

Developing
Entrepreneurial
Competences and
Digital Skills: A
Practical Toolkit
for VET Educators



VETENTRE

Building VET Trainers Entrepreneurial Competences



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Introduction

The toolkit aims to support VET educators in developing, designing, and implementing programs and supporting the development of their learners' entrepreneurial mindset. This toolkit is practical and provides short sections on relevant topics for VET educators. The unit topics of this toolkit have been chosen based on the results of research conducted in all partner countries.

- Unit 1 provides an overview of VET and entrepreneurship, such as related definitions in entrepreneurial education, the Quality Assurance in VET, and an overview of the EntreComp Framework and why it is helpful.
- Unit 2 focuses on methodologies and approaches in VET, and more specifically, on the Needs-Based Methodology and the Collaborative Methodology.
- Unit 3 presents and discusses strategies for entrepreneurship, such as how case studies contribute to the development of competencies in the field of entrepreneurship and how VET educators can implement them in their teaching practice. It also explains how role-playing games contribute to the development of entrepreneurial competencies.
- Unit 4 outlines how VET educators can better choose the digital tools they will use for entrepreneurial skills development, get informed about the latest digital tools in the classroom, and find out more about criteria they need to consider before selecting digital tools for entrepreneurial skills training.
- Unit 5 focuses on the entrepreneurial competences of VET educators, how VET educators can use the EntreComp Framework, and how they can integrate the EntreComp Framework in their training programs.
- Unit 6 introduces the SELFIE Tool and how VET educators can use it to assess their own readiness and practices regarding the use of ICT in teaching and learning.
- Unit 7 emphasises the digital competencies of VET educators. It introduces the DigComp Edu Framework, explains its 22 competencies, and provides an overview of the six levels of the progression model.



Unit 1: Overview and framework for VET & Entrepreneurship education

Overview

This unit provides an overview of definitions of entrepreneurship and the added value that arises from the combination of entrepreneurial skills and Vocational Education and Training (VET). It also introduces the European and National Qualifications Frameworks on VET and relevant information and requirements. Finally, this unit presents the European Competence Framework “EntreComp”, which is developed by the European Commission, and how it can be beneficial for VET educators. The “EntreComp” Framework and practical ways it can be used are discussed in greater detail in other units of this toolkit.

Definitions of entrepreneurship and its role in VET

There is not only one but myriad definitions of what entrepreneurship is. For example, Professor Howard Stevenson called entrepreneurship the

“pursuit of opportunity beyond resources controlled”.¹

However, there is not only one type of entrepreneurship. Entrepreneurship can take the form of a small business, such as a restaurant; it can be a scalable startup or a new division within a large company, even a social enterprise that is not driven by profit but by helping the world.²

When entrepreneurship takes place within an established organisation, it is often termed as ‘intrapreneurship’. In contrast to entrepreneurs who create something from scratch, intrapreneurs are using the resources of their organisation. As professor Michael Cusumano put it, intrapreneurs “are creating something that hasn’t been done before or done quite the same way”.³

For VET educators and learners, both entrepreneurship and intrapreneurship are relevant and need to be explored. VET learners might be or want to become entrepreneurs by creating something of their own. VET learners could also be working for an organisation and need entrepreneurial skills during their day-to-day work or aim to engage in intrapreneurship. Thus, VET educators need to be aware of the different ways and situations requiring entrepreneurial skills and nurturing an entrepreneurial mindset in their students.

Beyond creating an organisation, entrepreneurial skills are seen in a broader sense as a competence or a set of competences, rather than a skill. Consequently, different definitions or frameworks on entrepreneurial skills include a broad spectrum of competences. The EntreComp Framework is an example of this. It presents entrepreneurial skills as a set of three

¹ Eisenmann, T. (2013). Entrepreneurship: A Working Definition. Available at: <https://hbr.org/2013/01/what-is-entrepreneurship>

² Hayes, A. (2021). Entrepreneur. Available at: <https://www.investopedia.com/terms/e/entrepreneur.asp>

³ Somers, M. (2018). Intrapreneurship, explained. Available at: <https://mitsloan.mit.edu/ideas-made-to-matter/intrapreneurship-explained>



competence areas and a total of 15 competences. You can see all of the competences in the graph included in the third section of this unit.

Quality Assurance Frameworks for VET

Based on the Skills Agenda published in July 2020, future-proof vocational education and training (VET) are among the skills that the EU will invest in over the next five years. The aims are to achieve employment for more than 4/5 VET graduates, at least 3 out of 5 VET learners to be engaged in work-based learning such as apprenticeships and increase the number of learners who learn abroad by 1/3 (EC, 2020).

Vocational education and training (VET) responds to the economy's needs and provides skills to help learners with their personal development and active citizenship.⁴ Vocational education and training (VET) systems in Europe include the initial VET (I-VET) and the continuing VET (C-VET). The I-VET is usually offered at the upper secondary level and can take place at either a school context or work-based contexts (e.g. training centres and companies), varying from country to country (EC, 2020). The main EU bodies on VET are:

- the [European Centre for the Development of Vocational Training \(Cedefop\)](#)
- the [European Training Foundation \(ETF\)](#)

A relevant financial instrument is the [European Social Fund \(ESF\)](#) which supports VET-related activities. Among various deliverables developed on an EU level for 2015-2020, notable developments include the [European Credit system for Vocational Education and Training \(ECVET\)](#) and the [European Quality Assurance Reference Framework \(EQAVET\)](#).

The ECVET allows learners to gain validation and recognition for the knowledge and skills from various systems and countries. In addition, the EQAVET acts as a reference instrument for each country to monitor their progress regarding VET systems.

Stay Updated:

To be up-to-date with news on VET, the following bodies offer relevant information and updates:

- **Representation of the European Commission:** The European Commission has representations in different EU countries. Representations upload relevant EU information and news.
- **CEDEFOP:** CEDEFOP publishes up-to-date [national news](#) on VET for each EU member country.
- **ET 2020 Working Groups:** The working groups have been set-up to support policymaking at national and EU levels. The ET 2020 Working Group on VET has also published a [report](#) focused on innovation and digitalization in VET.

⁴ European Commission (N.D.). What is vocational education and training?. Available at: https://ec.europa.eu/education/policies/eu-policy-in-the-field-of-vocational-education-and-training-vet_en



It is important to note that VET systems differ across EU member countries. This is because each country has a different VET system, and thus, it also has another National Qualifications Framework (NQF), which is in many cases aligned with the EQAVET framework. Therefore, it is essential to be informed about EU level information on VET and check the news of the relevant body or authority responsible for the national qualification framework.

To explore the different VET systems across Europe, CEDEFOP has created an easy-to-use [tool](#) which is a database with information for each member state. It also allows the comparison between countries on VET for different periods.

EntreComp and its benefits for VET educators

Apart from formal learning, the EntreComp framework can also be used in non-formal learning. For example, it could be used for intrapreneurship in established organisations or as a starting point for the development of learning outcomes in various contexts and entrepreneurship learning.⁵

The EntreComp framework views entrepreneurship as competence, and it defines it as

“the capacity to act upon opportunities and ideas to create value for others. The value created can be social, cultural, or financial. EntreComp recognises the opportunity to be entrepreneurial in any situation: from school curriculum to innovating in the workplace, from community initiatives to applied learning at university. In the EntreComp framework, entrepreneurship competence is both an individual and collective capacity”(McCallum et al., 2018).

The EntreComp can be used in various sectors and offer support to many individuals, from educators to policy-makers. The EntreComp Framework can be used:

- as a supporting tool for policy and practice for the development of entrepreneurial skills;
- as an assessment of entrepreneurial skills;
- as recognition and certification of skills;
- as a supportive framework for training on entrepreneurial skills by educators, trainers and teachers;
- for designing programmes and learning opportunities.⁶

⁵JRC (2016). EntreComp: The Entrepreneurship Competence Framework. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581>

⁶European Commission (N.D.). The European Entrepreneurship Competence Framework (EntreComp). Available at: <https://ec.europa.eu/social/main.jsp?catId=1317&langId=en>



The EntreComp framework explains what is meant by entrepreneurial mindset and includes 15 competences in three areas, which break down into 442 learning outcomes.

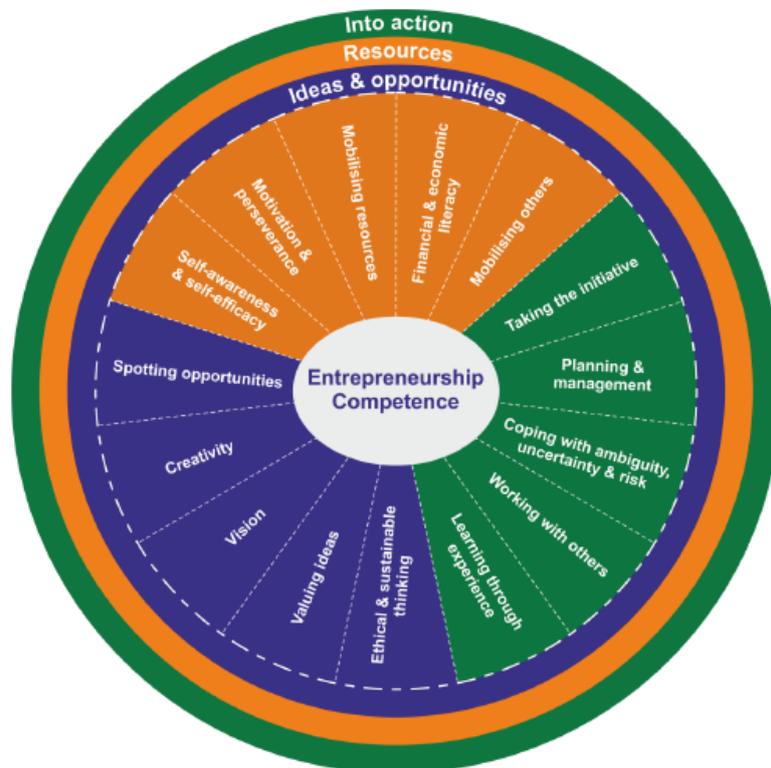


Figure 1. Areas and Competences of the EntreComp Framework

Source: JRC (2016, p. 11)

However, not all individuals would be interested in developing their entrepreneurial competences to the highest level. The JRC report notes that the EntreComp is a starting point, and individuals who use this framework can adapt it to their situation or the needs of their group.⁷ It also includes the EntreComp Progression Model, which includes four levels:

1. Foundation
2. Intermediate
3. Advanced
4. Expert

**Find out more about the
EntreComp Framework:**

[EntreComp into Action - Get inspired, make it happen: A user guide to the European Entrepreneurship Competence Framework](#). This is a guide on how the EntreComp Framework can be used. It is targeted at both individuals and organisations.

