



United Nations
Educational, Scientific and
Cultural Organization

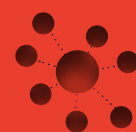
UNEVOC

International Centre
for Technical and Vocational
Education and Training

Entrepreneurial learning

for TVET institutions

A practical guide



Entrepreneurial learning

for TVET institutions

A practical guide

Published in 2020 by the

**United Nations Educational,
Scientific and Cultural Organization**

7, place de Fontenoy
75352 Paris 07 SP
France

and

**UNESCO-UNEVOC International
Centre for Technical and Vocational
Education and Training**

UN Campus
Platz der Vereinten Nationen 1
53113 Bonn
Germany

© UNESCO 2020

ISBN: 978-92-3-100425-4 (print/pdf)

This publication is available in Open Access under the Attribution-ShareAlike 3.0 IGO (CC-BY-SA 3.0 IGO) license (<http://creativecommons.org/licenses/by-sa/3.0/igo/>). By using the content of this publication, the users accept to be bound by the terms of use of the UNESCO Open Access Repository (<http://en.unesco.org/open-access/terms-use-ccbysa-en>).



The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of UNESCO and do not commit the Organization.

Main author

Johannes Lindner

Design

Christiane Marwecki

Print

Printed in Germany

Acknowledgements

This practical guide was written by Johannes Lindner, Head of the Centre for Entrepreneurship Education as Innovation in Schools (e.e.si), Austrian Federal Ministry of Education, Science and Research and Initiative for Teaching Entrepreneurship (IFTE), and Centre for Entrepreneurship Education and value-based Business Didactics of the University Teacher College, Vienna/Krems, who also developed its methodology, with contributions from Francesca Beddie of Make Your Point (Australia).

The publication is the result of a collaborative effort and reflects the contributions of nine members of the UNEVOC Network – a global platform of technical and vocational education and training (TVET) institutions– who supported the co-development, peer review and validation of the Entrepreneurial Learning Institution Canvas (ELIC). UNESCO-UNEVOC wishes to express special thanks to the following experts from these UNEVOC Centres: Raja Chaieb, CENAFFIF - Centre National de Formation de Formateurs et d'Ingenierie de Formation (Tunisia); Anshika Kushwaha, NSDC - National Skill Development Corporation (India); Paolo Nardi, Cometa Formazione (Italy); Luis Fernando Cateura, Fundación Paraguaya (Paraguay); Pablo Vaillant, Duoc UC (Chile); Chunlin Huang and Zheng Gangqiang, ZJTIE - Zhejiang Technical Institute of Economics (China); Masaudu Kazaure Adamu, Amina Idris and Abdu Isa Kofarmata, NBTE – National Board for Technical Education (Nigeria); Sibusiso Moyo and Grace Ngcobo Nontokozo, DUT - Durban University of Technology (South Africa); and José Ramón Gómez, Pili Alonso Suarez and Susana Espilla, Tknika - The Basque Centre of Research and Applied Innovation in VET (Spain). UNESCO-UNEVOC also extends its sincere appreciation to Mariavittoria Garlappi, ETF - European Training Foundation, who contributed her knowledge and expertise.

The concept and different steps of the ELIC were elaborated and tested by the above-mentioned partners at a UNESCO-UNEVOC workshop held in Basque Country, Spain, on 12-14 February 2020. UNESCO-UNEVOC is grateful to TKNIKA for hosting the event.

In addition, UNESCO-UNEVOC would like to thank the following experts for their feedback and contributions: Eva Jambor, IFTE - Initiative for Teaching Entrepreneurship (Austria), Katharine Kiss, Federal Ministry of Education, Science and Research (Austria); Inge Koch-Polagnoli, e.e.si – Centre for Entrepreneurship Education as Innovation in Schools of the Federal Ministry of Education, Science and Research (Austria); and Ivan A. Sandjaja, Global Entrepreneurship Network (Indonesia).

The publication also benefited from peer review by UNESCO staff, namely H  l  ne Guiol, Wouter de Regt and Pooja Gianchandani.

The overarching work was overseen and coordinated by Miki Nozawa and Nickola Browne, UNESCO-UNEVOC.

Introduction




Entrepreneurial learning has never been more important. The growing youth population, rising unemployment in many countries, changes in the labour market and in our economy due to technological developments are just some of the reasons why we must provide future generations with the entrepreneurial skills and mindsets they need to cope with a changing world. Entrepreneurial learning is the basis for the creative, innovative ideas we need to succeed in the 21st century. It is also a way we can foster the education and training of resilient lifelong learners able to respond to social, economic and ecological disruption. The importance of entrepreneurial skills to better equip youth for employment is well reflected in the commitments made by the international community. The Sustainable Development Goal 4 on Education, through one of its 10 targets, explicitly calls for the need to strengthen '*skills for employment, decent jobs and entrepreneurship*'. Furthermore, Sustainable Development Goal 8 to promote 'full and productive employment and decent work for all' emphasizes development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation. Fostering youth employment and entrepreneurship is one of the three thematic priorities under UNESCO's Strategy for technical and vocational education and training (TVET) (2016-2021).

UNESCO-UNEVOC believes that entrepreneurial learning offers a realistic and effective means to develop the transferable skills needed in this changing world, and leaders and practitioners of TVET institutions can play an important role. To help TVET institutions form the entrepreneurial mindset and values that are important for people's lives, economic development and a sustainable society, UNESCO-UNEVOC has developed this practical guide on how to introduce entrepreneurial learning where it is lacking, and how to mainstream it in vocational training. TVET can take place at secondary, post-secondary and tertiary levels. It is integral to lifelong learning and includes work-based learning, continuing formal and informal training and professional development, which may lead to qualifications.

Reorienting a TVET institution towards producing graduates with an entrepreneurial mindset can bring benefits to the institution as well as the

individual, and serve to increase the relevance and status of the institution in its local community. Entrepreneurial learning entails solving real-world problems. While these can, to a certain degree, be simulated in a classroom, the more effective approach is to build a learning ecosystem that involves students, teachers, employers and other social partners. Students can acquire skills for work and life; teachers retain and expand their industry connections; employers can partner with TVET institutions to solve workplace issues and to innovate; and communities can benefit from social enterprises initiated with or by TVET students.

This guide has been designed primarily to support TVET teachers and managers and leaders, but also company trainers, young and adult trainees, curriculum developers and decision makers. It has three parts:

-  An introduction to entrepreneurial learning and the basic concepts.
-  A self-assessment tool for TVET institutions to understand where they stand in terms of integrating entrepreneurial learning.
-  A guide to integrating entrepreneurial learning into TVET institutions using the Entrepreneurial Learning Institution Canvas (ELIC). ELIC is a conceptual tool for strengthening entrepreneurial learning at the institutional level. You can answer some or all of the questions posed in this section and learn from examples of what others are doing. Together your answers will help you to develop or refine an approach to entrepreneurial learning at your TVET institution.

This guide has benefitted from discussions with, and the experiences shared by, experts from selected member institutions of UNESCO's global platform of TVET institutions, the UNEVOC Network, in Austria, Chile, China, India, Italy, Nigeria, Paraguay, South Africa, Spain and Tunisia¹, as well as the European Training Foundation (ETF).

¹ The countries are listed in alphabetical order.

Table of contents

Acknowledgements 4

Introduction 5

A

Understanding the basic concepts 10

- 1 What is entrepreneurship? 11
- 2 What is entrepreneurial learning? 13
- 3 Why is entrepreneurial learning important? 16
- 4 What is an entrepreneurial TVET institution? 19
- 5 What are the key components of an entrepreneurial learning ecosystem? 20

B

Making a self-assessment 22

1. At which stage in entrepreneurial learning is your TVET institution? 23

C

Initiating and strengthening entrepreneurial learning in TVET 26

What are the main components of the Entrepreneurial Learning Institution Canvas (ELIC)? What does ELIC do?
How can ELIC be used? 27

- 1 **Value Proposition** 32
What is the value proposition: the value entrepreneurial learning produces for learners and the TVET institution?
- 2 **Target Group** 36
Who are your target groups for entrepreneurial learning?
- 3 **Entrepreneurial Competencies** 40
Which entrepreneurial competencies should be strengthened in the TVET learner?



4	Curriculum Approach How can entrepreneurial learning be integrated into curricula?	43
5	Key Activities What methods exist to develop entrepreneurial competencies?	50
6	Key Resources What resources are needed?	66
7	Core Team Who is the `driver` of the implementation of entrepreneurial learning at the institution?	68
8	Key Stakeholders Who are the key stakeholders?	72
9	Assessment How can entrepreneurial competencies be tested?	76
10	Channels How are the benefits of entrepreneurial learning communicated?	82
11	Organizational Structures How can the institution support entrepreneurial learning organizationally?	85
12	Key Metrics and Monitoring How can the development of entrepreneurial competencies be monitored? Which indicators can be used to evaluate impact?	90

Conclusion and next steps	92
----------------------------------	----

References	93
-------------------	----

Figures, boxes

FIGURES

FIGURE 1	Six core elements of entrepreneurship	11
FIGURE 2	Overlapping steps in the process of entrepreneurship education	13
FIGURE 3	TRIO model of entrepreneurial education	14
FIGURE 4	The micro and macro views of TVET, with the school at the centre of the entrepreneurial learning ecosystem	20
FIGURE 5	12 ELIC steps to achieve entrepreneurial learning	27
FIGURE 6	Concept development from the starting point to actual project implementation	28
FIGURE 7	Suggested sequencing for the 12 ELIC steps to achieve entrepreneurial learning	29
FIGURE 8	Basic questions institutions can ask themselves as they develop entrepreneurial learning	30
FIGURE 9	The EntreComp concept	41
FIGURE 10	Framework of references for entrepreneurship competencies	42
FIGURE 11	Variants of curricular integration of entrepreneurial learning	45
FIGURE 12	VET applied research developmental framework	71
FIGURE 13	The constructive alignment process	80
FIGURE 14	Criteria for e.e.si-Entrepreneurship Schools	88

BOXES

BOX 1	Entrepreneurial competencies can bring benefits to all spheres of life	15
BOX 2	Paraguay's example: Self-sufficiency skills to lift the disadvantaged out of poverty	18
BOX 3	Canada's example: drivers of an ecosystem of innovation	19
BOX 4	India offers a national perspective and policy framework on value proposition	33
BOX 5	Entrepreneurship training for women and refugees: a combination of interventions and a tailored approach work best	37
BOX 6A	The integration of entrepreneurial learning into curricula: example from Chile	47
BOX 6B	The integration of entrepreneurial learning into curricula: example from China	48
BOX 6C	The integration of entrepreneurial learning into curricula: example from Nigeria	49
BOX 7	The Cometa Learning Process Model: an entrepreneurial learning production school in Italy	53
BOX 8	Promoting an entrepreneurial learning culture with school companies in the classroom: the Ikasenpresa model in Spain	54
BOX 9	The Schumpeter Start-up Academy: an entrepreneurial learning school model in Austria	55
BOX 10	Going online: being entrepreneurial about entrepreneurial learning in India	56
BOX 11	The incubator programme: an example of entrepreneurial learning models in South Africa	57
BOX 12	Types of stakeholders and how to involve them: an example from Fundación Paraguaya	75
BOX 13	A formative assessment pilot project for entrepreneurial learning in Tunisia	79
BOX 14	A transversal examination for the entrepreneurial mindset course: an example of entrepreneurial assessment from Chile	81

Tables, worksheets

TABLES

TABLE 1	Rationale and benefits of developing an entrepreneurial mindset	16
TABLE 2	Stages for transforming a TVET institution into an entrepreneurial learning ecosystem	23
TABLE 3	Didactic and entrepreneurial learning modes	51
TABLE 4	Overview of entrepreneurial learning modules, based on the TRIO-model approach	59
TABLE 5	Different assessment possibilities for entrepreneurial learning	78

WORKSHEETS

WORKSHEET 1A	Why do you want to mainstream entrepreneurial learning?	34
WORKSHEET 1B	Which approach to entrepreneurial learning do you want to mainstream?	35
WORKSHEET 2A	Who is your target for entrepreneurial learning in TVET?	38
WORKSHEET 2B	What do you know about your target group?	39
WORKSHEET 3	Which competencies would be important for your target group?	42
WORKSHEET 4A	Which phases of entrepreneurial development will you address?	44
WORKSHEET 4B	Variations of curricular integration of entrepreneurial learning	45
WORKSHEET 4C	Analyse in which learning areas curricular measures should be taken	46
WORKSHEET 5A	Analyse the practical examples in this chapter on the methods of entrepreneurial learning	52
WORKSHEET 5B	Overview of entrepreneurial learning modules	58
WORKSHEET 6	What resources are available and what is possible?	67
WORKSHEET 7A	Who is the driver of the implementation of entrepreneurial learning in a TVET institution?	69
WORKSHEET 7B	What is the role of entrepreneurship teachers?	70
WORKSHEET 8A	Who are the key stakeholders?	73
WORKSHEET 8B	What is the role of the different key stakeholders to promote entrepreneurial learning?	74
WORKSHEET 9	What kind of assessment does entrepreneurial learning require?	77
WORKSHEET 10A	Prioritize your stakeholder relationships	83
WORKSHEET 10B	Create an ABC list for successful communication with the target group and stakeholders	84
WORKSHEET 11A	Which organizational elements have you integrated, or will you integrate?	86
WORKSHEET 11B	Entrepreneurial learning institution certificate	89
WORKSHEET 12	Which indicators can be used to evaluate the impact of the entrepreneurial learning programme?	91

PART

A

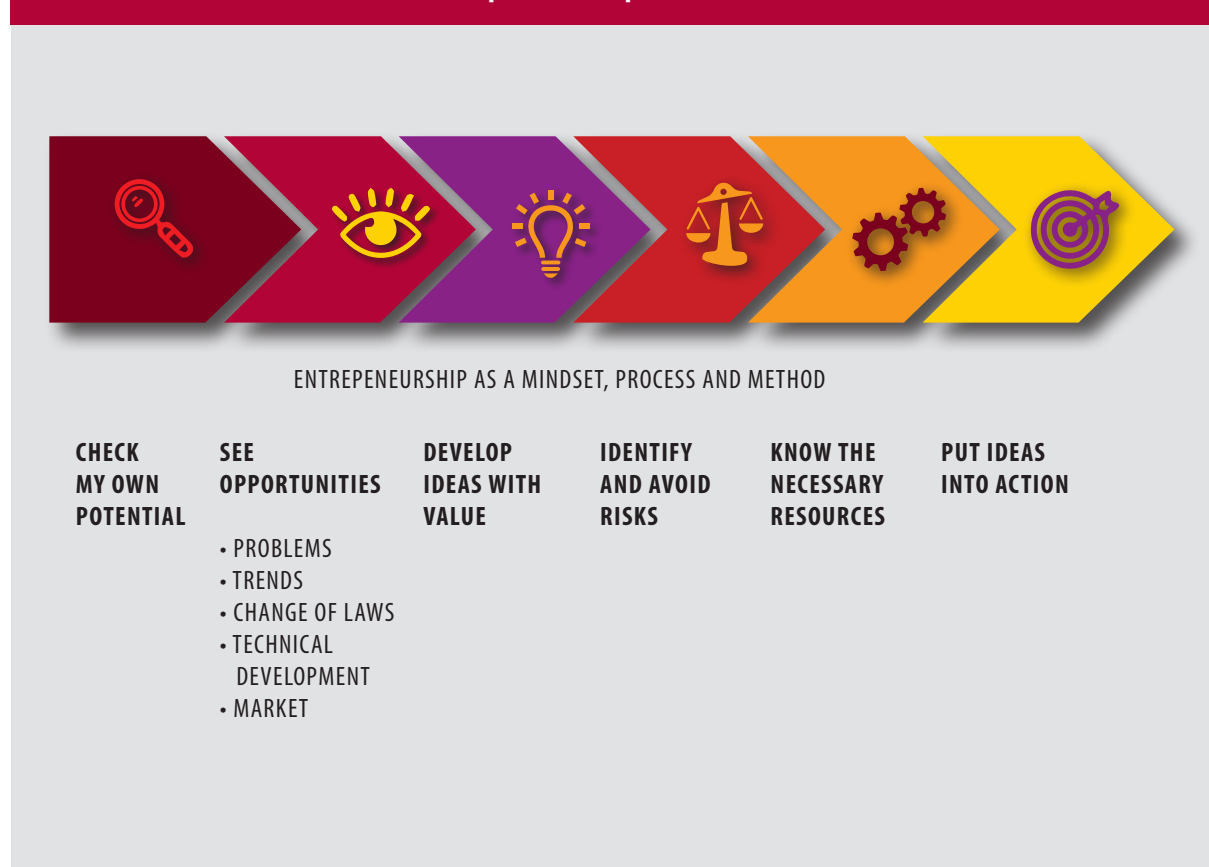
Understanding the basic concepts

1. What is entrepreneurship?

The terms **entrepreneur** and **entrepreneurship** derive from the French word *entreprendre*, (to undertake). The current meaning of the entrepreneur as an independent protagonist was introduced in 1911 by the economist Joseph Schumpeter. According to Schumpeter, entrepreneurs are the key drivers of economic and social dynamics in society because they can independently develop and implement ideas. This innovative power encompasses the creation of new products, production processes, organizational structures or alternative distribution channels. Entrepreneurs play a relevant role in all parts of our society: from business, religion, science and politics to education and sports. Generally speaking, anybody has the potential to become more innovative and self-reliant, especially if they are exposed to entrepreneurial learning (Faltin, 2013).

While the term ‘entrepreneur’ is usually associated with someone who sets up their own business, it has a broader application. Entrepreneurship supports individuals operating in their everyday lives and in the workplace to be aware of the context of their work and be able to seize opportunities (European Commission, 2006, p.4.). The terms ‘intrapreneurs’ (Pinchot, 1985) and ‘co-entrepreneurs’ describe entrepreneurs who are not self-employed but decide to become entrepreneurially active within an organization. ‘Social entrepreneurs’ or ‘changemakers’ (Drayton, 2006) are individuals who combine entrepreneurial and social initiatives to bring about a positive change in society. They implement ideas in areas such as education, environmental protection or the creation of jobs for persons with disabilities (Mycoskie, 2011; Sivers, 2015).

FIGURE 1 Six core elements of entrepreneurship



Source: Adapted from Lindner, 2018

The six core elements of the **entrepreneurship** checklist:

- (1) **Check your own potential:** Everyone should be able to develop their own potential to pursue their wishes, hopes, dreams and talents.
- (2) **See opportunities:** A central part of entrepreneurship is identifying opportunities. This requires an outward looking orientation and the ability to stay attuned to a changing environment. Entrepreneurs see problems and develop solutions to them; identify trends and opportunities arising from changes brought about, for example, by legislation or technical or market developments; or create product or process improvements based on their experience (Kirzner, 1973; Shane and Venkataraman, 2000).
- (3) **Develop ideas with value:** Schumpeter (1911) saw the value in innovative solutions: introducing new products, production methods, markets and organizational forms, or combinations of these, adds value for individuals as well as society, and raises awareness for social and commercial opportunities. The value that is created can be financial, cultural or social (Johannisson and Nilsson, 1989).
- (4) **Identify and avoid risks:** Entrepreneurs are not adventurers. They aim to deal competently with risks (Drucker, 1986).
- (5) **Know the necessary resources:** Entrepreneurial efforts require the mobilization of a wide range of resources, such as know-how, skills and passion, networking, capital, the necessary equipment and facilities (Ries, 2011; Faltin, 2013).
- (6) **Put ideas into action:** An individual's ability to turn ideas into action underpins entrepreneurship. People must also be able to plan and manage projects in order to achieve objectives (European Commission, 2005; 2006, p.4.) while also marshalling 'people and resources to create, develop and implement solutions to problems to meet people's needs' (Timmons et. al., 1977, p.4).

Entrepreneurship combines all these elements into a mindset, a process and a set of principles or method (see Figure 1).

- a) **Entrepreneurship as a mindset.** An entrepreneurial mindset consists of interrelated beliefs and assumptions that inform our decisions and guide our behaviour. Such a mindset can be cultivated and enhanced through entrepreneurial learning (Duckworth et. al., 2007; Dweck, 2007). It is a way of creative thinking that helps a person overcome challenges, be decisive and accept responsibility. It also drives them to improve their skills, learn from mistakes and take continuous action on ideas (Rae, 1999). Developing an entrepreneurial mindset and spirit is something everyone, not just business people, can benefit from.
- b) **Entrepreneurship as a process.** It is a dynamic process, consisting of different phases (Kuratko and Hodgetts, 1998). The first involves identifying possibilities and one's own potential – without regard for the resources an individual currently controls (Stevenson and Jarillo, 1990; Ronstadt, 1985). This is the starting point for developing new ideas that create value for an individual, a company or society. Next comes developing a concept and, finally, putting it into practice.
- c) **Entrepreneurship as a method.** Entrepreneurial method is a way of thinking and acting that is built on a set of guidelines about the mechanisms underlying entrepreneurial action (Neck and Green, 2011; Connor et al, 2018; Sarasvathy and Venkataraman, 2011), such as effecting change or experimenting with new ways of doing things.

2. What is entrepreneurial learning?

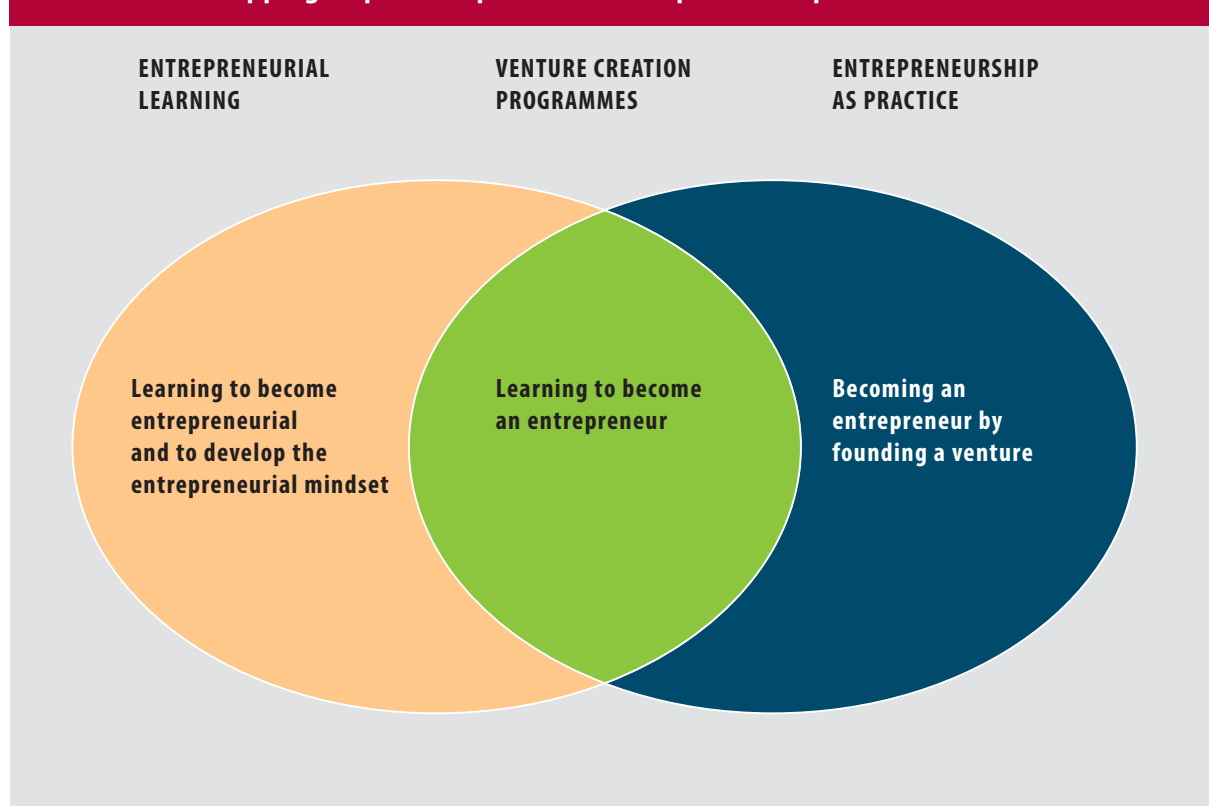
Different definitions can apply in different countries and at different levels and phases of education (Gibb and Nelson, 1996; European Commission, 2011; Guzmán and Liñán, 2005; UNESCO-UNEVOC, 2019a). The term 'entrepreneurship education' can refer to learning to become entrepreneurial (cultivating a mindset), learning to become an entrepreneur to create a venture (acquiring skills and knowledge) and becoming an entrepreneur by founding a venture (entrepreneurship as practice). Figure 2 demonstrates the interrelationships.

Entrepreneurial learning, also called entrepreneurial or entrepreneurship education,² seeks 'to foster self-esteem and confidence by drawing on the individual's talents and creativity, while building the relevant skills and values that will assist learners in expanding their perspectives on schooling and

opportunities beyond. Methodologies are based on the use of personal, behavioural, motivational, attitudinal and career planning activities' (UNESCO/ILO, 2006, p.22). The European Commission Thematic Working Group on Entrepreneurship Education has developed a definition, agreed upon by representatives from the European Training Foundation (ETF), the German Corporation for International Cooperation (GIZ), the International Labour Organization (ILO), and UNESCO and the UNESCO-UNEVOC International Centre for TVET (UNESCO-UNEVOC, 2012, p.8; European Commission, 2014b, p.3) based on this broad understanding:

Entrepreneurship education is about learners developing the skills and mindset to be able to turn creative ideas into entrepreneurial

FIGURE 2 Overlapping steps in the process of entrepreneurship education



² In the United Kingdom and Australia, the term 'enterprise education' is also used (Gibb 1993, 2008; Erkkilä, 2000).

action. This is a key competence for all learners, supporting personal development, active citizenship, social inclusion, and employability. It is relevant across the lifelong learning process, in all disciplines of learning and to all forms of education and training (formal, non-formal and informal) which contribute to an entrepreneurial spirit or behaviour, with or without a commercial objective (European Commission, 2014a; European Commission, EACEA and Eurydice, 2016, p.17).

Entrepreneurial learning helps learners from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities for creative thinking, instils confidence, and can help to stimulate the economy and to ensure social justice by empowering individuals to be more self-reliant.

Entrepreneurial learning should not be confused with general business or economic studies (even though there is an overlap), as its goal is to promote creativity, innovation and an entrepreneurial mindset (European Commission, 2009): a mindset that can develop new ideas and learn how to create value. Entrepreneurship is multidimensional and can be developed in individuals, organizations and as a cultural orientation. The **TRIO Model of Entrepreneurial Education** (see Figure 3), based on a research project (Aff and Lindner, 2005) conducted over several years at a TVET institution, offers an approach for entrepreneurial learning that encompasses both the aspect of entrepreneurial and professional independence. On

three levels, it summarizes the most important elements of a comprehensive entrepreneurial learning programme that can create a culture of entrepreneurial thinking in addition to imparting knowledge and abilities, and applies both to self-employment and to citizenship.

Learning to become an entrepreneur, which is based on the narrower definition of entrepreneurship, focuses on entrepreneurial skills for self-employment and business start-up. Entrepreneurial Learning starts at the lower levels of the education system with a wider view. Learning to become an entrepreneur evolves through the higher levels towards the more concrete aspects of self-employment and business start-up (European Commission, 2002; Guzmán and Liñán, 2005).

