with 90 pupils. In 2021, 55 Youth entrepreneurship weeks were organised with 1 800 young people from 69 schools. In the school year 2022/23, 110 Youth entrepreneurship weeks were supported.

Before the week starts, there are preparation units and seminars for the young people, teachers and trainers. During the 3.5 days, young people explore social and sustainability-related issues, develop solutions for innovative ideas, build the first prototypes for their projects and train for investor pitches. The week is led by two trainers and supported by partners and two teachers. It is preferably hosted externally, at locations such as start-up centres, shared working spaces, and makerspaces. The best project ideas receive awards. The Youth entrepreneurship week is not meant to be a one-off event, but the start for the young people's projects. Each education organisation is included in networking with further offers for the implementation of the projects and supported in their further entrepreneurship journey.

YouthStart projects

These projects build on the [YouthStart entrepreneurial challenges programme](#) which was developed in cooperation between the Ministries of Education of Luxembourg, Portugal, Austria and Slovenia, in collaboration with PEEP, the Danish Entrepreneurship Foundation, KPH Vienna/Krems, e.e.si and IFTE. The learning programme, based on the TRIO and EntreComp model, offers learning with small and large challenges across all grades and subjects (starting from primary to upper secondary, age 7 to 19). It consists of different modules which, in

combination, make up the programme and aim to empower every child and young person through holistic learning.

Based on this programme, learning programmes for different school levels were designed.

- (a) Primary level – Empowering every child: a four-volume, holistic learning programme with different challenges that are aligned with the curriculum and can be used immediately in class. In Austria, more than 6 000 children at around 100 primary schools take part in the programme.
- (b) Lower-secondary level – Empowering youth: a four-volume learning programme with entrepreneurial challenges for lower secondary schools. The programme can be used at lower secondary schools, the lower cycle of secondary academic and specialised pre-vocational schools.
- (c) Upper secondary level: Learning materials from the YouthStart entrepreneurial challenges programme and numerous other training offers in entrepreneurship education.

The [YouthStart programmes](#) offer creative learning arrangements in personal development, entrepreneurship, financial literacy, mindfulness, sustainability, holistic learning and social engagement. They are accompanied by further training for teachers, workshops for school classes and events. YouthStart digital offers anyone, in addition to its use in schools, an interactive and modular entrepreneurship learning environment.

Innovative youth (*Jugend innovativ*)

[Innovative youth](#) is a school competition for learners between 15 and 20 for innovative ideas in design, science, engineering, entrepreneurship as well as sustainability. For the 35th anniversary edition (2022), applicants could also submit ICT and digitalisation projects as well as energy and electrical engineering projects in the federal province Vorarlberg (as a regional special award). Innovative youth is commissioned by the BMDW, the BMBWF and the BMK and it is managed by Austria Wirtschaftsservice (AWS). The young people are supported with know-how, prize money and bonuses worth over EUR 90 000.

Talent internships (*Talente Praktikum*)

Learners aged 15 and above who attend an Austrian school or have graduated in the last year, can gain practical experience in the research and development department of a company or research institution. The [talent internships](#) in the focus areas of energy transition, circular economy and other scientific and technical topics have a duration of at least 4 weeks. BMK student support is EUR 1 200 per internship.

Female entrepreneur at school (*Unternehmerin macht Schule*)

In the [Female entrepreneur at school initiative](#) of the WKO, female entrepreneurs inspire learners to pursue an entrepreneurial career. Using their own examples, they report on the opportunities that entrepreneurship opens up and what can be achieved with an entrepreneurial spirit, motivating in particular female learners to pursue an independent professional future.

Environment and school initiatives (ENSI)

Since 1986, Austria has been part of the Environment and school initiatives (ENSI). ENSI is an international network aimed at supporting education and pedagogical developments, environmental understanding, as well as active approaches to teaching and learning through research and the international exchange of experiences. In 1995, the [ÖKOLOG programme](#) for the actual, verifiable and sustainable implementation of environmental education in schools was developed by the Austrian ENSI teacher team on the initiative of the BMBWF. For more than 25 years, 660 ÖKOLOG schools have been implementing the teaching principle of environmental education for sustainable development and teaching skills for developing a future worth living. VET schools and VET colleges are also active in the ÖKOLOG programme. In this, sustainable projects are developed and implemented in everyday school life on topics such as saving energy and resources, reducing waste, conscious nutrition, feeding into the concept of entrepreneurship.

Changemaker programme

The [Changemaker programme](#) supports young people at upper secondary level in implementing innovative project ideas on the UN sustainable development goals. The young people themselves are to become active in shaping a sustainable future and become changemakers in society. In implementing their projects, young people also expand and deepen their entrepreneurial skills. The programme is coordinated by the Rotary Club Kitzbühel and IFTE and is supported by the Rotary Foundation, the BMBWF, the e.e.si Impulse Centre, KulturKontakt Austria and numerous sponsors.

In Austria, project teams are supported in two categories:

- (a) changemakers, with projects carried out and completed by the end of the school year;
- (b) changemakers going start-up, where a concept for a start-up is developed that is to be implemented in the following years.

The Rotary youth award for sustainability and the Changemaker award are given to the best teams. Prizes range from participation in conferences and awards, financial support for their own crowdfunding campaign, to the opportunity to pitch their idea to experienced investors.

The school Business Academy Maygasse (Vienna), which participates in numerous entrepreneurship activities, also takes part in the Changemaker programme. Two students reported that they were able to implement their sustainable ideas with start-up capital in the context of this programme. They stated that they have learned a lot in these workshops.

Trash value challenge Austria

From 2017 to 2020, IFTE and its partners organised the Trash value festival in Austria, where primary and lower secondary school students presented their upcycled objects to an audience. The aim of these festivals was for children to create value from something worthless and to look at how waste is created and avoided. In 2019, there was one Trash value festival in Vienna and two in Salzburg. This challenge was developed as part of the [international project UKids](#) where six countries (Denmark, Hungary, the Netherlands, Austria, Portugal and Finland) created and researched social entrepreneurial lessons for elementary schools and teacher training programmes to develop social entrepreneurship competences. The project was partly funded by the Erasmus+ programme of the European Union.