⁷JRC (2016). EntreComp: The Entrepreneurship Competence Framework. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581>



The EntreComp framework includes descriptions for all three areas and 15 competences across the 4 levels, which can be helpful for VET educators to assess themselves but also identify the level of their VET learners. This way, they can create better and more tailored programs or activities on entrepreneurial skills.

References

Cedefop (2020). *Vocational education and training in Europe, 1995-2035: Scenarios for European vocational education and training in the 21st century*. Luxembourg: Publications Office of the European Union. Cedefop reference series; No 114. <http://data.europa.eu/doi/10.2801/794471>

Eisenmann, T. (2013). Entrepreneurship: A Working Definition, Available at: <https://hbr.org/2013/01/what-is-entrepreneurship>

European Commission (N.D.). The European Entrepreneurship Competence Framework (EntreComp). Available at: <https://ec.europa.eu/social/main.jsp?catId=1317&langId=en>

European Commission (N.D.). What is vocational education and training?. Available at: https://ec.europa.eu/education/policies/eu-policy-in-the-field-of-vocational-education-and-training-vet_en

Hayes, A. (2021). Entrepreneur. Available at: <https://www.investopedia.com/terms/e/entrepreneur.asp>

McCallum E., Weicht R., McMullan L., and Price A. (2018). *EntreComp into Action: get inspired, make it happen* (M. Bacigalupo & W. O’Keeffe Eds.), EUR 29105 EN, Publications Office of the European Union, Luxembourg, 2018. ISBN 978-92-79-79360-8, doi:10.2760/574864, JRC109128

Somers, M. (2018). Intrapreneurship, explained. Available at: <https://mitsloan.mit.edu/ideas-made-to-matter/intrapreneurship-explained>

JRC (2016). *EntreComp: The Entrepreneurship Competence Framework*. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581>



Unit 2: Methodologies and approaches for integrating entrepreneurship education in VET

Overview

Entrepreneurship is at the heart of innovation in our societies, driving social and economic change (Aljohani, 2015). In order to drive entrepreneurship and stimulate the economy, learners must be provided with entrepreneurship education to ensure that value is created for others (Lackéus, 2015).

To ensure the long-term success of our global economy, VET providers must be able to self-examine their programs and practices to ensure that future students are equipped with the skills and knowledge to keep up to date with 21st-century methodologies. This section examines these methodologies and approaches for integrating entrepreneurship education in VET through a Needs-Based Methodology and a Collaborative Learning Methodology.

By successfully identifying the needs of VET learners and the capabilities of the VET providers, a synergy can be created with resources and abilities merged to drive entrepreneurship education in VET.

Needs-Based Methodology

A needs-based methodology “*focuses on developing and implementing procedures and practices to support all learners*” (Saskatchewan Ministry of Education, 2015). A needs-based model of education aims to ensure that all learners have the ability to understand the pedagogy and are provided with the correct resources to reach their full potential. In line with the objectives set out under the European Pillar of Social Rights (2021), a needs-based methodology can provide inclusive education and training opportunities to all.

A needs-based methodology provides all learners with the appropriate learning opportunities specific to their individual needs, such as additional classroom supports, differentiated instruction and inclusive opportunities within the learning environment. Depending on the individual needs of learners, some may require targeted short-term support through coaching and mentoring. In contrast, others may require longer-term support, which can be identified through an Inclusion and Intervention Plan, detailing the learning styles and needs, learning capacity and relevant medical information that may have a bearing on the individual.

For the successful delivery of a needs-based methodology within VET, educators must follow three main principles, namely; (1) Inclusionary Philosophies and Beliefs; (2) Planning for Instruction, Interventions and Supports; and (3) Interprofessional collaboration (Saskatchewan Ministry of Education, 2015).

1) Inclusionary Philosophies and Beliefs

Empowering learners to achieve their potential is at the heart of a needs-based methodology. By promoting inclusion and diversity within the learning environments, learners can be



empowered to become independent thinkers. To successfully ensure that entrepreneurship learners in VET education are provided with ample opportunities to hone their skills, educators should conduct a needs-based analysis.

According to McKillip (1987), in educational settings, a needs-based analysis should be conducted using the Discrepancy Model of Needs Assessment, which aims to set goals and objectives for the learner to achieve, determine the performance indicators which will measure the achievement of these goals, and identify the discrepancies between succeeding and failing to achieve the goal.

Especially in the context of entrepreneurship education in VET, educators should conduct a Needs Assessment to examine and identify the current capabilities of both learners and educational providers and examine how they will achieve their strategic goals and objectives over a predefined period.

2) Planning for Instruction, Interventions and Support

Entrepreneurship educators in VET need to examine the existing structures in place within the organisation to successfully plan for instruction, interventions, and support to be provided to learners. Educators, especially in entrepreneurship, should aim to incorporate an outcomes-based approach to learning, which focused on providing learners with a wide range of learning opportunities in online, face-to-face, and blended learning opportunities.

According to Lackéus (2015), some of the major challenges and obstacles that VET educators face in implementing entrepreneurship education and training include assessment difficulties and a lack of strategic direction, clarity of goals and objectives, resources, and time.

The RAM approach to learning can assist adult educators in providing a needs-based analysis within an organisation. [RAM – Relevance, Alignment, Measurement](#) – is a learning and development strategy that aims to support educators in examining how learning provisions can address the opportunities and challenges that the organisation will face and align and measure these provisions with the overall organisational strategy (CIPD, 2021).

3) Interprofessional Collaboration

Promoting entrepreneurship in VET education requires educators to develop a culture of collaboration and shared responsibility to drive innovation and entrepreneurial endeavours outside of the learning environment. Reflective in its nature, interprofessional collaboration responds to the needs of the learners by providing qualified staff who avail of Continuous Professional Development (CPD) opportunities. To measure the needs of learners, a wide range of measures can be implemented, including self-assessments, peer reviewing and observation of others.

Work-Based Learning, or Dual-Training opportunities, enable learners at the VET level to receive classroom-based learning through their VET provider and additional learning opportunity in an organisational setting. Through engaging organisations to offer work-based learning (WBL) opportunities for VET learners, an interdisciplinary team of staff can support



learners in acquiring real-life entrepreneurial skills. When successful, WBL opportunities provide learners with a myriad of learning opportunities that can be transferred to their own entrepreneurial activities, including opportunities to examine their own cultural and personal blind spots that hinder their learning; and an examination of the complaints and feedback process.

Collaborative Learning Methodology

The educational landscape is diversifying daily, with learners from different backgrounds and experiences in each learning environment. As the landscape changes shape, to stay alert of new trends occurring, educators need to collaborate and share knowledge with one another. Collaborative Learning stems from research conducted by Lev Vygotsky during the early 1900s. Vygotsky identified that “we learn through our interactions and communications with others” (Neff, n.d.). Collaboration enables groups of two or more learners to work together to enhance their overall knowledge. Learners can solve problems, learn new concepts or even complete new tasks through the supportive environment promoted in collaborative learning.

For the successful delivery of a collaborative-based methodology within VET, educators can rely on three main educational theories, namely; (1) Bandura’s Social Learning Theory; (2) Vygotsky’s Social Development Theory; and (3) Piaget’s Theory of Cognitive Development.

1) Social Learning Theory

During the 1970s, Albert Bandura developed the Social Learning Theory, which proposes that individuals acquire behaviour through observing others or having the first-hand experience at a task (Bandura, p146). The Social Learning Theory suggests three main elements; (1) Observation, (2) Imitation, and (3) Modelling.

Through observing the basic behavioural patterns of individuals, entrepreneurs can learn appropriate and inappropriate behaviours from others. Once these behaviours have been observed, learners can progress to stage two, where they begin to replicate the behaviours of others. This enables learners to reinforce their knowledge, and upon replication of the behaviour, they begin to feel pride and accomplishment. The final principle of Bandura’s Theory stipulates that these learners become educators; having learned the behaviours, they should be able to teach them to others.

The Social Learning Theory proposes that rote memorisation is also reduced when learners participate in collaborative learning methodologies. Learners develop increased accountability for their work and are provided with a multitude of options for higher-level thinking and learning, all essential for entrepreneurs.

2) Vygotsky’s Theory of Social Development

Vygotsky (1934) advocated that people need to be informed to create meaning from situations. Social interaction is at the heart of his Theory of Social Development, which proposes that people acquire new skills and knowledge through engaging in conversations with others, which enables them to grow and develop.