The **TRIO Model** (see Figure 3) offers an overview of entrepreneurial education for both entrepreneurial professional self-employment and becoming an entrepreneurial citizen (*citoyen*):

- **Level I: Entrepreneurial skills in a narrower sense** means imparting core competencies (see Box 1 below) that foster entrepreneurial and professional independence and support autonomous decision-making for one's private life, with the aim of equipping learners with the knowledge, abilities and skills to be able to succeed in an ever-changing business world and, if necessary or desirable, to found their own company.

FIGURE 3 TRIO Model of Entrepreneurial Education



LEVEL I
Core entrepreneurial learning, entrepreneurial skills in a narrower sense, develop own innovative ideas - with value - and implement them in a creative and structured way.



LEVEL II
Encouragement of a culture of entrepreneurial thinking and acting among young adults.



LEVEL III
Encouragement of a culture of maturity, autonomy, personal responsibility and solidarity (value basis) for a dynamic civil society of citizens ("citoyens").

Source: Aff & Lindner, 2005, p. 86

- **Level II: Promotion of a culture of entrepreneurial thinking and acting** means creating an environment in which people are encouraged and expected to take initiative and challenge the status quo. Soft skills like creativity, empathy, the willingness to take risks, being goal oriented and the ability to work in a team are imparted in all subjects taught in an entrepreneurial TVET institution.
- **Level III: Promotion of a culture of autonomy, personal responsibility and solidarity:** entrepreneurial learning does not mean the strengthening of egoism; it is about people who are open to new ideas and initiatives and who are socially responsible.

BOX 1 Entrepreneurial competencies can bring benefit to all spheres of life

As one participant at UNESCO-UNEVOC's 2019 Virtual Conference on Innovation in TVET observed: 'a lesson to me in curriculum development [is] do not take out the golden knowledge of the past' (UNESCO-UNEVOC, 2019d, p.5). Many fundamental skills remain constant; it is technology, business conditions and other external factors that change, increasingly requiring an entrepreneurial mindset to create new opportunities and respond to challenges. That is why the competencies and learning outcomes in frameworks like the European Commission's EntreComp (see Figure 9) framework, are so important. They embrace attributes, skills and knowledge such as self-awareness and self-efficacy, planning and perseverance, coping with uncertainty, financial literacy and ethical thinking.

Entrepreneurial competencies can be applied by citizens to all spheres of life from nurturing their personal development to actively participating in society, to (re)entering the job market as an employee or as a self-employed person, and to starting up ventures (cultural, social or commercial).

How these competencies are combined with basic education and technical skills will depend on the context for the learner. For example, a future pharmacy assistant will likely spend less time on store administration (for example, stocktaking and ordering) and much more time on digital tasks, such as updating the business website, developing an online shopping app and analysing monthly sales data (Foundation for Young Australians, 2017, p.10). There is, however, a role for entrepreneurial learning in all subjects with a goal of creating new value, not in the narrow sense of financial or individual profit but also social, environmental, aesthetic and intellectual value (Draycott and Rae, 2011).

The Foundation for Young Australians (2015a) argues that young people need to learn entrepreneurial (or what they call enterprise) skills to prepare them for the economy of the future, so they can become job creators, not just job seekers, and navigate more complex careers. They have investigated how the world of work is changing, predicting that technology looks set to automate around 40% of jobs in Australia, including 70% of the entry-level jobs young people currently move into. Furthermore, with the average young person expected to have 17 different jobs across five different industries throughout their lifetime, young people need to be prepared for increasingly flexible work and 'portfolios' of work activities.

What are these enterprise skills and attributes? They are generic skills that are transferrable across different jobs and have been found to be as powerful a predictor of long-term job success as technical knowledge. The terms used to describe these skills vary across different contexts: sometimes called generic, soft or 21st century skills. However, the meaning is clear – a set of skills and characteristics that enable young people to confront the challenges of change and navigate a complex future:

Confidence and agency	Digital literacy	Financial literacy
Creativity and innovation	Teamwork	Project management
Problem solving	Presentation skills	Global enthusiasm
Communication skills	Critical thinking	

Source: The Foundation for Young Australians (2015b)

To support their call for a national enterprise skills and careers education strategy, the Foundation has categorized these enterprise skills and mapped them to the Australian Curriculum General Capabilities and Learning Areas (see <https://www.fya.org.au/wp-content/uploads/2020/05/Enterprise-Skills-Curriculum-Mapping.pdf>).

3. Why is entrepreneurial learning important?

The 21st century is demanding that all individuals develop the capacity to be creative and innovative at work and in their communities. The world of work is undergoing major transformations caused by technological change, shifts in the global economy, new business models, demographics and other factors, all of which are likely to intensify in the future. A growing number of workers have non-standard work arrangements, including part-time work and self-employment. This is a trend that has particularly affected young people, who are the most active in the gig-economy of temporary contracts and odd jobs (OECD, 2020).

The COVID-19 pandemic is a powerful illustration of how such change can affect living, working and learning conditions, as well as well-being. It has revealed the fast-changing boundaries of work for both employees and the self-employed. At the same time, extreme poverty persists in many regions of the world, and rising inequality along with environmental degradation continue to challenge the way we live and prosper. Organizations like

UNESCO, the European Commission, the OECD (2018) and the ILO (2019) recognize the importance of enabling entrepreneurship as a way to drive growth, innovation and job creation, especially among small and medium-size enterprises. Preparing people to be able to flourish in sustainable enterprises is therefore a priority for the whole education system and especially TVET, which has a specific remit to equip people to enter the workforce.

Table 1 presents the rationale for pursuing entrepreneurial learning and developing an entrepreneurial mindset in three clusters: **personal development** for building resilience and motivation; **economic development** through creating one’s own job, reorienting corporate culture towards entrepreneurship or triggering far-reaching innovations in the economy; and **social development**, whereby creators and innovators help citizens to prepare for, and cope with, the uncertainties of the future in all areas of life.

TABLE 1 Rationale and benefits of developing an entrepreneurial mindset		
Reasons	The big idea behind it	Sources
a) Personal development		
Experiencing self-efficacy Living one’s dreams Increasing motivation	Everyone should have the opportunity to develop their own potential: to pursue their hopes, dreams and talents. Being creative and overcoming big and small challenges alike are a source of joy for learners. By participating in an entrepreneurship programme, learners are encouraged to discover their own potential – what they really, really want – and to strengthen a growth mindset. People who have a growth mindset see mistakes as an opportunity to try something new and are convinced that this will help them to develop their abilities.	Amabile & Kramer, 2011 Bandura, 1997 Bergmann, 2019 Duckworth et. Al., 2007 Dweck, 2007 Goss, 2005 Seligman, 2006
Fostering young talent	People do not develop an entrepreneurial mindset automatically. Therefore, entrepreneurship programmes are needed across the curriculum. Entrepreneurs and changemakers are needed in all areas of society – in the arts and sports, as well as in business and public service.	EU-Commission, EACEA & Eurydice, 2016

b) Economic development

Developing perspectives for the future	Entrepreneurship is a major engine for economic growth and job creation. With rising employment and persistently high rates of youth unemployment, entrepreneurship programmes are a means to address this problem. They can give learners tools to create their own jobs and career paths, or to bring an entrepreneurial mindset to their role as an employee, thus improving job security. TVET institutions offering these programmes can improve learners' motivation and their willingness to stay engaged in all their subjects. This can reduce dropout rates.	Andersen et. A., 2017 Badawi, 2013 Khan & Jakel, 2017 Kuratko, 2005 Lindner, 1997 Nimeshi, 2017 Volkman <i>et. al.</i> , 2009 Wong <i>et. al.</i> , 2005
Self-entrepreneurs are becoming leading figures for TVET and are creating a new corporate culture	The ideal-typical role model in the 19th century was the respectable craftsperson, in the 20th century the professional or technical expert of the industrial society, in the 21st century the leading figure is the self-entrepreneur, someone who is a creative thinker and an innovator, who is prepared to take risks, learn from their mistakes and make bold decisions.	Bridges, 1995 Gonon, 2008
Responding to the dynamics of society and the economy	Globalization and technological progress have led to the world changing at an extraordinary pace, affecting the way we live, work and learn. These dynamics in society and the economy call for greater nurturing of entrepreneurial thinking in the next generation. Their entrepreneurship and innovation will provide new impetus to social and human development, economic growth, and job creation. Entrepreneurial learning programmes can prepare learners to identify and address the challenges and opportunities they confront by solving problems and creating value in both monetary and social terms.	Kourilsky & Walstad, 2007 Schumpeter, 1911 UNESCO-APEID, 2019 UNESCO-UNEVOC, 2019a United Nations, 2017
The growth of the creative economy as an economic factor	The creative economy is projected to reach around 10% of global GDP, with the cultural and creative industries providing nearly 30 million jobs worldwide in recent years and employing more people aged 15–29 than any other sector. Nearly half of the people working in these industries being women. Preparing young people to make the best of their talent and creativity will give them greater opportunities to flourish in these industries or their other chosen pathways through life.	UNESCO, 2017a UNESCO, 2017b

c) Social development

Learning how to participate in society	All kinds of shapers of the future are in school today, and the way they are educated will determine how they participate in society and the economy. Entrepreneurial learning offers a socio-educational perspective. It is an approach that can open up income-generation and other opportunities for disadvantaged groups in society. An understanding of the contextual and personal challenges of the target group is important for the development of an entrepreneurship programme. Entrepreneurship is also a way of gaining self-confidence and learning how to participate in both society and the economy.	Baxter et. Al., 2014 Manzanera-Roman & Valera, 2019 Nafukho & Muyia, 2010
Preparing learners for an uncertain future	We live in an age of unprecedented transformation. Today's learners face a future full of complex social, technological and environmental issues, such as the automation of routine tasks and more unpredictable weather. Entrepreneurship programmes teach learners crucial life skills that will help them to navigate uncertainty with agility and to adapt to change. They foster creativity, fuel curiosity and help people manage their relationships by developing hard and soft skills including problem-solving, teamwork and learning to accept failure.	Fadel, Trilling & Bialik, 2015 Goodwin, 2017 Leopold, Ratcheva, & Zahidi, 2016
Making the world a better place	People can change society with small as well as large initiatives. Social entrepreneurs and changemakers seek to solve problems, meet the needs of their community and the planet, and ease recurring problems with the help of their products and services. They are hard-wired to make an impact. By participating in entrepreneurship programmes, learners do not just become ready to create their own futures — they become ready to change the community and the world.	Drayton, 2006 Yunus, 2010 United Nations, 2015 Volkman et. al., 2009

Source: Lackéus, 2015; Lindner, 2018

BOX 2 Paraguay's example: Self-sufficiency skills to lift the disadvantaged out of poverty

In Latin America, secondary school drop-out rates are high, partly because many young people feel that the type of education they receive at school does not offer any guarantee of future employment (UNESCO, 2015b). But those who drop out lack the skills required to find stable employment and are often unable to enter into further training programmes (World Bank, 2016). School dropouts can find themselves trapped in unstable informal employment or, worse, are unable to find any work at all. One-fifth of young people aged 15–24 in Latin America are neither in school nor working. These youth tend to be from the poorest and most disadvantaged segments of the population (World Bank, 2016).

Recognizing the need for practical training that gives young people the skills to find employment or become self-employed, Fundación Paraguaya established the Self-Sufficient School model (Baird and Harrelson, 2008), which provides low-income youth with opportunities to 'learn by doing, while earning and saving'. Under this model, the schools offer the officially recognized secondary school curriculum as well as training in practical skills such as growing vegetables, raising livestock and crafting furniture. The Self-Sufficient Schools go beyond the type of training provided by conventional vocational training programmes to focus more on practical learning and soft skills. Students learn the skills, knowledge and attitudes required to become entrepreneurs and they also apply what they learn in a real-life context by producing marketable goods and services.

Under the Self-Sufficient Schools model, Fundación Paraguaya not only educates rural and low-income young people but transforms them into entrepreneurs who can potentially lift themselves and their families out of poverty.

Source: Fundación Paraguaya, Paraguay. UNESCO-UNEVOC, 2017.

Fundación Paraguaya is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3040>

4. What is an entrepreneurial TVET institution?

The transition to a green economy, the implementation of digital technologies and the emergence of new ways of working (for example, the gig economy) are not only changing the profile of jobs and career paths but also creating new possibilities for generating solutions for social and economic problems in the form of innovation. This is driving TVET systems to improve their capacity to identify the future demand of skills (e.g. soft and specific technical skills – including digital, greening and entrepreneurial skills) and to expand access to these skills. TVET systems are also having to find ways to incorporate new activities (e.g. the development of applied research, business incubators, and intellectual property activities)

(UNESCO-UNEVOC, 2019d). Thus, a TVET institution striving to prepare students to be entrepreneurial in the 21st century needs a new vision of its mission and flexible business models. The first step is seeing students, teachers and trainers, as well as external industry and social enterprises as partners in learning, knowledge creation and dissemination. Such partnerships can drive innovation in teaching and learning, ways of working, new products and services, and social interventions. They can also lead to new uses for TVET infrastructure, its expertise and community connections (Beddie and Simon, 2017). Imagine your institution converting classrooms into innovation hubs and facilitating enterprise incubators!

BOX 3 Canada's example: drivers of an ecosystem of innovation

In Canada, colleges and institutes have long been vital drivers of the country's innovation ecosystem and are sought-after partners for small and medium-sized enterprises, entrepreneurs, and community stakeholders looking to find innovative solutions to their everyday challenges. Across the country, they help business owners produce tangible results in industries as varied as manufacturing, digital technologies, agri-food, health sciences, and natural resources. In fact, in 2017-2018, research activity at colleges and institutes led to more than 4,400 new processes, products, prototypes, and services, approximately 87% of which were achieved in less than one year.

College and institute applied research not only helps Canadian small businesses be more productive, competitive, and innovative; it also provides students with opportunities for hands-on work-integrated learning. In 2017-2018, 53,000 students participated in applied research projects at college and institute laboratories and research centres and gained valuable hands-on experiences contributing to local economic growth and sustainability. These experiences give graduating students an edge when finding employment, launching their own entrepreneurial ideas, and leading the next generation of innovators.

In Canada, colleges and institutes have a unique presence particularly in rural, northern, and remote regions, with over 95% of all Canadians and 86% of Indigenous people living within 50 km of a college or institute location. They are also the primary point-of-access to post-secondary education for First Nations, Inuit and Métis learners, and provide tailored learning opportunities to help women, racialized groups, and newcomers to Canada reach their full potential. Through an inclusive approach to learning, colleges and institutes ensure that Canada's innovation ecosystem benefits from diverse perspectives to drive sustainable growth.

With deep links to their communities, colleges and institutes support local and community entrepreneurs with resources to innovate, entrepreneurship centres and incubator spaces, and expertise to develop and implement solutions for the greatest collective social impact.

Source: *Colleges and Institutes of Canada (CICan), Canada.*

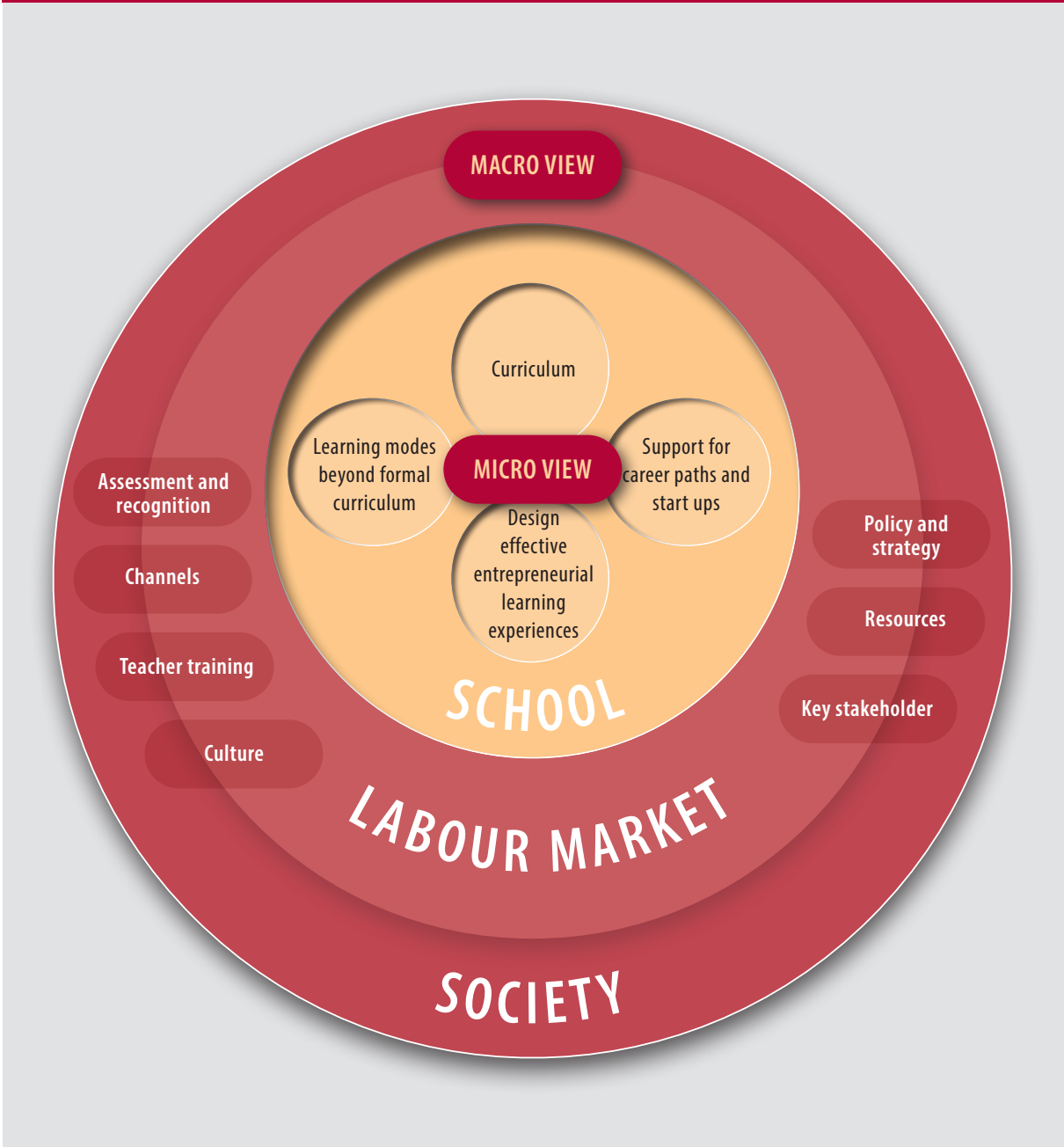
CICan is a member of the UNEVOC Network. More information about this national body can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3038>

5. What are the key components of an entrepreneurial learning ecosystem?

Entrepreneurial learning is an attitude to learning and teaching that requires a change in educational culture. Entrepreneurial learning is best developed and more effective when a number of factors

are taken into consideration. These factors are interlinked, creating the entrepreneurial learning ecosystem in TVET.

FIGURE 4 The micro and macro views of TVET, with the school at the centre of the entrepreneurial learning ecosystem



Source: Prepared based on Figure 2 in UNESCO-UNEVOC, 2019a.

UNESCO-UNEVOC coordinated a series of consultations on entrepreneurial learning in TVET with UNEVOC Centres and other experts from around the world. These consultations identified key factors that support the mainstreaming of entrepreneurial learning within the TVET ecosystem (UNESCO-UNEVOC, 2019a, p.8.). The ecosystem model for TVET shown in Figure 4 identifies the elements that support and drive quality implementation of entrepreneurial learning. At the macro level, policy actors impact the ability to create a clear progression of entrepreneurial competency development from primary through to TVET and other tertiary education. Institutional actors such as education leaders, teachers and trainers can influence the governance and implementation of policy and curriculum frameworks. At the micro level, each institution and its teachers must design an effective and specific entrepreneurial learning experience. You can use these views of the ecosystem to guide the self-assessment you will be undertaking in the next section (Part B). The third section (Part C) of this guide takes you through 12 steps that will help you to create an entrepreneurial ecosystem in your TVET institution.

The **Micro View**. DOMAIN: What you do!

- (1) **Design effective entrepreneurial learning experiences:** First, have clear objectives: why do you want to support entrepreneurial learning? What outcomes should be achieved for the target group? Who should be the entrepreneurship educator?
- (2) **Curriculum:** Which key activities and learning approach will you take? What kind of courses and concentrations should be implemented? Where should entrepreneurship 'live' in your institution?
- (3) **Learning modes beyond formal curriculum:** Co-curricular activities, entrepreneurship clubs, festivals.
- (4) **Support for career paths and start-ups:** Mentorships and scholarships.

The **Macro View**. DIMENSIONS: What you have!

- (1) **Policy and strategy:** A proactive role of local and national education authorities could lead them to support entrepreneurial learning in the following ways: mapping the current status of entrepreneurial learning; identifying country-specific entrepreneurship opportunities and challenges; and developing and supporting some entrepreneurial learning actions, e.g. entrepreneurial teacher training and festivals, managing the interaction of key stakeholders, setting up monitoring and evaluation routines.
- (2) **Resources:** Entrepreneurial resources include people and time for entrepreneurial learning, and a pedagogical approach that fits the region. A central requirement is that learners have access to their community and social or economic partners so that they can try their ideas out.
- (3) **Stakeholders:** Who 'does' entrepreneurship and who can support the learners to develop an entrepreneurial mindset?
- (4) **Culture:** Norms, values and traditions that enhance (or deter) entrepreneurship
- (5) **Teacher training:** How is entrepreneurial learning included in teacher training (initial teacher education and in-service training for teachers) and what possibilities exist for cooperation with TVET institutions?
- (6) **Channels:** How is entrepreneurship communicated and connected across the TVET institution and networks?
- (7) **Assessment and recognition:** How can an assessment culture be introduced to support the active learning of entrepreneurial competencies? How are practical entrepreneurial skills recognized in relation to academic knowledge?

PART

B

Make a self-assessment

1. Self-assessment: at which stage in entrepreneurial learning is your TVET institution?

The progression model (Table 2) shows that the implementation of entrepreneurial learning consists of several steps. An entrepreneurial TVET institution is one that incorporates entrepreneurial learning as part of a coherent programme, not as a separate extracurricular offer. It comprises outcome-oriented learning activities in many study areas and permeates the school culture. In an entrepreneurial TVET institution, measures to promote entrepreneurial and sustainable thinking, strengthening self-efficacy, personal development

and the education of responsible citizens are integral parts of teaching and everyday school life.

Institutions can take an incremental approach to developing an entrepreneurial culture. Table 2 shows how to progress from small beginnings to an integrated entrepreneurial learning ecosystem. In the development of entrepreneurial learning, consider at what stage – from rudimentary beginning to a fully integrated system - your institution is situated. What is missing? In which areas are you stronger?

TABLE 2 Stages for transforming a TVET institution into an entrepreneurial learning ecosystem

	Rudimentary stage, mainly based on individual initiative	Introduction of an entrepreneurial ecosystem: concept development	Concept implementation and consolidation of the approach and development of practice	Entrepreneurial learning well-integrated into the institution and measured for impact
Entrepreneurial Learning Plan	<ul style="list-style-type: none"> • No formal concept available. • Entrepreneurial learning covered – if at all – by initiatives of individual teachers. • First projects on entrepreneurial learning. • No or only rudimentary platforms for dialogue with the other teachers and relevant stakeholders. 	<ul style="list-style-type: none"> • Developing and promulgating a concept, by identifying and agreeing on the objectives for entrepreneurial learning and the competencies, roles and responsibilities of core team. • Identify stakeholders and establishing mechanisms for cooperation. • The value proposition (and the intended outcomes) are being defined: this may involve coordinating competing agendas within the institution. • Mapping and analysing entrepreneurial learning to identify examples of good practice and exchanging these with other schools. • Collating effective learning methods and materials. • Raising awareness among teachers across the ecosystem. 	<ul style="list-style-type: none"> • Specification of learning outcomes, objectives, indicators, and targets. Development of methods for assessing learning outcomes and, where suitable, of appropriate qualifications. • Embedding regular cooperation mechanisms at different levels of the system, with the relative roles and responsibilities of the various actors clearly defined and accepted. • Development of funding streams to support entrepreneurial learning. • The available teaching materials, dissemination channels and the broad application of the effective teaching methods are developed. • Development of a research purpose 	<ul style="list-style-type: none"> • On-going monitoring and regular evaluation of entrepreneurship programmes in terms of the quality of activity and learning outcomes. • Implementation support mechanisms are part of everyday teacher and school development. • Continuous application and refinement of effective teaching methods. • Robust funding mechanisms established. • Important partner of the entrepreneurship and innovation ecosystem

TABLE 2 Stages for transforming a TVET institution into an entrepreneurial learning ecosystem

	Rudimentary stage, mainly based on individual initiative	Introduction of an entrepreneurial ecosystem: concept development	Concept implementation and consolidation of the approach and development of practice	Entrepreneurial learning well-integrated into the institution and measured for impact
Learning opportunities	<ul style="list-style-type: none"> • Offered to some learner groups. • Creativity and innovation encouraged within various subjects, arts, design, crafts, and others, leading to knowledge and skills to act on ideas and enhance initiative. 	<ul style="list-style-type: none"> • Offered and expected of all learners. • Shared responsibility for entrepreneurial learning projects introduced into certain classes. • Learning projects reflect reality: hands-on experience; training in the innovation process. • Skills and attributes developed include: creativity, flexibility, positive attitude, initiative, responsibility, problem solving. 	<ul style="list-style-type: none"> • Entrepreneurial learning incorporated into the curriculum of all learners. This includes knowledge about the management of small firms. • Learners accept a higher responsibility for their own learning, teachers assist and monitor. • Training in how to start one's own business and manage it. • Practice in running a firm or a project with a connection to the world of work or society, for example a new environmental scheme in the neighbourhood. 	<ul style="list-style-type: none"> • Entrepreneurial learning obligatory for all learners – who have various options to choose from. • Learners responsible for devising projects with teachers as consultants. • Leadership training – training in innovation and the evaluation of ideas – cooperation – division of labour. Students run a real firm or an operation as a part of the course. • Cooperation with outside establishments to work on joint projects or in-firm learning.
Key resources	<ul style="list-style-type: none"> • Ad hoc access to some materials for creative work and tools that help to turn ideas into innovations within certain subjects. 	<ul style="list-style-type: none"> • The school is equipped with a variety of tools and materials to support learners working on a variety of projects of idea realization. • Safe environment in which entrepreneurial learning can take place. 	<ul style="list-style-type: none"> • Access to various tools and materials to fulfill a range of idea realizations within the institution, implemented in the school timetable and as an extra-curricular activity or in a workplace. 	<ul style="list-style-type: none"> • Available access to various tools and materials to fulfill different needs of idea realization – within the school location and in the firms of need. • Access to needed expertise outside school on a regular basis. For example, the project might involve solving a problem suggested by a local employer.