Keep growin'

[Keep growin'](#) is an initiative of the Rotary Club Kitzbühel for the development of sustainable ideas by apprentices. Apprentices work in teams to develop an entrepreneurial idea that promotes sustainability in their own apprenticeship business. The apprentices take part in workshops and are supported by coaches and mentors from the Rotary Club in working on their entrepreneurial ideas. In the process, entrepreneurial thinking, innovative strength and an awareness of sustainability in a business context are promoted.

5.4. Apprenticeship training

In Austria, apprenticeship training has a long tradition and great importance; many entrepreneurs have completed apprenticeship training. For apprentices, the teaching of entrepreneurship skills takes place directly in the context of daily work. The stakeholders interviewed have the impression that apprentices have a stronger focus on entrepreneurial thinking than school VET learners. In companies

such as Geberit and Zumtobel, various activities are set up to promote the personal and social skills of their apprentices.

Box 6. Apprenticeship training at Geberit Austria

Geberit Austria produces sanitary products and is active in sanitary technology and bathroom ceramics. Apprenticeship training at Geberit was established in 1995 by a dedicated apprentice trainer.

At the beginning, the company started by taking on two apprentices on a trial basis; by 2022, almost 40 apprentices had been trained. In the interim, a second employee, for whom the training of young people is just as much a matter of the heart, has also been employed as an apprentice trainer in the company.

The management has always attached great importance to apprenticeship training, which primarily serves to train future skilled workers for the company. This also includes development towards higher positions, where more entrepreneurship skills are required. Around two thirds of the former apprentices are still employed at Geberit in a variety of positions and some management positions are also held by this group of people.

As part of the apprenticeship training, rotation through different departments is planned so that apprentices get to know the entire production process. In addition, they can participate in international social projects and to get to know other group locations abroad or professionally corresponding companies within the framework of exchange projects.

Many joint social activities, such as get-to-know-you days for the new apprentices, autumn hikes, and excursions are also implemented at the site. Great importance is attached to personality development, soft skills training and presentation skills.

For example, the apprentices guide school classes and other guests through the company, present their activities at the annual parents' evening, in schools and at job fairs. The apprentices interviewed stated: 'The trainers do not only emphasise technical training, but also personal development. We must give presentations and take guided tours through the company. It is important that we are competent and can present ourselves. We also go to trade fairs where we have to talk to people'. This also makes them stand out for their above-average communication and presentation skills, their appearance and their effect on others.

Source: Authors, based on the field research.

Box 7. Apprenticeship training at Zumtobel Lighting

Zumtobel Lighting GmbH, located in Dornbirn, teaches entrepreneurial skills during the 4 years of apprenticeship. The company uses a variety of practical methods, like job rotation, to integrate the apprentices into the company at an early stage, to show career development opportunities and to enable the apprentices to be assigned to the right positions. Through working in different departments, apprentices gain 'additional knowledge about the firm, specific methods and to work independently'.

Job rotation can be handled in a flexible way. The apprentices appreciate the system because 'it offers multiple insights, but the experience in each rotation position depends on the supervisor and type of the department'. Teaching of social skills and the entrepreneurial perspective happens continuously in the daily work routine. The trainers and supervisors have a role model function in this regard but they also offer specific project work.

After the first year of their apprenticeship, apprentices are given the task of designing, planning and implementing a lighting project as part of a team (TechCube project). Each team receives a budget to implement the respective idea. The project aims to promote various entrepreneurial skills: creativity, teamwork and individual role in the project, project management and planning (dealing with time and financial resources), problem-solving, understanding of potential challenges that may arise in a company and dealing with mistakes. The companies also encourage independent work by giving apprentices more freedom and decision-making scope over the course of their apprenticeship. During their training, apprentices learn to keep everything in order, to have confidence in themselves, and to meet deadlines and economic targets in projects.

Zumtobel offers a variety of extracurricular activities and social projects, like company events, excursions and trips as a team, exchanges with other companies, customers and schools. Social and cultural projects are implemented together with other organisations. These projects focus on topics related to the work environment (e.g. cultural diversity) or the strengthening of specific skills such as teamwork. They also offer work experience or internships abroad as well as the integration of underperforming apprentices or integrative apprentices.

Source: Authors, based on the field research.

5.5. Continuing VET

Entrepreneurship also plays a significant role in private CVET providers for adults, such as the biggest adult education providers in Austria *Wirtschaftsförderungsinstitut der Wirtschaftskammer Österreich* and *Berufsförderungsinstitut Österreich*. In a large part of their education offers they also consider entrepreneurial competences. For example, the regional CVET provider WIFI Vienna supports participants in setting up and managing their businesses with its business start-up programme. In teaching, great importance is attached to practical orientation and reports on practical experience, and the focus of the course is set on competences. For this purpose, the [LENA learning model](#) (*LEbendiges und NACHhaltiges Lernen*,

i.e. lively and sustainable learning) was developed. LENA deliberately focuses on the learners, their learning processes and strengthening self-learning competences. The scientific background is the systemic-constructivist learning paradigm where learning is understood as an active, constructive, self-directed and goal-oriented process that cannot be initiated and controlled from the outside.

Box 8. **LENA learning model in the entrepreneurship training course at WIFI Austria**

The participants in entrepreneurship training mainly come from different crafts and trades, most having completed an apprenticeship. The aim of the training is to pass the entrepreneurial examination required by law in Austria for trades subject to licensing and for regulated trades. The trainers often come from the field, i.e. they have had prior experience as entrepreneurs.

There are six separate scripts for the entrepreneurship training (accounting, business law, marketing, communication, organisation, leadership/HR management) as well as exercise books with comprehensive examples. The participants work together on these examples during the course. The learning materials focus on a combination of knowledge (or prior knowledge of the learners) and implementation in practice (e.g. application in the participants' business life). This works well with questions/open questions and work assignments. The participants work independently on the solution to the tasks, followed by a joint discussion. The internal exchange among participants is essential. Time is provided for reflection and discussion.

WIFI teaches the participants the theory and they must put this into practice using examples or respond to tasks related to their own company. It is even possible to create one's own business plan from these question answers.

The internal exchange is also often a 'self-runner' in generating interesting ideas and mutual inspiration.

Source: Authors, based on the field research.

5.6. Career guidance and business start-up support in VET

Austria offers numerous opportunities for career guidance and business start-up support in VET.