Although focused on children, Vygotsky's theory proposes that children collaborate with society and acquire key skills, including cultural values, beliefs, and problem-solving capabilities. To support learners, educators are advised to provide learners with opportunities to learn with skilled peers and educators. When assessing individual learners, educators should focus primarily on encouraging learners to use their own skills when solving problems based on their new knowledge, rather than focusing solely on the knowledge they have been provided with.

Entrepreneurs need to be provided with opportunities to engage in conversations with others through discussions, case study analysis, experimentation and peer review. By using these newly acquired skills and knowledge, entrepreneurs will be able to apply their positive experiences in their work environment and in their daily lives.

3) Piaget's Theory of Cognitive Development

Piaget identified four stages of cognitive development that individuals, particularly children, must pass through in order to reach their highest potential. Piaget's Four Stages of Cognitive Development are defined in the table below:

Stage	Age	Goal
1. Sensorimotor	Birth to 18 -24 months	Object Permanence
2. Preoperational	2 to 7 years	Symbolic Thought
3. Concrete Operational	7 to 11 years	Logical Thought
4. Formal Operational	Adolescence to adulthood	Scientific Reasoning

Source: McLeod, S. (2020) <https://www.simplypsychology.org/piaget.html>

These four stages, especially the fourth, align well to iVET and cVET, as individuals progress from learning about stimuli in their surroundings to developing capabilities in dealing with hypothetical situations. Although the four stages above highlight an age range through which individuals pass, McLeod (2020) identifies that individuals may never pass through all four stages.

Overall, communication and collaboration are at the heart of entrepreneurship. Without leaning on others for support during complex and challenging times, entrepreneurs will find it challenging to succeed in their entrepreneurial endeavours. Failing to recognise the environmental stimuli that can impact entrepreneurship could result in the inability of future entrepreneurs to succeed in the challenging marketplace.

Empowering and encouraging VET learners through attractive and engaging methodologies and approaches is crucial to entrepreneurship training in VET. By successfully implementing the principles of needs-based methodologies and collaborative-based methodologies into the vocational education and training learning environment, both learners and educators can ameliorate their entrepreneurial competences. By recognising important marketplace trends, educators can create interactive and engaging learning material that addresses these market



trends, resulting in learners becoming empowered to engage with the learning material and seek out opportunities to develop their own entrepreneurial endeavours in the future.

References

Aljohani, M. (2015). Innovation and entrepreneurship integration in education. Ohio State Model. DOI: 10.20472/TE.2015.3.3.001

Chartered Institute of Personnel Development (2021). Identifying learning and development needs. Available at:

<https://www.cipd.co.uk/knowledge/fundamentals/people/development/learning-needs-factsheet>

European Parliament (2019). European Pillar of Social Rights. Available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-20-principles_en

Falk, R.A. and Kim, S.S. (1980). The War System: An Interdisciplinary Approach. Taylor & Francis. Available at:

https://books.google.ie/books?hl=en&lr=&id=rGMPEAAQBAJ&oi=fnd&pg=PA141&dq=social+learning+theory+bandura&ots=StGUKg4NeC&sig=IEi39R-aa5po0VERoI6_M8mA9DM&redir_esc=y#v=onepage&q=social%20learning%20theory%20bandura&f=false

Lackéus, M. (2015). Entrepreneurship in Education: What, Why, When and How. Available at: https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf

McKillip (1987). Needs analysis. Available from:

http://courses.php.ufl.edu/rcs6740/ppt%2006/need_analysis.pdf

McLeod, S. (2020). Piaget's theory and stages of cognitive development. Available from: <https://www.simplypsychology.org/piaget.html>

Neff, L.S. (N.D.). Lev Vygotsky and Social Learning Theories. Available from: <https://jan.ucc.nau.edu/lasn/educator/edtech/learningtheorieswebsite/vygotsky.htm>

Saskatchewan Ministry of Education (2015). Actualising a needs-based model to support student achievement. A journey of transformation. Available at:

<http://saskedworkers.bravehost.com/wp/wp-content/uploads/2015/05/EA-Actualizing-a-Needs-Based-Model-to-Support-Student-Achievement.pdf>



Unit 3: Strategies for entrepreneurship education in VET

How to use Case Studies in Teaching Entrepreneurial Skills

This unit explains how case studies can contribute to the development of competences in the field of entrepreneurship and how VET educators can implement them in their teaching practice.

The case method proves to be a suitable didactic approach for complex learning content. The learners should prove that they can convert knowledge from their studies into practicable problem-solving proposals by solving a case study. Case studies require a precise analysis of the topic concerned and a precise strategy for solving the 'case' and include the presentation of pros and cons and the recommendation or presentation of the best possible solution.

Therefore, case studies are a valuable teaching method, especially in entrepreneurial training, and this works on two levels. First, the learners learn how to solve the given problems by practising creatively and being self-determined. Second, the content of a case study decides which competences the learner can develop.

According to the entrepreneurial competencies as they are defined in EntreComp, case studies can develop, especially the following ones:

1.3 Vision: Visualise future scenarios to help guide effort and action

1.4 Valuing ideas: Recognise the potential an idea has for creating value and identify suitable ways of making the most of it

2.3 Mobilising resources: Get and manage the material, needed to turn ideas into action
Make the most of limited resources

2.4 Financial and economic literacy

3.2 Planning and management

3.3 Coping with uncertainty, ambiguity, and risk

How case studies are structured

Case studies also play an important role outside of teaching. They are one of the most popular (qualitative) research methods, e.g., medicine and management theory. Case studies can be used here to form ideas. These studies report on how a specific problem was solved and what decisions were made along the way. These can be positive but also negative cases. Case studies are also used in marketing, e.g. when a company talks about the effect of its products in concrete cases or about its corporate culture.

Useful Resources

On these webpages you can find a collection of case studies.

English:

- <https://www.speakhr.com/category/case-study/>
- https://www.academia.edu/21954348/A_Case_Study_in_Entrepreneurship_Small_Business_Set_Up
- <https://guides.library.utoronto.ca/entrepreneurship/casestudies>

German:

- <https://www.e-fellows.net/Karriere/Branchen-Beratung-und-IT/Fallstudie/Fallstudien-Beispiel>
- <https://www.e-teaching.org/lehrszenarien/pruefung/pruefungsform/fallstudien>



From this, two critical factors of a case study become clear:

1. a concrete problem is needed, which is told
2. (storytelling) including the framework conditions and decisions up to the 3rd solution. In the classroom, case studies can be used to impart knowledge. The whole study is read together with the students and then discussed.

However, the lessons become much livelier when the case study leaves the solution open and ends with questions. Often the connection between case and context is unclear, or not all information is accessible from the beginning. This form of knowledge transfer goes back to Harvard Business School. Therefore, it is also referred to as the "Harvard Method", mainly used in business administration.

Most "full-blown" cases have these common elements:

- A decision-maker who is grappling with some question or problem that needs to be solved.
- A description of the problem's context (a law, an industry, a family).
- Supporting data can range from data tables to links to URLs, quoted statements or testimony, supporting documents, images, video, or audio.

The solution can then be worked out by the learner alone (e.g. in an exam) or – and this will be the case more often – in group work. In the last case, the procedure looks like this:

1. Knowledge content has already been imparted in the classroom, which is then necessary for the following case study.
2. The teacher presents / tells the case, which deals with a concrete problem and its framework conditions. It is recommended to present the case using visualisations, a power point presentation or a prepared flipchart / blackboard or the visualisation developed on the flipchart/blackboard during storytelling. Especially in management cases, handouts with numbers and graphical representations are also issued to the learners.
3. The teacher asks the question(s) about the case.
4. The learners work out a solution in groups.
5. Back in the plenary, the groups present their solutions.
6. Discussion on the different solutions.

Example: In the classroom, the knowledge of various marketing strategies was imparted. In the next lesson, the teacher then uses a case study in which a company and its product, which is to be newly introduced, are presented. The person responsible is faced with the decision of whether advertising should be placed in print media or only advertised via digital media.

Depending on the level of the learners, information about the product, numbers, and data are given to the learners. Complexity can be increased by including unnecessary information. This strengthens the competence to distinguish the essential from the insignificant.



Finally, a case study worth mentioning is the estimation question. It usually consists of only one question sentence: e.g. How many piano tuners are there in Germany? The following competencies can be observed and trained:

1. Dealing with ambiguity, and risk
2. Trust in one's own solution competence
3. Courage to gap
4. Reasoning

The estimation question can also be solved in the classroom in individual or group work, the solutions can be in competition. In addition to achieving good approximation values, it is important to argue for the solution.

How teachers can use case studies to teach entrepreneurial skills

Vocational training is not just about generating new entrepreneurs out of learners who set up a business after school. Entrepreneurial thinking also means understanding the problems and thought processes of a future employer and thus also being able to support them or possibly bring in their own solutions. That is why it makes sense to use case studies dealing with business decisions such as the takeover of another company, introducing a new product or the closure of a plant.

What needs to be considered

Learners often come with the following statements: "I did not know this framework, this information was missing, so I could not solve the case study." Learners can define framework conditions themselves that are not explicitly stated in the text. However, these must be presented credibly and must not exceed a certain level. For example, not: "Manager XY married a rich heiress, and thus all financial problems were solved." It may be helpful at the beginning to explain to learners which skills are promoted and challenged by the case study. An example would be "It is important to show how to deal with limited resources and make decisions based on given circumstances and missing information".

Useful/Practical Tip:

Explain to your learners in advance that there is not one possible solution to the case study but that learners should argue well for their solution.

You do not always have to buy case studies for lessons. You can also write them yourself. Excellent sources for this are experiences from your own environment, scientific case studies from the Internet or stories that companies tell about themselves and their products. And besides that, the learners can write the case study themselves, along with the content you give. A case study can also be part of an exam.