TABLE 2 Stages for transforming a TVET institution into an entrepreneurial learning ecosystem

	Rudimentary stage, mainly based on individual initiative	Introduction of an entrepreneurial ecosystem: concept development	Concept implementation and consolidation of the approach and development of practice	Entrepreneurial learning well-integrated into the institution and measured for impact
Teacher expertise	<ul style="list-style-type: none"> • Has an interest in entrepreneurial learning and enthusiasm for individual entrepreneurial learning projects. • Supports student ideas, encourages creativity and innovation. 	<ul style="list-style-type: none"> • Has received training and foundational knowledge of entrepreneurial learning. • Gives learners autonomy within certain boundaries. Respects the learners' expertise. • Organizes work-related projects and hands-on experience for students. 	<ul style="list-style-type: none"> • Updates his/her initial training in entrepreneurial learning regularly, in contact with the industry and the startup ecosystem. • Gives students responsibility for planning and inventing a business project and running it (within the TVET institution). • Encourages students to form connections beyond the school and helps them to establish these. • Monitors progress formalise an entrepreneurial assessment. 	<ul style="list-style-type: none"> • Teacher organizes and takes part in entrepreneurial learning dissemination in his/her own school. • Teacher trains, organizes, and moves responsibility gradually over to learners. Teacher acts as assistant and consultant. • Teacher expands the entrepreneurial learning ecosystem across the school and its network. • Teacher works with students on an applied research project for an external partner.
Leadership and school cultures	<ul style="list-style-type: none"> • Leaders are positive about entrepreneurship and encourage an innovation emphasis in some subjects. 	<ul style="list-style-type: none"> • Managers expect and support projects that reflect reality and include practical learning and training in the innovation process. • Evaluation procedures in schools include the process of learning and creativity. • Leaders encourage the concept of entrepreneurial learning across the institution. 	<ul style="list-style-type: none"> • The leaders support the learners' ownership of projects and emphasize the value of entrepreneurial learning. • Evaluation procedures in the school include process and creativity, and entrepreneurial learning receives credits. • There is a core team that liaises with school leaders and external stakeholders. 	<ul style="list-style-type: none"> • School culture respects learners' autonomy and creative work, which is supported and celebrated by school leaders. • Evaluation procedures value process and creativity.

Source: The table was prepared by combining and adapting the following sources: European Commission, 2012, p. 24ff.; Rogan and Grayson, 2003; and Jónsdóttir, 2005

PART

C

Initiating and strengthening entrepreneurial learning in TVET

Entrepreneurial Learning Institution Canvas (ELIC)

Key questions, checklists and exercises

Key components of the Entrepreneurial Learning Institution Canvas (ELIC)

Introducing entrepreneurial learning in a TVET institution and anchoring it permanently is a challenge for all involved. The 12 sets of questions presented in this part will help you to get an idea of entrepreneurial learning in your institution. As you fill in your Entrepreneurial Learning Institution Canvas (ELIC) you will be creating a concept for your own entrepreneurial TVET institution.

After an introduction to ELIC, this part poses questions in 12 sections, with each following the same structure to guide you through the work of embedding entrepreneurial learning:

- Questions for you to consider
- Potential challenges to carrying out the step discussed
- A simple activity to reinforce your understanding of the step
- Guidance for the notes required to fill in each box on the ELIC canvas

To strengthen entrepreneurial learning at a TVET institution, it is important to clarify your starting point. In many countries or regions, strategies

or action plans for entrepreneurship education already exist. These provide an important impulse for strengthening entrepreneurial learning (European Commission, 2012), so it is important to know how your canvas ties in with any national strategy your country might have. As these will vary, the ELIC tool is designed to be used flexibly.

Once the impulse is there, you need a concept for your own TVET institution. A concept is comparable to a plan for a house: it is prepared before it is built and there will likely be several rounds of development, from first sketches to a finished plan. Having a clear concept also provides the basis for implementation and involving further partners. ELIC helps you to decide what the essentials of your entrepreneurial learning concept are and to present your ideas clearly so you can advance them. The tool was developed from the e.e.si Entrepreneurship School concept (Lindner, 2019) and the Business Model Canvas (Osterwalder and Pigneur, 2010) during a UNESCO-UNEVOC workshop with a team of entrepreneurial learning experts from Austria, Chile, China, India, Italy, Nigeria, Paraguay, Spain, South Africa and Tunisia, as well as the European Training Foundation (see Figure 5,7 and 8).

FIGURE 5 12 ELIC steps to achieve entrepreneurial learning



What does ELIC do?

ELIC will help you to shape your entrepreneurial TVET institution. It is based on the following three principles:

A focus on value

ELIC helps you to focus on what really drives entrepreneurial learning by giving you the tools to listen to what your target group (learners, industry partners, local community, for example) wants and exploring the value to be achieved. It also shows which entrepreneurial learning activities are important at a vocational training institution and how these can be embedded in an entrepreneurial learning ecosystem. By using this guide, you can sharpen your concept, bringing the essentials into focus and revealing connections with other learning activities and your stakeholders.

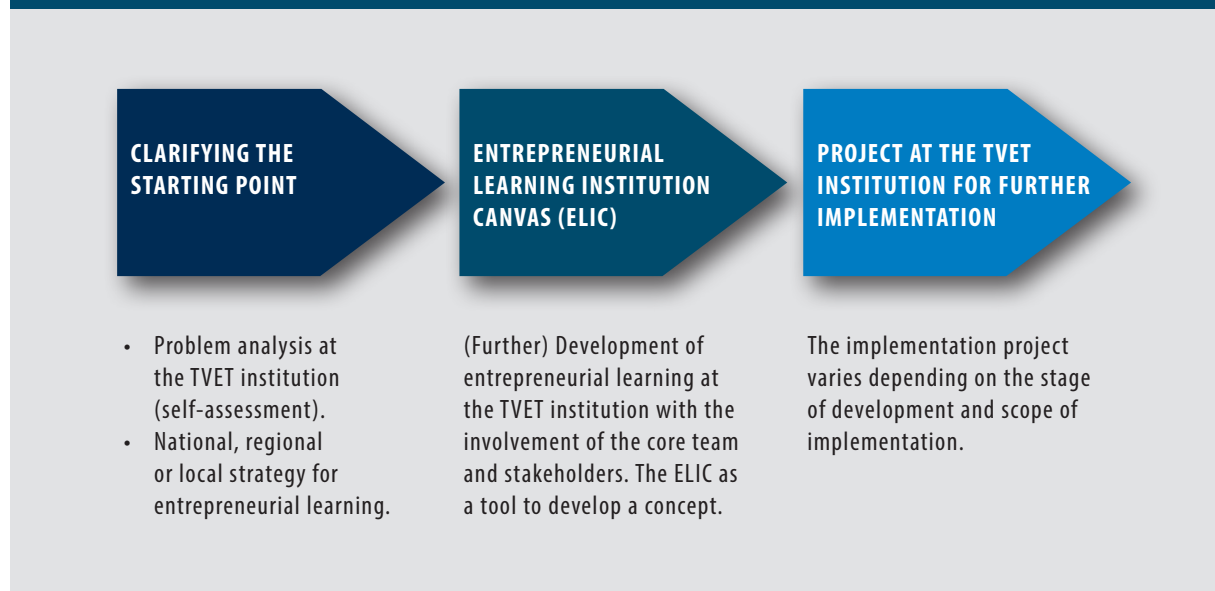
Flexibility

This tool encourages you to think about your school's concept in a structured way, while offering enough flexibility for you to tailor your approach to suit your institution and learners. ELIC makes it easier to think about how you can embrace new approaches and different models.

Transparency and traceability

This instrument provides a good framework for developing a concept for entrepreneurial learning in your own TVET institutions. The tool is designed to be easy to use and to help you identify strengths and weaknesses in your approach to entrepreneurial learning, as well as to demonstrate how your framework has been put together.

FIGURE 6 Concept development from the starting point to actual project implementation



How can ELIC be used?

Preparation

- The status quo of entrepreneurial learning has been determined (see Part B).
- Draw the ELIC on a flipchart and prepare sticky notes. It is a good idea to use sticky notes so you can add notes for each area on the poster and move them around as your concept planning develops.

Work steps

The ELIC consists of 12 elements or steps. At the beginning, you have to clarify the objectives you want to achieve, i.e. the value you want to create for the school and the target group through entrepreneurial learning. Typically, the elements are worked sequentially from 1 to 12 (see Figure 7). The sequence in Part C follows these 12 steps. As you move through this part and undertake the activities,

fill in the canvas of your school's entrepreneurial learning approach. Each section in Part C follows a similar structure with questions, challenges and activities, and sometimes examples of existing practice are presented to guide you. Some of the exercises may require a single brainstorming session; others will take longer to complete.

For each section, sticky notes are stuck to the corresponding element, thus creating a visualization of the concept.

Follow-up

The process is transparent, i.e. the concept should be discussed and further developed with the target group and stakeholders before a final concept is available, which is then tested and implemented in a project.



Entrepreneurial Learning Institution Canvas (ELIC)

FIGURE 8 Basic questions institutions can ask themselves as they develop entrepreneurial learning



Size of the canvas boxes can be adjusted based on requirements

Value Proposition

The value proposition: determining the value that entrepreneurial learning produces for learners and the TVET institution

Why do you want to mainstream entrepreneurial learning? Your value proposition is the core of the ELIC. Collate here all the points that characterize the benefits of entrepreneurial learning for your TVET institution.

The following questions and exercise will help you to identify your value proposition and find a clear, compelling way to articulate it.

Questions for you to consider

- Is there a national, regional or local strategy for entrepreneurial learning?
- What value does this strategy pursue?
- What value does entrepreneurial learning produce for your learners?
- What value does entrepreneurial learning produce for your institution?
- Which problem will be solved, e.g. a social problem in the community, underemployment?
- What benefit/added value does your TVET institution offer your target group?
- Why should partners of the school support this?

Potential challenges to carrying out this step

- Articulating the value proposition is not easy. Find out what other TVET institutions are doing, consult your stakeholders, especially learners and graduates.

A simple activity to reinforce your understanding of the step

- Worksheet 1A: Why do you want to mainstream entrepreneurial learning?
- Worksheet 1B: Which approaches to entrepreneurial learning will your TVET institution use?

Notes for this ELIC step

- Find a clear, compelling message: place your sticky notes in the ELIC box for Step 1 (Value Proposition).

BOX 4 India offers a national perspective and policy framework on value proposition

In India, entrepreneurial learning has gained momentum across formal education and TVET institutions. Entrepreneurship across TVET is promoted by the National Skill Development Corporation (NSDC) under the aegis of the Ministry of Skill Development and Entrepreneurship. NSDC aims to promote skills development by catalysing the creation of large, quality and for-profit vocational institutions. The organization provides funding to build scalable and profitable vocational training initiatives, and develops appropriate models to enhance, support and coordinate private sector initiatives.

- *Supply side:* there is a shift of mindset among younger people from being job seekers to job creators. They know an entrepreneurial mindset is essential for getting ready for the “world of work”. Entrepreneurial learning is no longer confined to a narrow focus on business creation, instead it provides key competencies for life and work, which learners can develop and practice through the TVET curriculum. This type of learning is becoming globally acknowledged.
- *Demand side:* due to macro-economic conditions, job creation is limited. What replaces it is the opportunity within the value chain to go into self-employment/entrepreneurship. Therefore, India’s youth need to be trained for entrepreneurial skills. This is also required to create sustainable growth for the country.

Target Groups: NSDC’s focus is mostly on blue-collar workers and youth who are primarily outside the main education system, with a special focus on women. Roughly 25 per cent of those who enter vocational training in India through centrally sponsored welfare programmes opt for self-employment/entrepreneurship.

The Ministry of Skill Development and Entrepreneurship (2015) in its Skill Development and Entrepreneurship Policy outlines its role as an ecosystem builder, recognizing that such an entrepreneurial ecosystem is needed to unlock human potential. This policy framework proposes a nine-part entrepreneurship strategy:

- Educate and equip potential and early stage entrepreneurs across India
- Connect entrepreneurs to peers, mentors and incubators
- Support entrepreneurs through Entrepreneurship Hubs (E-Hubs)
- Catalyse a culture shift to encourage entrepreneurship
- Encourage entrepreneurship among under-represented groups
- Promote entrepreneurship among women
- Improve ease of doing business
- Improve access to finance
- Foster social entrepreneurship and grassroots innovations

Source: National Skill Development Corporation (NSDC), India.

NSDC is a member of the UNEVOC Network. More information about this national body can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3080>

WORKSHEET 1A:

Why do you want to mainstream entrepreneurial learning?

Convene a group of the stakeholders you have identified (management staff, teachers, students, graduates, community and industry partners) for a session to further consider the value proposition you have articulated and how it fits within a strategy of entrepreneurial learning.

<p>a) Brainstorm the 'WHY'. As a prompt, please use Figure 4 and any national or regional strategy for entrepreneurship learning you have identified as relevant.</p>	<p>Please write down your thoughts on sticky notes.</p>
<p>b) Please discuss them in a small group.</p>	<p>Please cluster the sticky notes in the small group.</p>
<p>c) Bring these ideas to a plenum, to help determine your institution's next steps.</p>	<p>Please cluster the sticky notes in plenary, according to priority actions, then place in Box 1.</p>

Which approach to entrepreneurial learning do you want to mainstream?

Approaches to entrepreneurial learning	You have thought about why you want to strengthen entrepreneurial learning. Please rank the approaches (1 very important to our institution – 5 not so important) and give reasons. Why?	
<p>a) Develop and strengthen an entrepreneurial mindset among young people. Entrepreneurial learning at TVET institutions is intended to help young people learn entrepreneurial thinking and behaviours as early as possible and to acquire the corresponding skills. These competencies are needed in professional and private life.</p>	<p>1 <input type="radio"/></p> <p>2 <input type="radio"/></p> <p>3 <input type="radio"/></p> <p>4 <input type="radio"/></p> <p>5 <input type="radio"/></p>	
<p>b) Impart competencies and experiences encourage learners to initiate and participate in an entrepreneurial activity. Develop training content, methods and activities to support this approach.</p>	<p>1 <input type="radio"/></p> <p>2 <input type="radio"/></p> <p>3 <input type="radio"/></p> <p>4 <input type="radio"/></p> <p>5 <input type="radio"/></p>	
<p>c) Emphasise the emancipatory approaches to entrepreneurial learning that have social and pedagogical relevance for society (e.g. the Sustainable Development Goals of the United Nations).</p>	<p>1 <input type="radio"/></p> <p>2 <input type="radio"/></p> <p>3 <input type="radio"/></p> <p>4 <input type="radio"/></p> <p>5 <input type="radio"/></p>	
<p>d) Concentrate on training self-entrepreneurs who can establish themselves in the labour market, as self-employed workers.</p>	<p>1 <input type="radio"/></p> <p>2 <input type="radio"/></p> <p>3 <input type="radio"/></p> <p>4 <input type="radio"/></p> <p>5 <input type="radio"/></p>	



Target Group

Who are your target groups for entrepreneurial learning?

It is important to decide to which people and organizations your institution wants to offer an entrepreneurship programme. These are your target groups. The answer will help you decide what type of entrepreneurial learning they need. It should be noted that while entrepreneurial learning may be offered to all, certain groups, particularly among women and girls, refugees, people with a

disability or disengaged learners, could face specific challenges or barriers in developing entrepreneurial mindsets and establishing start-ups. This calls for tailored support to address such challenges.

The following questions and exercise will help you to define your target groups.

Questions for you to consider	<ul style="list-style-type: none">• Who are your most important target groups (a variety of these is listed on Worksheet A)?• What are the characteristics of the target group? Gender, age, social environment or place of residence are just as important as the question of what wishes, problems or needs your target group has.• How will entrepreneurial learning help them create value?
Potential challenges to carrying out this step	<ul style="list-style-type: none">• It is not so easy to gather all the information you will need about the target group. Do not make assumptions about their requirements without clarifying these with the target group.
A simple activity to reinforce your understanding of the step	<ul style="list-style-type: none">• Worksheet 2A to categorize the target group.• Worksheet 2B to create personas of your target customers and develop fictitious model customers based on character traits.
Notes for this ELIC step	<ul style="list-style-type: none">• The target group should be clearly defined.• A list of personas (groups of users with certain characteristics and usage behaviour), preferably grouped in priority order.• Add sticky notes to the ELIC box for Step 2 (Target Group).

BOX 5 **Entrepreneurship training for women and refugees: a combination of interventions and a tailored approach work best**

Entrepreneurial learning projects are offered for **women** within and outside formal TVET institutions. The core objective of many of these projects is to improve the social mobility and life chances of women. Sarfaraz et al. (2014) emphasize that prosperity and social cohesion increase in countries where women are centrally involved in economic life and in leadership positions. The Female Entrepreneurship Index (FEI), which was surveyed in 77 countries (2015), also shows that improvements are needed: 61% of countries score less than 50 out of 100 FEI points (Terjesen and Lloyd, 2015). The economic factor 'woman' not only contributes to a fairer and better society – it is also essential for women's self-determination and independence (Schneider, 2017). Yadav and Unni (2016) point out that there are different dimensions of female entrepreneurship.

In an ILO study (Patel, 2014) on the effectiveness of support measures to develop entrepreneurship among women, six meta-evaluations and twenty-three impact studies were evaluated. The study confirms that the combination of financial support and entrepreneurial learning seems to be more effective in helping women start their own businesses than either financial support or entrepreneurial learning alone. It recommends a series of interventions: combining entrepreneurial learning with peer learning; mentoring; developing women's networks; involving male household members; and providing financial support for women's projects.

Although evidence on the impact of entrepreneurship initiatives on **refugees and their livelihoods** is thin, the OECD (2019) suggests that a key success factor is the use of tailored training by staff who can speak relevant languages and are knowledgeable about the local entrepreneurship support system as well as the challenges faced by refugees. In addition to covering mainstream entrepreneurial learning, they place greater emphasis on issues such as the regulatory environment and administrative obligations, as well as the implications of migrant legal status and citizenship. To support the acquisition of language skills, many entrepreneurship training programmes for refugees include language classes that focus on business- and sector-relevant vocabulary.

WORKSHEET 2A:

Who is your target group for entrepreneurial learning in TVET?

This categorization of target groups will help you to reveal the differing requirements of your learners and the type of entrepreneurship programmes that would suit them.

Target groups	How many persons?	How well developed (1 very high – 5 basic) is the entrepreneurial mindset of the target group?	What is the target group's goal?	What competencies does the target group have?	What resources or specific challenges does the target group have?
All TVET learners at your TVET institution		 1 2 3 4 5			
TVET students at certain educational levels		 1 2 3 4 5			
TVET students of certain disciplines		 1 2 3 4 5			
Male/Female		 1 2 3 4 5			
TVET students with disabilities		 1 2 3 4 5			
Young people outside school		 1 2 3 4 5			
Graduates who cannot find a job		 1 2 3 4 5			
Graduates who want to start a (micro)business		 1 2 3 4 5			
Graduates who want to work in a company and continue their education		 1 2 3 4 5			
Others		 1 2 3 4 5			

Persona profile. What do you know about your target group?

Understanding your students is essential for tailoring your approach to entrepreneurial learning.

<p>Background (job, career, education, family):</p> <ul style="list-style-type: none"> • What is the educational background? • What are the family circumstances? • What is important to the person in life? 	<p>Demography:</p> <ul style="list-style-type: none"> • Age, gender • Place of residence • Living conditions
<p>Identifiers:</p> <ul style="list-style-type: none"> • What constitutes the person (e.g. hobbies, interests)? • What are their preferred communication channels (online/face-to-face & which channels)? • Who exerts influence on the person (friends, work colleagues, role models etc.)? 	
<p>Expectations, goals & emotions:</p> <ul style="list-style-type: none"> • What does this person want to achieve with TVET? • What problems do they want to solve? • What benefit do they want to achieve? • What fears could the target group have? • And what could particularly inspire them? 	<p>Challenges:</p> <ul style="list-style-type: none"> • What challenges arise for the person? • What are they struggling with? • What is challenging for them?
<p>Ideal solution:</p> <ul style="list-style-type: none"> • How can we help the person to master the challenge? • How can we exceed their expectations? • With which emotions can we pick up the person? • How do we help them achieve their goals? 	<p>Common objections:</p> <ul style="list-style-type: none"> • What counter arguments can arise? • What could disturb or unsettle them?



Step

3

Entrepreneurial Competencies

Which entrepreneurial competencies should be strengthened in the TVET learner?

Having established the value proposition and identified target groups, you need to determine what competencies should be acquired. The following questions and exercise will help you to develop the learner's entrepreneurial competencies, depending on what sort of programme or approach you think suitable. Competencies will vary depending on how your learners intend to deploy

their entrepreneurial mindset, and on the labour market and on community needs. For example, an employee in a factory will need not only the ability to work in a team but also greater technical expertise to solve a manufacturing problem, while self-employed entrepreneurs will need to maintain their motivation and have sound business skills.

Questions for you to consider

- What are the learning goals of the entrepreneurship programme?
- Which entrepreneurial competencies should be strengthened?
- Which entrepreneurial professional, social, methodological, and self-efficacy competencies should be achieved?
- How are competency requirements formulated (see Worksheet 3A)?

Potential challenges to carrying out this step

- Entrepreneurial competencies should be formulated from the learners' perspective, so that it is clear what the outcome of their learning will be. The challenge is to craft the competencies so that they can be tailored to suit the learner and local conditions. Their formulation should be neither too general nor too detailed.
- Competencies need to build on each other to ensure that the learner graduates with a coherent set of entrepreneurial skills and attitudes.

A simple activity to reinforce your understanding of the step

- Worksheet 3A: Which competencies would be important for your target group?
- Download the full EntreComp document (Bacigalupo *et al.*, 2016) or refer to other competency frameworks that you find useful. This will help you complete this component of ELIC. You may find you need to mix and match competencies once you have decided on the most suitable entrepreneurial learning programme.

Notes for this ELIC step

- Make a list of competencies per module, indicate these on sticky notes and add them to the ELIC box for Step 3 (Entrepreneurial Competencies).

The Entrepreneurship Competence Framework (EntreComp, see Figure 9), developed by the European Commission, categorizes three areas

of competence, each with five main competencies and further detailed competencies, depending on the educational level.

FIGURE 9 The EntreComp concept



Areas of competence

Competencies

1. Ideas and opportunities

- 1.1 Spotting opportunities
- 1.2 Creativity
- 1.3 Vision
- 1.4 Valuing ideas
- 1.5 Ethical and sustainable thinking

2. Resources

- 2.1 Self-awareness and self-efficacy
- 2.2 Motivation and perseverance
- 2.3 Mobilising resources
- 2.4 Financial and economic literacy
- 2.5 Mobilising others

3. Into action

- 3.1 Taking the initiative
- 3.2 Planning and management
- 3.3 Coping with uncertainty, ambiguity, and risk
- 3.4 Working with others
- 3.5 Learning through experience

Source: Bacigalupo et al., 2016

WORKSHEET 3:

Which competencies would be important for your target group?

- a) As well as EntreComp and any other references you have found, the following framework will help you to select and explain the competencies relevant for your target group. It is based on a framework for developing competencies for students from primary school upwards. The three levels here are appropriate for TVET learners.
- b) Note these in column 3.

FIGURE 10 Framework of references for entrepreneurship competencies

		Progression of competence for entrepreneurship competencies in TVET		
		1	2	3
Develop ideas	Attitude	<ul style="list-style-type: none"> • I can identify my strengths and weaknesses • I set goals to improve my skills where needed • I am comfortable in taking responsibility for a task • I can face possible competition in the implementation stage • I know that people have different career options • I can describe my own professional goals 	<ul style="list-style-type: none"> • I can identify my strengths and weaknesses • I pursue my goals persistently • I am willing to take responsibility and work to overcome potential difficulties 	<ul style="list-style-type: none"> • I am motivated to develop my abilities • I can set myself long-term targets to achieve my goals • I can take a task and complete it successfully • I am ready to stand up for others and societal issues
	Identifying opportunities	<ul style="list-style-type: none"> • I can develop ideas and provide justifications why they should be implemented • I can identify and seize opportunities • I am aware of risks and take responsibility for my own actions • I can present a draft concept and understand the purpose of a business plan 	<ul style="list-style-type: none"> • I can develop ideas into business proposals and evaluate innovative approaches and market potential • I can evaluate business risks using case studies and make appropriate decisions • In a discussion with others I can find arguments for my ideas in a structured way 	<ul style="list-style-type: none"> • I can read, interpret, and evaluate a business plan • I can design my own business plan within a social enterprise business model • I can interpret the entrepreneurial risks of my own business model and can take decisions based on controlled risk management
Implement ideas	Organizing	<ul style="list-style-type: none"> • I can plan goals and implement a supervised project • I can come up with ideas for effective marketing 	<ul style="list-style-type: none"> • I can plan goals, develop work packages for their implementation and carry out a project • I can plan strategic marketing based on tactical approaches • I can plan and correctly deal with finances 	<ul style="list-style-type: none"> • I can plan and project manage a small-scale project • I can develop a logical project plan (aims, measures, output), take necessary decisions and organize project implementation
	Working together	<ul style="list-style-type: none"> • I can work with others and maximize use of individual skills • I am able to convince others when making group decision • I can communicate well with other people 	<ul style="list-style-type: none"> • I can develop appropriate strategies to deal with difficult situations while working together • I am good at networking and developing cooperation. I can use modern technologies 	<ul style="list-style-type: none"> • I can develop a marketing and financial plan (using software) • I can initiate and develop project-based collaborations with others and evaluate individual roles
Sustainability	Acting future oriented	<ul style="list-style-type: none"> • I recognize ecological, social, and economic issues, and would like to contribute ideas on how to solve them • I understand fair trade • I am aware of different ways of financing my ideas 	<ul style="list-style-type: none"> • I take ecological and social considerations into account when planning and implementing a business model and can discuss these • I can analyse and explain alternative financing arrangements through case studies 	<ul style="list-style-type: none"> • I take ecological and social considerations into account when planning and implementing my business • I can understand ethical problems and address these where possible • I can develop a financing plan according to the motto "Brain beats Capital"

Curriculum Approach

How can entrepreneurial learning be integrated into curricula?

Entrepreneurial learning should be extended to all fields of study in TVET: it should link practical training in specific fields of study with the objective of entrepreneurship and provide support for learners interested in starting up a business. It should also make use of methods based on real experience, for example project work with real enterprises or with the local community, mini-companies. Entrepreneurship is a competency for

everyone, helping people become more creative and self-confident in whatever they undertake. Young people should be taught to take things into their own hands at an early age (Faltin and Zimmer, 1995). The following questions and exercise will help you first to understand how to foster entrepreneurship and, second, to develop a curriculum approach.

Questions for you to consider

- Which types of education and training currently provide entrepreneurial learning, to which groups of learners, at which levels, and how successful was the planning and implementation process?
- What competencies and curriculum content have been selected, and what are the modes of delivery, i.e. the organization and methods of instruction?
- Which curriculum approach should be developed to achieve entrepreneurial competencies?
- Should entrepreneurial learning be provided as a separate compulsory subject, a transversal element in an existing subject, as an elective subject or a combination of both, as well as being embedded in the overall curriculum?

Potential challenges to carrying out this step

- It will take a concerted effort to establish entrepreneurial learning in all parts of the TVET system and ensure that all learners are able to participate.
- Incorporating practical elements of entrepreneurship.
- Linking entrepreneurship to specific training subjects or professions.
- Involving external stakeholders.

A simple activity to reinforce your understanding of the step

- Worksheet 4A: Which phases of entrepreneurial development will you address?
- Worksheet 4B: Analyse the variants of curricular integration.
- Worksheet 4C: Analyse in which learning areas curricular measures should be taken.

Notes for this ELIC step

- Make a proposal for a curriculum approach.
- Add sticky notes to the ELIC box for Step 4 (Curriculum Approach).

WORKSHEET 4A:

Which phases of entrepreneurial development will you address?