Business start-up service of the Austrian Federal Economic Chamber

The [business start-up service](#) of the [WKO](#) offers targeted support in setting up a business. In more than 90 [information centres](#) located in the provincial chambers and regional contact points, business founders can benefit from legal and economic consultation and business start-up coaching free of charge. Local chambers organise events, such as Business start-up days (*Gründertage*), workshops, and lectures. Guidelines for business founders inform on necessary

authority contacts, financing and marketing aspects and give a summary of legal forms and questions of social insurance and tax. Comprehensive business start-up information and service is also available online at the platform *Gründerservice* ⁽¹⁹⁾.

AustrianStartups

As an independent non-profit platform for innovative entrepreneurship in Austria, [AustrianStartups](#) is an open place for startups, change-makers, and interested persons. It offers information about the national startup scene, different supporting services and utilities to start-ups. AustrianStartups has different entrepreneurial programmes, like the Entrepreneurial leadership programme or the Youth entrepreneurship week.

Fairs

Fairs related to entrepreneurship take place at regional level, such as the founder fair ([Gründermesse](#)) in Styria and the Youth and profession fair ([Messe Jugend und Beruf](#)) in Upper Austria. They are often shared with the federal provinces and the regional chambers of commerce.

Business start-up programme of the AMS (Unternehmensgründungsprogramm)

An example of entrepreneurship education for adults is the Business start-up programme of the [Public Employment Service \(AMS\)](#) that supports unemployed persons who wish to become self-employed and start up their own business. They provide a qualification programme for potential entrepreneurs. The Business start-up programme is implemented by various regional actors and has a duration of 6 months.

The path to self-employment takes place in four phases:

- (a) clarification phase: clarification of the feasibility of the business idea and examination of personal requirements;
- (b) preparation phase: entry into the business start-up programme; accompanying management consultancy and qualification;
- (c) realisation phase: start of self-employment;
- (d) follow-up phase: business check-up on the newly founded company by a management consultant.

University incubation centres

⁽¹⁹⁾ [European Commission's Youth Wiki](#)

University incubation centres often focus on innovative, mostly technology-oriented start-up projects in the university environment, such as the innovation incubation centre at the Vienna University of Technology or the WU business incubator at the Vienna University of Economics and Business. However, there are also centres that want to address potential founders in a larger regional context beyond the university catchment area. One example is the Centre for Applied Technology (*Zentrum für angewandte Technologie, ZAT*) in Leoben with the start-up initiative [Unternehmerwerden.at](#) in Upper Styria (BDO Consultung, 2019).

Business plan competitions

Business plan competitions run by various organisations (e.g. i2b, Bank Austria) support prospective entrepreneurs. Their aim is that the participants develop new business ideas and present them in the form of a business plan. In most cases, participants are supported in the development of their business plan through coaching sessions of the supporting organisations or experts (BDO Consultung, 2019).

AWS First Incubator (AWS First Inkubator)

The [AWS First Inkubator programme](#) supports young people aged between 18 and 30 with professional coaching, financial support and a large network of experts in starting their own business.

5.7. Extracurricular activities

The following are examples of extracurricular activities to support entrepreneurship competence and young entrepreneurs.

Your projects (*Eure Projekte*)

[Eure Projekte](#) was an initiative of the Department for Families and Youth at the Federal Chancellery and was carried out by the national network of Austrian youth information centres between 2015 and 2021. During this period, young people aged 14 to 24 with a project idea could apply for grants of up to EUR 500 (EUR 750 for projects under the annual focus, e.g. climate protection and sustainability). In addition to this initial funding, they also received an individual project consultation with employees of the youth information centres in the federal provinces of Austria. In the context of the European Year of Youth 2022, a new initiative was launched which offers financial support of up to EUR 1 000 for activities and projects that bring young people closer to the topics of environmental and climate protection, digital change, inclusion, participation or EU youth goals.

RYLA camp

[RYLA](#) stands for Rotary youth leadership award and is particularly concerned with leadership qualities, social commitment and personal development of young people. The Kitzbühel RYLA camp for entrepreneurship strengthens young people in their spontaneous wealth of ideas and gives them inspiration to put their ideas into practice.

Erasmus for young entrepreneurs

With the programme [Erasmus for Young Entrepreneurs](#) ⁽²⁰⁾ young or new entrepreneurs can learn from an experienced entrepreneur who runs a small business in another country. They travel to an EU Member State and work with experienced entrepreneurs there. The European Union foresees financial assistance for the new entrepreneurs, with funding based on paying monthly lump sums to the entrepreneur.

5.8. [Professional development opportunities in entrepreneurship for VET teachers](#)

Teachers of economics and similar subjects in VET schools and colleges have usually completed a master degree in business education. Before they start teaching in schools, they must gain 2 years of work experience in a company. Teachers of other subjects need further training in this field.

The University College for Teacher Education of Christian Churches Vienna/Krems ([Kirchlich Pädagogische Hochschule Wien/Krems, KPHVIE](#)) offers a comprehensive further training programme for entrepreneurship education for teachers at vocational schools. The promotion and strengthening of social entrepreneurship education has been a central goal of teacher training and further education at the University College for many years.

In order to train teachers in entrepreneurship competence, the e.e.si Impulse Centre ([eesi Impulszentrum](#)) has developed a competence compass for entrepreneurship teachers. The compass is available to certified schools and their teachers and can be used both as a self-test and as a control element.

IFTE ([IFTE. Lehrer](#)) offers information material and numerous training courses for teachers, such as the Kitzbühel summer school or Teachers into business. They also offer the annual award Entrepreneurship educator of the year that recognises dedicated teachers and good teaching models in entrepreneurship

⁽²⁰⁾ For more information see also [European Commission. Erasmus for Young Entrepreneur](#)

education. The prize was awarded for the first time in 2007 and the nominations are made by e.e.si.

Schoolgames is a project of Freyspiel gmbh, a Styrian enterprise that supports the career orientation of the young. It has been supporting teachers since 2003 in preparing their learners for the challenges of life and the professional world and in showing them new professional perspectives. Teachers receive board games, internet games, teaching materials, practical projects, career information offers and personality development modules for their lessons.