How to use Role-Playing Games in Teaching Entrepreneurial Skills

This section presents how role-playing games can contribute to the development of competencies in the field of entrepreneurship and how anyone can implement them in their teaching practice.

Suppose we want to prepare individuals to act like entrepreneurs. In that case, one of the most effective techniques is to facilitate experiments by trying entrepreneurship out in a controlled environment, for instance, through business simulation or role-playing.⁸ Role-playing games are particularly suitable when the aim is to encourage students to act independently in an economic environment using means that are as realistic as possible. For this, the learners take on roles and play them as authentically and convincingly as possible. The aim is to adopt economic actors' positions and attitudes and experience them with the game partners, resolve conflicts, and take decisions.

With this technique, it is possible to transfer knowledge on entrepreneurial skills in a more interesting and additional to that more effective way. At the same time, the learners directly apply and develop those skills during the game.

The learning objectives, which can be achieved through role-playing, are numerous and include, for example, inventiveness, analytical skills, commercial skills, financial competence, communication skills or the ability to delegate or to (self-) organise.

Preparatory Phase

At the beginning of a role play, the teacher introduces the game situation by describing the fictional scenario:

- What is it about?
- What is the motivation/ goal to be achieved in the game?
- What are the problems?
- Which rules of the game do players and observers have to adhere to?

When the setting and the rules are clear to everyone, the teacher distributes the different roles, and the players prepare for their roles with the help of role cards. If the game is carried out in multiple rounds, learners can change their roles.

Useful/Practical Tip:

It might be useful to designate some learners as observers. The observers do not take an active part in the role play but observe the game and take notes, which they later share with their colleagues.

⁸ Arasti, Z., Falavarjani, M. K. and Imanipour, N. (2012). A Study of Teaching Methods in Entrepreneurship Education for Graduate Students, *Higher Education Studies*, 2 (1). doi:10.5539/hes.v2n1p2



Implementation phase

There are many roles and conflicting constellations that are suitable for role-play in entrepreneurship education. Examples include entrepreneur and customer, founder and bank consultant, entrepreneur and venture capitalist or competing companies.

Game situations can be, inter alia: organising production processes, market a business idea or product, negotiating loans with the bank. The subject matter is not the main focus. It is primarily about the different perspectives from which the presented problems are seen, assessed and dealt with.

The game takes place in certain turns. The role-play ends either after a previously agreed time or after an evaluable result has been achieved.

Evaluation Phase

Usually, the evaluation phase lasts three times as long as the role-playing sequence. The players are officially "released" from their roles. They then comment on their actions or their results. The observers report their results. In this phase, the learners should only express their perceptions and impressions, not make any evaluations.

The role-play is then evaluated. The teacher leads the group through the evaluation process by posing questions, such as:

- How did the game go?
- Who acted how and why?
- Who achieved which outcome?
- What is the result for the whole group?
- Conclusions: How can evaluation results and findings be transferred to real life and how can these be used here?

It is advisable to take notes of the key findings on meta plan cards (moderation cards) and place them on a board. In order to not disturb the discussion flow, an assistant can be designated to take over this task.

Preparing Role Playing Games

Prepare the game: You can either write your own role-playing games or use one of the many to be found on the internet (see some links in the box on the next page). If you use an existing one, make sure you familiarise yourself with it and memorise the game structure and the guiding questions for the evaluation round. The games during which calculations are being used most often need some practice beforehand.

Prepare your material: most games need some tools (like scissors, markers etc.) or some products to play with. Also, it might be good to display the rules of the game or any other important information on the flipchart.



Prepare role cards: on role cards, individual persons (game roles) are described. They can contain information like: Name and occupation, age, marital status, children, etc.; Information on the context of the role (professional situation); Information about views and opinions etc.

Prepare the classroom: Let learners sit in a circle with no tables instead of sitting at individual tables. This supports a vivid discussion after each round of action. Also, it helps to rearrange the classroom for group work or action phase quickly.

Prepare students: for some games, it is useful to let learners write on metaplan cards. In this case, briefly introduce learners to how to use metaplan cards and use them as a moderation and discussion technique during the entire lesson.

Main rules for writing on metaplan cards:

- Write one idea per card,
- use entire space on card
- write max. 3 lines per card
- no capital letters

Note: Some learners are not familiar with games as a teaching technique. Using an **Energizer** game might help to prepare, activate and motivate the group for the actual game. They can also be used to introduce the topic of the subsequent game you have planned. You can find many energiser examples online.

Useful Resources

On these webpages you can find a collection of role-playing games and energizers:

English:

- <https://www.lewispalmer.org/cms/lib/CO01900635/Centricity/Domain/1731/2018%20Individual%20Role%20Play%20Events.pdf>
- <https://sixth.ucsd.edu/files/home/student-life/icebreakers-teambuilding-activities-energizers.pdf>

German:

- <https://bildung.vonmorgen.org/category/methoden/spiele/planspiele/>
- https://lehrerfortbildung-bw.de/u_gewi/wirtschaft/gym/bp2004/fb1_2/06_sim/plan/uebersicht_spiele_und_simulationen.pdf



Further Resources

English:

R. W. Scholz, D. J. Lang, A. Wiek, A. I. Walter und M. Stauffacher: Transdisciplinary Case Studies as a Means of Sustainability Learning. Historical Framework and Theory. In: International Journal of Sustainability in Higher Education. Volume 7, Nr. 3, 2006, S. 226–251.

Davis A. Garvin: Making the Case. In: Harvard Magazine. Heft 106, 2003, S. 56 ff.

EACEA, 2021. 3.8 Development of entrepreneurship competence. [Online]
Available at: <https://eacea.ec.europa.eu/national-policies/en/content/youthwiki/38-development-entrepreneurship-competence-cyprus>

Jean Barbazette: Instant Case Studies: How to Design, Adapt, and Use Case Studies in Training. Pfeiffer; Pap/Cdr Edition, 2003

Lackéus M.: Entrepreneurship in Education. What, Why, When, How Entrepreneurship360 Backgroundpaper. OECD 2015.
https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf

Zahra Arasti, A Study of Teaching Methods in Entrepreneurship Education for Graduate Students, March 1, 2012; URL: <http://dx.doi.org/10.5539/hes.v2n1p2>, doi:10.5539/hes.v2n1p2

German:

Franz-Josef Kaiser: Grundlagen der Fallstudiendidaktik – Historische Entwicklung – Theoretische Grundlagen – Unterrichtliche Praxis. In: Franz-Josef Kaiser (Hrsg.): Die Fallstudie – Theorie und Praxis der Fallstudiendidaktik. Band 6, Bad Heilbrunn, 1983, S. 9–34

Franz-Josef Kaiser und H. Kaminski: Methodik des Ökonomie-Unterrichts. Grundlagen eines handlungsorientierten Lernkonzepts. Bad Heilbrunn 1999

Peter Heimerl und Oliver Loisel: Lernen mit Fallstudien in der Organisations- und Personalentwicklung. Anwendungen, Fälle und Lösungshinweise. Linde, Wien 2005.

Michael Bannach: Selbstbestimmtes Lernen. Baltmannsweiler 2002, S. 141ff.

References

Arasti, Z., Falavarjani, M. K. and Imanipour, N. (2012). A Study of Teaching Methods in Entrepreneurship Education for Graduate Students, *Higher Education Studies*, 2 (1). doi:10.5539/hes.v2n1p2



Unit 4: Integration of digital tools in entrepreneurial skills training

Overview

The integration of digital tools in the teaching and learning process is essential for creating effective and flexible training programmes. Especially in the context of the Covid-19 outbreak, the introduction of digital tools has been of paramount importance. As there are many different digital tools to choose from, VET trainers and educators need to consider certain criteria when they choose their tools. At the same time, teachers and trainers need to be constantly updated on the different tools offered to make informed choices for their classes.

This unit aims to enable VET teachers and trainers to make informed choices regarding the digital tools they will use for entrepreneurial skills development; inform VET teachers and trainers on the latest digital tools for the classroom; and highlight the criteria that need to be taken into account when selecting the digital tools for entrepreneurial skills training.

Guidelines on selecting the right digital tools

It is essential to consider that any technology used should support and enhance the learning process and contribute to the achievement of the learning outcomes. Three research-based principles are crucial to consider when evaluating a new digital tool or product. These are the following:

User experience

The tools need to be easy to be used by the students. This is very important as any difficulties in using the software proposed may distract them from the learning process. Overall, the digital tools and apps used need to be intuitive and attractive to the users (Harrison, Flood and Duce, 2013). Moreover, it is important to consider if the tools are offered for free or a subscription is needed if students have to create an account and how easy collaboration is made using those tools. Considering the GDPR regulations, it is also essential to check the terms and conditions of use for different tools used in the classroom (Hertz, 2010).

Useful/Practical Tip:

Always consider your target group.

Always bear in mind who the product is appropriate for, who is going to use it – and why. It is always important to take into consideration the age of the students and the size of the group.

Development of entrepreneurial skills

The digital tools that will be introduced need to be appropriate resources for the development of entrepreneurial skills. Digital resources need to prepare the students for their integration



in the knowledge economy therefore they need to be relevant at all times. There are tools and apps that also facilitate the development of soft skills such as collaboration and decision-making skills which are also considered essential entrepreneurial skills.

Another parameter that will have to be taken into consideration is the progress tracking of the students. Learners need to be able to set clear learning goals through the different tools and at the same time be able to benefit from self-assessment opportunities. Teachers' monitoring of the overall learners' progress and entrepreneurial skills' development will also need to be considered.

Useful/Practical Tip:

Identify why it is important to use this specific tool.