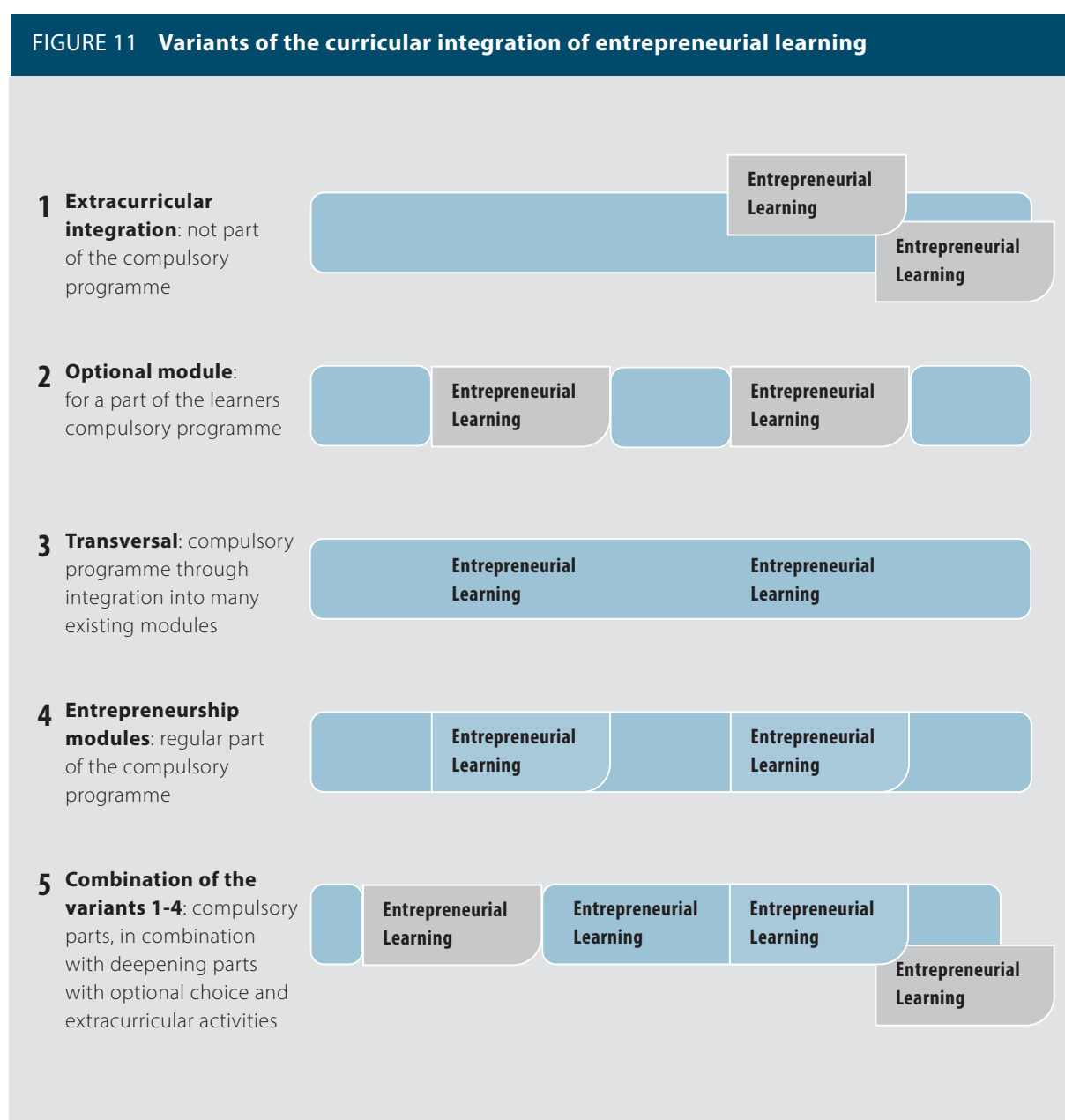
The concept of entrepreneurship as a lifelong learning process (Ashmore, 1990) has five phases of entrepreneurial development, which are strongly related to the stages of entrepreneurial competence. How will you address entrepreneurial development, from the initial phase of introducing the concept to enabling students to be entrepreneurs?

Phase	Learners are expected	a) Note where you are already taking measures	a) Consider what (further) measures you will set up
1. Basics	<ul style="list-style-type: none"> • To understand the basics in the economy • To identify their personal potential and opportunities • To master basic skills to be successful in society and market economy 		
2. Competency awareness	<ul style="list-style-type: none"> • To understand entrepreneurship competencies • To identify entrepreneurial challenges 		
3. Creative applications	<ul style="list-style-type: none"> • To explore entrepreneurial ideas • To develop a variety of entrepreneurial designs 		
4. Start-up	<ul style="list-style-type: none"> • To start up a business and be their own boss (this enables them have experiences on how to risk their own money, organize their own work and handle diverse activities at the same time). 		
5. Growth	<ul style="list-style-type: none"> • Some pupils when given money to start-up an organization cannot manage the final outcomes • There is need for workshops to enable them recognize potential problems and deal with them in time as this fosters growth and prosperity in businesses 		

Variations of curricular integration of entrepreneurial learning

- a) Status Quo: Analyse how entrepreneurial learning is currently integrated into the curriculum.
- b) Future: How would you like to integrate entrepreneurial learning into the curriculum?

Entrepreneurial learning can be integrated into a curriculum in different ways. Figure 11 gives an overview of the different variants (blue marked is the regular curriculum), starting from no integration with only extracurricular activities involving some learners. In variant 2, there are optional modules within the regular curriculum. In variant 3, integration takes place across different learning areas – this is an exciting but also complex way of integration. In variant 4, there are compulsory entrepreneurship modules for all learners. Variant 5 consists of a mixture of the previous variants, with compulsory courses for all learners, optional modules and extracurricular activities, as well as an advanced, practically oriented course or project (e.g. an incubator programme [see practical examples below]).



Analyse in which learning areas curricular measures should be taken

TVET institutions	a) Analyse practical examples on the next pages	
	How is entrepreneurial learning integrated in the curriculum?	In which learning areas has curricular integration taken place?
ZJTIE, China		
NBTE, Nigeria		
Duoc UC, Chile		
A TVET institution in your region:		

b) Analyse the teaching subject examples on www.etctoolkit.org.uk. In which learning areas does the ETC (2000) propose curricular integration?

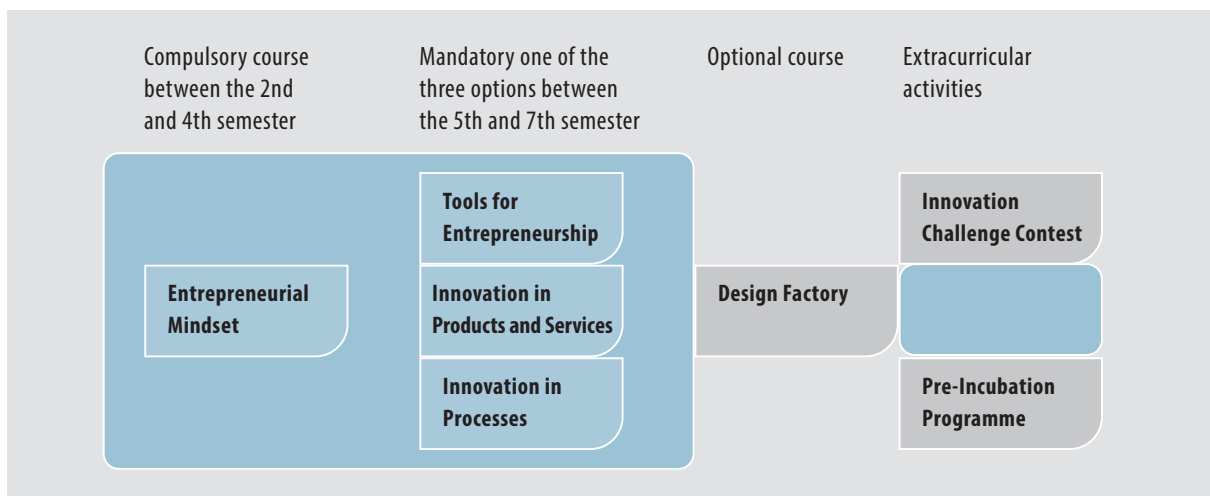
c) What kind of curricular integration do you want to achieve? Write down your curriculum approach on sticky notes.

BOX 6A The integration of entrepreneurial learning into curricula: example from Chile

In **Chile, Duoc UC** is a technical and professional higher education institution (UNEVOC Centre), linked to the Pontifical Catholic University of Chile. With an academic offering of 71 undergraduate study plans in the areas of administration and business, tourism, informatics and telecommunications, engineering, construction, natural resources, health, design and communication, more than 100,000 people study at this institution on 18 campuses. Duoc UC has developed a competency-based educational model that has entrepreneurial and innovation learning integrated into the curriculum. Its pedagogical approach emphasizes the role of the teacher as a guide and facilitator of the learning process, and is based on active, contextualized and meaningful learning; for example: linking educational practice to working experience by relating learning to problems of professional practice; using real problems to encourage practical work by studying possible solutions and evaluating their implications; and emphasising, as well as reflecting on, the meaning and relevance of what a learner has learned.

Curricular integration of entrepreneurial learning at Duoc UC, Chile

Transversal programme through integration in the whole TVET programme



Two mandatory entrepreneurship courses are included in every undergraduate programme. The first course, 'Entrepreneurial Mindset', takes place between the second and fourth semester (technical cycle) and seeks to develop the generic skills of entrepreneurship, creativity and innovation, using a practice-based approach, where students identify, evaluate and take advantage of opportunities. These activities highlight play, empathy, creation, experimentation and reflection; they challenge students to analyse opportunities, generate ideas, evaluate their risks and take action by implementing quick experiments and pilot projects that employ an entrepreneurial approach. Student reflection on these activities reveals the capacities and entrepreneurial mindset they are developing. The second course, which is offered between the fifth and seventh semesters (professional cycle), seeks to develop the competencies of the technical cycle at the next level, by deepening functional skills in entrepreneurship or innovation. Depending on the student's career pathway, three course options are available: Tools for Entrepreneurship, Innovation in Products and Services and Innovation in Processes.

In addition to these mandatory courses there are elective courses on entrepreneurship and innovation, such as the Duoc Design Factory that seeks to identify opportunities for students to innovate in a specific context based on their understanding of their external environment. This promotes interdisciplinary work, based on challenges from community and companies, and extracurricular activities, such as entrepreneurial tournaments, innovation contests, pre-incubation programmes, mentoring and other business-linked activities.

Link: www.duoc.cl/; www.allin-chile.cl/

Source: Duoc UC, Chile.

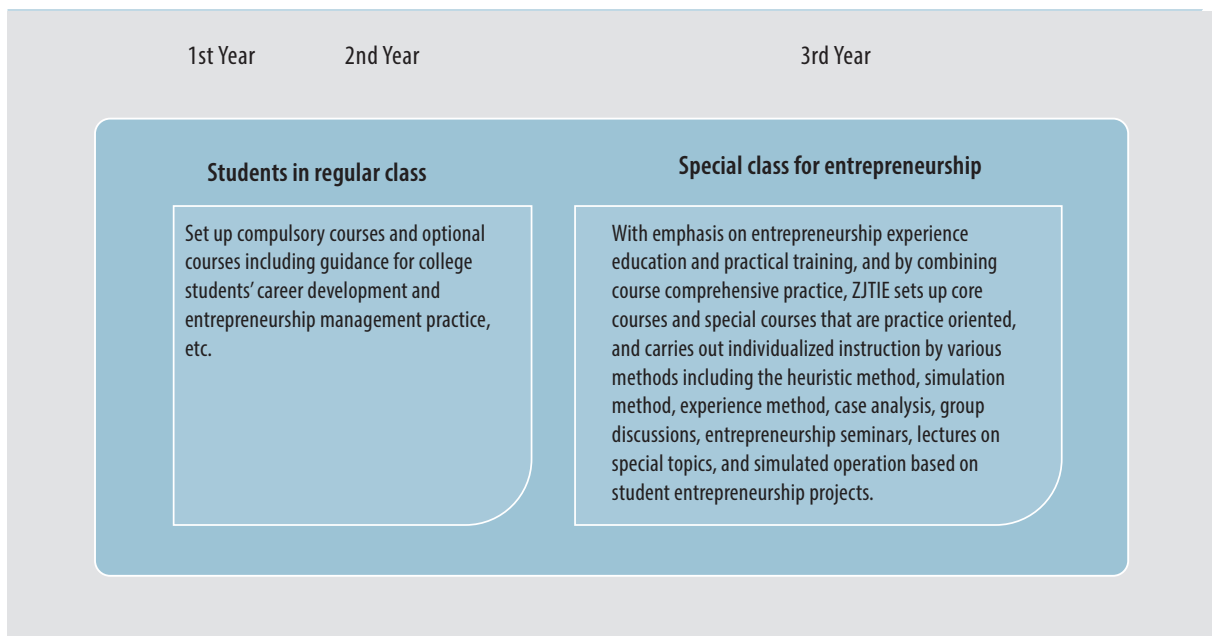
Duoc UC is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3069>

BOX 6B The integration of entrepreneurial learning into curricula: example from China

In **China, the Zhejiang Technical Institute of Economics (ZJTIE)** proposes an entrepreneurial learning model that offers special classes for entrepreneurship. The Institute has adopted 'classroom interactive teaching + project practice'. Students from selected majors learn about entrepreneurship and receive practical training. These majors are chosen from fields of study that are oriented towards starting a business: mobile internet application technology, automobile services, cross-border e-commerce, financial services, and cultural and hospitality industries.

It provides a 3-year diploma, based on a 2+1 system: For two years students attend their regular classes. In the third year, they are in a special programme with an emphasis on entrepreneurship, i.e. it combines a compulsory programme in the first two years and a choice of a compulsory programme in the third year for a specialization. Students doing this programme receive an additional certificate.

Curricular integration of entrepreneurial learning at ZJTIE, China 2+1 system (3-year diploma)



Source: Zhejiang Technical Institute of Economics (ZJTIE), China.

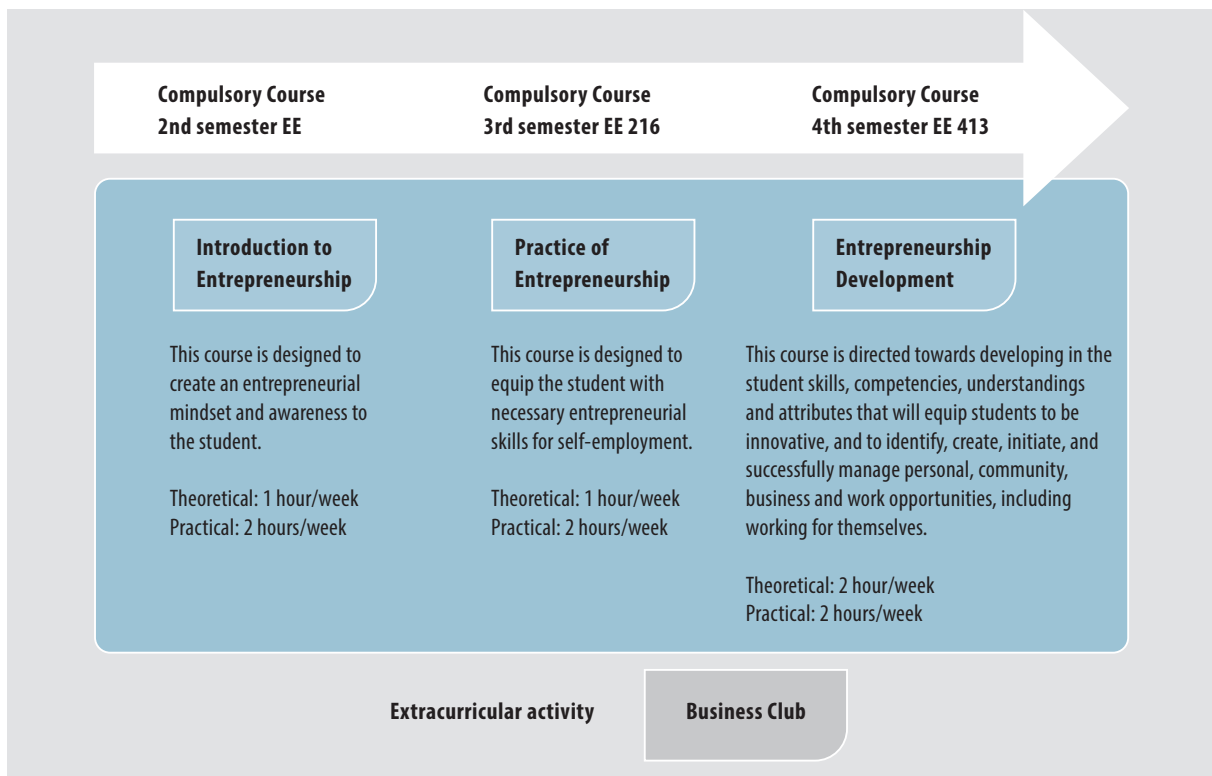
ZJTIE is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=2602>

BOX 6C The integration of entrepreneurial learning into curricula: example from Nigeria

In **Nigeria, the NBTE model** for the integration of entrepreneurial learning into curricula: 'To manage their futures successfully, young people need a clear purpose and a "can do" attitude that will allow them to take advantage of opportunities, be they in a personal, business, work, self-employment or community setting. Demands by business and industry for more relevant skills and knowledge have increased the need for schools to develop enterprising attributes through their teaching and learning. People in both their working and personal lives need to be self-motivated, creative, flexible, resourceful and prepared to take initiative. By fostering positive personal attributes such as responsibility, commitment, integrity and initiative, and skills in negotiating and networking, teachers enhance the ability of young people to participate more fully in their local community both now and in the future.' (NBTE, 2007).

Curricular integration of NBTE, Nigeria

Transversal programme through integration in the whole TVET programme



For the implementation of entrepreneurial learning, a curriculum for TVET in the tertiary sector has been developed, consisting of three modules which are the same for all TVET institutions (Polytechnics, Mono-Technics and other similar institutions). In addition to the curriculum, a trainer's guide and manuals for each course have been developed. Entrepreneurial learning is essentially about good teaching and learning practice. It is about helping students to become independent learners and, above all, to be prepared to take responsibility for their own future development. Thus, entrepreneurship teachers encourage innovation, provide and seek regular constructive feedback, act as role models and mentors for their students and treat failure as an opportunity to learn and a stepping stone to later success.

Source: National Board for Technical Education (NBTE), Nigeria.

NBTE is a member of the UNEVOC Network. More information about this national body can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3037>

Key Activities

What methods exist to develop entrepreneurial competencies?

To turn your value proposition into something concrete for the groups you have identified and to activate entrepreneurial learning in your curriculum approach, you need to develop specific activities.

These are key to combining knowledge, cognition and action and thus nurturing and strengthening an entrepreneurial mindset.

Questions for you to consider

- What type of learning activity would suit your target group?
- What programmes and other engagement can you offer?
- Where does entrepreneurship 'live' in your courses?

Potential challenges to carrying out this step

- There is no magic method. You will need to adapt your activities to your particular situation.
- Take into consideration factors such as your pedagogical objectives, the characteristics of the audience, cultural and organizational constraints (Fayrolle and Gailly, 2008).

A simple activity to reinforce your understanding of the step

- Worksheet 5A: Analyse the practical examples in this chapter.
- Worksheet 5B: Overview of entrepreneurial learning modules. Some questions for discussion:
 1. Which learning activities are already part of your programme? How many hours are they allocated? In which school grades are the entrepreneurial learning modules offered?
 2. Which additional learning activities, methods and tools are appropriate for delivering the entrepreneurial competencies to the target groups you have identified?
 3. Which learning activities achieve the needs of entrepreneurial learning at your TVET institution well?

Notes for this ELIC step

- Make a list of learning activities linked to your value propositions, competencies and target groups.
- Note these on sticky notes and affix them to the ELIC box for Step 5 (Key Activities).

Entrepreneurial learning requires a shift in learning and teaching practices (Gibb, 1993; Lindner 2018; Neck, Greene and Brush, 2014). Table 3 gives an overview that contrasts traditional 'didactic learning modes' with 'entrepreneurial learning modes'. Gibb observes that to foster entrepreneurial behaviours,

there needs to be a shift from traditional 'instruction' towards an 'experiential' learning methodology, using action and problem-based learning, mentoring and group-work approaches to ensure greater learning effectiveness.

TABLE 3 Didactic and entrepreneurial learning modes

Didactic learning modes	Entrepreneurial learning modes
Learning from teacher alone	Learning from each other
Passive role as listener	Learning by doing
Learning from written texts	Learning from personal exchange and debate
Learning from 'expert' teacher frameworks	Learning by discovering (under guidance)
Learning from feedback from one key person (teacher)	Learning from reactions of many people
Learning in well-organized, time-tabled environment	Learning in a flexible, less formal environment
Learning without pressure of immediate goals	Learning under pressure to achieve goals
Copying from others discouraged	Learning by borrowing from others
Mistakes feared	Mistakes to learn from
Learning from notes	Learning by problem solving

Source: Gibb, 1993; Tom Martin and Associates, 2016

WORKSHEET 5A:

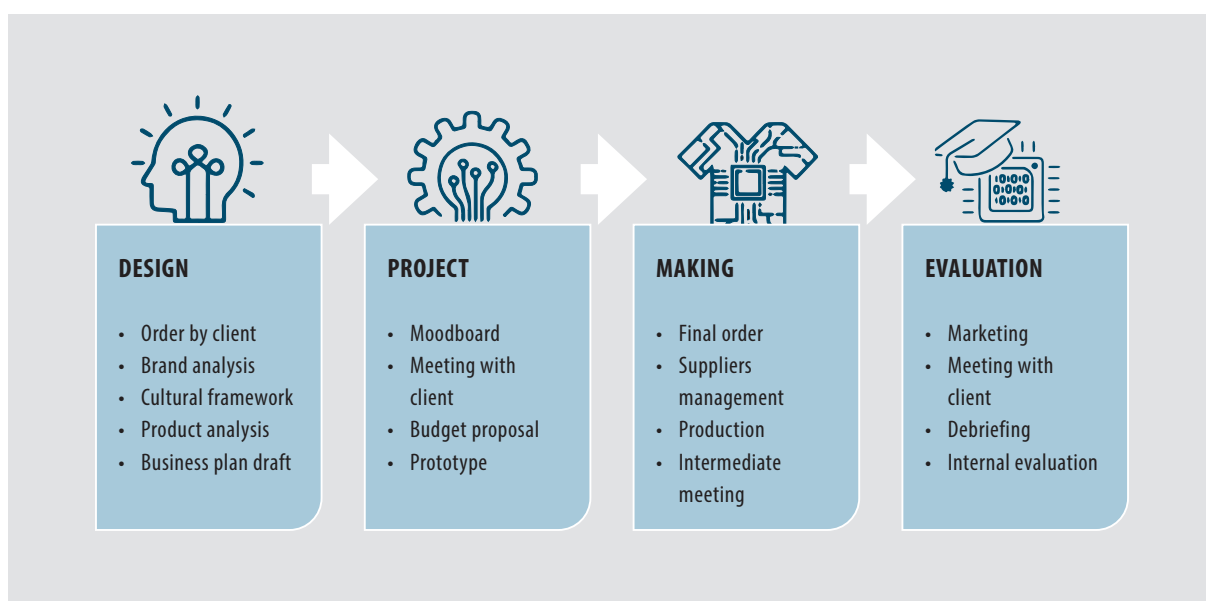
Analyse the practical examples in this chapter on the methods of entrepreneurial learning

Entrepreneurial learning examples from TVET Institution	a) Which methods of entrepreneurial learning are used?	b) Which of the methods would be suitable for your TVET institution?
Cometa Learning Process Model from Italy		
Ikasapresa model from Spain		
The 'Schumpeter' Start-up Academy from Austria		
National Skill Development Corporation (NSDC) from India		
Incubator programme from South Africa		
A TVET institution in your region:		

BOX 7 The 'Cometa Learning Process Model': an entrepreneurial learning production school in Italy

The Cometa Learning Process Model (Nardi et al., 2018) encourages entrepreneurial learning in a production school (a TVET centre that produces goods and services as part of the curriculum). The target group is secondary-level learners, including early school leavers and NEETs (young people not in education, employment or training). The model is based on a production process, where learners deliver products and services for real customers. Workshops act as real enterprises where learners work with their trainers. Foundational skills are included in the process, providing learner competencies in communication, maths, economics, etc. Tutors are in charge of coordinating the process and support their learners to gain transversal skills.

Cometa Learning Process Model - Major phases and activities



Introducing real tasks empowers these learners to cope with real life challenges and increases their motivation. Regular analyses of the model's results (learning outcomes and social impact) are conducted with the support of Politecnico di Milano. The findings are impressive in terms of foundational, transversal and professional skills:

- 95% of learners recognize that their soft skills have increased.
- 94% of dropout learners completed their course at Cometa.
- Since 2012, more than 80% of former Cometa students in the catering branch found stable employment and are no longer completely dependent on their families.
- Former Cometa learners have an employment rate 8% higher than graduates from other TVET schools in Italy.

Source: Cometa Formazione, Italy.

Cometa Formazione is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal:

<https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3081>

BOX 8 Promoting an entrepreneurial culture with school companies in the classroom: the Ikasenpresa model in Spain

The Basque Country is an autonomous community in northern Spain. Entrepreneurship has become a valuable component of its economic development and one of the regional government's main priorities (Azanza, Campos and Moriano, 2013). In 2005, the Basque Country developed an integrated school curriculum that fosters social, personal and professional life skills, particularly those associated with the entrepreneurial mindset and behaviours. This is reinforced by the 5th Basque Vocational Training Plan, which focuses on TVET in the context of the 4th industrial revolution. By encouraging a culture of entrepreneurship among teachers and students, the plan aims to change attitudes and develop competencies that are more in line with the reality of modern and future society.

The Ikasenpresa model creates school companies in the classroom where students develop the technical skills and business acumen they need to become entrepreneurs. They are trained to be dedicated professionals who are either employable or actively entrepreneurial in the face of a changing, unstable labour market. Ikasenpresa uses innovative and practical learning methodologies that embrace new technologies, work tools and communication. Practical learning takes students out of their comfort zone and introduces them to situations or problems that they will face in the labour market. Furthermore, the programme provides teachers with a framework and support to better manage the 'Business and Entrepreneurial Initiative' module within the curriculum.

Development of the Ikasenpresa programme

School Year	TVET Schools involved	Student Companies
05-06	5	7
06-07	21	34
...
15-16	53	420
16-17	73	630
17-18	78	823
18-19	81	890

In this model, students are the protagonists and the teachers act as facilitators. To reinforce the point that students are expected to take the lead, there is a break away from the traditional classroom. On the first day, when students sit at their tables in the classroom as they have always done, they are asked to put the tables aside and sit in a circle. When the teacher sits down with them at the same level, they immediately realize that the learning process will be different. In the Ikasenpresa learning package, the rationale for the inclusion of each topic is provided. By fully understanding the rationale, the teacher can decide which part of the package should be addressed and which part can be skipped according to the different capabilities of students. This allows teachers to adjust their teaching styles while following a standard outline. The Ikasenpresa model has been successfully implemented by all VET providers in the Basque Country.