Another tool that supports the learning of teachers is the COOL cooperative open learning (**COOL trainers**). COOL is a pedagogical school and teaching development concept based on reform pedagogy for lower and upper secondary level. COOL started in 1996 as an initiative of teachers at the commercial academy Steyr in Upper Austria. It provides information about teaching methods and materials and includes several forms of cooperative learning like peer tutoring, pair programming, and talents exchange. By 2022, the COOL community was very active, with over 1 200 teachers forming its base. They are active in over 60 certified partner, impulse and innovation schools and organise themselves through numerous events and partnerships.

To promote entrepreneurship education among teachers, the Vienna Chamber of Commerce (*Wirtschaftskammer Wien, WKW*) motivates companies to offer internships for teachers and teacher trainees. The company internships for teachers (*Betriebspraktika für LehrerInnen*) take place in cooperation with the Austrian Managers Association (*Wirtschaftsforum der Führungskräfte, WdF*), KPH Vienna/Krems, IFTE, the Economic Society Vienna (*Volkswirtschaftliche Gesellschaft Wien, VWG*) and the regional education directorate of Vienna. Since 2014, more than 300 teachers have been able to complete an internship in over 200 companies and pass on their knowledge to their students.

5.9. VET entrepreneurial learning environments

VET schools are an important entrepreneurial learning environment; it is here that the topic of entrepreneurship is first taken up directly. A key success factor for teaching entrepreneurial skills in school is the commitment of the teachers. This was confirmed both by the stakeholders interviewed and at VET provider level. Teachers need to rethink and redefine their role in entrepreneurship education. They should act more as coaches than as teachers. Contacts with the business community are also very important and have a strong influence on learning outcomes.

In schools, modern teaching settings that enable interdisciplinary, cross-curricular teaching of the topic are also helpful for teaching entrepreneurship skills. Examples of such offers are training firms, business games, group work, project work, and company visits.

In the Business Academy Maygasse (Vienna), the Start-Up Academy students are taught in the cross-curricular Competence Day once a week with focus on presentation skills and improvisation in the first year. In the second year they have an interdisciplinary Business Day with a stronger business focus, featuring specific subject combinations and their teachers (German, personal education, geography, ethics and history). On these days, the class works on interdisciplinary, complex tasks in teams in a project-oriented way and is accompanied by the teacher team involved.

Moreover, gamification, i.e. playful teaching of learning content and business simulation games, have been mentioned by experts and teachers as interesting teaching methods. Modern teaching materials and teaching settings in rooms such as innovation labs, makerspaces or laboratories also enable other forms of teaching and stimulate the creativity of the students (BDO Consulting, 2019).

Especially in the Higher College for Engineering Wolfsberg (HTL Wolfsberg) gamification is seen as a relevant approach: all interviewees mention the introduction of playful elements or business games as an important tool. Teachers state that the use of illustrative, practical examples is beneficial for teaching entrepreneurial skills. Also, participation in competitions (e.g. Moonshot Challenge / entrepreneurial Bootcamp) is important, since it helps to get to know the perspective of outsiders and enables exchange with people with the same mindset.

In apprenticeship training, entrepreneurship skills are taught directly through daily practical work. Entrepreneurial, social and personal competences are further promoted in committed companies through additional activities such as project work, participation in social projects, or rotation opportunities in different departments of the company. Teaching entrepreneurial competences in apprenticeship training could be further promoted through appropriate training of apprenticeship trainers, both in the pedagogical area and regarding entrepreneurship.

The human resource manager of an enterprise said 'I don't see entrepreneurship in the training of apprenticeship trainers. It should focus on the competences a skilled worker should bring with him. That you already place this in the training of the trainers. Then there would be different training plans in some companies.' The apprenticeship trainer adds, 'Entrepreneurship is a topic in apprenticeship and is also practised, but it varies depending on the commitment of

the company. It is not part of the whole, not a must. Small companies don't have the opportunities that large corporations have'.

Currently, additional activities in that field are strongly dependent on the commitment of the company and the trainers, i.e. individual persons.

5.10. Formative and summative assessment

Performance assessment in Austrian schools is generally carried out according to the performance assessment regulation (*Leistungsbeurteilungsverordnung*, LBVO). In the individual subjects, the performance assessment includes cooperation among the learners in class, special oral performance assessments (examinations and exercises), special written performance assessments (in-class tests and written examinations such as tests and dictations), as well as special practical and graphical performance assessments. The inclusion of practical and graphical forms of work, e.g. on the computer or project-oriented work in oral and written performance assessments, is permissible. The requirements of the curriculum are the benchmark for performance assessment, considering the respective stage of the lesson (Republik Österreich, 1974).

Box 9. Performance assessment at Fashion School Hallein

The Fashion School Hallein has introduced a competence-oriented performance assessment and summative assessment in the commercial subjects in line with the LBVO. The school has defined three competence areas per semester or term for each class, to which all competences are assigned according to didactic considerations (e.g. 7th grade, subject: accounting, 1st semester: basics, depreciation, inventory valuation). These areas of competence are the basic units of performance assessment and evaluation.

The areas of competence vary in scope and difficulty, but this does not pose a problem, as the learners are given more time to acquire them in the case of more extensive and/or more demanding topics.

In addition to schoolbooks, Fashion School Hallein uses specific scripts in order to define competence areas, as well as worksheets, newspaper articles, or the like in order to expand the basic material in breadth or in depth. The performance assessment is done with the help of tests, projects, voluntary competence tests, oral examinations and participation in class.

The summative assessment considers the competence areas as well as basic and additional parts regarding the tasks that have to be fulfilled.

Source: Authors, based on the performance assessment document of Fashion School Hallein.

In the schools, learners generally receive an information sheet covering what the grades are based on. In the main subjects, test and examination results are

especially considered when giving grades. The entrepreneurship-related commitment of the students is indirectly assessed through their participation in class. Attention is often paid to how the learners progress, e.g. in their presentation skills. In the subject of the training firm, there are written examinations or reports, but the quality of the practical work is also assessed. In some schools, such as HAK Maygasse Vienna, there are also feedback and appraisal interviews, and the students receive service certificates in the context of their deployment in the training firm.