Before integrating a specific digital tool, teachers need to think which specific area of learning this tool will support. At the same time, digital tools need to facilitate learning but also be a challenge for the target group so they feel engaged at all times.

Technical Specifications

Before selecting digital tools, teachers need to be aware of their technical specifications. These include information on data storage and usage, licenses needed to use the product and any potential fees, and any other technological equipment required. Privacy and data processing also needs to be investigated.

Useful/Practical Tip:

Always do your research before selecting a tool.

Always remember to test and experiment with the tools before integrating them into the classroom. Tools and apps that may work well for other classes, may not be in line with the learning outcomes you wish to achieve in entrepreneurial skills teaching.

Examples of digital tools and how to use them

The following digital tools and apps could be very useful for the development of entrepreneurial skills. They foster the development of important skills while they also make online learning more effective increasing student-teacher interaction in an online environment. At the same time, they promote collaboration among the students and enhance their creativity.



Kahoot!

Kahoot! is a game-based learning platform used as educational technology in schools and other educational institutions. Its learning games, "kahoots", are user-generated multiple-choice quizzes that can be accessed via a web browser or the Kahoot app.

Why is this tool useful?

Kahoot! can be used to review students' knowledge, for formative assessment and as a means of fostering interaction especially in online courses.

Mentimeter

A useful tool for creating interactive presentations also using live polls, quizzes, word clouds, Q&As and more to get real-time input - regardless if the teaching and learning experience is remote, hybrid or face-to-face.

Why is this tool useful?

Through the use of digital devices, the audience can answer questions and participate in an interactive way, enabling everyone's participation.

Nearpod

Nearpod is a great tool to boost student participation with collaborative activities and formative assessments like Virtual Reality, Polls, Collaborate Boards, and game-based quizzes. Get student insights in real-time and in post-session reports.

Why is this tool useful?
Through Nearpod it is easy to create or find ready-made interactive presentations on a variety of topics. The customizable nature of the app means that it can be used for learners of any age and be adaptable to different teaching contexts. Nearpod also is great in saving time through real-time formative assessment and session reports helping building a community also outside the classroom.

Quizlet

Quizlet is a powerful tool that makes learning more interesting as it uses a variety of tools. These tools range from flashcards to games and snack learnings.

Why is this tool useful?

Especially for entrepreneurship classes, this tool can be particularly useful. It offers a session dedicated to social sciences and business and through its use, students gain important and practical knowledge that will benefit them in the future.



Miro

Miro is an online collaborative whiteboard platform that enables distributed teams to work effectively together, from brainstorming with digital sticky notes to planning and managing agile workflows.

Why is this tool useful?

Miro is an excellent tool that will enable brainstorming and collaboration of teams. These skills are essential for future entrepreneurs who will be exposed to a tool that helps manage ideas and workflows in an effective way.

Prezi

Prezi is a digital software for creating interactive presentations. Prezi is more than a traditional application for creating slides as it allows for the creation of more persuasive and engaging presentations through great visuals and zooming.

Why is this tool useful?

This is a great attention catcher for the students if it is used in the classroom. At the same time, the students who wish to become future entrepreneurs, will have the opportunity to be exposed to a software that will be a great tool for them to promote their entrepreneurial ideas and dreams.

Edmodo

Edmodo is a global education network that connects all learners with the people and resources needed to reach their full potential.

Why is this tool useful?

This tool can be proven useful as it offers an interactive environment that caters to the needs of teachers and students. It prepares students to become the digital citizens of the future and learn through collaboration and digital information. At the same time, teachers can share material with their digital class, interact with the students and send them messages.

Socrative

Socrative is a tool that is suitable both for the classroom and for online learning. Its main advantage is the effective monitoring and evaluation solutions that it gives to the teachers while it is also engaging and fun for learners.

Why is this tool useful?

This tool is useful especially in online learning contexts where immediate feedback is always an issue. Teachers can monitor their students' progress through short quizzes. Students also feel part of the classroom the same way they do during face-to-face classes.



Zoom

It provides videotelephony and online chat services through a cloud-based peer-to-peer software platform and is used for teleconferencing, telecommuting, distance education and social relations.

This tool is very easy to use and access, even by vet professionals and students who are not very familiar with digital solutions as it is very intuitive. Apart from being a great digital learning solution, it allows for team work and work in groups through its Break-out rooms as well as through its screen sharing functions. The Zoom platform can be combined well with activities on Miro or JamBoard making online learning more interactive.

Jamboard

Jamboard is a digital interactive whiteboard developed by Google to work with Google Workspace, formerly known as G Suite. It can be used for online collaboration using Google Workspace. The display can also be mounted onto a wall or be configured into a stand.

Why is this tool useful?

This tool is easily accessible and enables work in groups. This is especially useful as in online environments. Collaboration gives a sense of being part of the group, even when teachers and students are not in the classroom.

Google Drive

Google Drive is a file storage and synchronization service developed by Google. It allows users to store files in the cloud (on Google's servers), synchronize files across devices, and share files.

This tool is useful because it enables document sharing and helps both teachers and students organize their workload and share information.



Selecting the most suitable digital tools is crucial for an effective learning process in an online environment. Therefore, it is important to choose tools considering the age of students, the purpose of training, and the specific learning objectives that are to be covered each time. Both trainers/teachers and educational organisations need to conduct in-depth research and testing for user experience, ease of access, and terms and conditions before introducing digital tools to their students.

References

Harrison, R., Flood, D. and Duce, D. (2013). *Usability of mobile applications: Literature review and rationale for a new usability model*. *Journal of Interaction Science*, 1(1).

Hertz, M. B. (2010). *Which Technology Tool Do I Choose?* Retrieved from: <https://www.edutopia.org/blog/best-tech-tools>. Last access: 25/06/2021



Unit 5: Entrepreneurial competences of VET educators

Overview

This section introduces the readers to the European Entrepreneurship Competence Framework “EntreComp”, the official model for nurturing entrepreneurial competences developed by European Commission.

Building an entrepreneurial mindset in every aspect of life is considered high importance to meet the needs of a rapidly changing society. EntreComp serves as a reference framework to explain what is meant by an entrepreneurial mindset and offers a comprehensive description of the knowledge, skills and attitudes that people need to be entrepreneurial and create financial, cultural or social value for others.

EntreComp is a flexible tool that can be used in a variety of ways and across sectors. The current section focuses on two aspects:

- How can VET educators, trainers and teachers be supported by using EntreComp to deliver entrepreneurial skills;
- How EntreComp can be used to design training programs and learning opportunities.

How to use the EntreComp Framework

EntreComp can be used across sectors and support the collaborative work between educators, trainers, employers and policymakers. To understand EntreComp, we first need to answer the question: “what does it mean to be entrepreneurial?”

Entrepreneurship as a competence is defined as the capacity to act upon opportunities and ideas to create value for others in any situation. The value created can be social, cultural, or financial. In the EntreComp framework, entrepreneurship competence is both an individual and collective capacity. EntreComp maps out 3 key areas to entrepreneurship competence:

- ideas and opportunities;
- resources;
- into action;

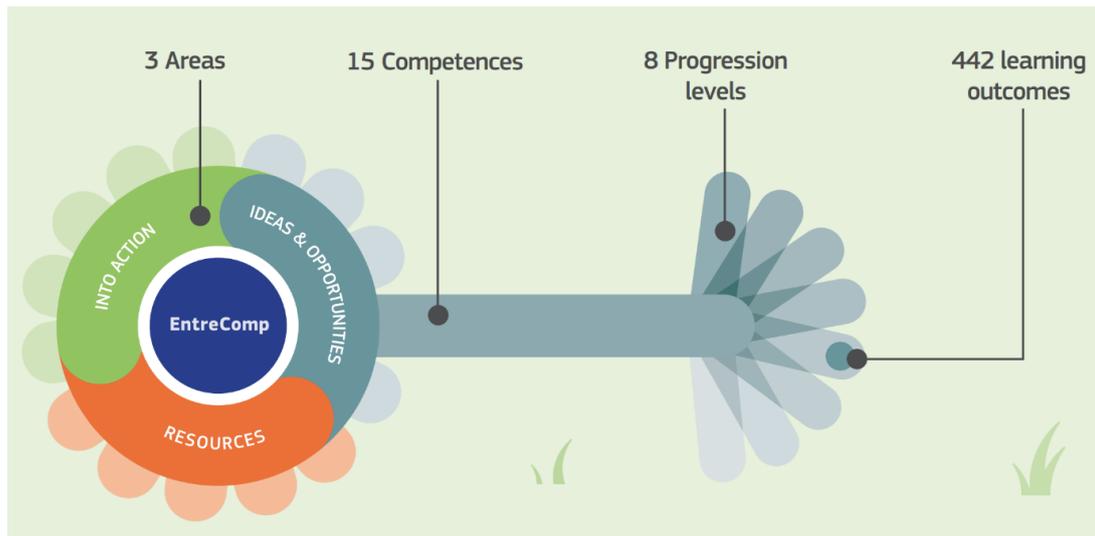
Each area contains 5 competences, and together these make up the 15 competences that create an entrepreneurial mindset. Each competence is further refined through learning outcomes mapped from the most basic to advanced progression levels.

Useful Resources:

[ENTRECOM4ALL](#) is a project aiming to develop its capacity as a resource centre for EntreComp.

It offers a clickable EntreComp model that users can explore to see the definitions and insights behind each of the 15 competences.

Platform can be used to find Open Educational Resources that teach EntreComp skills.