Source: *The Basque Centre of Research and Applied Innovation in VET (Tknika), Spain. UNESCO-UNEVOC (2019b). Tknika is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3065>*

BOX 9 The 'Schumpeter' Start-up Academy: an entrepreneurial learning school model in Austria

Offering five years of TVET training with a VET Diploma (Reife- and Diplomprüfung) as its final qualification, the academy supplements the regular curriculum with various modules of entrepreneurial challenge-based learning to develop learners' potential. During three years, entrepreneurship is a separate teaching subject (two hours a week) with a strongly experimental approach.

Components of the Entrepreneurial Learning School Model



An overview of some modules:

- Individual specialized work: to explore their own potential, learners can – according to their own interests – create a specialized project in any subject.
- Annual class project: interdisciplinary projects are conducted annually. In the first year, outdoor days – team building events – are organized by the students or student companies.
- Extra-curricular workshops: these are workshops offered outside school hours and are organized by the students. The range of topics is broad. These workshops encourage students to look beyond the horizon.
- Work experience: students complete several months of work experience and an internship abroad. Two weeks in a foreign country are compulsory.
- Coaching: to help realize their potential, qualified coaches/teachers offer weekly coaching sessions with three to a maximum of five students.
- Portfolio folder: during their five-year training, the students keep a portfolio to document all individual activities. With the portfolio, pupils become more aware of their own strengths and it is an aid for planning their own career. Applying for a job with a portfolio is something special.
- Teacher meetings: to enhance communication within the teaching team, weekly team meetings are held to discuss teaching and learning questions.

An evaluation has shown the high impact of the model. The Schumpeter Model was the starting point for the Youth Start programme – Entrepreneurial Challenge-based Learning (Lindner, 2018) and the academy's certification as an e.e.si Entrepreneurship School (Lindner, 2019).

Source: Centre for Entrepreneurship Education as Innovation in Schools (e.e.si), Federal Ministry of Education, Science and Research, Austria. The Federal Ministry of Education, Science and Research is a member of the UNEVOC Network. More information about this ministry can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=522>

BOX 10 Going online: being entrepreneurial about entrepreneurial learning in India

The COVID-19 pandemic has forced a rapid transition to online learning. This example demonstrates how entrepreneurial mindsets and competencies can be developed in alternative settings, in this case via an eCourse.

NSDC, in collaboration with multiple content providers, has curated a variety of online courses on entrepreneurship that caters to different sets of target audiences. One such course is Enabling Women Entrepreneurs which NSDC specially curated for the Britannia Marie Gold My Start-Up Contest 2.0. The Enabling Women Entrepreneurs eCourse was developed after multiple brainstorming workshops, intensive research and analysis to accomplish the objective of enhancing employability and entrepreneurship skills. The online skills development course on Enabling Women Entrepreneurs is specially designed to empower women to gain ICT and microentrepreneurial skills for socioeconomic self-reliance. The digital nature of the training makes sure that homemakers from even smaller towns in the country have access. The primary aim is to train women on key functional skills to boost their confidence at the start of their entrepreneurial journey. Innovative digital skills content is supported by formative and summative assessments, and an eCertification is awarded to participants on successful completion of the online training module.

The Enabling Women Entrepreneurs course takes 39 hours and is available in English and Hindi.

No.	Module name	Duration (hours)	Module details
1	Basic Communication Skills	9	Discusses the importance of communication, day-to-day conversation, verbal and non-verbal communication, negotiation skills, assertiveness, selling skills, etc.
2	Customer Centric Skills	3.5	Discusses the importance of excellent customer service, understanding different types of customers, responding to various customer queries and handling complaints, and how to enhance customer experience through some real-life situations.
3	Digital Literacy: Basic Entrepreneurial Mindset	6.5	Discusses the basics of MS office, online communication etiquette, accessing information on the Internet, emailing, social networking and on safe searching and online security.
4	Foundation	11	Focuses on developing an understanding about entrepreneurship, importance of networking and competition analysis, different risks involved in the business and ways to mitigate these risks. It also talks about the concept of funding and diversity at the workplace.
5	Entrepreneurial Skills	9	Focuses on self-discovery, opportunity discovery, customer and solutions, types of business models and approaches, and validation using the Blue Ocean Strategy.

Each lesson has four parts: watch, think, do, and explore.

- **Watch:** This includes a short video that you will watch to understand the concepts.
- **Think:** This includes a few questions that you will answer based on the Watch video.
- **Do:** This includes a scenario with some questions to help you apply your understanding of concepts to practical situations.
- **Explore:** This includes additional links to resources to help you learn more.

Source: NSDC, India.

BOX 11 The incubator programme: an example of entrepreneurial learning modules in South Africa

In South Africa, the unemployment rate for young people in the 15-24 years age group is around 50%. While the unemployment rate (30%) for tertiary-level graduates is lower than for those with other educational levels, both national and provincial governments are keen to address this problem by encouraging entrepreneurial programmes within the higher education sector. The Department of Higher Education and Training (DHET) is working closely with Universities South Africa (USAf), a body that represents and advocates for the 26 public higher education institutions in South Africa, to establish an Entrepreneurship Development in Higher Education (EDHE) programme. This programme is a platform for universities and TVET institutions to participate in entrepreneurial programmes and discuss policy matters through annual conferences. One of these programmes uses incubators.

Incubators provide a habitat for start-ups, venture capitalists, local government and industries to come together as part of the local ecosystem in order to reinforce networks and collaboration to strengthen businesses. Incubation is defined as the 'dynamic process of business enterprise development' and a 'business support process that accelerates the successful development of start-ups (Fernández et al., 2015) and small, medium and micro enterprises (SMMEs). Incubators have been set up in some universities and TVET institutions. They offer training and mentoring outside the formal curriculum for students interested in starting up their own enterprises. These mentorship programmes provide a space for student micro businesses to experiment and grow. Post-incubation, they become independent and, in many cases, link up with other investors. This strengthens their chances of growth and survival, and may help to reduce the rate of failure of SMMEs in South Africa.

Benefits include:

- a safe space to experiment and set up a new business or enterprise
- a safe space to experiment with products, innovations
- an enabling environment for mentorship, establishing relevant networks and being introduced to other companies that can help a small enterprise to mature
- access to market advice and support for students.

Source: DVC Research, Innovation and Engagement, Durban University of Technology, South Africa.

Durban University of Technology is a member of the UNEVOC Network. More information about this institution can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=500>

WORKSHEET 5B:

Overview of entrepreneurial learning modules

Consider the attributes of your learners, their career aspirations and your own resources, to identify activities you might be able to incorporate into your courses and curriculum, then note what further actions this will require. These activities can be categorized according to the TRIO model (Figure 3), which offers a tiered approach to developing entrepreneurial skills, mindset and culture. You may wish to combine activities from all three tiers, arranging them in your curriculum to allow progression as well as giving learners a holistic understanding of entrepreneurship. The following examples will also be useful to guide your discussions.

Overview of entrepreneurial learning modules: fill in this table to start identifying the activities

Level	Skills	Mindset	Community
Year ONE			
Year TWO			
Year THREE			
Year FOUR			

TABLE 4 Overview of entrepreneurial learning modules, based on the TRIO-Model approach

The following learning activities are based on the TRIO-model (see Figure 3), which offers a tiered approach to developing entrepreneurial skills, mindset and culture. The yellow strip indicates core entrepreneurial learning activities; the pink strip sets out activities that can develop an entrepreneurial mindset; and the green strip extends activities to embrace a culture of entrepreneurship both in the economy and in society. Some activities will help to develop entrepreneurial learning across more than one tier. This is not a strict hierarchy; indeed, when choosing suitable activities for your learners and your institutional setting, you may find ways to combine a core skills exercise with one that helps build a culture of entrepreneurship in your school and community.

	Activity	Description	Possible integration	Resources
1	Entrepreneurship Day with speeches by entrepreneurs	<ul style="list-style-type: none"> Learners' first introduction to entrepreneurial learning. Cooperation between TVET teachers and general education teachers to create together an inspirational entrepreneurship day. 	<ul style="list-style-type: none"> Participation of at least one entrepreneur. For all staff and learners, including beginners. Duration: approx. 4 hours. 	Approach a community or industry figure in your external stakeholder community.
2	Exploration of a company with an entrepreneurial culture	<ul style="list-style-type: none"> Insight into a different working reality gained by engaging learners in exploratory tasks. Learners prepare a list of questions about the business idea, entrepreneurial personality, competitive advantage, etc. 	<ul style="list-style-type: none"> For all learners, including beginners. Organization of the exploration activity by the learners themselves, under teacher guidance. Can be done in class or by groups of learners outside the classroom, possibly including excursions to companies. 	This requires good contacts with companies or social enterprises in your local community.
3	Hero challenge	<ul style="list-style-type: none"> An active approach to learning from practical experience: learners select somebody who has successfully implemented an idea, interview him or her, and pitch the idea. The challenge is to get into a conversation with an entrepreneur. 	<ul style="list-style-type: none"> For all learners, including beginners. Each learner makes a 2-3 minute presentation about their interview with an entrepreneur (2-3 presentations per lesson). Every student becomes an 'expert' on an entrepreneur. 	Requires contact with entrepreneurs in the region. This will strengthen the entrepreneurial learning institution's network. www.youthstart.eu/en
4	Design thinking	<ul style="list-style-type: none"> Design thinking entails learning to develop empathy in order to create in ways that reflect an understanding of the needs of others. Students go through a process of creating a needs statement, identifying beneficiaries or users, brainstorming and generating prototypes or solutions, and testing their ideas. 	<ul style="list-style-type: none"> Design thinking can be integrated into different subjects, ranging from science and business to the arts and civics. 	<ul style="list-style-type: none"> Toolkit: designthinkingforducators.com Handbook: www.ifte.at/entrepreneur/bibimbap App: https://flipchallenge.at/ https://www.gettingsmart.com/2017/11/real-life-examples-of-design-thinking-in-the-classroom/

5	Idea challenge within the school	<ul style="list-style-type: none"> Promotion of ideas generation and entrepreneurial design thinking, for example business model development. 	<ul style="list-style-type: none"> All learners develop their own business idea as a project in school. The learners work in teams and the project may last one year. 	<ul style="list-style-type: none"> www.youthstart.eu/en
6	Board game: Next Generation of Changemaker	<ul style="list-style-type: none"> Board game for developing innovative ideas and business models. 	<ul style="list-style-type: none"> An 'Entrepreneurial Journey' to create a better world can be a part of many different learning areas. 	<ul style="list-style-type: none"> https://www.ifte.at/shop/the-next-generation-of-changemaker
7	Entrepreneurship Week	<ul style="list-style-type: none"> The week aims to activate the entrepreneurial mindset of learners. 	<ul style="list-style-type: none"> A project week to be deepened during the school year. 	<ul style="list-style-type: none"> https://hackathon.guide/
8	Participation in an 'Ideas Competition'	<ul style="list-style-type: none"> Celebrating ideas, similar to sport tournaments, for example by conducting a hackathon. Involvement in regional, national and international competitions. 	<ul style="list-style-type: none"> Presentation of ideas to an external jury as part of the school culture, and/or submission to a competition. Celebrate success. 	<ul style="list-style-type: none"> Youth Start European Entrepreneurship Award (www.youthstart.network) UNESCO Youth Citizen Entrepreneurship Competition (www.entrepreneurship-campus.org) Euroskills Entrepreneurship / Business Development Team Challenge
9	Activities related to the GEW – Global Entrepreneurship Week	<ul style="list-style-type: none"> Participation in events, either within the school or beyond. GEW is always in November and takes place in 170 countries worldwide. 	<ul style="list-style-type: none"> School-related and extra-curricular events for learners in higher grades, working with an entrepreneur or changemaker. 	<ul style="list-style-type: none"> https://genglobal.org/gew
10	Challenge-based learning: the central element of the TRIO model is collaborative learning based on challenges	<ul style="list-style-type: none"> Learning is a process whereby students assume responsibility for their own learning. Individually and in teams, learners embark on a project and produce a result. This result is analysed to see what has worked and what has not. Then it is decided what is going to be done differently in the next challenge to achieve higher objectives. 	<ul style="list-style-type: none"> In TVET subjects, the challenges should simulate, as close as possible, real work situations and be embedded in the training cycle. Promote self-management. Evaluation is integrated as a key element in the learning process. The implementation of these new methodologies, for example simulated work environments, and a different classroom design that addresses the characteristics of flexible, open, and interconnected spaces to foster collaborative work. 	<ul style="list-style-type: none"> Youth Start – Challenge based Learning, www.youthstart.eu/en ETHAZI model from Tknika, https://tknika.eus/en
11	Lemonade stand challenges	<ul style="list-style-type: none"> From the implementation of an idea to purchase planning and accounting, this challenge will give students first-hand experience of what it takes to make a product or a service successful. 	<ul style="list-style-type: none"> Can be integrated into lessons in different grades. A variant would be that students from TVET take care of elementary school children, who take on a lemonade stand challenge. 	<ul style="list-style-type: none"> www.youthstart.eu/en

12	Mini-company	<ul style="list-style-type: none"> • Mini-companies are awareness-raising programmes that give learners the opportunity to start and run a small business for a certain period (one or two semesters), using money up to a certain turnover limit. 	<ul style="list-style-type: none"> • Mini-companies are offered as a separate project-oriented subject (2-3 hours per week per school year), often as an optional subject or an after-school programme. • Teachers provide support as consultants and mentors. 	<ul style="list-style-type: none"> • www.juniorachievement.org
13	Virtual company (practice enterprise, training firm)	<ul style="list-style-type: none"> • A virtual company is a trainee-run company that resembles a real company in its form, organization, and function. There is no actual transfer of real goods and money but the trading environment simulates reality. 	<ul style="list-style-type: none"> • Virtual companies are offered as a subject (at least 3-4 hours per week for a school year). • Teachers provide support as consultants and mentors. • Many virtual companies have a real company as a permanent partner. 	<ul style="list-style-type: none"> • www.penworldwide.org
14	Student company or cooperative (within learning institution)	<ul style="list-style-type: none"> • The idea for the student company comes from the learners themselves. They organize their company like a real business and decide together who will take on which task –from product development to marketing and sales. The young entrepreneurs examine economic efficiency, market demand, organization and structure. 	<ul style="list-style-type: none"> • Student companies are offered as a subject (at least 3 hours per week for a school year). • Intended for advanced learners. • Teachers provide support as consultants and mentors. 	<ul style="list-style-type: none"> • School Enterprise Challenge at Fundación Paraguaya, www.fundacionparaguaya.org.py
15	Production school	<ul style="list-style-type: none"> • A production school is a TVET training institution organized as a learning company. • Production processes are designed like on-the-job learning. 	<ul style="list-style-type: none"> • Training in the production school does not consist of subjects, all learning phases are based on work in a company that is managed for learning purposes and offers a product or service. • A production school course takes one year. 	<ul style="list-style-type: none"> • https://eng.uvm.dk/upper-secondary-education/production-schools
16	Entrepreneurship case studies	<ul style="list-style-type: none"> • Cases describe real-life situations. • Usually the protagonist in the case is facing a tricky challenge or decision. Class participants discuss possible solutions and analyse the pros and cons of various approaches to the problem. 	<ul style="list-style-type: none"> • Case studies for different learning areas possible. • Case studies also available as final exam. 	<ul style="list-style-type: none"> • Case studies book: Kunev, Galanakis and Gkiourka, 2011
17	Junior consultant projects	<ul style="list-style-type: none"> • Learners carry out projects (independently) in cooperation with a company. 	<ul style="list-style-type: none"> • Junior consultant or cooperation projects can be part of school subjects. • In some countries team projects are part of the final exam. • Teachers provide support as mentors. 	<ul style="list-style-type: none"> • Case study: Heriott et. al., 2008

18	Entrepreneurial learning on the job	<ul style="list-style-type: none"> • Corporate entrepreneurship drives constant change and innovation in organizations, which means workers keep on learning on the job. • This requires the awareness and support of management and organizational policies and procedures. 	<ul style="list-style-type: none"> • Organizational entrepreneurial learning inside an enterprise. 	<ul style="list-style-type: none"> • Franco and Haase, 2009 • Nielsen, 2015
19	Student company (within company)	<ul style="list-style-type: none"> • A student company is a 'small' company within a 'big' one. It is founded by trainees and managed by them on-the-job. The trainees have a free hand but trainers are available as advisers. 	<ul style="list-style-type: none"> • This concept is part of vocational training in companies and requires experienced learners. • Student companies are not legally independent. Patronage is incumbent on the training company. 	<ul style="list-style-type: none"> • https://www.serc.ac.uk/about/student-companies/ • https://www.fachnetzwerk.net/was-sind-schuelerfirmen.html
20	Start-up projects and use of a crowd funding platform	<ul style="list-style-type: none"> • Learners work on a start-up project. They develop proof of the concept; use a crowd funding platform for customer contact and build up a network. 	<ul style="list-style-type: none"> • In some TVET training courses the realization of a project is part of the curriculum. • Learners in final year. 	<ul style="list-style-type: none"> • www.startedeinprojekt.at
21	Innovation lab, makerspace: dream it, think it, make it – ideas and projects need space	<ul style="list-style-type: none"> • Makerspaces are technical laboratories, innovation labs, including open spaces at TVET-Institutions. • They encourage students to implement new ideas, tinker, learn and teach in a circle of like-minded people. 	<ul style="list-style-type: none"> • Makerspaces are places where learning is done differently, where the focus is on challenge-based learning, developing learner's own projects and becoming involved in start-ups. 	<ul style="list-style-type: none"> • https://www.makerspaces.com/what-is-a-makerspace/
22	Entrepreneurship club	<ul style="list-style-type: none"> • Entrepreneurship clubs provide an avenue through which learners can acquire skills to cope with life outside of school. The club comprises students who are passionate about entrepreneurship. 	<ul style="list-style-type: none"> • Entrepreneurship clubs are an after-school activity. • Learners meet with mentors and businesspeople from different fields, who mentor and foster the learners' skills. 	<ul style="list-style-type: none"> • https://www.hbs.edu/mba/student-life/activities-government-and-clubs/Pages/club-details.aspx?num=26
23	Incubator for business ideas and co-working spaces	<ul style="list-style-type: none"> • The term 'incubator' in the corporate sector can be seen as a kind of 'birthplace' for start-up ideas and founders. • The teams in an incubator have access to know-how, network, offices or co-working spaces and other resources. 	<ul style="list-style-type: none"> • Incubator programmes are based at TVET institutions or universities or have these as partners. • Often one-year programmes after completion of TVET training. 	<ul style="list-style-type: none"> • Canberra co-working space, part of the innovation hub which has TVET partners. https://cbrin.com.au/coworking/

You will notice in this pink tier of the TRIO model of activities, **promotion of a culture of entrepreneurial thinking and acting**, that some activities are similar to those in the first yellow tier. This is deliberate because it is important to include activities that reinforce understanding of the learner's potential and that develop skills in all three parts of the model.

	Activity	Description	Possible integration	Resources
24	Potential analysis (Be A YES Challenge)	<ul style="list-style-type: none"> Students will first assess their unique personal character strengths in a standardized test. After that, a 'Be A YES' programme will help them focus on things that went well and they will learn to make conscious decisions. Students will also examine their own learning styles. 	<ul style="list-style-type: none"> Learners should get to know their own potential so that they can assess better what they are good at. Integration of a potential analysis can take place in classroom lessons and would benefit from team coaching if available. 	<ul style="list-style-type: none"> www.charakterstaerken.org
25	Team coaching by teachers and peers	<ul style="list-style-type: none"> Setting and pursuing goals Students are encouraged to make their own decisions, with the coach available to give guidance. Creation of a personal plan for future study. Strength and weakness analyses. 	<ul style="list-style-type: none"> Regular coaching by teachers. One hour per week for a team (4-5 learners together). This is often called career planning. 	<ul style="list-style-type: none"> The role of coaching in TVET: https://set.et-foundation.co.uk/digital-assets/qtlsmap/Resources/7/Insights-the-role-of-coaching-in-vocational-education.pdf
26	Empathy challenge	<ul style="list-style-type: none"> Empathy plays a crucial role in business, as illustrated by the examples Nike and LEGO (e.g. LEGO® Serious Play [LSP] is a facilitated method for strategic decision-making and problem solving in business environments). Those who analyse the way their target clientele group thinks and feels have better chances of success. To understand this, students use key questions to create an Empathy Map for their own innovative ideas. 	<ul style="list-style-type: none"> Good integration as an exercise in entrepreneurial learning and also in language teaching. Traditional empathy maps are split into quadrants (Says, Thinks, Does, and Feels), with the user in the middle. Empathy maps provide a glance of the user as a whole person. 	<ul style="list-style-type: none"> https://addicted2success.com/entrepreneur-profile/how-i-built-nike-phil-knights-4-business-lessons-for-young-entrepreneurs/ 101. Innovative methodology to evaluate an entrepreneur idea https://ec.europa.eu/programmes/erasmus-plus/project-result-content/af1ce132-7496-4cba-ad91-9e86d933715b/CRAYON's%20Methodology.pdf
27	Buddy challenge	<ul style="list-style-type: none"> Buddies support peers in their learning. 	<ul style="list-style-type: none"> Learners experience this concept in two ways: they complete 'buddy training' that enables them to supervise and direct practical exercises during class. They learn how to support their peers in achieving their goals. 	<ul style="list-style-type: none"> https://www.coachingcloud.com/buddy-coaching
28	Storytelling challenge	<ul style="list-style-type: none"> An aspect of everyday life becomes something special when it is featured in a story. The 'storytelling challenge' teaches 	<ul style="list-style-type: none"> This activity can be completed in a mother language and a foreign language subject. 	<ul style="list-style-type: none"> www.youthstart.eu/en

		students how this works and how to attract and hold the interest of an audience.		
29	Perspective challenge	<ul style="list-style-type: none"> Interconnected thinking deals with complex problems in a systemic, integrated, and cooperative way; working together to address issues holistically rather than focusing on isolated features in a simplistic way. 	<ul style="list-style-type: none"> Interconnected thinking can be learned in many subjects by ensuring that students consider different perspectives on problems and issues they are studying. 	<ul style="list-style-type: none"> http://www.youthstart.eu/en/challenges/
30	Trash value challenge	<ul style="list-style-type: none"> An object of everyday life becomes something special. The learners use 'waste' to create individual objects. Then they present their objects and assess each other's presentations. A key aspect of this challenge is the analysis of the value created (material and immaterial). 	<ul style="list-style-type: none"> The challenge here is to do more than recycle something; it must be up-cycled. This is a good activity for arts and crafts courses. 	<ul style="list-style-type: none"> In Kenya, animal sculptures are handcrafted from discarded flip-flops collected from the beaches and waterways. These flip-flops are a major source of marine and wildlife pollution.
31	Open door challenge	<ul style="list-style-type: none"> Learners plan and organize an event in collaboration with external partners, leading to an extra-curricular activity or joint project. They are responsible for all steps – from designing invitations to final accounting. 	<ul style="list-style-type: none"> Networking should be taught to all students in higher grades: this requires -and fosters- organizational skills. 	<ul style="list-style-type: none"> Crowd funding is one example of this type of challenge. Students venture beyond the school to build a network, to 'sell' an idea to the people in the network and attract support, financial or other, to realize that idea.
32	Extreme challenge (sports)	<ul style="list-style-type: none"> Learners are introduced to a 'parkour', a popular training discipline in which the practitioner learns to manage risk, and through exposure to challenging situations learns to overcome obstacles in creative ways. These activities boost self-confidence and help students discipline body and mind. 	<ul style="list-style-type: none"> Good for sports. In the gym, learners exercise parkour movements and practice how to keep each other safe. Activities can also take place outdoors: running, climbing, swinging, vaulting, jumping and navigating obstacle courses. 	<ul style="list-style-type: none"> https://parkourforschools.com/
33	Students gain additional external qualifications	<ul style="list-style-type: none"> Individual students participate in external entrepreneurship programmes and other opportunities to develop their talents further. 	<ul style="list-style-type: none"> Information for learners about external offers (online and offline), e.g. Makerspace, entrepreneurship webinars from universities and start-up /SME support organizations, entrepreneurship certificates. Support for extracurricular activities that encourage networking. 	<ul style="list-style-type: none"> Finland: https://sites.google.com/oep.fi/hello-future-entrepreneur/introduction https://analytics-au.click-dimensions.com/cn/ahtkt/entrepreneurcomp2020

The third (green) tier is about **entrepreneurial civic education**, which aims to enhance social competencies and empower students in their role as citizens. These activities encourage discussion and reflection and will help young people express their opinions and assume responsibility for themselves, others and the environment.

	Activity	Description	Possible integration	Resources
34	My community challenge (solving problems together)	<ul style="list-style-type: none"> How can we empower ourselves? By encouraging young people to use their ideas and their energy to solve problems that affect us all! Working together to find creative solutions. 	<ul style="list-style-type: none"> Social entrepreneurship entails solving social problems together, can be an important contribution in many different subjects. Using the SDGs as the basis for discussion about global problems and grass-roots solutions. 	<ul style="list-style-type: none"> http://www.youthstart.eu/en/challenges/ https://sdgs.un.org/goals
35	Debating club	<ul style="list-style-type: none"> Promotes a constructive culture of discussion and critical thinking. Helps to analyse problems, and formulate and argue solutions. 	<ul style="list-style-type: none"> Debating club as a school subject. Debating Club as an after-school activity. Participation in competitions. 	<ul style="list-style-type: none"> https://www.youtube.com/watch?v=RFG7isiLheU&t=3s
36	Service learning	<ul style="list-style-type: none"> Service learning is a method of learning where learners work for the common good and become involved in existing ideas/projects of not-for-profit organizations (NPOs). Practical learning experience is combined with theoretical training content, and reflected and supported in a structured framework. 	<ul style="list-style-type: none"> Students need to have a positive connection with the establishment they serve in order to maximize their learning. Projects can be carried out with NPOs. There are TVET institutions that have introduced an optional subject, 'taking responsibility'. 	<ul style="list-style-type: none"> https://www.prodigygame.com/main-en/blog/service-learning

Source: Adapted from Lindner, 2018.

Key Resources

What resources are needed?

This step is about the resources and infrastructure that the TVET institution will need to offer entrepreneurial learning. Developing an entrepreneurial mindset, aptitude and capabilities, as well as business acumen, in the classroom comes

about by having entrepreneurial environments and approaches to learning in which entrepreneurial learning can flourish. The following questions and exercise will help you to develop an overview of the resources you need.

Questions for you to consider

- What key resources do I need to deliver the value proposition?
- What were / are the input requirements for the planning and delivery of training, in terms of time, financing, and human resources?

Potential challenges to carrying out this step

- Establishing an entrepreneurial learning programme takes dedicated resources. If this not possible with existing resources, a concerted effort will be necessary to obtain additional funds and involve external funding partners in an effective way.

A simple activity to reinforce your understanding of the step

- Worksheet 6A: What resources are available and what will be possible?

Notes for this ELIC step

- Make a list of key resources needed for the value propositions.
- Put this list on sticky notes and affix them to the ELIC box for Step 6 (Key Resources).

WORKSHEET 6:

What resources are available and what is possible?

Edit the table and add further points.

Potential resources	What resources are available in your TVET institution?	Which additional resources are needed?
Number of teachers participating		
Subjects in which entrepreneurial learning is taught		
Number of students who can be reached		
Spaces that can be used		
Available budget for curriculum design, infrastructure, teaching materials, equipment, professional development, events, seed funds for student projects, etc.		
Training for teachers		
Communication platform for contacting stakeholders		
Political support		



Step

7

Core Team

Who 'drives' the implementation of entrepreneurial learning at the TVET institution?