In the framework of apprenticeship training, general assessment takes place at school (theoretical knowledge) and in the company (practical knowledge) and is mainly summative. The assessment takes place after each apprenticeship year and in the case study companies of Zumtobel and Geberit also after every job rotation. For example, at Zumtobel, apprentices receive feedback from their supervisors and the trainers at the end of each job rotation based on nine assessment criteria (including teamwork, keeping order, punctuality, comprehension and technical knowledge). Geberit also conducts interviews that assess personality traits, work behaviour and competences.

in writing, in a team or as individual work) has a strong influence on the way in which teaching is carried out. Innovative approaches such as practice-based examinations and application-oriented approaches are needed here (BDO Consulting, 2019). Therefore, there is an increasing orientation towards competence-based learning and assessment.

In CVET at WIFI Austria, the LENA learning model is applied. This focuses on the learners, their learning processes and strengthening self-learning competences. While the learning model itself is competence-oriented, some of the examinations that complete a specific training course, are not. For instance, entrepreneurship training based on the LENA learning model is competence-oriented. The entrepreneurship training has to be completed with an entrepreneurial examination at the Master Craftsman Examination Centre (*Meisterprüfungsstelle*); this is an examination regulated by law and including very specific criteria that have to be fulfilled in order to pass the exam. However, the exam questions are not competence-oriented yet, but the regulation is currently under review (Status February 2023) and the exam questions will be adapted to be competence-oriented in the future.

CHAPTER 6.

Conclusions

Entrepreneurship competence plays an important role in Austria, especially in the context of VET, because many apprenticeships, VET schools and VET colleges lead to self-employment.

In this context, the term entrepreneurship education is relevant: it stands for the development of one's own ideas and learning the skills to implement these ideas, comprising all education measures that encourage and impart entrepreneurial attitudes and skills as well as personal skills. These are helpful for graduates founding their own business but are also essential for employment. Austria follows the TRIO model of entrepreneurship education. The country has a broad understanding of entrepreneurship competence and follows the European EntreComp framework developed by the JRC of the European Commission in 2016. During the creation of the framework, JRC referred to the Austrian framework, so the content and competences included a largely extent overlap. The interviewed VET schools, colleges and companies have a broad understanding of entrepreneurship competence and understand it particularly as the creation of opportunities and values. Every learner should have the chance to experience that every individual can participate and contribute to society. This is to be seen as a value-creating process that can be used in any subject.

The Austrian entrepreneurial learning ecosystem comprises different levels and actors to support and promote entrepreneurship competence. At the national level, the central actors are the various ministries and political actors, such as the BMBWF and the BMAW. They jointly drew up the national action plan for entrepreneurship education (*Entrepreneurship education: map of actions for children and young adults*) in 2020. This action plan forms a good basis and overview of the activities in Austria, but lacks an underlying, formulated national strategy with concrete implementation steps. However, the plan formulates a joint vision, i.e. goals to be reached by 2025, including the creation of framework conditions and the widening of networks and securing process quality, including evaluation.

An example of success that has been achieved at the political level are the new 2023/24 curricula, currently being designed for primary schools, lower secondary schools and the lower cycle of secondary academic schools. These new curricula focus on subject-specific, generic and interdisciplinary competence orientation, including entrepreneurship competence in both learning and assessment. However, a formulated entrepreneurship strategy and continuous

cooperation of all stakeholders would be helpful in promoting the implementation of entrepreneurship education more strongly.

Several institutions have been established to support imparting entrepreneurship competence and to strengthen the entrepreneurial spirit in VET schools and colleges: these include the e.e.si Impulse Centre, IGIP Austria. Other examples are the Initiative for Teaching Entrepreneurship Austria (IFTE), to promote entrepreneurship education, and the Austrian Centre for Training Firms (ACT), which assists in the handling of training firms in the different schools. Both e.e.si and IFTE have been established on behalf of BMBWF. The interviews showed that the community dealing with entrepreneurship education is rather small and tight knit. Stakeholders know each other well and are often active in more than one stakeholder organisation.

In VET schools and colleges, entrepreneurship competence is mainly integrated in VET programmes with a commercial focus, but there are also schools and colleges with other thematic focuses teaching entrepreneurship competence to learners. At commercial academies (HAK), VET schools and colleges of social and service industries (HUM) and colleges of engineering, arts and crafts (HTL), teaching or imparting entrepreneurship competence is included in curricula. However, depending on the school type, entrepreneurship competence is addressed to varying degrees. It is considered in compulsory subjects (including training firms) or compulsory internships, but it can also be addressed in non-compulsory subjects (e.g. junior company, pupils' cooperatives). Interviews with school directors and teachers revealed that school bureaucracy and rigid structures can sometimes be challenging, particularly when activities with entrepreneurship learners do not take place at the school location (e.g. competitions, events, extracurricular activities) or when implementing interdisciplinary teaching activities. In the school context, when promoting entrepreneurship competence, active and flexible learning settings seem to be particularly successful. Therefore, it is important to make use of school autonomy and the possibilities of interdisciplinary teaching.

Enterprises are also important players in the Austrian entrepreneurial ecosystem, because apprenticeship training mainly takes place in companies. Here, the teaching of entrepreneurship competence occurs directly in the context of daily work. However, the degree of imparting entrepreneurial, social and personal skills depends on the commitment and the corporate culture of the company. The companies interviewed were active in teaching entrepreneurship competence through additional activities such as project work, participation in social projects or rotation opportunities in different departments of the company.

Teamwork and project work prove especially conducive to the development of entrepreneurship competence in the context of apprenticeship training.

Various programmes and methods support entrepreneurship competence. These can be implemented in schools, such as the junior companies that offer pupils the opportunity to set up their own real company for a school year, or the pupils' cooperatives that can be established for learning purposes. Schools engaged entrepreneurship often take part in international and national activities like the Global entrepreneurship week, the Youth entrepreneurship week, Innovative youth (school competition for innovative ideas) or YouthStart projects (learning programmes for different school levels). Different extracurricular activities also help young people to develop project ideas or support young or new entrepreneurs. However, the extensive offer of diverse activities is sometimes confusing for teachers and trainers: teachers must pick individual activities they want to implement. Evaluations of the various initiatives would be helpful in this regard, as well as securing medium and long-term funding for successful projects.