Source: *EntreComp factsheet, 2021* ([Link](#))

EntreComp for VET educators

EntreComp is useful for developing and influencing policy by providing a shared understanding and common language with all parties involved. VET educators can benefit by:

- using EntreComp to embed entrepreneurial learning outcomes in specific subjects, programmes and teaching;
- in non-formal and informal learning: by designing practical entrepreneurial experiences and recognise skills and experience.

EntreComp into Action:

EU has created a user guide to the EntreComp. The examples gathered in the plan are intended to illustrate the breadth and depth for using EntreComp by VET educators & entrepreneurs. The guide can be downloaded [here](#).

What are the top tips for getting started with EntreComp?

- Create a shared understanding of what it means to be entrepreneurial;
- Identify the right competences by prioritising the entrepreneurial competences that are relevant to a certain project or organisation;
- Choose the right level of EntreComp that corresponds to the targeted audience;
- Understand the starting point of learners that have different starting points for their skills development;
- When evaluating learning strategies, consider introducing opportunities for practical entrepreneurial experiences;
- Identify learning outcomes that are relevant to a certain activity;
- Use EntreComp as the evidence (research) base for making changes in the learning approach.



Useful/Practical Tip for ideas and opportunities:

Use your imagination and abilities to identify opportunities for creating value.

Example: Identify and seize opportunities to create value by exploring the social, cultural and economic landscape and by identifying needs and challenges that need to be met.

How to integrate the EntreComp Framework in training programs

EntreComp skills can be integrated into any type of learning. Educators can be shown the strengths they already have and how they can use them to deliver impactful entrepreneurship education. It aims to establish a bridge between the worlds of education and work regarding entrepreneurship as a competence.

Supporting teachers to integrate entrepreneurial education into their teaching should consider the national context and language of the respective country. To turn EntreComp into learning opportunities, teachers should first develop a strong understanding of implementing a competence-based approach and disseminating this approach to internal and external involved actors.

Working with the EntreComp framework within the curriculum design leads to the following three main lessons, 3 main lessons have been identified:

- EntreComp can be used to support 'light' improvements to standards and curricula;
- Moving into large-scale revision inevitably brings the need to engage large groups of experts into a multi-year work on step-by-step integration of new approaches into the standards and curricula;
- Teacher training is the core element for both approaches, with the need for changes in teacher qualifications, teacher training and career promotion systems.

Useful Resources: Explore the Competendo Online Toolbox

[COMPETENDO](#) is an international education platform committed to the development of civic competences.

Competendo resources are thus a practical resource for anyone willing to foster entrepreneurial learning in the wider context of social and civic competences.

Project on Curriculum Development Canvas [Link](#)

The Curriculum Development Canvas (CD Canvas) is a one-page inquiry-based collaborative exercise to guide the design of training curricula focused on competence development. Its aim is to develop and design new competence-based learning which can be aligned to the EntreComp framework.



How does the Canvas Tool work?

A practical guide with a suggested structure for a workshop that uses a group work approach to developing new training using the CD Canvas can be accessed here: [Link](#)

Useful/Practical Tips:

What does EntreComp mean for VET educators and trainers?

- Continually developing knowledge in entrepreneurial education;
- Understanding the relevance of entrepreneurial education in teaching and learning;
- Identifying learners' needs, interests and starting points.

Entrepreneurial planning and teaching

Setting entrepreneurial learning objectives that create societal and moral value is a core element of planning entrepreneurial education. Other features include monitoring space, time, classroom layout and resources to encourage entrepreneurial learning opportunities. During teaching, interacting with learners and empowering them to regularly ask questions, consider alternative solutions and create value for others through learning ensures relevance of entrepreneurial training and learners' constant engagement.

Learning outcomes

Learning outcomes are statements of what a learner knows, understands, and can do after completion of learning. EntreComp learning outcomes have been developed as references for different purposes. They could be used in the formal education and training sector for curricula design.

Useful Resources: The full EntreComp framework in relation to learning outcomes

Learning outcomes for each EQF level in relation to entrepreneurial thinking can be found here (Appendix): [Link](#)

Thus, EntreComp learning outcomes should not be taken as normative statements to be directly transposed into actual learning activities or measure student performance. They are a basis for developing specific learning outcomes that are fit for the particular context and a basis for the development of performance indicators.

Useful/Practical Tips:

Building networks and research orientation.

Sharing experience and working with other educators and external stakeholders can enrich learners' entrepreneurial learning experiences. Basing entrepreneurial learning on research and other evidence can sharpen educators' competences on what works well and why.



References

EACEA (2021). *3.8 Development of entrepreneurship competence*. [Online] Available at: <https://eacea.ec.europa.eu/national-policies/en/content/youthwiki/38-development-entrepreneurship-competence-cyprus>

EU (2021). *EntreComp into Action - Get inspired, make it happen: A user guide to the European Entrepreneurship Competence Framework*. [Online] Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC109128>

EU (2021). *EntreComp: the European Entrepreneurship Competence Framework - factsheet*. [Online] Available at: <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8200&furtherPubs=yes>

EU (2021). *The European Entrepreneurship Competence Framework (EntreComp)*. [Online] Available at: <https://ec.europa.eu/social/main.jsp?catId=1317&langId=en>

JRC Publications Repository (2016). *EntreComp: The Entrepreneurship Competence Framework*. [Online] Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581>



Unit 6: Assessment of Digital Readiness of VET Providers

Overview

For VET educators to assist their learners with their skills development, they first need to assess their own readiness and practices regarding ICT use in teaching and learning. Therefore, this section will introduce the SELFIE tool and provide guidelines to VET educators on how they can use this self-reflection tool.

Introduction to the SELFIE Tool

SELFIE (Self-reflection on Effective Learning by Fostering the use of Innovative Educational Technologies) is a self-reflection tool for primary, secondary, and vocational schools. It is an initiative of the European Commission. It was launched in 2018 and used by more than 7,000 schools and around 700,000 individuals from 57 countries.⁹

It includes questions on a 1-5 scale that take around 20 minutes to complete, and the answers of students, teachers and school leaders regarding the use of technology in their school remain anonymous.¹⁰

Based on the answers gathered, the SELFIE tool creates an interactive report that outlines the strengths and weaknesses of schools when it comes to using technology.

The SELFIE tool is:

- A 360-degree process
- Free of charge
- Easy to use
- Anonymous (answers are anonymised)
- Private (personal data are not collected)
- Available to use on a computer, tablet, or smartphone
- Available in more than 30 languages

Key Facts about the SELFIE Tool:

- Included in the [Digital Education Action Plan](#) of the European Commission
- Developed based on the framework by JRC titled “[Promoting Effectiver Digital-Age Learning: A European Framework for Digitally – Competent Educational Organisations](#)”
- Funded through the Erasmus Programme
- Developed by a team of experts from various bodies and partner institutions include:
 - the European Training Foundation ([ETF](#))
 - the European Centre for the Development of Vocational Training ([CEDEFOP](#))
 - UNESCO’s [Institute for Information Technologies in Education](#)

⁹ EU Science Hub (2020). New school year: support to schools facing the remote teaching challenge. Available at: <https://ec.europa.eu/jrc/en/news/new-school-year-support-schools-facing-remote-teaching-challenge>

¹⁰ European Commission (N.D.). SELFIE. Available at: https://ec.europa.eu/education/schools-go-digital/about-selfie_en



As the COVID-19 pandemic brought many challenges, a significant challenge has undoubtedly been to teach remotely. Given these challenges, the JRC started developing [SELFIE for Teachers](#) in 2020. Teachers complete a self-reflection, and based on their answers, each teacher receives a feedback report with their proficiency level across different areas, which they can use for their professional development.¹¹ The Selfie for Teachers is based on the [DigCompEdu Framework](#).

The SELFIE tool is also applicable to Vocational Education and Training (VET) and work-based learning systems. This will be explored in detail in the following Unit.

The SELFIE Tool in practice

The SELFIE tool has been developed to help schools assess their technology use. However, the needs of post-secondary VET schools and work-based learning could differ from those of primary, secondary, and vocational schools (secondary).

This has been taken into consideration. Therefore, the JRC carried a feasibility study to assess whether the SELFIE tool needs adaptations to become relevant to work-based learning (WBL) systems. According to the feasibility study, the SELFIE tool can be used in VET and WBL, which include apprenticeships and dual VET, and it can be adapted with few changes to be made (Broek & Buiskool, 2020). The JRC report suggests the adaptations be made with a 'phased approach', distinguishing between two modalities: one led by the VET school that requires no fundamental change to the SELFIE tool and led by the companies.

More information about the feasibility study and the suggested changes can be found in the [JRC report](#). Since the proposed changes to the SELFIE tool to be led by VET schools (first modality) are minimal, the focus will be on using the SELFIE tool in practical terms.

How does the SELFIE tool work? The SELFIE tool is an easy-to-use tool that involves choosing a coordinator and making a registration, having VET educators, trainers, and students answer the questions, and finally receiving the results and using them to improve. The SELFIE tool does not have to be a one-time assessment; VET schools can use it regularly to check their progress from the previous period and plan ahead for future activities and changes.

Helpful Resources:

- For an introductory video to the SELFIE tool, check this [YouTube video](#) by the European Commission
- To make the set-up of SELFIE tool easier, you can use a [check list](#).
- For a sample that shows how a report from the SELFIE tool looks like, look at a [demonstration school report](#).

¹¹ European Commission (N.D.). SELFIE for Teachers - Discover your digital potential. Available at: <https://digcompedu.jrc.es/>



A step-by-step approach to the SELFIE tool

Choosing the
coordinator and
registering the
school

- If the evaluation is focused on a VET school, you can choose a person or a small group that will be the coordinator of the SELFIE evaluation.
- The coordinator(s) register the school online [here](#).
- Coordinators can optionally create a school profile.
- The school coordinator(s) can then login with the email and password they used, as many times as they want through this [link](#).