The implementation of an entrepreneurial learning programme requires a core team to coordinate the project and motivate others.

The following questions and exercise will help you to establish that team.

Questions for you to consider

- Who will drive entrepreneurial learning at your TVET institution?
- What is the specific role of entrepreneurship teachers?

Potential challenges to carrying out this step

- A shift to entrepreneurial learning can be daunting for teachers who have little experience themselves of entrepreneurship. Developing their competency in entrepreneurship is crucial.

An activity to reinforce your understanding of the step

- Worksheet 7A: Who drives the implementation of entrepreneurial learning at your TVET institution?
- Worksheet 7B: What is the role of entrepreneurship teachers?

Notes for this ELIC step

- Make a list of core team members and core tasks.
- Make a list of core tasks for the entrepreneurship teacher.
- Put these lists on sticky notes and affix them to the ELIC box for Step 7 (Core Team).

WORKSHEET 7A:

Who is the driver of the implementation of entrepreneurial learning in a TVET institution?

Analyse the compilation. Edit the table and add further core team members.

Core Team Members	What are the main tasks of the team members?	How important will this member of the core team be?	In which key activities should this core team member be involved?
School principal/ head	<ul style="list-style-type: none"> • Develop school inspiration • Leadership • Problem-solving • Support the teachers with resources • Establish partnerships • Role model 		
Coordinator (The coordinator should be someone (e.g. a teacher) who has contact with students).			
Core team of teachers			

WORKSHEET 7B:

What is the role of entrepreneurship teachers?

Teachers are important team members in promoting entrepreneurial learning. The following small group exercise is intended for teachers who will be directly involved in delivering entrepreneurial programmes to help them define their role as an entrepreneurship educator.

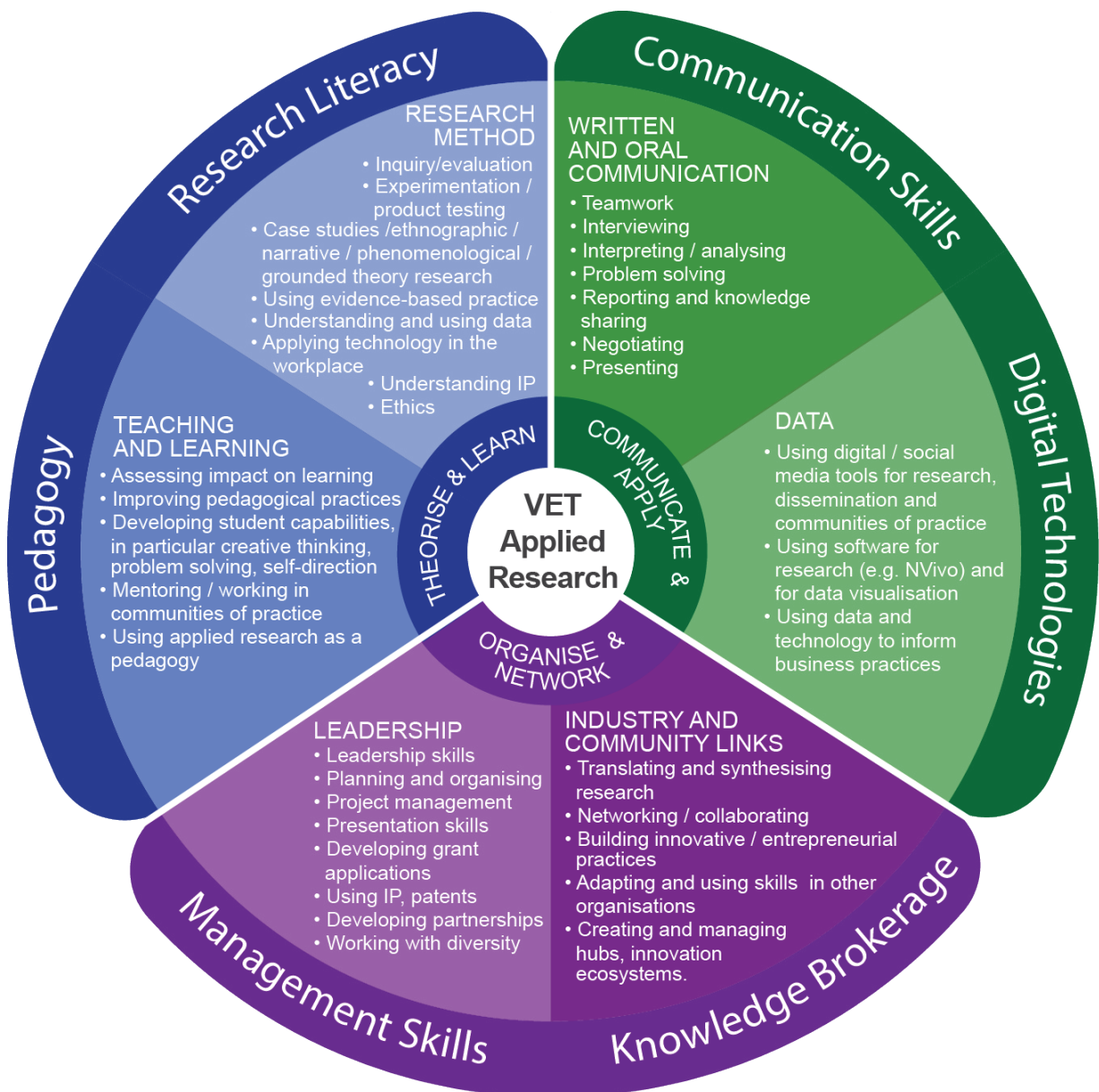
- a) Everyone reads one of the texts (A or B).
- b) Talk about the roles of an entrepreneurship teacher and create a list of the top five functions and how the institution can support them.

A	<p>Entrepreneurial learning requires the use of active learning methods that place the learner at the centre of the educational process. Entrepreneurship teachers need the professional competencies to be able to guide learners through the learning process rather than, as in traditional methods, communicating knowledge and information mainly through 'chalk and talk'. They need to be able to ensure the relevance of education to students' learning needs and backgrounds and to support students in planning their activities. The teacher's role is especially important in the latter stage of activity-based learning, i.e. in the reflection stage. Without the right support, learners may not be able to draw lessons from their experiences. In this setting, there is a fine balance to be found between too distant interventions that leave learners under-equipped to make the most of the experience and too much supervision which does not leave space for students to develop their independence. This is not to say that it is only teachers who need to change. Learners need authentic, practical experiences and realistic learning environments as essential parts of active learning. Teachers need to have access to a varied new range of resources in order to build activities for students that are as true to life as possible, bringing the outside world into the school (European Commission, 2011).</p>
B	<p>When it comes to entrepreneurial teachers, the teacher is often equated with an enthusiastic individual who is not afraid of breaking old habitual patterns and is a driving force for change. Another characteristic is that the entrepreneurial teacher acts more as a guide than a director and has the courage to give his or her students the freedom they need in order to develop their entrepreneurial skills. It is important to point out the 'shift of power' in teachers' relationship to their students, which means that the teacher should give students free rein and trust their willingness and ability to use their own capacities. These thoughts have developed and the communication and interaction between teachers and students are highlighted as crucial. The teaching and learning culture will contain a culture with many questions and answers instead of a focus on the 'right answer'. The result of our study shows that success factors for entrepreneurship teachers are that they are 'relationship-oriented', encourage working in groups and have a strong motivation for action (Leffler, 2019).</p>

Professional development of staff of an entrepreneurial learning TVET institution

To reposition TVET so that it becomes a more integrated part of the innovation system also requires attention to the professional qualifications of its staff, who need to become adept facilitators of entrepreneurial learning, participants in applied research as well as savvy networkers who understand the current business environment and who maintain good relationships in their areas of industry expertise. Simon and Beddie (2017) created a capability framework for Australian VET educators and other professionals designed to help them to organize the skills and capabilities they have or need to acquire to better support industry innovation. They labelled these applied research capabilities; in other contexts they could be called innovation skills, which contribute to an entrepreneurial mindset. Many of these skills are ones educators already have. The difference is in the way they might be bundled, imparted and applied. TVET institutions have the flexibility to do this, as their adaptability in the time of COVID has so recently demonstrated.

FIGURE 12 VET applied research developmental framework



Source: Simon & Beddie, NCVET, 2017.



Key Stakeholders

Who are the key stakeholders?

Which partners inside and outside the TVET institution should be included in your entrepreneurial programmes? Here you will discuss the role not only of your colleagues but, and this is very important, also of your external stakeholders.

The following questions and exercise will help you to develop a stakeholder plan.

Questions for you to consider

- Who are the key stakeholders?
- What role do teachers play?
- How can the role of teachers be promoted?
- What role do managers play?
- What can external partners contribute?

Potential challenges to carrying out this step

- A partial lack of competency of teachers is in many cases perceived as a problem, at least as regards their practical experience of entrepreneurship.
- Improvement is greatly needed in this area.

An activity to reinforce your understanding of the step

- Worksheet 8A: Who are the key stakeholders?
- Worksheet 8B: What is the role of the different key stakeholders to promote entrepreneurial learning?

Notes for this ELIC step

- Make a list of key partners. You should note their connection to the key activities.
- Put this list on sticky notes and affix them to the ELIC box for Step 8 (Key Stakeholders).

WORKSHEET 8A:

Who are the key stakeholders?

Start by brainstorming who your ten most important stakeholders are. As part of this, think of all the people who are affected by your programmes, who has influence or power over them or an interest in their success.

Note: stakeholders can be both organizations and people, but ultimately you must communicate with people. So, be sure to identify the correct individuals to make contact within a stakeholder organization.

	a) Who are your 10 key stakeholders?	b) Compare your list with another person and add other key stakeholders	c) Compare your list with the list from worksheet 8B and add missing stakeholders there
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

What is the role of the different key stakeholders to promote entrepreneurial learning?

Key stakeholders	a) What can this stakeholder contribute?	b) How important will the stakeholder be? What does the power/interest grid tell you?	c) In which key activities should this partner be involved?
Learners			
Teachers (with different profiles)			
Student council			
Alumni			
Manager			
Teacher training institution			
Role models			
Private and public companies			
Entrepreneurship agency			
Other TVET institution			
Community centres			
Banks			
Local leaders			
Employment office			
Families			
Marketplaces			
Incubators, mini-funds			
Researchers, university			
Media			

BOX 12 Types of stakeholders and how to involve them: an example from Fundación Paraguaya

- **The champion:** you need a person with strong leadership qualities to guide the entrepreneurial learning process and to change a 'not possible' attitude to a 'maybe' attitude.
- **Low-hanging fruit first:** create a circle of teachers or colleagues who believe in your initiative and are ready to take the first steps, then include the others who are wary of change. This strategy is useful for beginning the mindset change in teachers.
- **Show first goals:** celebrate small achievements. This helps to motivate the team and move forward to the next level.
- **Communication:** all the stakeholders at different levels need to be involved. Communication is key. Clarify the outcomes expected. Inform parents, colleagues, and students (the school community).
- **Making easy what looks difficult:** to involve policy makers is one thing, to make them move forward and initiate change is a more difficult task. Government supervisors need first to understand the project idea, the process and how it will be implemented, because only then will they actively take part in the effort.
- **Students:** involve the students. They love to embrace new things and challenges.
- **Challenge:** competitions and challenges can also be very powerful. The school enterprise challenge across your country helps to raise awareness about entrepreneurial learning.

Source: Fundación Paraguaya, Paraguay.



Assessment

How can entrepreneurial competencies be tested?

Assessment refers to the techniques and methodologies used to evaluate and validate the entrepreneurial learning outcomes acquired by the individual. The method of assessment can have a major impact on the entire entrepreneurial learning

programme. The introduction of competency-based education (Lans and Gulikers, 2010) has shifted assessments from being 'tests of learning' towards 'assessments for learning'. These questions and exercises will help you to choose a modern assessment method for entrepreneurial learning.

Questions for you to consider

- How can the assessment for entrepreneurial learning be organized?
- How can learners become more involved in the learning process and, by doing so, gain confidence and better understand what they are expected to learn and to what standard?

Potential challenges to carrying out this step

- Mkala and Wanjau (2013) show that teachers routinely use traditional teaching and assessment methods in entrepreneurial learning, as they are often not sufficiently trained in this field and do not have a network of entrepreneurship practitioners.
- The European Training Foundation (2019) emphasizes that teachers traditionally test learners' knowledge (assessment of learning) and then hopefully provide feedback to help them to move forward. In entrepreneurial learning, teachers should also try to create student-led assessment where learners learn how to learn (assessment for learning).
- Entrepreneurial learning calls for learning-oriented-assessments that recognize the heterogeneity of the learners as well as the entrepreneurship contexts. The assessment should offer opportunities to show what learners already can do and find out what skills they should develop in the future.

An activity to reinforce your understanding of the step

- Worksheet 9A: What kind of assessment does entrepreneurial learning require?

Notes for this ELIC step

- Make a list of assessments for entrepreneurial learning;
- Put this list on sticky notes and affix them to the ELIC box for Step 9 (Assessment).

What kind of assessment does entrepreneurial learning require?

See the text and the practical examples	a) Analyse which assessments would be important for entrepreneurship learning	b) Discuss with a colleague why these assessments would be good for entrepreneurial learning	c) What changes in resources do they need to introduce an outcome-based assessment model?
Assessment model from Tunisia Assessment model from Chile			
d) How can the final TVET examination be made competence-oriented?			

‘Contrary to the testing culture which is rooted in empirical-analytic views on learning in which knowledge is viewed as an objective truth, the assessment culture is based on constructivist epistemologies on knowledge and learning ... Assessment in this assessment culture should, among other characteristics,

- (1) be contextualized in professional practice or society and address professional thinking and acting,
- (2) as a result focus not only on knowledge, but on knowledge, skills and attitudes integrated and used to perform in this real world,
- (3) allow individual perspectives, interpretations and contributions,
- (4) recognize not only end products, but also the process leading to a product, and
- (5) stimulate people’s understanding and further learning.

Contrary to the standardized, objective and knowledge-based tests of the testing culture, the assessment culture embraces more interpretative personalized forms that address students’ ability to perform in the real world, both social and professional.’ (Lans and Gulikers, 2010, p.57).

Examples of different types of assessment for entrepreneurial learning are highlighted in Table 5. This will help you to design your assessment tools. Teachers should also aim to create space for unintended learning outcomes by providing open-ended tasks that are not tied to assessing students against predefined criteria. Moreover, it is important to focus on the outcomes of entrepreneurial learning, in terms of the development of work-ready competency. Final assessments should aim to certify students for the labour market.

TABLE 5 Different assessment possibilities for entrepreneurial learning

Assessment	Formative Assessments that evaluate how someone is learning throughout a course.	Summative Assessments that evaluate how much someone has learnt throughout a course.
Informal assessments are not data driven but rather content and performance driven.	<ul style="list-style-type: none"> • Learning diagnostics • There is feedback after the assessment in order to modify learning activities. EXAMPLE: <ul style="list-style-type: none"> • Feedback • Peer assessment • Self-assessment 	<ul style="list-style-type: none"> • No immediate feedback during the course • Assessments are driven by content and performance, rather than data. EXAMPLE: <ul style="list-style-type: none"> • Entrepreneurship portfolio • Coursework • Teacher assessment
Formal or standardized measures are used to assess overall achievement, and to identify comparable strengths and weaknesses with peers.	<ul style="list-style-type: none"> • There is feedback after the assessment • Assessment is made during the course EXAMPLE: <ul style="list-style-type: none"> • Tests • Examination • Workplace assessments 	<ul style="list-style-type: none"> • The objective is the final assessment or verification of the degree of compliance. • Results of the assessment indicate what was learned within a specific period and may lead to certification. EXAMPLE: <ul style="list-style-type: none"> • Taking a central standardized final written exam at the end of the semester.

Source: UNESCO-UNEVOC workshop.

For example, the different types of formative assessment are:

- **Self-assessment.** This involves students self-assessing their own learning and progress. This can help learners to identify their own strengths and weaknesses and be more motivated to address these in future learning. Examples of self-assessment could include: an achievement and expectations questionnaire, a skills/competency analysis questionnaire, a learning journey statement, individual action planning/progress, goal setting/progress and online surveys (e-assessment).
- **Reflective assessment** is 'when students are included in the assessment process by being asked or required to reflect individually or

together with others on their own learning experience, either in writing or orally' (Thayer, 2018a). Examples can include: daily diary or personal journal, in-depth reflection during or after the course and questionnaires (Thayer, 2018b).

- **Peer assessment** is when learners evaluate each other's work and provide feedback and ideas for improvement. This feedback can be guided by pre-agreed criteria. It is important to provide guidelines and practice for students undertaking peer assessment to ensure the validity and quality of this collaborative learning process. Examples include: feedback in pairs or small groups, review and reflection in pairs, and co-working questionnaires.

BOX 13 A formative assessment pilot project for entrepreneurial learning in Tunisia

In Tunisia, there is a strong commitment to entrepreneurial learning. It is seen not only as a way to develop new businesses, but also as a way to help young people develop skills for life and for their careers. It is one way in which education and training can foster personal and social development for learners, and prepare them to expect the unexpected, which is important for entrepreneurial learning.

In recent years, a pilot project has been carried out to consider and develop new ways of assessing entrepreneurial learning in TVET so that it too, is a learning process where teachers encourage learners to set their own goals, learners self-monitor their progress towards achieving those goals and both teachers and students actively seek out feedback from different audiences. This is formative assessment, an integral part of the learning process.

The new Tunisian reform is part of a strategy of 'entrepreneurship for growth and value'. In this context, the National Centre for the Training of Trainers and Training Engineering (CENAFFIF) proposed to integrate all forms of learning: formal (cross curricular approach), non-formal (entrepreneurial context using digital tools where learners demonstrate their engagement and take initiative by making audio-visual reports and uploading them to the centre's online magazine) and informal, in order to work on skills, talents, attitudes and the creation of an environment where the freedom index is quite high.

For this purpose, by adopting a systems approach that integrates the entrepreneurial spirit through innovative pedagogical approaches, finding an efficient entrepreneurial spirit assessment system requires more thinking and experimentation. Hence, the "Pilot Project Assessment" model is offered as part of CENAFFIF-ETF reflection workshops.

Source: European Training Foundation (ETF), 2019, and National Centre for the Training of Trainers and Training Engineering (CENAFFIF), Tunisia.

CENAFFIF is a member of the UNEVOC Network. More information about this national body can be accessed on the UNEVOC Network Portal: <https://unevoc.unesco.org/home/Explore+the+UNEVOC+Network/lang=en/centre=3070>

Introducing entrepreneurial assessment into teaching

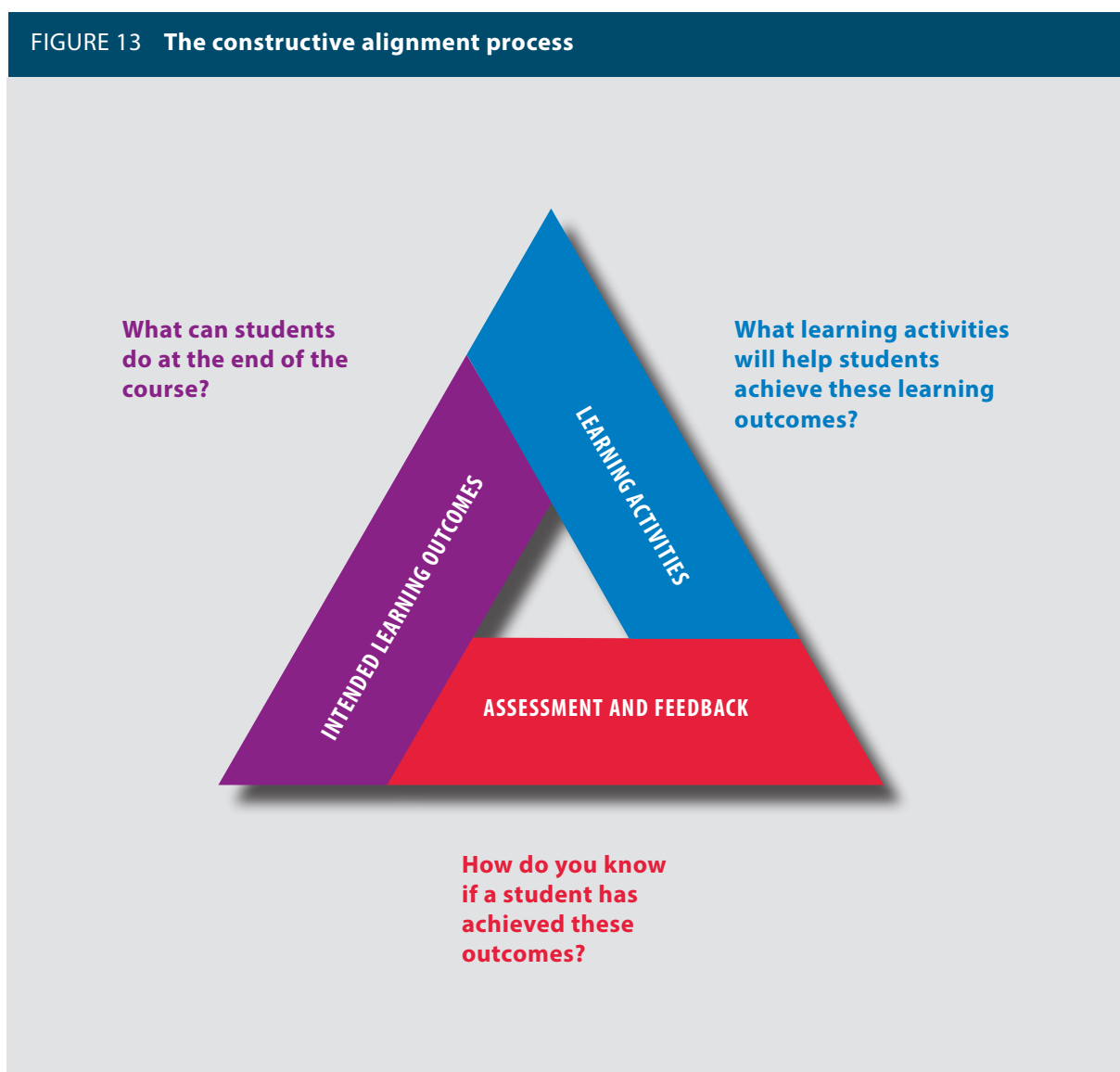
The best way to introduce assessment of entrepreneurial competencies into your teaching is to do so in stages so that you can learn what works with your learners and what doesn't. You could perhaps begin by choosing one lesson which lends itself to active learning. Choose the learning outcomes that you want to achieve that match the level of your learners and will work with the content of your lesson. Add those objectives to your lesson plan. This will enhance the lesson so that your learners are not just going to meet the objectives of the subject matter (e.g. maths, science, history, etc.) but will also meet additional objectives related to entrepreneurial competencies.

Selecting an assessment method. You will probably already use different methods in your teaching to formatively assess learners on different subject matter. In order to assess the achievement of entrepreneurial competencies, you need to decide on a suitable method. Do not try to use a complex method straight away. Instead use, for example, feedback assessment or self-assessment, to encourage your learners to reflect on what additional skills they have used; their own progress; how confident they feel about the various skills; how they view the value of those skills; which skills they found more difficult to apply; why or how they would like to progress in the development of their skills.

This type of group discussion allows learners not just to consider their own progress and learning needs but also to learn from their peers' views and opinions. As a teacher, you can ensure that there will be time for this kind of reflection at the end of each lesson. This allows your learners to be fully aware of the additional learning that is taking place and therefore begin to gain confidence, not just about what they know about the subject you teach but also about what they can do to apply that knowledge in real life scenarios. When delivering entrepreneurial learning, teaching sometimes does the unexpected, and therefore teachers can create space for unintended learning outcomes by providing open-ended tasks that are not tied to assessing students against predefined criteria.

Constructive alignment. Many entrepreneurial competencies are learned through experiences triggered by learning activities. The design of the learning activity should support the development of entrepreneurial competencies, and the assessment techniques that can enhance this. This is about aligning the learning objectives, the learning activity, feedback and the assessment to decide whether the learning objectives have been achieved. The term for this is constructive alignment (Biggs, 2020) (see Figure 13).

FIGURE 13 The constructive alignment process



Source: Biggs, 2020

BOX 14 A transversal examination for the Entrepreneurial Mindset Course: an example of entrepreneurial assessment from Chile

Duoc UC in Chile (see Box 6) has an education model for developing entrepreneurial competencies. A competency is the set of knowledge, skills and attitudes that allow the successful performance of a certain job function. Each competency is specified as a unit of competency. The transversal examination assesses its acquisition.

The transversal examination of the Entrepreneurial Mindset Course consists of a process evaluation lasting 5 weeks developed in teams of 3 to 5 students. The assignment (challenge) entails creating the greatest financial value from a project that consists of delivering a service or selling a product. It is an entrepreneurial activity. Week by week the students will deliver progress reports and evidence of their work, which culminates in a presentation of the results they have obtained and also a reflection on what they have learned from the process of this challenge. Students must give an account of the five practices learned during the course, which are: play, empathy, creation, experimentation, and reflection.

During the first week, students must generate income from the project, having done a risk analysis prior to its execution. The experiment is carried out a second time in subsequent weeks, taking into account their analysis of the amount of income generated and how they carried out the activity. Based on this analysis, they may choose to propose changes to their approach in order to make improvements.

In the second week, students must individually reflect on probing questions that are related to upgrading their abilities and identifying failure. This is a way of learning from the results their project obtained and from the content of the course.

During the third week the students present the results of their second attempt; from there, they must reflect on their creative capacity and initiative to generate actions and on how they identified opportunities in their business environment. In this instance, an individual reflection is requested and later is shared with the other members of the team, who proceed with a co-evaluation of these achievement indicators.

In the fourth week the students are tasked with preparing a final presentation that explains the context of the challenge, the risk analysis, a comparison between the first and second versions of the project and a conclusion about the opportunities they have identified. In the fifth and final week, students make an oral presentation of their results and provide a conclusion about the learning acquired during the course.

The types of evaluation of the transversal exam are hetero-evaluation and co-evaluation of the competencies acquired during the Entrepreneurial Mindset Course: the ability to generate ideas, solutions or innovative processes that respond to productive or social opportunities, needs and demands, in collaboration with others and taking calculated risks.

Source: Duoc UC, Chile.



Step
10

Channels

How are the benefits of entrepreneurial learning communicated?

In this step, you need to ask yourself which communication channels can be used to contact your target groups in order to communicate the value proposition. You will also need to decide what form of relationship you want to have with different stakeholders and how you will maintain contact.

Disseminating an entrepreneurship culture requires public awareness. This might be achieved through media cooperation and/or by organizing workshops with partners (ILO, 2017). The following questions and exercise will help you to develop an overview.

Questions for you to consider

- How and through which channels does the TVET institution reach the target group?
- How can the TVET institution establish good communication with the stakeholders?
- Which communication channels work best?

Potential challenges to carrying out this step

- The critical criteria for establishing communication are the cost and the time required, and ensuring its regularity. After an initial phase of euphoria, communication tends to decrease in frequency.

An activity to reinforce your understanding of the step

- Worksheet 10A: Prioritize your stakeholder relationships using the Power/Interest Grid.
- Worksheet 10B: Create an ABC list for successful communication with the target group and stakeholders.