There are also further education and training offers for teachers and trainers active in imparting entrepreneurship competence to learners, such as the KPH Vienna/Krems, IFTE and the e.e.si Impulse Centre. The centre has developed a competence compass for entrepreneurship teachers. Apart from compulsory projects in entrepreneurship, the curricula of VET schools and colleges leave room for individual focal points and school-autonomous activities. The main key success factor for teaching entrepreneurial competence in school is the commitment of the teachers; this is true also for apprenticeship training. However, the teaching of entrepreneurial competence could be further promoted through appropriate training of apprenticeship trainers both in the pedagogical area and regarding entrepreneurship.

Performance assessment in Austrian schools is carried out according to the performance assessment regulation (*Leistungsbeurteilungsverordnung, LBVO*). Learning outcomes must be monitored through different assessment methods such as written and oral performance assessments (exercises, tests, exams), practical and graphical performance assessments, or participation in class. It has been shown that the way in which examinations or knowledge tests are carried out also has a strong influence on the way in which teaching is carried out. Therefore, increasing orientation towards competence-based learning and assessment can be observed.

An example in CVET is the WIFI LENA learning model that focuses on the learners, their learning processes and strengthening self-learning competences. While the learning model itself is competence-oriented, some of the examinations that complete a specific training course, are not. This competence-oriented

approach still needs to be taken up more strongly in the context of examinations, as well as in the whole education and training system.

In the VET schools interviewed, the learners and graduates stated that in the context of entrepreneurship competence they have benefited above all from the commitment of the teachers, practice-oriented lessons (also in the context of the training firm or junior companies) and participation in the numerous additional activities and entrepreneurship events along with classroom teaching. Besides economic know-how, they have learned much about personality development and presentation techniques. Apprentices benefited from teamwork and management competences, soft and presentation skills, which are not only helpful in the company environment, but also in school and private settings.

Austria has numerous activities and measures for teaching entrepreneurship competence in VET. They are strongly based on the commitment of the individual actors, both in the planning and conception at the political level and in the actual implementation in schools and companies. Starting points for further advancing entrepreneurship education in Austria are a formulated national entrepreneurship strategy, closer cooperation of all actors involved and a stronger competence orientation in teaching and assessment. Above all, school autonomy and flexibility facilitate modern learning settings, interdisciplinary teaching and participation in external projects. This also requires appropriate training and further education opportunities for teachers and trainers.

Acronyms

ACT	<i>Servicestelle österreichischer Übungsfirmen</i> – Austrian centre for training firms
AHS	<i>Allgemeinbildende Höhere Schulen</i> – Lower and upper cycle of academic secondary schools
AMS	<i>Arbeitsmarktservice Österreich</i> – Public Employment Services Austria
aws	<i>Austria Wirtschaftsservice</i> – Austrian promotional bank
BMAW	<i>Bundesministerium für Arbeit und Wirtschaft</i> – Federal Ministry for Labour and Economy
BMBWF	<i>Bundesministerium für Bildung, Wissenschaft und Forschung</i> – Federal Ministry of Education, Science and Research
BMK	<i>Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie</i> – Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology
BMS	<i>Berufsbildende mittlere Schulen</i> – Schools for intermediate vocational education
BRP	<i>Berufsreifeprüfung</i> – vocational matriculation exam
COOL	<i>Cooperatives offenes Lernen</i> – Cooperative Open Learning
CVET	continuing vocational education and training
e.e.si	<i>Entrepreneurship Education für schulische Innovationen Impulszentrum</i> – Entrepreneurship education for school innovation impulse centre
EEE	Entrepreneurship Education in Engineering
ENSI	Environment and School Initiatives
EntreComp	European entrepreneurship competence framework
EQF	European qualifications framework
ESC	Entrepreneur's skills certificate
ESP	Entrepreneurial skills pass
FFG	<i>Österreichische Forschungsförderungsgesellschaft</i> – Austrian Research Promotion Agency
HAK	<i>Handelsakademie</i> – Commercial academy/college, also known as Secondary college for business administration
HAS	<i>Handelsschule</i> – Commercial school
HTL	<i>Höhere Technische und Gewerbliche Lehranstalt</i> – College of engineering, arts and crafts
HUM	<i>Humanberufliche Schulen</i> – VET schools and colleges of social and services industries
IFTE	Initiative for teaching entrepreneurship – <i>unternehmerische Haltungen wecken, fördern, stärken</i>
IGIP Austria	International Society for Engineering Pedagogy – Austria

IniTS	<i>Wiener Business Inkubator für innovative forschungs-/technologiebasierte Startups mit hohem Wachstumspotenzial</i> – High-tech business incubator of the City of Vienna
ISCED	International standard classification of education
IVET	initial vocational education and training
JA	Junior achievement
JRC	Joint Research Centre of the European Commission
KPH	<i>Kirchliche Pädagogische Hochschule (KPH) Wien/Krems</i> – University College for Teacher Education of Christian Churches Vienna/Krems
LBVO	<i>Leistungsbeurteilungsverordnung</i> – Performance assessment regulation
NQF	national qualifications framework
RYLA	Rotary youth leadership award (Camp)
SBP	<i>Studienberechtigungsprüfung</i> – higher education entrance examination
SchOG	<i>Schulorganisationsgesetz</i> – School organisation act
VET	vocational education and training
VWG	<i>Volkswirtschaftliche Gesellschaft Wien</i> – Economic Society Vienna
WdF	<i>Wirtschaftsforum der Führungskräfte</i> – Austrian Managers Association
WIFI Austria	<i>Wirtschaftsförderungsinstitut</i> – Institute for Economic Promotion of the Austrian Economic Chambers
WKO	<i>Wirtschaftskammer Österreich</i> – Austrian Federal Economic Chamber
WKW	<i>Wirtschaftskammer Wien</i> – Vienna Chamber of Commerce

References

[URLs accessed 15.03.2023]

