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Entrepreneurial learning in TVET

Report of the UNESCO-UNEVOC Virtual conference

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Introduction

In response to the changing world of work, technical and vocational education and training (TVET) systems are increasingly recognizing the importance of broad-based entrepreneurial skills and mindsets to support employability and innovation.

Entrepreneurial learning is no longer confined to a narrow focus on business creation, instead it is globally acknowledged as providing key competences for life and work, which learners can develop and practice through the TVET curriculum. TVET systems must now consider how to enact this new set of competences that their graduates need for the future.

Fostering youth employment and entrepreneurship is one of the three thematic priorities under the UNESCO TVET Strategy (2016-2021), highlighting the importance of entrepreneurial skills in responding to the economic and societal challenges of rising youth unemployment around the world. The UN Sustainable Development Goals confirm this importance, stressing entrepreneurship across two of the seventeen goals. Sustainable Development Goal 4 highlights the need to strengthen 'skills for employment, decent jobs and entrepreneurship' through education. Alongside this is Sustainable Development Goal 8, advocating 'full and productive employment and decent work for all', where a focus is placed on the development of policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation.

This virtual conference was organized from 26 November to 7 December 2018, as part of a wider initiative by UNESCO-UNEVOC to advance the dialogue on entrepreneurship in TVET, including the Experts Consultation Meeting on Mainstreaming Entrepreneurial Skills in TVET in Santiago, Chile from 5-7 December 2017. The consultation meeting brought together UNEVOC Centres and other key stakeholders from around the world to discuss how entrepreneurial learning is evident in TVET policies and programmes, share experiences, examine implications for teachers and teacher training and identify opportunities and challenges to mainstreaming into TVET systems. As one of the next steps, this conference picked up on some of the key themes emerging from the meeting, to allow the global TVET community to add their perspectives and ideas.

The conference was attended by 295 participants from 83 countries and drew added value from a cross-section of diverse contributions. Educators, managers, policy-makers, community representatives and business leaders were all represented, bringing much-needed perspectives to a topic that must transcend silos to become mainstreamed within TVET learner experiences. Contributions also came from experts and practitioners in this field through webinars and recorded presentations, alongside other resources and links to diverse initiatives associated with this important topic. After each topic was completed, a summary of discussions was made available in a designated topic thread.



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Objectives and scope

The **intended outcomes** of the conference were for participants to:

- Build insights into how entrepreneurial learning has relevance and importance to TVET;
- Explore the role of different elements of the ecosystem in supporting entrepreneurial learning in TVET: policy, curriculum, teachers, learning activities beyond formal curriculum, and support for career paths/startups in mainstreaming entrepreneurial learning in TVET;
- Discover practical ideas to empower TVET learners with entrepreneurial mindset and skills;
- Contribute to forward thinking on how UNESCO-UNEVOC can develop their work to drive forward entrepreneurial learning in TVET systems.
- The structure and sequencing of the virtual conference were founded on six topics to allow key themes within this area of work to be considered, with an extensive range of online sessions to support insights and discussions. The topics addressed were inter-linked, thus the summary of discussions may draw on inputs from across the conference to ensure all relevant contributions are included.

Topics and questions discussed

Topic 1 – Introducing entrepreneurial learning – the why and what for TVET

This topic explored the why and what of entrepreneurial learning, introducing widely used definitions to build understanding and share how these break down into the skills and behaviours that can be developed through learning. Key questions for participants included:

- What do you understand by entrepreneurial learning?
- What do you understand as the entrepreneurial skills developed through entrepreneurial learning in TVET?
- Are there unique features specific to entrepreneurial learning within TVET compared to other levels of education?

Topic 2 – Policy or strategy supporting entrepreneurial learning in TVET

Research shows that policy can be an important driver for entrepreneurial learning in TVET. This topic explored existing examples of policy and strategy in this area and the motivations behind it, identifying both key characteristics and real impact on learning. Key questions for participants were:

- Does policy or strategy emphasize the importance of entrepreneurial learning for TVET in your country?
- What are the factors to be addressed through policy, which can help drive entrepreneurial learning in TVET?
- Are there examples where policy, strategy or tools have had positive impacts on entrepreneurial learning in TVET institutions?

Topic 3 – Entrepreneurial learning in TVET curriculum

Education is often driven by the acquisition of academic or technical knowledge, while entrepreneurial learning focuses on the skills and mindset that learners need to develop to apply their knowledge in

new and innovative ways. This topic asked participants to contribute their views and experience on how curriculum can promote entrepreneurial skills and mindset. Key questions included:

- What are the main characteristics or features of curricula for entrepreneurial learning?
- In what ways can we – or should we – bring real-life into entrepreneurial learning experiences for TVET learners?
- What examples of entrepreneurial learning in TVET can you suggest from your country?