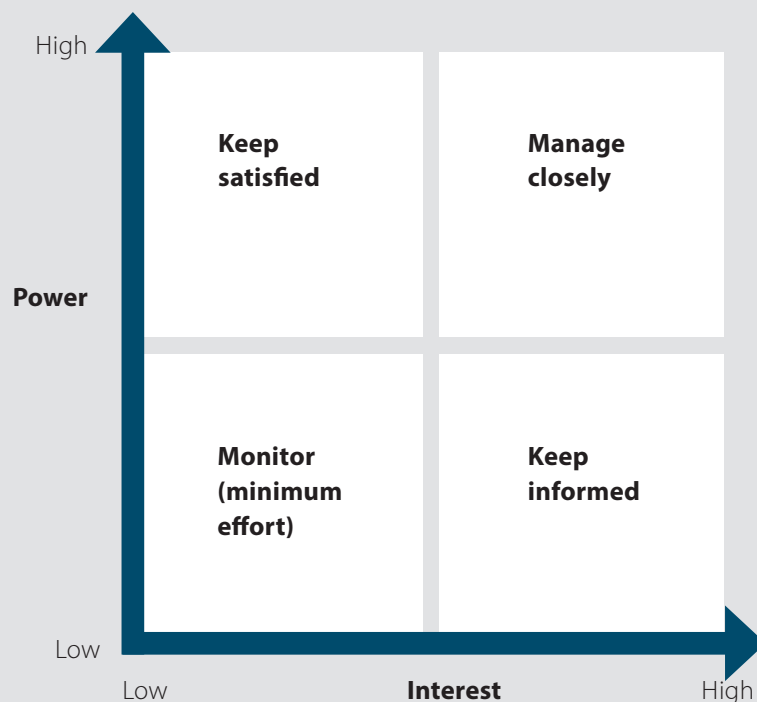
Notes for this ELIC step

- Make a list of important channels linked to the target group and the stakeholders.
- Make additional comments on how and when these channels became relevant to users.
- Put these on sticky notes and affix them to the ELIC box for Step 10 (Channels).

WORKSHEET 10A:

Prioritize your stakeholder relationships

To help decide how you maintain these stakeholder relationships you may like to use the Power/Interest Grid below.



Refer to the list you made in step 8 and, using sticky notes, place names of individuals from the organizations you have identified on the grid, in terms of how much power and interest you consider they have in relation to your entrepreneurial programmes. Also consider the position of each stakeholder within the quadrant (you can repeat this exercise in relation to a specific activity, for example to help you decide who to approach for support or invite to a function).

The position that you allocate to a stakeholder within a quadrant shows you the actions you need to take:

- **Top right quadrant: high power, highly interested people (Manage Closely):** you must fully engage these stakeholders
- **Top left quadrant: high power, less interested people (Keep Satisfied):** keep these stakeholders up to date so they can see your progress
- **Low power, highly interested people (Keep Informed):** these stakeholders can often be very helpful
- **Low power, less interested people (Monitor):** do not ignore these stakeholders, in case their interest or power changes

WORKSHEET 10B:

Create an ABC list for successful communication with the target group and stakeholders

The ABC list or ABC brainwriting method can be used to generate ideas and look for answers to solve a problem. First, make a note of your question. Then write down any idea that is prompted by each letter of alphabet. You can write down as many ideas as you want. If you cannot think of anything or very little when you get to a letter, just keep going. Empty spaces are allowed. The letters are intended as a prompt to creative thinking.

	a) Individual work: each participant writes down ideas that arise spontaneously about successful communication. This should only take two or three minutes.	b) Partner work: compare the ideas with the results of another person and add interesting ideas. Clarify ideas and terms.	c) Plenary: Create a common ABC list on a poster to form the basis of your communication strategy.
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			
P, Q			
R			
S			
T			
V			
W			
X, Y, Z			

Organizational Structures

How can the institution support entrepreneurial learning organizationally?

The following questions and exercise will help you to develop an overview of the organizational

work needed to support the implementation of entrepreneurial learning in your TVET institution.

Questions for you to consider

- Does your TVET institution include entrepreneurial learning as part of its mission? If not, how would you formulate that mission?
- What organizational work is necessary for an institution to become an entrepreneurial learning institution?

Potential challenges to carrying out this step

- The implementation of an entrepreneurial learning programme should go hand in hand with organizational development.

An activity to reinforce your understanding of the step

- Worksheet 11A: Which organizational elements have you integrated, or will you integrate?
- Worksheet 11B: Entrepreneurial learning institution certification.












Notes for this ELIC step

- Make a list of measures to strengthen the organizational culture at your TVET institution.
- Put this list on sticky notes and affix it on the ELIC box for Step 11 (Organizational Structures).

Which organizational elements have you integrated, or will you integrate?

Analyse the compilation. Edit the table and add further elements.

<p>These organizational elements should be integrated in the organizational structure of an entrepreneurial learning TVET institution.</p>	<p>Please rank which elements are important for an entrepreneurial TVET institution? (1 very important - 5 not so important)</p>	<p>List your reasons</p>
<p>1. The entrepreneurial learning philosophy of the school is established in the school mission statement</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>2. Entrepreneurial activities are highlighted on the website</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>3. Entrepreneurial corner: documentation of entrepreneurship activities and successes inside the TVET institution (e.g. in the entrance area)</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>4. Evaluation of the progress in becoming an entrepreneurial learning institution</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>5. Teachers responsible for entrepreneurial learning coordinate and look after the implementation of the entrepreneurship activities, and support the school administration/principal as well as the teachers at the institution</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>6. Information is available for school partners (e.g. as part of parents' evenings, conferences of the class representatives, elected panel of teachers, parents and students, other stakeholders, etc.)</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	
<p>7. Transparent and open development of the institution (governance)</p>	<p>○ ○ ○ ○ ○ 1 2 3 4 5</p>	

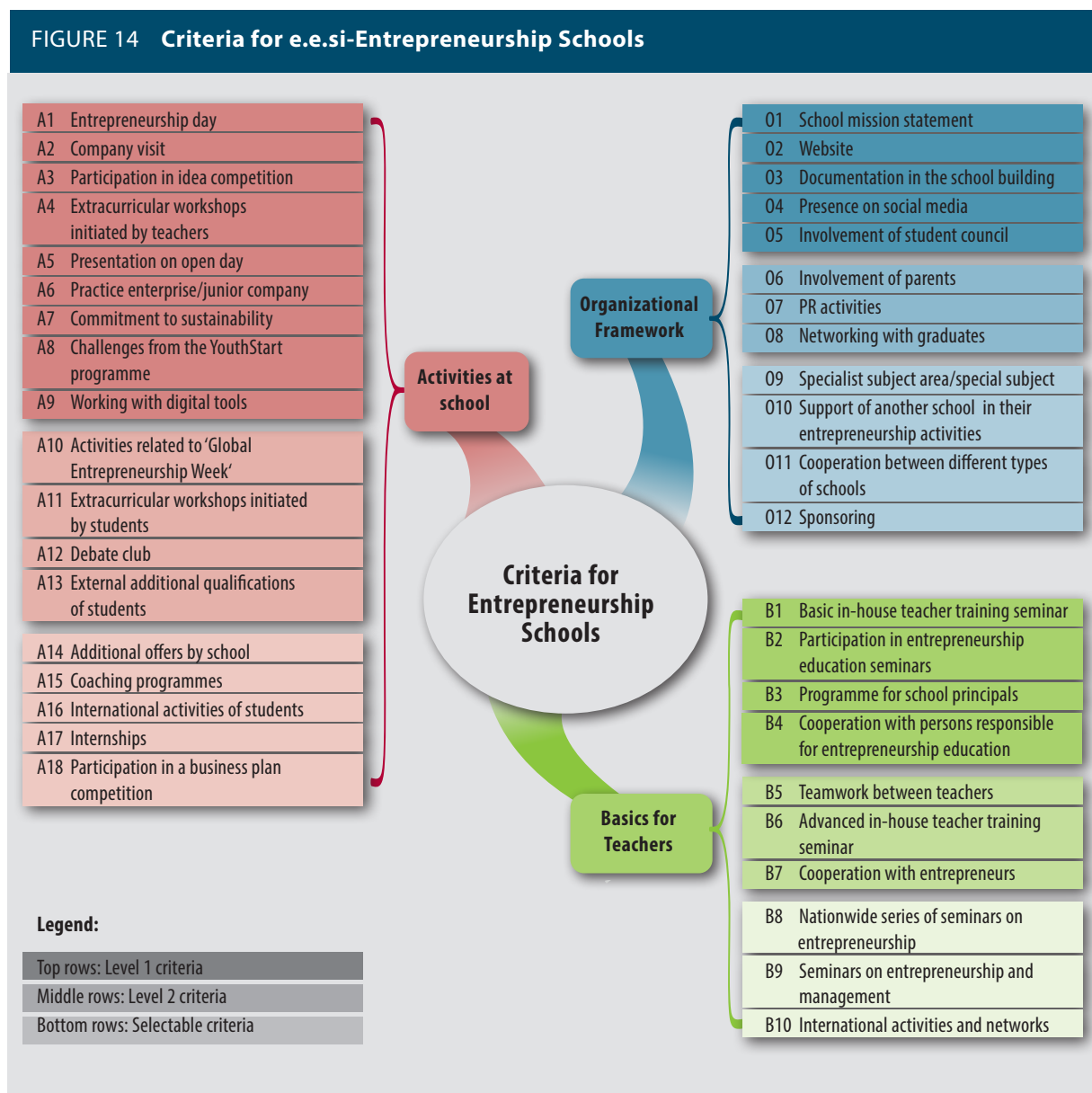
<p>8. Corporate identity (CI): design of school logo, stationery, website etc. with uniform layout that conveys the entrepreneurial learning culture</p>	 1 2 3 4 5	
<p>9. Entrepreneurship Day: learners' first introduction to entrepreneurial learning, together with an entrepreneur</p>	 1 2 3 4 5	
<p>10. Participates and performs well in events like the Entrepreneurship Week</p>	 1 2 3 4 5	
<p>11. Supports other schools during the implementation of entrepreneurship activities</p>	 1 2 3 4 5	
<p>12. Bottom-up activities, initiated by students</p>	 1 2 3 4 5	
<p>13. Top-down activities suggested by the school leadership (for example, 'learn a change a day' or external stakeholders)</p>	 1 2 3 4 5	
<p>14. Classrooms designed for entrepreneurial learning: group work, practical activities. learning, projects</p>	 1 2 3 4 5	
<p>15. Teachers can have their own business</p>	 1 2 3 4 5	
<p>16. Self-directed innovation: learners and teachers work on innovations. The process of innovation is part of the structure and culture of the TVET institution</p>	 1 2 3 4 5	
<p>17. An Entrepreneurship Hub exists in the community (e.g. township)</p>	 1 2 3 4 5	
<p>18. Entrepreneurial learning activities at the school are disseminated and reported on in the media</p>	 1 2 3 4 5	

Criteria for entrepreneurship schools or entrepreneurial learning institution certification

An entrepreneurial learning institution certification confirms that a TVET school has implemented entrepreneurship activities holistically, in an outcome-oriented way and on a long-term basis, and has integrated these activities into everyday school life. It signals that learners are achieving remarkable learning outcomes. To be a sustainable entrepreneurial institution is only possible if entrepreneurial learning is supported and experienced by all those involved in the school. Learning and teaching must be planned and designed with a sustainable entrepreneurial

spirit. An example of certification is the e.e.si-Entrepreneurship School Certificate of the Austrian Standards Institute (ON Guideline No. 42001), which sets standards beyond the school sector. Based on the 'Trio Model of Entrepreneurship Education' (see Figure 3), activities in an entrepreneurship school – from the students' development of their own business ideas, the promotion of entrepreneurial thinking and personality development to the education for becoming responsible citizens – are integral parts of teaching in all subjects and everyday school life.

To be eligible for such certification, you need to meet a catalogue of criteria (Lindner, 2019). Figure 14 gives you the basis for identifying which criteria you already meet and those you still need to work on.



Source: Lindner, 2019.

WORKSHEET 11B:

Entrepreneurial learning institution certification

Analyse the compilation. In the e.e.si certification, the criteria are divided into three areas.

e.e.si criteria	a) Which criteria are well met?	b) Analyse your previous work on ELIC to see if elements are missing? In which areas would further developments be important?
(1) Activities at your TVET institution		
(2) Organizational structures		
(3) Basics for teachers		

Key Metrics and Monitoring

How can the development of entrepreneurial competencies be monitored, and which indicators can be used to evaluate impact?

This step deals with the question of how to measure the impact of the entrepreneurial learning programme within your TVET institution and how to organize the monitoring (evaluation) of this programme. This activity should run in parallel to

programme implementation so that it can help refine and improve the programme (Hytti, 2004). The following questions and exercise will help you to develop your approach to evaluation.

Questions for you to consider

- Which indicators can be used to evaluate impact?
- How and when can the development of the entrepreneurial learning programme be evaluated?
- Who will carry out the evaluation or monitoring? Should it be internal or external monitoring?
- What resources are available for monitoring?

Potential challenges to carrying out this step

- Often the evaluation of the impact of a programme is neglected, as this takes time and money. This hinders continuous improvement and does not encourage learning from mistakes, which is an important element of an entrepreneurial culture.

An activity to reinforce your understanding of the step

- Worksheet 12: Which indicators can be used to evaluate the impact of the entrepreneurial learning programme?

Notes for this ELIC step

- Make a list of impact indicators that could be used.
- Indicate ideas of how the evaluation or monitoring of the entrepreneurial learning programme could be realized.
- Put these on sticky notes and affix them to the ELIC box for Step 12 (Key Metrics and Monitoring).

WORKSHEET 12:

Which indicators can be used to evaluate the impact of the entrepreneurial learning programme?

Exercise: Discuss these impact indicators and consider which are suitable for you.

Which impact indicators for entrepreneurial learning should be used?	Yes	Why?
1. The percentage of learners of ... year olds who have had an entrepreneurial learning experience as part of their TVET		
2. The percentage of teachers who have been trained in entrepreneurial learning		
3. The hours of entrepreneurial learning offered		
4. A compilation of entrepreneurial learning resources		
5. Access to finance (micro funds) for the learners.		
6. An established network with entrepreneurial enablers and an entrepreneurial ecosystem		
7. Learners' satisfaction with the entrepreneurial learning programme.		
8. The number of learners who have participated in entrepreneurial innovation processes with companies or not-for-profit organizations		
9. The number of female learners who have participated in entrepreneurial innovation processes with companies		
10. The number of teachers who have participated in entrepreneurial innovation processes, with companies or not-for-profit organizations		
11. The results of an evaluation of the entrepreneurship competencies of the learners		
12. The number of teachers who have supported start-ups		
13. Self-assessment as an entrepreneurial TVET institution		
14. External certification as an entrepreneurial learning TVET institution		
15. The number of founded companies after 5 years		
16. The survival rate of founded companies after 7 years		

Conclusion and next steps

This practical guide is an invitation to deal with some of the fundamentals of entrepreneurial learning and to begin planning your own TVET institution's approach to introducing or strengthening entrepreneurial learning.

The Entrepreneurial Learning Institution Canvas (ELIC) tool can assist you in developing your concept. Once completed, the canvas demonstrates how all parts of a TVET institution can work together to create an entrepreneurial learning culture.

You have filled in the Entrepreneurial Learning Institution Canvas (ELIC), now what?

With all the components visible to everyone at the table, problems and opportunities can be identified and new versions of the model can be designed. In the spirit of entrepreneurial thinking, rather than finding reasons why an idea will not work, use

creativity to identify the circumstances in which the idea could flourish. For some, if not most, areas you will need to have additional discussions and workshops to resolve matters or to formulate them more clearly. You may also have to identify funding sources for implementing your ideas.

Once you have a concept for the integration of entrepreneurial learning into your institution, the best thing to do is to design a pilot project that validates or refutes the key assumptions.

A key success factor for the introduction of entrepreneurial learning is to network and exchange ideas with other educational institutions and entrepreneurial stakeholders in your own country and internationally. We invite you to share your experiences of implementing this guide and fostering the entrepreneurial mindset at your institution. Contact us at: unevoc@unesco.org.

References

- Abney, D. and Laya, A. G. 2018. *This is why women must play a greater role in the global economy*. <https://www.weforum.org/agenda/2018/01/this-is-why-women-must-play-a-greater-role-in-the-global-economy/> (Accessed on 25 September 2020.)
- Aff, J., and Lindner, J. 2005. Entrepreneurship Education zwischen „small and big ideas“ – Markierungen einer *Entrepreneurship Education an wirtschaftsberuflichen Vollzeitschulen*. Aff, J., and Hahn, A. (eds.), *Entrepreneurship-Erziehung und Begabungsförderung an wirtschaftsberuflichen Vollzeitschulen*. [Entrepreneurship education between “small and big ideas” - marks of entrepreneurship education at full-time business schools]. Innsbruck, StudienVerlag, pp. 83–138.
- Aff, J., A. Hahn, T. Magyar and G. Sailmann. 2005. Ziele und Konzeption des Schulversuchs. Aff, J., and Hahn, A. (eds.), *Entrepreneurship-Erziehung und Begabungsförderung an wirtschaftsberuflichen Vollzeitschulen*. [Entrepreneurship education between “small and big ideas” - marks of entrepreneurship education at full-time business schools]. Innsbruck, StudienVerlag, pp. 13–27.
- Akanbi, G.O. 2017. Prospects for (TVET) in Nigeria: Bridging the gap between policy document and implementation. *The International Education Journal: Comparative Perspectives*, Vol 16, Issue 2, pp. 1-15.
- Alvarez, S.A., and Barney, J.B. 2007. Discovery and Creation: Alternative Theories of Entrepreneurial Action. *Strategic Entrepreneurship Journal*, Vol 1, Issue 11, pp. 11-26.
- Amabile, T.A. and Khaire, M. 2008. Creativity and the role of the leader, *Harvard Business Review*. <https://hbr.org/2008/10/creativity-and-the-role-of-the-leader> (Accessed on 20 June 2020.)
- Amabile, T.A. and Kramer, S. 2011. *The progress principle: Using small wins to ignite joy, engagement, and creativity at work*. Boston, Harvard Business Press.
- Amyot, D. 2019. Support collaboration to give Canadian innovation a boost. Applied Research Comes of Age, RESEARCH MONEY & Colleges and Institutes Canada. <https://researchmoneyinc.com/wp-content/uploads/2019/11/AR-finalNov162019-Digital-Pages.pdf> (Accessed on 12 October 2020.)
- Andersen, T., K. Frøhlich Hougaard, S. Nindl and A. Hill-Dixon. 2017. *Taking the future into their own hands – Youth work and entrepreneurial learning*. Luxembourg, Publications Office of the European Union.
- Ashmore, C.M. 1990. Entrepreneurship in Vocational Education. Kent, C.A. (ed.), *Entrepreneurship Education: current developments, future directions*. Westport, Quorum Books.
- Azanza, G., J. Campos and J. Moriano. 2013. Entrepreneurial Intention and Values in the Basque Country. <https://www.bizkailab.deusto.es/wp-content/uploads/2013/05/Entrepreneurial-Intention-and-Values-in-the-Basque-Country.pdf> (Accessed 14 September 2020.)
- Bacigalupo, M., P. Kampylis, Y. Punie and L. Van den Brande. 2016. *EntreComp: The Entrepreneurship Competence Framework*. Luxembourg, Publication Office of the European Union.
- Badawi, A.A. 2013. TVET and entrepreneurship skills. UNESCO-UNEVOC (eds.), *Revisiting global trends in TVET: Reflections on theory and practice*. Bonn, UNESCO-UNEVOC, pp. 275-308.
- Baird, A. and Harrelson, W. 2008. *Analysis of Fundacion Paraguaya's financially self-sufficient agricultural high school: Documenting a model of a financially self-sustaining school and the opportunities and challenges for replication*. Washington DC, Making Cents International for the Inter-American Development Bank.
- Bandura, A. 1997. *Self-efficacy. The exercise of control*. New York, Worth Publishers.
- Baxter, A., D.W. Chapmann, J. DeJaeghere, A.R. Pekol and T. Weis. 2014. Youth Entrepreneurship Education and Training for Poverty Alleviation: A Review of International Literature and Local Experience. International Educational Innovation and Public Sector Entrepreneurship. *International Perspectives on Education and Society*, Volume 23, pp. 33-58.
- Beddie, F. and Simon, L. 2017. *VET applied research: driving VET's role in the innovation system*. Adelaide, NCVET.
- Bergmann, F. 2019. *New Work New Culture: Work We Want and A Culture That Strengthens Us*. Hampshire, Zero Books.
- Biggs, J. 2020. Constructive Alignment. <https://www.johnbiggs.com.au/academic/constructive-alignment/> (Accessed on 14 September 2020.)
- Bornstein, D. 2007. *How to Change the World: Social Entrepreneurs and the Power of New Ideas* (Second Edition). New York, Oxford University Press.
- Bridges, W. 1995. *Jobshift*. London, Brealey.

- Brown, R. J. and Cornwall, J. R. 2000. *The Entrepreneurial Educator*. Lanham, Maryland & London, The Scarecrow Press.
- Carrier, C. 2007. Strategies for Teaching Entrepreneurship: What else Beyond Lectures, Case Studies and Business Plans. Fayolle, A. (ed.), *Handbook of Research in Entrepreneurship Education*. Cheltenham/Northampton, Edward Elgar, pp. 143-159.
- Chang, J., A. Benamraoui and A. Rieple. 2013. Learning-by-doing as an Approach to Teaching Social Entrepreneurship. *Innovations in Education and Teaching International*, Vol 51, Issue 5, pp. 459-471.
- Chapman, S. 1992. What is experiential education? *The Journal of Experiential Education*, Vol 15, Issue 2, pp. 16-23.
- Charney, A., and Libecap, G.D. 2000. Impact of Entrepreneurship Education. Kansas City: Kauffman Center for Entrepreneurial Leadership.
- CICan. 2015. The College and Community Innovation Program: Partnerships for Industry Innovation. <https://www.collegesinstitutes.ca/file/the-college-and-community-innovation-program-partnerships-for-industry-innovation/> (Accessed on 18 October 2020.)
- Connor, A., S. Karmokar and C. Walker. 2014. *Doing entrepreneurship: Towards an entrepreneurial method for design and creative technologies*. Hong Kong, Leadership Forum on Design Education.
- Cowan, J. 1988. Learning to facilitate experiential learning. *Studies in Continuing Education*, Vol 10, Issue 1, pp. 19-29.
- Deveci, I. and Seikkula-Leino, J. 2018. A Review of Entrepreneurship Education in Teacher Education. *Malaysian Journal of Learning and Instruction*, Vol 15, Issue 1, pp. 105-148.
- Draycott, M. and Rae, D. 2011. Enterprise Education in Schools and the role of Competency Frameworks. *International Journal of Entrepreneurial Behaviour & Research*, Vol 17, Issue 2.
- Drayton, B. 2006. *Everyone a Changemaker: Social Entrepreneurship's Ultimate Goal*. MIT/Harvard University/George Mason University, Innovations Journal Winter.
- Drucker, P. F. 1986. *Innovation and Entrepreneurship: Practice and Principles*. New York, Harper & Row.
- Duckworth, A., Ch. Peterson, M.D. Matthews and D.R. Kelly. 2007. Grit: Perseverance and Passion for Long-Term Goals. *Journal of Personality and Social*, Vol 92, Issue 6, pp. 1087–1101.
- Dweck, C. S. 2007. *Mindset: The New Psychology of Success*. New York, Ballantine Books.
- Ememe, O.N., St. Ch. Stella Chinasa Ezech and C.A. Ekemezie. 2013. The role of head-teacher in the development of entrepreneurship education in primary schools. *Academic Research International*, Vol 4, Issue 1, pp. 242-249.
- Erkkilä, K. 2000. *Entrepreneurial Education. Mapping the debates in the United States, the United Kingdom and Finland*. New York, Garland Publishing.
- ETC. 2020. Enhancing the Curriculum. Enterprise and Entrepreneurship Education Toolkit. <https://www.etctoolkit.org.uk> (Accessed on 19 October 2020.)
- European Commission, EACEA and Eurydice. 2016. *Entrepreneurship Education at School in Europe*. Luxembourg, Publications Office of the European Union.
- European Commission. 1999. *Action Plan to Promote Entrepreneurship and Competitiveness*. Luxembourg, European Commission Publishing Office.
- European Commission. 2002. *Final Report of the Expert Group 'Best Procedure' Project on Education and Training for Entrepreneurship*. Brussels, Enterprise Directorate-General.
- European Commission. 2002. *Making progress in promoting entrepreneurial attitudes and skills through Primary and Secondary education. Report of the Expert Group on Entrepreneurship Education*. Brussels, Enterprise Directorate-General.
- European Commission. 2003. *Green Paper: Entrepreneurship in Europe*. Brussels, Enterprise Directorate-General.
- European Commission. 2005. *Recommendations of the European Parliament and the Council on key competences for life-long learning*. Brussels, KOM 548.
- European Commission. 2006. *Fostering entrepreneurial mindsets through education and learning*. Brussels, COM 33.
- European Commission. 2009. *Entrepreneurship in Vocational Education and Training. Final Report of the Expert Group*. Brussels, Directorate-General for Enterprise and Industry.
- European Commission. 2011. *Entrepreneurship Education: Enabling Teachers as a Critical Success Factor. A report on Teacher Education and Training to prepare teachers for the challenge of entrepreneurship education*. Brussels, Directorate-General for Enterprise and Industry.
- European Commission. 2012. *Building Entrepreneurial Mindsets and Skills in the EU. Guidebook #1*. Brussels, Directorate-General for Enterprise and Industry.
- European Commission. 2013. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Entrepreneurship 2020 Action Plan. Reigniting the entrepreneurial spirit in Europe*. Brussels, COM 795.