- Aff, J. and Lindner, J. (2005). Entrepreneurship Education zwischen small and big ideas: Markierungen einer Entrepreneurship Education an wirtschaftsberuflichen Vollzeitschulen. In: Aff, J. and Hahn, A. (eds). *Entrepreneurship Erziehung und Begabungsförderung an wirtschaftsberuflichen Vollzeitschulen*. Innsbruck: Studien Verlag. pp. 83-137
- BDO Consultung (2019). *Entrepreneurship-fördernde Kompetenzen im österreichischen Bildungssystem. Studie im Auftrag des Rates für Forschung und Technologieentwicklung*. [Entrepreneurship-promoting competences in the Austrian education system. Study on behalf of the Austrian Council for Research and Technology Development].
- Cedefop (2021). *European inventory on NQF 2020: Austria*.
- Cedefop and ibw Austria (2022). *Vocational education and training in Europe: Austria: system description*. [From Cedefop; ReferNet. Vocational education and training in Europe database].
- European Commission; Joint Research Centre and Bacigalupo, M. et al. (2017). *EntreComp: the entrepreneurship competence framework*. Luxembourg: Publications Office.
- Federal Ministry for Digital and Economic Affairs (BMDW) and Federal Ministry of Education Science and Research (BMBWF) (2020). *Entrepreneurship education: map of actions for children and young adults*.
- Federal Ministry of Education. (2011). *LLL:2020: Strategie zum lebensbegleitenden Lernen in Österreich* [Strategy on Lifelong Learning in Austria].
- Federal Ministry of Education Science and Research (BMBWF) (2021). *Educational paths in Austria 2021/22*.
- Gibb, A.A. (1983). *The small business challenge to management education*. *Journal of European Industrial Training*, Vol. 7, No 5, pp. 3-41.
- Hueber, S. (2018). *Abschlussbericht qualitative Beforschung des Programms YouthStart entrepreneurial challenges an Volksschulen (A1) und neuen Mittelschulen (A2) in Österreich (2015-2018)*.
- Institut für Bildungsforschung der Wirtschaft (ibw Austria) (2019). *The Austrian education system*. Vienna: ibw.
- Institut für Bildungsforschung der Wirtschaft (ibw Austria) (2022). *Qualität in der Lehre: Zahlen und Fakten*. [Quality in apprenticeships: facts and figures].
- Lackéus, M.; Lundqvist, M. and Williams-Middleton, K. (2016). *Bridging the traditional-progressive education rift through entrepreneurship*. *International Journal of Entrepreneurial Behavior & Research*, Vol. 22, No 6, pp. 777-803.

- Lindner, J. (2018). [Entrepreneurship education](#). In: Faltin, G. (ed.). *Handbuch Entrepreneurship*. Wiesbaden: Springer Fachmedien Wiesbaden. pp. 407-423.
- Lindner, J. (2019). [Entrepreneurial spirit for the whole school: ways to become an e.e.si-entrepreneurship school](#). *Discourse and Communication for Sustainable Education*, Vol. 10, No 2, pp. 5-12.
- Republik Österreich (1974). [Schulunterrichtsgesetz](#) [School Instruction Act]. Bundesgesetzblatt 139 [Federal Law Gazette], 24.6.1974.
- Republik Österreich (2014). [Änderung der Verordnung über die Lehrpläne für die Handelsakademie und die Handelsschule sowie der Eröffnungs- und Teilungszahlenverordnung; Bekanntmachung der Lehrpläne für den Religionsunterricht](#) [Amendment of the Ordinance on the Curricula for the Commercial Academy and the Commercial School and the Ordinance on the Opening and Division Numbers; Announcement of the curriculum for religious education]. Bundesgesetzblatt 209 [Federal Law Gazette], 27.8.2014.
- Republik Österreich (2015a). [Lehrpläne der humanberuflichen Schulen, Änderung der Verordnung über Lehrpläne für technische, gewerbliche und kunstgewerbliche Fachschulen, der Verordnung über Lehrpläne für die Fachschule für wirtschaftliche Berufe und die Höhere Lehranstalt für wirtschaftliche Berufe, der Verordnung über den Lehrplan der Fachschule für Sozialberufe, der Verordnung über die Lehrpläne der dreijährigen Fachschule und der Höheren Lehranstalt für wirtschaftliche Berufe sowie der Verordnung über die Lehrpläne für Höhere technische und gewerbliche Lehranstalten; Bekanntmachung der Lehrpläne für den Religionsunterricht](#) [Curricula of human vocational schools, amendment of the ordinance on syllabuses for technical, commercial and arts and crafts technical schools, the ordinance on syllabuses for the technical school for economic professions and the college for economic professions, the ordinance on the curriculum of the technical school for social professions, the ordinance on the Curricula of the three-year technical school and the college for economic professions as well as the ordinance on the curricula for higher technical and commercial colleges; Announcement of the curriculum for religious education]. Bundesgesetzblatt 340 [Federal Law Gazette], 17.11.2015.
- Republik Österreich (2015b). [Lehrplanpaket der Höheren technischen und gewerblichen Lehranstalten 2015 sowie Bekanntmachung der Lehrpläne für den Religionsunterricht](#) [Curriculum package of the higher technical and commercial schools 2015 and announcement of the curriculum for religious education]. Bundesgesetzblatt 262 [Federal Law Gazette], 17.9.2015.

Websites

- [Austrian Centre for Training Firms \(ACT\)](#) (Servicestelle österreichischer Übungsfirmen)

- [Austrian Federal Economic Chamber](#) (Wirtschaftskammer Österreich, WKO).
- [Austrian Research Promotion Agency](#) (Österreichische Forschungsförderungsgesellschaft, FFG).
- [AustrianStartups](#).
- [Austria Wirtschaftsservice \(aws\)](#).
- [AWS first incubator](#) (AWS first Inkubator).
- [Business Start-up Service](#) of the Austrian Federal Economic Chamber.
- [Cedefop VET Indicator overviews](#).
- [IFTE. Changemaker programme](#).
- [Commercial Academies](#) (Handelsakademien).
- [COOL Cooperative Open Learning](#).
- [DigbizHAK](#).
- [Entrepreneurship education](#).
- [Entrepreneurship Education for School Innovation \(e.e.si\)-Impulse Centre](#).
- [Entrepreneurial skills pass](#).
- [Entrepreneur's skills certificate](#) (Unternehmerführerschein).
- [Erasmus for young entrepreneurs](#).
- [Federal Chancellery](#) (Bundeskanzleramt).
- [Federal Ministry of Education, Science and Research](#) (BMBWF).
- [Federal Ministry for Labour and Economy, BMAW](#) (formerly Federal Ministry for Digital and Economic Affairs, BMDW).
- [Training regulations of the different professions](#).
- [Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology](#) (BMK).
- [Female entrepreneur at school](#) (Unternehmerin macht Schule).
- [Founder fair](#) (Gründermesse).
- [Global entrepreneurship week](#).
- [IGIP Austria](#):
- [Initiative for teaching entrepreneurship, IFTE](#).
- [INiTS](#).
- [Innovative youth](#) (Jugend innovativ).
- [JA \(Junior achievement Austria\)](#) Junior company programme.
- [Junior Chamber Austria](#) (Junge Wirtschaft Österreich).
- [Keep growin'](#).
- [ÖKOLOG programme](#).
- [Public Employment Service](#) (Arbeitsmarktservice, AMS).
- [RYLA-Camp](#).