Topic 4 – Supporting teachers and trainers to embed entrepreneurial learning into TVET

Teachers and trainers are at the frontline of education, acting as primary catalysts of change within any education system. This topic sought out the key issues and potential solutions for supporting teachers and trainers. Key questions were:

- How can TVET systems actively help teachers and trainers to embed entrepreneurial learning in their teaching?
- What is the role of those leading and managing TVET institutions?
- What additional knowledge, skills or experience do teachers and trainers need to introduce or enhance entrepreneurial learning?
- How can introducing entrepreneurial learning support teachers and trainers?
- Do you know of interesting or effective practices that target teachers, trainers or education leaders to promote and embed entrepreneurial learning?

Topic 5 – Entrepreneurial learning beyond formal TVET curriculum

This topic aimed to gather insights on innovative approaches to encouraging non-formal entrepreneurial learning within the TVET system, as extra-curricular opportunities or alternatives to formal curricula.

Participants were asked:

- Can you identify opportunities and areas for TVET students to undertake entrepreneurial learning beyond formal TVET curriculum?
- What examples are already out there that we can adapt or learn from?

Topic 6 – Support for career paths/start-ups

Career guidance is about supporting young people to take their next steps into the world of work or start-ups, and entrepreneurial skills and mindset are crucial assets for every learner. This topic explored the need for career guidance to recognize the value of entrepreneurial competences for the wider labour market, highlighted business start-ups as a specific career pathway within the student advice and information process, and identified start-up support sources for aspiring entrepreneurs. Key questions for participants included:

- In your view, what does an entrepreneurial career pathway look like?
- How can career guidance services support TVET learners to understand the value of their entrepreneurial skills to their future career and employers?
- How can TVET support start-ups?
- What inspiring examples are already out there?

Summary of the discussions

Topic 1: Introduction to entrepreneurial learning

There is a mismatch between the skills developed through global education systems and the evolving needs of society and the economy. Increasingly, evidence shows that the currency of the future will be the ability to apply transformative competences like creativity and problem solving¹, both as citizens and as workers. Our young people now need more than knowledge and basic skills. However, TVET systems around the world are not yet fully adapted to promote and deliver the competences that students need to thrive as active members of society and contributors to the economy.

This part of the conference opened up discussions on participants' own perceptions and understanding of entrepreneurial learning, supported by links and expert contributions on widely used definitions. It offered the chance to explore whether there is consensus, whether there is alignment within the commonly used definitions and if there is a specificity of how TVET contributes.

Understanding entrepreneurial learning

The understanding of entrepreneurial learning shared through the virtual conference highlighted the emphasis on connecting entrepreneurial learning to the world of work. Some participants highlighted their understanding of how entrepreneurial learning can support social or environmental impact. Others stressed that it is about allowing students to find and follow their own interests and dreams.

The perspectives contributed by many participants point to an understanding of entrepreneurial learning through a competence-based approach, stressing the importance of skills and mindset development through this type of learning.

A number of participants highlighted the connection between entrepreneurial learning and business creation, specifically from South Africa, Nigeria and Ethiopia. Participants wrote of the importance of students considering start-ups as a career pathway after study, and the role of entrepreneurial learning in developing this different mindset. In areas of high unemployment, this may take on added significance where business creation is seen as the alternative to a dearth of employment opportunities.

'Entrepreneurial learning is important to me because it changes the mindset of students from job seekers to job creators.'

Participant from Nigeria

Many contributors explicitly extended this broad understanding to include the world of work, by highlighting the role that entrepreneurial competences play in employment and the labour market. This often links to the importance of ensuring learners recognise that they themselves have developed entrepreneurial skills and how they can support employability.

'...the notion that all individuals should be encouraged to be more enterprising, whether or not they have the ambition to start their own business. The underlying logic is that enterprising employees will be both innovative and easily adaptable in ever-changing economies, seek opportunities and be excellent resource managers - the entrepreneurial features essential to productivity'

Participant from Cameroon

¹ World Economic Forum, New Vision for Education (2015)

The broader value of entrepreneurial learning, highlighted through EntreComp, was evident in contributions from some participants, who noted the potential social and cultural impact. A participant from Malawi working in the culture and tourism sector referred to the potential benefit for communities where a rich culture can offer entrepreneurial opportunities.

'Teaching and learning activities aimed at observing needs in our society and developing skills [...] that solve problems for a better world for all to live in, no matter the area of studies.'

Participant from Nigeria

Defining the competences developed through entrepreneurial learning

When asked what participants understood as the competences associated with entrepreneurial learning in TVET, some respondents were very precise about what they see as essential for skills and mindset development. They commonly highlighted creativity, idea generation, teamwork and problem solving, with some participants linking to documents from Europe that define specific sets of competences associated with entrepreneurial learning (for an example, see EntreComp in Topic 2). Participants from Nigeria and Egypt provided a list of the specific competences developed through current training provisions:

'Entrepreneurial skills could be viewed from the perspective of negotiation, opportunity identification, idea generation and communication, human relation, effective team building and resource control amongst others.'

Participant from Nigeria

'Problem solving, critical thinking, negotiation, creativity, discovering opportunities, vision, self-awareness, financial literacy, initiation, planning and management, team building, communication.'