Setting up the
questionnaire

- The assessment tool includes:
 - Core questions in eight areas
 - Area 1: Leadership
 - Area 2: Collaboration and networking
 - Area 3: Infrastructure and equipment
 - Area 4: Continuing Professional Development
 - Area 5: Pedagogy: Supports and Resources
 - Area 6: Pedagogy: Implementation in the classroom
 - Area 7: Assessment Practices
 - Area 8: Student Digital Competence
 - Optional Questions
 - Optional custom questions. School coordinators can add up to 10 more questions of their own, tailored to their needs.

Administering
the
questionnaire

- Once the questions have been finalized, the coordinator(s) have to:
 - Select the education level and choose dates on the calendar
 - Activate the links and send them to the students, teachers, and school leaders. Once activated, no additional changes can be made.
- The questionnaires must be completed within two hours from the starting time.

Getting the
results

- Once the questions are answered and the deadline for responses has been reached, the insights can be found in the “Results” section.
- The results can be downloaded as a pdf.
- More detailed information in a specific area can be found on the online report and the charts can be downloaded from there.
- The SELFIE tool also gives the option to see the results per area, group, and see the results to the custom questions that were added by the school.



After the completion of the SELFIE tool

Once the assessment through the SELFIE tool is finalised, the school also has the option of getting an open digital badge. An account needs to be created here using the same email address as the one used for logging into the SELFIE tool and setting a password. The next step is to send an email to JRC-EAC-SELFIE-TOOL@ec.europa.eu to confirm the completion of the badge registration together with the name of the school as it was registered in the email that was used during the registration. The badge will be sent within one month.

Regarding the report that the SELFIE tool provides, it would be helpful to make use of these results beyond getting a broad picture of the school's technology use. The report shows the average scores across the 8 core areas per group category, namely school leaders, teachers and students.

When analysing the results, it is beneficial to be critical of the overall results and identify discrepancies in specific areas or specific groups. The following aspects can help take action and identify issues and potential problems that go unnoticed:

- 1**
Low participation rate to the questionnaire from all groups
- 2**
Low participation rate to the questionnaire by a specific group, compared to the other groups
- 3**
Repeated low rating across an area by all the groups (e.g. VET students, educators, school leaders)
- 4**
Repeated low rating across all areas by the same group (e.g. VET students, educators, school leaders)
- 5**
Repeated low rating across many subsections in an area by the same group (e.g. VET students, educators, school leaders)
- 6**
Great discrepancy of responses between the different groups
- 7**
Mixed (and potentially contradictory) responses by the different groups to the optional custom questions



If the responses are low or any of the above hold true, it would be beneficial to create an improvement plan. A few actions (non-exhaustive) are proposed:

- Discuss with the school leader the results and raise potential concerns
- Create a focus group of people from the different groups and create a discussion around specific areas you consider important
- Find experts internally or externally who can help in areas where weaknesses were identified
- Set goals and actions for improvement
- Decide when to use the SELFIE tool again

Useful Tip:

It is helpful to make an assessment periodically and take advantage of the custom questions. The custom questions can focus on the areas that were previously identified as weaknesses.

Once corrective actions are taken, it is vital that continuous monitoring and evaluation are taking place. This will not only help identify the weaknesses but also help prevent future weaknesses and failures. Technology is rapidly changing, and the VET sector has to adapt continuously. Using the SELFIE tool and adapting it to current needs can be one of VET schools and educators' actions to make a self-assessment that helps them take action and remain up-to-date with the rapidly changing world.

Further resources

Costa, P., Castaño-Muñoz, J., and Kampylis, P. (2021). Capturing schools' digital capacity: Psychometric analyses of the SELFIE self-reflection tool. *Computers & Education*, 162 (104080). doi: [10.1016/j.compedu.2020.104080](https://doi.org/10.1016/j.compedu.2020.104080).

References

Broek, S., and Buiskool, B.-J. (2020). *Adapting the SELFIE tool for work-based learning systems in Vocational Education and Training. A feasibility study*. Hippe, R., & Kampylis, P. (eds.). EUR 30079 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-10623-4, doi: 10.2760/934724, JRC119707

EU Science Hub (2020). New school year: support to schools facing the remote teaching challenge. Available at: <https://ec.europa.eu/jrc/en/news/new-school-year-support-schools-facing-remote-teaching-challenge>

European Commission (N.D.). SELFIE for Teachers - Discover your digital potential. Available at: <https://digcompedu.jrc.es/>

European Commission (N.D.). SELFIE. Available at: https://ec.europa.eu/education/schools-go-digital/about-selfie_en



Unit 7: Development of Digital Competences of VET Providers

Overview

As the teaching professions face rapidly changing demands, educators require an increasingly broad and more sophisticated set of competences than before. In particular, the ubiquity of digital devices and the duty to help students become digitally competent requires educators to develop their own digital competence.

The instrument that could be applied in this area is the 'European framework for educators' digital competence' (DigCompEdu). DigCompEdu is a self-assessment tool and guidelines for teachers and trainers that defines:

- a conceptualisation of digital competences for educators (22 competences grouped in 6 areas)
- a progression model based on 6 proficiency levels

Digital competences for VET providers

The DigCompEdu Framework¹² aims to capture and describe these educator-specific digital competences by proposing 22 elementary competences organised in 6 areas:

- **Area 1: Professional Engagement**
→ Using digital technologies for communication, collaboration and professional development;

Digital competences	Description
1. Organisational communication	To use digital technologies to enhance organisational communication with learners, parents and third parties. To contribute to collaboratively developing and improving organisational communication strategies.
2. Professional collaboration	To use digital technologies to collaborate with other educators, share and exchange knowledge and experience, and collaboratively innovate pedagogic practices.
3. Reflective practice	To individually and collectively reflect on, critically assess and actively develop one's own digital pedagogical practice and that of one's educational community.

¹² Joint Research Centre (JRC) (2017). *Digital Competence Framework for Educators (DigCompEdu)*. Available at: <https://ec.europa.eu/jrc/en/digcompedu>



4_ Digital Continuous Professional Development (CPD)	To use digital sources and resources for continuous professional development.
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- **Area 2: Digital Resources**
- Sourcing, creating and sharing digital resources;

Digital competences	Description
5. Selecting digital resources	To identify, assess and select digital resources for teaching and learning. When selecting digital resources and planning their use, consider the specific learning objective, context, pedagogical approach, and learner group.
6. Creating and modifying digital resources	To modify and build on existing openly licensed resources and other resources where this is permitted. To create or co-create new digital educational resources. When designing digital resources and planning their use, consider the specific learning objective, context, pedagogical approach, and learner group.
7. Managing, protecting and sharing digital resources	To organise digital content and make it available to learners, parents and other educators. To effectively preserve sensitive digital content. To respect and correctly apply privacy and copyright rules. To understand the use and creation of open licenses and open educational resources, including their proper attribution.

- **Area 3: Teaching and Learning**
- Managing and orchestrating the use of digital technologies in teaching and learning;

Digital competences	Description
8. Teaching	To plan for and implement digital devices and resources in the teaching process to enhance the effectiveness of teaching interventions. To appropriately manage and orchestrate digital teaching strategies. To experiment with and develop new formats and pedagogical methods for instruction.
9. Guidance	To use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session. To use digital technologies to offer timely and targeted guidance and assistance. To experiment



	with and develop new forms and formats for providing guidance and support.
10. Collaborative learning	To use digital technologies to foster and enhance learner collaboration. To enable learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration and collaborative knowledge creation
11. Self-regulated learning	To use digital technologies to support learners' self-regulated learning, i.e. to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights and come up with creative solutions

- **Area 4: Assessment**

→ Using digital technologies and strategies to enhance assessment;

Digital competences	Description
12. Assessment strategies	To use digital technologies for formative and summative assessment. To enhance the diversity and suitability of assessment formats and approaches.
13. Analysing evidence	To generate, select, critically analyse, and interpret digital evidence on learner activity, performance, and progress to inform teaching and learning.
14. Feedback and planning	To use digital technologies to provide targeted and timely feedback to learners. To adapt teaching strategies and to deliver targeted support based on the evidence generated by the digital technologies used. To enable learners and parents to understand the evidence provided by digital technologies and use it for decision-making.

- **Area 5: Empowering Learners**

→ Using digital technologies to enhance inclusion, personalisation and learners' active engagement;

Digital competences	Description
15. Accessibility and inclusion	To ensure accessibility to learning resources and activities for all learners, including those with special needs. To consider and respond to learners' (digital) expectations, abilities, uses and misconceptions, as



	well as contextual, physical or cognitive constraints to their use of digital technologies
16. Differentiation and personalisation	To use digital technologies to address learners' diverse learning needs by allowing learners to advance at different levels and speeds and to follow individual learning pathways and objectives
17. Actively engaging learners	To use digital technologies to foster learners' active and creative engagement with a subject matter. To use digital technologies within pedagogic strategies that foster learners' transversal skills, deep thinking and creative expression. To open up learning to new, real-world contexts, which involve learners themselves in hands-on activities, scientific investigation or complex problem solving, or in other ways increase learners' active involvement in complex subject matters.

- **Area 6: Facilitating Learners' Digital Competence**

→ Enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving.