- [SCHOOLGAMES](#).
- [Talents internship \(Talente Praktikum\)](#).
- [Trash value challenge Austria](#).
- [Tyrolean location agency \(Standortagentur Tirol\)](#).
- [University College for Teacher Education of Christian Churches Vienna/Krems \(Kirchlich Pädagogische Hochschule Wien/Krems\)](#).
- [VET schools and colleges of social and services industries Schools and colleges with a focus on human professions \(humanberufliche Schulen\)](#).
- [Vienna Business Agency \(Wirtschaftsagentur Wien\)](#).
- [Your projects \(Eure Projekte\)](#):
- [Youth and profession fair \(Messe Jugend und Beruf\)](#).
- [Youth entrepreneurship week \(Entrepreneurship Woche\)](#).
- [YouthStart digital project \(Youthstart Digitale Projekte\)](#).
- [YouthStart projects \(Youthstart Projekte\)](#).
- [YouthStart research \(Youthstart Forschung\)](#).

Annex

Participating VET providers

Table 2. Selected VET providers in Austria

No	Name	Region	Type of VET (fieldwork focus)	Entrepreneurship programmes, inspected courses	Curricula addressed by the research
1.	Geberit	Lower Austria	Company providing apprenticeship training	<ul style="list-style-type: none"> • Plastics technician • Plastics moulding technician • Plastics moulding technician/toolmaking technician • Metal/electrical technician • Electrical engineering technician • Process technician • Mechanical engineering designer 	Training regulations of the different professions
2.	Zumtobel Lighting GmbH	Vorarlberg	Company providing apprenticeship training	<ul style="list-style-type: none"> • Plastics technology • Electrical engineering, • Mechatronics, • IT systems engineering 	Training regulations of the different professions
3.	Business Academy Maygasse, Wien 13 (HAK)	Vienna	Initial VET provider	Commercial school and commercial academy (resp. school and college of business administration)	Regulation on curricula of vocational business schools
4.	Higher College for Engineering Wolfsberg (HTL Wolfsberg)	Carinthia	Initial VET provider	College of engineering, arts and crafts with focus on: <ul style="list-style-type: none"> • Mechanical engineering – automation technology • Mechatronics • Information technology • Industrial engineering and management 	Regulation on curricula of colleges of engineering, arts and crafts

No	Name	Region	Type of VET (fieldwork focus)	Entrepreneurship programmes, inspected courses	Curricula addressed by the research
5.	Fashion School Hallein (Modeschule Hallein)	Salzburg	Initial VET provider	VET College of Fashion with specialisations <ul style="list-style-type: none"> • Fashion design and graphics • Fashion marketing and visual merchandising • Hairstyling, make-up artistry with specialisations <ul style="list-style-type: none"> • Make-up artist • Fashion stylist 	Regulation on curricula of schools and colleges of social and services industries
6.	Institute for Economic Promotion of the Austrian Federal Economic Chambers – WIFI (Wirtschaftsförderungsinstitut der Wirtschaftskammer Österreich)	Austria, selected region Vienna	Continuing VET provider	Entrepreneurship training course, (prerequisite for the Entrepreneurial Examination, required by law in Austria for trades subject to licensing and restricted trades)	Entrepreneurial examination regulation

Consultation with stakeholders

Table 3. Interviewed key stakeholders at national level

No	Organisation/ Institution	Role of organisation in entrepreneurship education and VET	Person (name, surname)	Role of person (position)	Additional notes
1.	Federal Ministry of Education, Science and Research (BMBWF)	Section I/12 – Commercial academies and commercial schools in Austria	Ms. Katharina Kiss	Head of department	Interview date: 19 August 2022
2.	Federal Ministry for Labour and Economy (BMAW)	Department II/4 KMU (SME)	Ms. Maria Christine Zoder	Deputy head of department, co-author of the national action plan on <i>Entrepreneurship education</i>	Interview date: 31 August 2022

No	Organisation/ Institution	Role of organisation in entrepreneurship education and VET	Person (name, surname)	Role of person (position)	Additional notes
3.	e.e.si- Impulszentrum (Bundesweites Impulszentrum für entrepreneurship education), nationwide impulse centre for entrepreneurship education	Initiated by section I/12 of BMBWF, implementing entrepreneurship education in VET schools, certification of Entrepreneurship schools	Mr. Johannes Lindner	Initiator and CEO	Interview date: 2 August 2022
4.	IGIP-Austria (International Society for Engineering Pedagogy)	Among others, fostering management training for engineers; Entrepreneurship education in engineering certification	Mr. Wolfgang Pachatz	President	Interview date: 15 September 2022
5.	Initiative for teaching entrepreneurship – IFTE	School-level-specific programmes – teaching and learning materials, training programmes for teachers and offers for students	Mr. Johannes Lindner	Chairman	Interview date: 2 August 2022
6.	Austrian Federal Economic Chamber (WKO), section Bildungspolitik (education policy)	Austrian Federal Economic Chamber, representing entrepreneurs and self-employed people in Austria	Mr. Alfred Freundling er	Deputy head of department	Interview date: 26 September 2022
7.	Austrian Centre for Training Firms (ACT)	Service centre for training firms, project of BMBWF since 1993	Ms. Renate Rode	Employee of the service centre	Interview date: 19 September 2022
8.	Kirchliche Pädagogische Hochschule (KPH) Wien/Krems (University College of Teacher Education Vienna/Krems)	Team Entrepreneurship education and value- based business didactics	Mr. Gerhard Fröhlich	Responsible for: secondary level II: YouthStart digital Lab, Understanding the economy by playing	Interview date: 14 September 2022

Entrepreneurship competence in vocational education and training

Case study: Austria

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

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

5595 EN -TI-BC-23-006-EN-N - doi:10.2801/57841



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