- European Commission. 2014a. *Final Report of the Thematic Working Group (TWG) on Entrepreneurship Education*. Brussels, Directorate-General for Education.
- European Commission. 2014b. *Entrepreneurship Education in Europe*. Brussels, Directorate-General for Education.
- European Commission. 2015. Entrepreneurship Education – a road to success. A compilation of evidence on the impact of entrepreneurship education strategies and measures. http://ec.europa.eu/growth/content/entrepreneurship-education-road-success-0_en (Accessed on 20 June 2020.)
- European Commission. 2018. Council Recommendation on key competences for lifelong learning. C 189/01. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C:2018:189:FULL&from=EN> (Accessed on 20 June 2020.).
- European Council. 2014. Conclusions on entrepreneurship in education and training. [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015XG0120\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015XG0120(01)&from=EN) (Accessed on 10 May 2020.)
- European Training Foundation. 2019. Entrepreneurial Learning: Practical guide supporting learning and assessment. <https://openspace.etf.europa.eu/wikis/tunisia-case-0> (Accessed on 28 July 2020.)
- Fadel, Ch., B. Trilling and M. Bialik. 2015. *Four-Dimensional Education: The Competencies Learners Need to Succeed*. Boston, Center for Curriculum Redesign.
- Faisal, M. N., F. Jabeen and M. Kasiolouides. 2017. Strategic interventions to improve women entrepreneurship in GCC countries: A relationship modeling approach. *Journal of Entrepreneurship in Emerging Economics*, Vol 9, Issue 2, pp. 161-180.
- Faltin, G. 2013. *Brains versus Capital. Entrepreneurship for everyone lean, smart, simple*. Berlin, Entrepreneurship Foundation.
- Faltin, G. and Zimmer, J. 1995. *Reichtum von unten. Die neuen Chancen der Kleinen. [Wealth from below. The new opportunities for the little ones]*. Berlin, Aufbau-Verlag.
- Farstad, H. 2002. *Integrated Entrepreneurship Education in Botswana, Uganda and Kenya. Final Report*. Oslo, National Institute of Technology.
- Fayrolle, A. 2006. *Essay on the Nature of Entrepreneurship Education*. Lyon, Lyon Business School.
- Fayrolle, A. 2008. Entrepreneurship education at a crossroads: towards a more mature teaching field. *Journal of Enterprising Culture*, Vol 16, Issue 4, pp. 325-37.
- Fayrolle, A. and Gailly, B. 2008. From craft to science teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, Vol 32, Issue 6-7, pp. 569-593
- Fernández, M. T., F. J. Blanco Jiménez and J. R. Cuadrado Roura. 2015. Business incubation: innovative services in an entrepreneurship ecosystem. *The Service Industries Journal*, Vol 35, Issue 14, pp. 783-800.
- Foundation for Young Australians. 2015a. *Enterprise skills and careers education in schools*. Melbourne, Foundation for Young Australians.
- Foundation for Young Australians. 2015b. *Unlimited Potential: a data and information resource on young Australians*. Melbourne, Foundation for Young Australians.
- Foundation for Young Australians and AlphaBeta. 2017a. *The new basics: Big data reveals the skills young people need for the New Work Order*. Melbourne, Foundation for Young Australians (FYA).
- Foundation for Young Australians and AlphaBeta. 2017b. *The new work smarts: Thriving in the New Work Order*. Melbourne, Foundation for Young Australians (FYA).
- Franco, M. and Haase H. 2009. Entrepreneurship: an organizational learning approach. *Journal of Small Business and Enterprise Development*, Vol 16, Issue 4, pp. 628-641.
- Gamede, BT. and Uleanya, C. 2019. Factors impacting Entrepreneurship Education in TVET Colleges: A Case of South Africa. *Journal of Entrepreneurship Education*, Vol 22, Issue 3, pp. 1-12.
- Gartner, W. 1988. Who Is an Entrepreneur? Is the Wrong Question. *Entrepreneurship Theory and Practice*, Vol 12, pp. 47-67.
- Gasse, Y. 1985. A strategy for the promotion and identification of potential entrepreneurs at the secondary school level. Hornaday, I. A., Shils, E. B., Timmons, J.A. & Vesper, K. H. (eds), *Frontiers of Entrepreneurship Researc*. Wellesley, Wellesley Publishers, pp. 538-559.
- Gfrerer, M. 2020. Entrepreneurial Spirit of TVET Graduates as the Engine of Innovation – A Comparative Study between German speaking countries and emerging countries (represented by Ethiopia). TVET Opportunities at Tertiary Levels and Strengthen Linkage between World of Work and Education and Training Systems. https://nadre.ethernet.edu.et/record/4621#.XuMPK_Lgryl (Accessed on 20 June 2020.)
- Gibb, A.A. 1993. The enterprise culture and education. Understanding enterprise education and its links with small business entrepreneurship and wider educational goals. *International Small Business Journal*, Vol 3, Issue 11.
- Gibb, A.A. 2008. Entrepreneurship and Enterprise Education in Schools and Colleges: Insights from UK Practice. *International Journal of Entrepreneurship Education*, Vol 6, pp. 1-48

- Gibb, Y.K. and Nelson, E.G. 1996. Personal Competences, Training and Assessment: A challenge for Small Business Trainers. *Proceedings of the European Small Business Seminar*, pp. 97-107.
- Gonon, P. 2008. *Vom ehrbaren Handwerker zum innovativen Self-Entrepreneur: Modernisierung der Berufsbildung anhand idealtypischer Leitfiguren. [From respectable craftsman to innovative self-entrepreneur: Modernising TVET on the basis of ideal-typical leading figures]*. Gütersloh, Bertelsmann Stiftung.
- Goodwin, T. 2017. Forget coding, we need to teach our kids how to dream. https://www.weforum.org/agenda/2017/04/forget-coding-we-need-to-teach-our-kids-how-to-dream?utm_content=buffer69e84&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer (Accessed on 20 June 2020.)
- Goss, D. 2005. Schumpeter's legacy? Interaction and emotions in the sociology of entrepreneurship. *Entrepreneurship Theory and Practice*, Vol 29, pp. 205-218.
- Guzmán, J. and Liñán, F. 2005. *Perspectives on Entrepreneurial Education: A US-Europe Comparison*. Madrid, Jean Monnet European Studies Centre Universidad Antonio de Nebrija.
- Halabisky, D. 2014. *Supporting Entrepreneurship in the Vocational Training System in Tunisia. OECD Reviews on Skills and Competences for Entrepreneurship*. Paris, OECD.
- Hanh Tien, H.T., N. T. Thanh Binh and N. Huu Chuc. 2019. Embedding Entrepreneurship Education in Vietnamese TVET towards the 4th Industrial Revolution. *International Journal of Scientific and Research Publications*, Vol 9, Issue 3, pp. 381-392.
- Haolader, F.A. 2015. Entrepreneurship Education in TVET for Small and Medium Enterprise Development: A Case Study in Bangladesh. *Bangladesh Education Journal*, Vol 14, Issue 2, pp. 27-44.
- Heriott, K.C., R. Cook, R.J. Jones and L. Simpson. 2008. The Use of Student Consulting Projects as an Active Learning Pedagogy: A Case Study in a Production/Operations Management Course. *Decision Sciences Journal of Innovative Education*, Vol 6, Issue 2, pp. 463-481.
- Hytti, U. 2004. *Evaluating and Measuring Entrepreneurship and Enterprise Education. Methods, Tools and Practices*. Turku, School of Economics and Business Administration.
- ILO. 2017. *Promoting Rural Youth Employment in Afghanistan through Entrepreneurship Education and Vocational Training: Analytical Study*. Turin, ILO.
- ILO. 2019. Centenary Declaration for the Future of Work. https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_711674.pdf (Accessed on 18 October 2020.)
- Islam, M.A., A. M. Kahn, A.Z.M. Obaidullah and S.N. Alam. 2011. Effect of Entrepreneur and Firm Characteristics on the Business Success of Small and Medium Enterprises (SMEs) in Bangladesh. *International Journal of Business and Management*, Vol 6, Issue 3, pp. 289-299.
- Jennings, D. F. 1994. *Multiple Perspectives of Entrepreneurship*. Cincinnati, South-Western Publishing Co.
- Johannisson, B. and Nilsson, A. 1989. Community entrepreneurs: networking for local development. *Entrepreneurship & Regional Development*, Vol 1, Issue 1, pp. 3-19.
- Jónsdóttir, S. R. 2005. *Analysis of Entrepreneurship Education in Vocational Education and Training in Iceland*. Reykjavík, Leonardo National Agency.
- Kahn, L., M. Abdo, S. Hewes, B. McNeil and W. Norman. 2011. The way to work. Young people speak out on transitions to employment. youngfoundation.org/wp-content/uploads/2012/10/the-way-to-work.pdf (Accessed on 19 October 2020.)
- Khan, A.R. and Jakel, T. 2017. *YES! Youth-Led Changemaking. A Game-Changer in the field of youth development*. Berlin, YES Founders Foundation.
- Kirzner, I. 1973. *Competition and Entrepreneurship*. Chicago, University of Chicago Press.
- Kolb, D.A. 1983. *Experiential learning: Experience as the source of learning and development*. New Jersey, Prentice Hall.
- Kourilsky, M. L. 1995. Entrepreneurship Education: Opportunity in Search of Curriculum. *Business Education Forum*, Vol 50, Issue 10, pp. 11-14.
- Kourilsky, M. L. and Walstad, W. B. 2007. *The Entrepreneur in Youth. An Untapped Resource for Economic Growth, Social Entrepreneurship, and Education*. Cheltenham/Northampton, Edward Elgar.
- Kunev, S., K. Galanakis and P. Gkiourka. 2011. Case Studies Book on Entrepreneurship and Innovation & Business creation and management. https://www.researchgate.net/publication/230556382_Case_Studies_Book_on_Entrepreneurship_and_Innovation_Business_creation_and_management_English_and_Spanish (Accessed on 19 October 2020.)
- Kuratko, D. F. 2005. The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice*, Vol 29, pp. 577-597.
- Kuratko, D. F. 2011. *Entrepreneurship Education: Emerging Trends and Challenges for the 21st Century*. Coleman Foundation White Paper. <http://www.usasbe.org> (Accessed on 20 June 2020.)
- Kuratko, D. F. and Hodgetts, C. 1998. *Entrepreneurship—A contemporary approach*. Hinsdale, The Dryden Press.

- Lackéus, M. 2015. *Entrepreneurship in Education. What, Why, When, How*. Paris, OECD/European Commission.
- Lans, T. and Gulikers, J. 2010. Assessing entrepreneurial competence in entrepreneurship education and training. Fayolle, A. (ed.), *Handbook of Research in Entrepreneurship Education*. Cheltenham/Northampton, Edward Elgar, pp. 54-67.
- Lans, T., V. Blok and J. Gulikers. 2015. Show me your network' and I'll tell you who you are: social competence and social capital of early-stage entrepreneurs. *Entrepreneurship & Regional Development*, Vol 27, Issue 7-8, pp. 458-473.
- Leffler, E. 2019. An Entrepreneurial Attitude: Implications for Teachers' Leadership Skills? Leadership and Policy in Schools. <https://doi.org/10.1080/15700763.2019.1668021> (Accessed on 20 June 2020.)
- Leopold, T. A., V. Ratcheva and S. Zahidi. 2016. *The Future of Jobs*. Geneva, World Economic Forum.
- Lindner, J. 1997. *Jugend ohne Arbeit. [Youth without jobs]. Gesellschaft für die Rechte zukünftiger Generationen. [Foundation for the Rights of Future Generations]. Ihr habt dieses Land nur von uns geborgt, [You have only borrowed this land from us]*. Hamburg, Rasch & Röhrling.
- Lindner, J. 2014. Reference framework for entrepreneurship competences, Version 15. EESI Austrian Federal Ministry of Education/IFTE, Vienna. <http://www.youthstart.eu/en/approach> (Accessed on 20 June 2020.)
- Lindner, J. 2018. Entrepreneurship education for a sustainable future. *Discourse and Communication for Sustainable Education*, Vol 9, Issue 1, pp. 115–127.
- Lindner, J. 2019. Entrepreneurial Spirit for the Whole School - Ways to Become an e.e.si-Entrepreneurship School. *Discourse and Communication for Sustainable Education*, Issue 10, Vol 2, pp. 5-12.
- Lindner, J., K. Kiss, B. Schwabl-Drobir and M. Zoder. 2020. *Entrepreneurship Education for children and young adults in Austria. From the review of the situation to the map of actions*. Vienna, Federal Ministry Republic of Austria Digital and Economic Affairs.
- Locke, R.R. 1993. Education and entrepreneurship: an historian's view. Braun, J./Rose, M.B. (eds), *Entrepreneurship networks and modern business*. Manchester/New York, pp. 55-75.
- Low, M. and MacMillan, I. 1994. Entrepreneurship: Past research and future challenges. Jennings, D. F. (eds), *Multiple Perspectives of Entrepreneurship*. Cincinnati, South-Western Publishing Co, pp. 14-31.
- Mansoori, Y. 2015. Entrepreneurial Methods. Division of Innovation Engineering and Management Department of Technology Management and Economics. Gothenburg, Chalmers University of Technology.
- Manzanera-Roman, S. and Valera, J.A.D. 2019. The influence of educative aspects on entrepreneurship of disabled people in Spain. *Suma de Negocios*, Vol 10, Issue 22, pp. 35-41.
- McCallum E., R. Weicht, L. McMullan and A. Price. 2018. *EntreComp into Action: get inspired, make it happen*. Luxembourg, Publication Office of the European Union.
- McFadzean, E., A. O'Loughlin and E. Shaw. 2005. Corporate entrepreneurship and innovation part 1: the missing link. *European Journal of Innovation Management*, Vol 8, Issue 3, pp. 350-372.
- McMullan, W.E. and Long, W.A. 1987. Entrepreneurship Education in the nineties. *Journal of Business Venturing* 2, pp. 261-275.
- Mendelow, A.L. 1981. Environmental Scanning - The Impact of the Stakeholder Concept. ICIS 1981 Proceedings, 20. https://www.mindtools.com/pages/article/newPPM_07.htm (Accessed on 20 June 2020.)
- MEPSC and NSDC. 2018. MEP/N996. Plan for basic entrepreneurial activity. National Occupational Standard. https://nsdcindia.org/sites/default/files/MEPN9996_Plan_for_Entrepreneurial_Activity_V1_16_10_2018.pdf (Accessed on 14 September 2020.)
- Mkala, M. and Wanjau, K. 2013. Transforming Implementation of Entrepreneurship Education Programme in Technical Training Institutions in Kenya. *European Journal of Business and Innovation Research*, Vol 1, Issue 3, pp. 18-27.
- Moberg, K., E. Stenberg and L. Vestergaard. 2012. *Impact of entrepreneurship education in Denmark*. Odense, The Danish Foundation for Entrepreneurship.
- Moroz, P. W., and Hindle, K. 2011. Entrepreneurship as a Process: Toward Harmonizing Multiple Perspectives. *Entrepreneurship Theory and Practice*, pp. 781-818.
- MSDE. 2015. *National Policy for Skill Development & Entrepreneurship*. New Delhi, MSDE.
- Mycoskie, B. 2011. *Start Something That Matters*. New York, Spiegel & Grau/Random House Group Company.
- Nafukho, F. M. and Muyia, M. A. H. 2010. Entrepreneurship and socioeconomic development in Africa: a reality or myth? *Journal of European Industrial Training*, Vol 34, Issue 2, pp. 96-109.
- Nardi, P., I. Bengo and S. Caloni. 2018. Reality-based learning and the Oliver Twist school: Towards a new approach in VET. C. Nägele and B. E. Stalder (eds.), *Trends in vocational education and training research. Proceedings of the European Conference on Educational Research (ECER)*. Vocational Education and Training Network (VETNET), pp. 253–260.

- NBTE. 2008. *General Guidelines for Entrepreneurship Education in Nigeria*. Kaduna, National Board for Technical Education.
- Neck, H. M., and Greene, P. G. 2011. Entrepreneurship Education: Known Worlds and New Frontiers. *Journal of Small Business Management*, Vol 49, Issue 1, pp. 55-70.
- Neck, H., Greene, P., and Brush, C. 2014. *Teaching entrepreneurship, a practice-based-approach*. Cheltenham/Northampton, Edward Elgar.
- Nielsen, J. E. 2015. Corporate Entrepreneurship, Organizational Learning and Knowledge Implementation. *Economic Horizons*, Vol 17, Issue 3, pp. 199-214.
- Nimeshi, G. K. S. 2017. Entrepreneurship Education and Employment Performance. *International Journal of Scientific and Research Publications*, Vol 7, Issue 10, pp. 86-91.
- OECD. 2012. European Commission/OECD Policy Brief on Youth Entrepreneurship. https://www.oecd.org/cfe/leed/Youth%20entrepreneurship%20policy%20brief%20EN_FINAL.pdf (Accessed on 20 June 2020.)
- OECD. 2018. Developing entrepreneurship competencies. Policy Note, SME Ministerial Conference, Mexico City. <https://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-3.pdf> (Accessed on 18 October 2020.)
- OECD. 2019. *OECD Policy Brief on Refugee Entrepreneurship. Papers on SMEs and Entrepreneurship*. Paris, OECD.
- OECD. 2020. *Policy Brief on Recent Developments in Youth Entrepreneurship*. Paris, OECD.
- Osterwalder, A. and Pigneur, Y. 2010. *Business model generation. A handbook for visionaries, game changers, and challengers*. New Jersey, John Wiley & Sons.
- Penaluna, A., K. Penaluna and I. Diego. 2014. The role of education in enterprising creativity. Rolf Sternberg, R. and Krauss, G. (eds.), *Handbook of Research on Entrepreneurship and Creativity*. Cheltenham/Northampton, Edward Elgar, pp. 360-398.
- Perry, J. T. and Chandler, G. N. 2011. Entrepreneurial Effectuation: A Review and Suggestions for Future Research. *Entrepreneurship Theory and Practice*, Vol 36, Issue 4, pp. 837-861.
- Pinchot, G. 1985. *Intrapreneuring: Why You Don't Have to Leave the Organization to Become an Entrepreneur*. New York, Harper & Row.
- Rae, D. 1999. *The Entrepreneurial Spirit: Learning to unlock value*. Dublin, Blackhall Publishing.
- Raposo, M. and Paco, A. d. 2011. Entrepreneurship Education: Relationship Between Education and Entrepreneurial Activity. *Psicothema*, Vol 23, Issue 3, pp. 453-457.
- Reezende de, T.L. and Christensen, J.D. 2009. *Supporting Entrepreneurship Education. A report on the Global Outreach of the ILO's Know about Business programme*. Geneva, ILO.
- Rogan, J. M., and Grayson, D. J. 2003. Towards a theory of curriculum implementation with particular reference to science education in developing countries. *International Journal of Science Education*, Vol 25, Issue 10, pp. 1171-1204.
- Ronstadt, R. 1985. The Educated Entrepreneurs: A New Era of Entrepreneurial Education is Beginning. *American Journal of Small Business*, Summer, pp. 7-23.
- Salvador Manzanera-Román, S. and Valera, J. A. D. 2019. The influence of educative aspects on entrepreneurship of disabled people in Spain. *Suma de Negocios*, Vol 10, pp. 35-41.
- Sarasvathy, S., and Venkataraman, S. 2011. Entrepreneurship as Method: Open Questions for an Entrepreneurial Future. *Entrepreneurship Theory and Practice*, Vol 35, Issue 1, pp. 113-135.
- Sarma, P. 2006. Need and Importance of Entrepreneurship Education: Issues & Efforts. Sahay, A. and Nirjar, A. (eds.), *Entrepreneurship: Education, Research and Practice*. New Delhi, Excel Books, pp. 43-54.
- Schumpeter, J.A., (2008). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, translated from the German by Redvers Opie. New Brunswick (U.S.A) and London (U.K.), Transaction Publishers.
- Seikulla-Leino, J., E. Ruskovaara, M. Ikavalko, J. Mattila and T. Rykola. 2010. *Promoting entrepreneurship education: the role of the teacher? Education + training*, Vol 52, Issue 2, pp. 117-127.
- Seligman, M. E. P. 2006. *Learned Optimism: How to Change Your Mind and Your Life*. New York, Vintage Books.
- Shane, S. and Venkataraman, S. 2000. The Promise of Entrepreneurship as a Field of Research. *The Academy of Management Review*, Vol 25, Issue 1, pp. 217-226.
- Shapero, A., and Sokol, L. 1982. Social dimensions of entrepreneurship. Kent, C.A., Sexton, D.L. and Vesper, K.H. (eds.), *Encyclopedia of Entrepreneurship*. Englewood Cliffs, Prentice-Hall, pp. 72-90.
- Simon, L. and Beddie, F. 2017. *Explaining the VET applied research developmental framework*. Adelaide, NCVET.
- Sinha, T. N. 1996. Human Factors in Entrepreneurship Effectiveness. *The Journal of Entrepreneurship*, Vol 5, Issue 1, pp. 23-39.
- Sivers, D. 2015. *Anything You Want: 40 Lessons for a New Kind of Entrepreneur*. New York, Penguin.
- Stevenson, H. H. and Jarillo, C. 1990. A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, Vol 11, pp. 17-27.
- Swartland, J. R. 2008. *A Study of Entrepreneurship Education in Botswana and the Significance of Institutional Preparation. Biennale on Education in Africa*. Maputo.

- Thayer, T. 2018a. Reflective Assessment. <http://entreassess.com/2018/05/23/reflective-assessment/> (Accessed on 14 September 2020.)
- Thayer, T. 2018b. Personal Attributes. <http://entreassess.com/2018/05/29/personal-attributes/> (Accessed on 14 September 2020.)
- Timmons, J.A. 1994. *New Venture Creation (4th edition)*. Irwin, Homewood.
- Timmons, J.A., L.E. Smollen and A.L. Dingee. 1977. *New Venture Creation (1st edition)*. Irwin, Homewood.
- TMA. (Tom Martin & Associates). 2016. *Best practice in Entrepreneurship Education and Training in the Further Education and Training sector. Final report*. Blackrock, TMA.
- UNCTAD. 2015. Policy Guide on Youth Entrepreneurship. http://unctad.org/en/PublicationsLibrary/webdiaeed2015d1_en.pdf (Accessed on 20 June 2020.)
- UNESCO-APEID. 2019. Hangzhou Declaration. Envisioning and Developing Entrepreneurship Education: Addressing the Challenges of the Fourth Industrial Revolution. <https://bangkok.unesco.org/index.php/content/entrepreneurship-education-crucial-amid-uncertainties-4th-industrial-revolution> (Accessed on 20 June 2020.)
- UNESCO-UNEVOC. 2013a. *Revisiting global trends in TVET: Reflections on theory and practice*. Bonn, UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training.
- UNESCO-UNEVOC. 2013b. *Advancing TVET for Youth Employability and Sustainable Development. Promising Practices in TVET and Entrepreneurship Education in the Arab States*. Bonn, UNESCO-UNEVOC International Centre.
- UNESCO-UNEVOC. 2017. *UNESCO-UNEVOC Promising Practices. Fundación Paraguaya's Self Sustainable Schools. Turning learning into earning and saving*. Bonn, UNESCO-UNEVOC International Centre.
- UNESCO-UNEVOC. 2019a. Entrepreneurial learning in TVET. Discussion paper. https://unevoc.unesco.org/pub/entrepreneurial_learning_discussion_paper1.pdf (Accessed on 20 June 2020.)
- UNESCO-UNEVOC. 2019b. *Entrepreneurial learning in TVET. Report of the UNESCO-UNEVOC Virtual conference*. Bonn, UNESCO-UNEVOC International Centre.
- UNESCO-UNEVOC. 2019c. *UNESCO-UNEVOC Promising Practice in Focus. Tknika: Entrepreneurial Culture (Ikasenpresa)*. Bonn: UNESCO-UNEVOC International Centre.
- UNESCO-UNEVOC. 2019d. Virtual conference summary report: innovation in TVET. <https://unevoc.unesco.org/home/UNEVOC+Publications/lang=en/akt=detail/qs=6137> (Accessed on 12 October 2020.)
- UNESCO. 2015a. Recommendation concerning technical and vocational education and training (TVET). http://portal.unesco.org/en/ev.php-URL_ID=49355&URL_DO=DO_TOPIC&URL_SECTION=201.html (Accessed on 20 June 2020.)
- UNESCO. 2015b. *Regional overview: Latin America and the Caribbean. EFA Global Monitoring Report: Achievements and Challenges*. Paris, UNESCO.
- UNESCO. 2017a. Global Report 2018. Reshaping Cultural Policies. <http://uis.unesco.org/sites/default/files/documents/reshaping-cultural-policies-2018-en.pdf> or <https://en.unesco.org/creativity/global-report-2018> (Accessed on 12 October 2020.)
- UNESCO. 2017b. Global Report. Reshaping Cultural Policies. Fact sheet. https://en.unesco.org/creativity/sites/creativity/files/global_report_fact_sheet_en.pdf (Accessed on 12 October 2020.)
- UNESCO. 2006. *Towards an Entrepreneurial Culture for the twenty-first century: Stimulating Entrepreneurial Spirit through Entrepreneurship Education in Secondary Schools*. Paris, UNESCO.
- United Nations. 2015. Transforming Our World. The 2030 Agenda for Sustainable Development. <https://sustainabledevelopment.un.org/post2015/transformingourworld> (Accessed on 20 June 2020.)
- United Nations. 2017. World Creativity and Innovation Day. <https://www.un.org/en/ga/71/resolutions.shtml> (Accessed on 20 June 2020.)
- Vaicekauskaitė, R. and Valackienė, A. 2018. The Need for Entrepreneurship Education at University. *Journal for Teacher Education for Sustainability*, Vol 20, Issue 1, pp. 82-92.
- Vesper, K.H. 1982. Research on Education for Entrepreneurship. Kent, C.A., Sexton D.L. and Vesper K.H. (eds.), *Encyclopedia of Entrepreneurship*. Englewood Cliffs, Prentice Hall.
- Vesper, K.H. and Gartner, W.B. 1997. Measuring progress in Entrepreneurship Education. *Journal of Business Venturing*, Vol 12, pp. 403- 421.
- Vesper, K.H. and McMullan, W.E. 1988. Entrepreneurship: today courses tomorrow degrees? *Entrepreneurship Theory and Practice*, Vol 3, Issue 1, pp. 7- 13.
- Vetrivel, S. C. 2011. Entrepreneurship and Education: A Missing Key in Development Theory and Practice. *Advances in Management*, Vol 3, pp. 18-22.
- Volkman, C., K.E. Wilson, S. Mariotti, D. Rabuzzi, S. Vyakarnam and A. Sepulveda. 2009. *Educating the Next Wave of Entrepreneurs - Unlocking entrepreneurial capabilities to meet the global challenges of the 21st Century*. Geneva, World Economic Forum.

- Wong, P.K., Y.P. Ho and E. Autio. 2005. Entrepreneurship, Innovation and Economic Growth: Evidence from GEM Data. *Small Business Economics*, Vol 24, pp. 335–350.
- World Bank. 2014a. Entrepreneurship Education and Training Programs around the World Dimensions for Success. <https://openknowledge.worldbank.org/bitstream/handle/10986/18031/9781464802027.pdf> (Accessed on 20 June 2020.)
- World Bank. 2014b. Entrepreneurship Education and Training: Insights from Ghana, Kenya, and Mozambique. from <http://documents.worldbank.org/curated/en/845181468030266720/pdf/886570PUB0978100Box385230B00PUBLIC0.pdf> (Accessed on 20 June 2020.)
- World Bank. 2016. *Out of school and out of work: Risk and Opportunities for Latin America's Ninis*. Washington DC, World Bank.
- World Innovation Summit for Education. 2017. Entrepreneurship Education: A Global Consideration from Practice to Policy Around the World. https://www.wise-qatar.org/sites/default/files/asset/document/wise-research-6-babson-11_17.pdf (Accessed on 20 June 2020.)
- Yunus, M. 2010. *Building Social Business: The New Kind of Capitalism that Serves Humanity's Most*. New York, PublicAffairs.
- Zhang, Y., G.M. Duysters and M. Cloudt. 2014. The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, Vol 10, Issue 3, pp. 623-641.



United Nations
Educational, Scientific and
Cultural Organization



International Centre
for Technical and Vocational
Education and Training

Technical and vocational education and training (TVET) institutions need to ensure not only job-specific skills that align with labour market demands, but also the development of entrepreneurial competencies and mindsets to respond to 21st century challenges. Indeed, the importance of entrepreneurial skills in equipping youth for the world of work and improving their capabilities to adapt to changing skills demands is well reflected in the commitments made by the international community. SDG 4 on quality education and SDG 8 on decent work and economic growth call for the strengthening of skills for employment, decent jobs and entrepreneurship.

This practical guide helps TVET institutions to focus on what really drives entrepreneurial learning by providing the tools to assess the needs of the target group and the framework to explore the added value of an entrepreneurial learning ecosystem. The Entrepreneurial Learning Institution Canvas (ELIC) enables TVET institutions to develop their own concept for entrepreneurial learning, map out which entrepreneurial learning activities are relevant to their institutional context and apply innovative approaches and models.