Digital competences	Description
18. Information and media literacy	To incorporate learning activities, assignments, and assessments that require learners to articulate information needs; to find information and resources in digital environments; to organise, process, analyse and interpret information; and compare and critically evaluate the credibility and reliability of information and its sources.
19. Digital communication and collaboration	To incorporate learning activities, assignments and assessments which require learners to effectively and responsibly use digital technologies for communication, collaboration and civic participation.
20. Digital content creation	To incorporate learning activities, assignments, and assessments that require learners to express themselves through digital means and modify and create digital content in different formats. To teach learners how copyright and licenses apply to digital content, how to reference sources and attribute licenses
21. Responsible use	To take measures to ensure learners' physical, psychological and social wellbeing while using digital



	technologies. To empower learners to manage risks and use digital technologies safely and responsibly
22. Digital problem solving	To incorporate learning activities, assignments and assessments which require learners to identify and solve technical problems, or to transfer technological knowledge creatively to new situations.

How can VET providers develop their digital competence?

For each of the 22 elementary competences, the competence descriptor is complemented by a list of typical activities. A progression model along six levels is proposed, for which a rubric with proficiency statements for self-assessment is supplied. The proposed progression model is intended to help educators understand their personal strengths and weaknesses by describing different stages or levels of digital competence development. For ease of reference, these competence stages are linked to the six proficiency levels used by the Common European Framework of Reference for Languages (CEFR), ranging from A1 to C2.

- **A1 > Newcomer:** Newcomers are aware of the potential of digital technologies for enhancing pedagogical and professional practice. However, they have had minimal contact with digital technologies and use them mainly for lesson preparation, administration or organisational communication. Newcomers need guidance and encouragement to expand their repertoire and apply their existing digital competence in the pedagogical realm.
- **A2 > Explorer:** Explorers are aware of the potential of digital technologies and are interested in exploring them to enhance pedagogical and professional practice. They have started using digital technologies in some areas of digital competence without, however, following a comprehensive or consistent approach. Explorers need encouragement, insight and inspiration, e.g. through the example and guidance of colleagues embedded in a collaborative exchange of practices

Areas	Newcomer (A1)	Explorer (A2)
Professional Engagement	Awareness Uncertainty Basic Use	Exploring Digital Options
Digital Resources		Exploring Digital Resources
Teaching And Learning		Exploring Digital Teaching & Learning Strategies
Assessment		Exploring Digital Assessment Strategies
Empowering Learners		Exploring Learner-centred Strategies



Facilitating Learners' Digital Competence

Encouraging Learners To Use Digital Technologies

- B1 > Integrator:** Integrators experiment with digital technologies in various contexts and for a range of purposes, integrating them into many of their practices. They creatively use them to enhance diverse aspects of their professional engagement. They are eager to expand their repertoire of techniques. They are, however, still working on understanding which tools work best in which situations and on fitting digital technologies to pedagogic strategies and methods. Integrators just need some more time for experimentation and reflection, complemented by collaborative encouragement and knowledge exchange to become Experts.
- B2 > Expert:** Experts use a range of digital technologies confidently, creatively and critically to enhance their professional activities. They purposefully select digital technologies for particular situations and understand the benefits and drawbacks of different digital strategies. They are curious and open to new ideas, knowing that there are many things they have not tried out yet. They use experimentation as a means of expanding, structuring and consolidating their repertoire of strategies. Experts are the backbone of any educational organisation when it comes to innovating practice.

Areas	Integrator (B1)	Expert (B2)
Professional Engagement	Expanding Professional Practice	Enhancing Professional Practice
Digital Resources	Fitting Digital Resources To The Learning Context	Strategically Using Interactive Resources
Teaching And Learning	Meaningfully Integrating Digital Technologies	Enhancing Teaching & Learning Activities
Assessment	Enhancing Traditional Assessment Approaches	Strategic And Effective Use Of Digital Assessment
Empowering Learners	Addressing Learner Empowerment	Strategically Using A Range Of Tools To Empower
Facilitating Learners' Digital Competence	Implementing Activities To Foster Learners' Digital Competence	Strategically Fostering Learners' Digital Competence

- C1 > Leader:** Leaders have a consistent and comprehensive approach to using digital technologies to enhance pedagogic and professional practices. They rely on a broad repertoire of digital strategies from which they know how to choose the most appropriate for any given situation. They continuously reflect on and further develop their practices. Exchanging with peers, they keep updated on new developments and





ideas. They are a source of inspiration for others, to whom they pass on their expertise.

- **C2 > Pioneer:** Pioneers question the adequacy of contemporary digital and pedagogical practices, of which they are Leaders. They are concerned about the constraints or drawbacks of these practices and driven by the impulse to innovate education even further. Pioneers experiment with highly innovative and complex digital technologies and/or develop novel pedagogical approaches. Pioneers are a unique and rare species. They lead innovation and are a role model for younger teachers.

Areas	Leader (C1)	Pioneer (C2)
Professional Engagement	Discussing And Renewing Professional Practice	Innovating Professional Practice
Digital Resources	Comprehensively Using Advanced Strategies & Resources	Promoting The Use Of Digital Resources
Teaching And Learning	Strategically & Purposefully Renewing Teaching Practice	Innovating Teaching
Assessment	Critically Reflecting On Digital Assessment Strategies	Innovating Assessment
Empowering Learners	Holistically Empowering Learners	Innovating Learner Involvement
Facilitating Learners' Digital Competence	Comprehensively And Critically Fostering Learners' Digital Competence	Using Innovative Formats To Foster Learners' Digital Competence

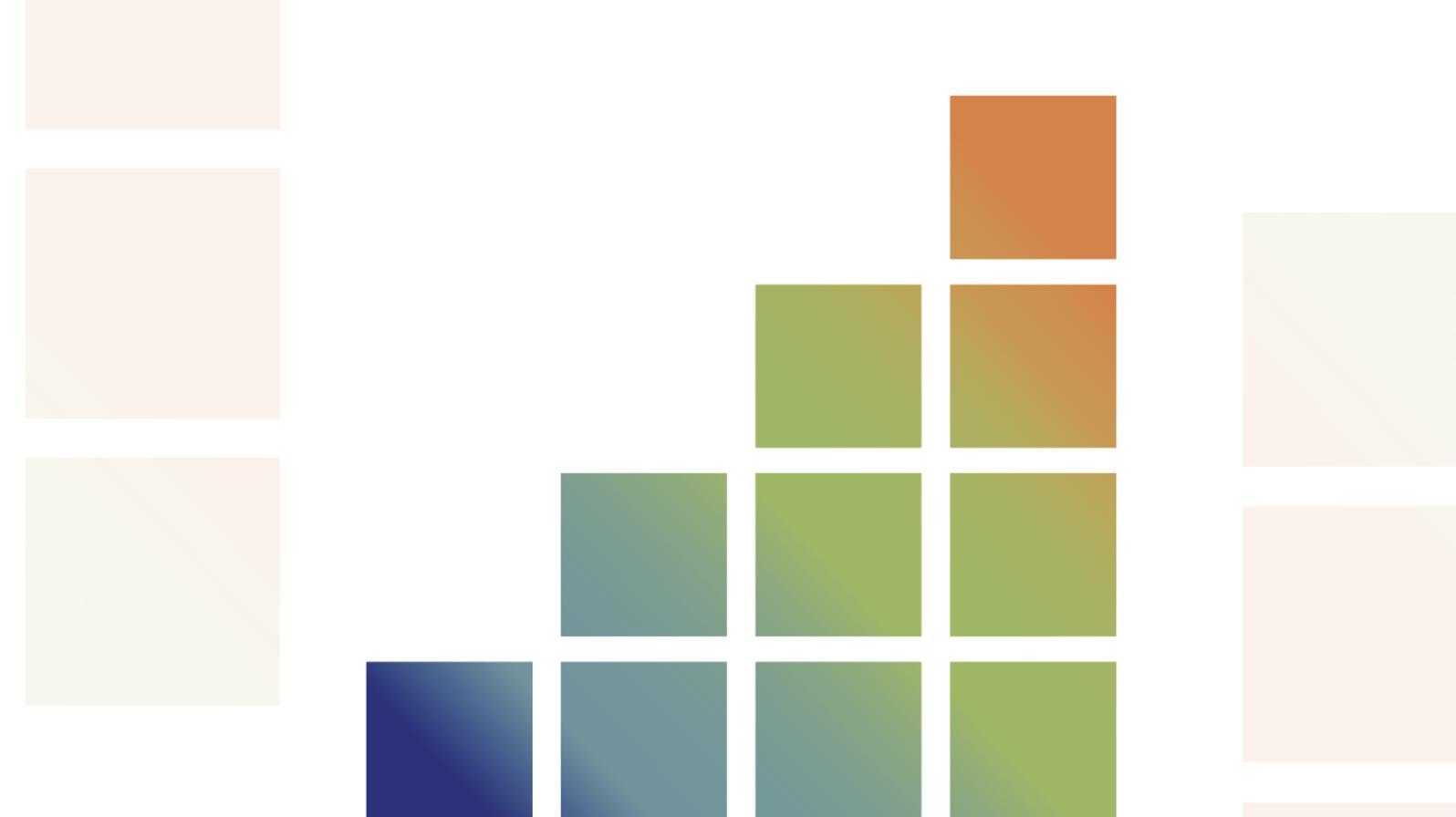
References

European Commission (2020). *Digital Education Action Plan (2021-2027)*: https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

European Commission (N.D.). *Digital skills and job platform / Training opportunities on digital skills and emerging technologies from all around Europe*. Available at: <https://digital-skills-jobs.europa.eu/en/opportunities/training>

European Training Foundation (2018). *Digital skills and competence, and digital and online learning*. Available at: https://www.etf.europa.eu/sites/default/files/2018-10/DSC%20and%20DOL_0.pdf

Joint Research Centre (JRC), 2017. *Digital Competence Framework for Educators (DigCompEdu)*. Available at: <https://ec.europa.eu/jrc/en/digcompedu>



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