Participant from Egypt

Unique features specific to entrepreneurial learning within TVET

There was a consensus among participants of the real-life focus of TVET. They agreed that learning in TVET is more reflective of the world of work than in other areas of education, and that entrepreneurial learning enhances this feature to support future TVET graduates as employees or as entrepreneurs setting up a new venture.

'Vocational education has so many different subjects, all related to real life situations, that offer a solid base for the development of entrepreneurial competences through PBL.'

Participant from Greece

Participants also stressed the role of entrepreneurial learning to enable a more rounded and holistic approach to education. This extended the perspectives associated with entrepreneurial learning to include the role of TVET learners as contributors to society as well as securing their own economic future.

"TVET is directly related to the real life of people... TVET without entrepreneurial learning is meaningless and outcomes will be socially and economically invaluable."

Participant from Islamic Republic of Iran



The third feature to be highlighted is the nature of TVET as an environment where practical learning is commonplace. This is a positive feature for the development of entrepreneurial learning, but it is clear that any practical learning should explicitly feature entrepreneurial competence development in order for it to be classed as practical entrepreneurial learning. However, practical learning is a very positive starting point for introducing entrepreneurial practical learning into TVET culture and curriculum.

Topic 2: Policy or strategy supporting entrepreneurial learning in TVET

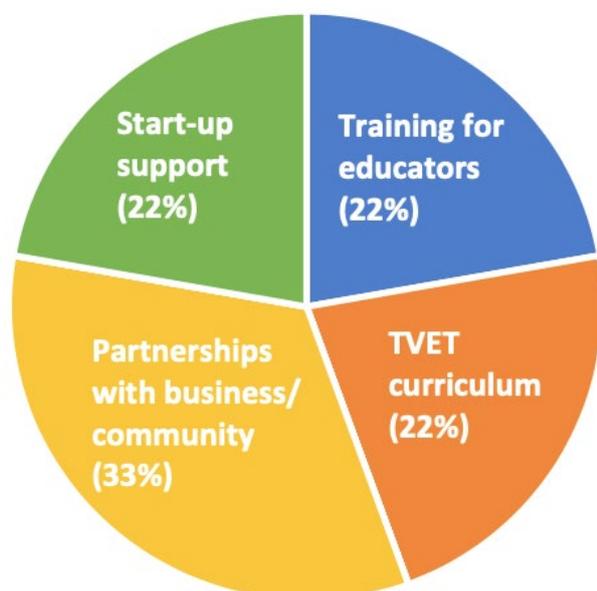
There is a mismatch between the skills developed through global education systems and the evolving needs of society and the economy. Increasingly, evidence shows that the currency of the future will be the ability to apply transformative competences like creativity and problem solving, both as citizens and as workers. Our young people now need more than knowledge and basic skills. However, TVET systems around the world are not yet fully adapted to promote and deliver the competences that students need to thrive as active members of society and contributors to the economy.

Policy and strategy can be the driving forces of change in a TVET system, responding to developing circumstances in society to identify what should be important within TVET and highlighting certain areas of work as priorities. A clear policy direction influences how discussions develop at policy level, how funding is allocated, the content of curriculum or how the perceived success of a TVET system is measured. Highlighting entrepreneurial learning in public policy and strategy can change peoples' minds about the relevance of this work to TVET; involving new or existing stakeholders and partners with an interest in this area can fuel the debate on how to mainstream this in teaching and learning.

There was broad agreement that policy-makers should recognize the potential of entrepreneurial learning in TVET. Contributions underlined its role as one of the catalysts of economic and social change through youth engagement, employability, social cohesion and new business creation leading to new jobs. While a number of participants highlighted that there was a lack of policy interventions (South Africa), many evidenced a number of ways in which entrepreneurial learning is being promoted at policy level. Suggested approaches include:

- Raising awareness through national campaigns and events such as Global Entrepreneurship Week (Jamaica, Democratic Republic of the Congo)
- Provision of guidance or curriculum resources on entrepreneurial learning in TVET (Jamaica, Nigeria, Wales, England)
- Mandatory inclusion of entrepreneurial learning in TVET curriculum (Nigeria, Jamaica)
- Capacity building through training for educators or TVET institution leaders (Nigeria, Wales, England, Scotland)
- Establishing entrepreneurship development centres in all TVET institutions (Nigeria)
- Support for TVET graduates through start-up competitions, grants or business incubation services (Jamaica, Nigeria)

Events and/or start-up competitions may either involve or be guided by policy level. Awareness-raising actions can be a tool to profile the importance of entrepreneurial learning to policy-makers directly, which can influence future policy direction towards the inclusion of actions for entrepreneurial learning in TVET.



Policy focus - Nigeria

Nigerian colleagues shared a detailed overview of the ongoing work at national level to mainstream entrepreneurial learning in TVET, introduced by the Nigerian government to support efforts to tackle youth unemployment and drive job creation. This is a regulatory approach and is being implemented via the National Board for Technical Education (NBTE). Guidance and training is provided across all accredited TVET institutions, with five-year accreditation of TVET institutions now also including monitoring on the following priorities:

- Integration of entrepreneurship education into curricula
- Establishment of Entrepreneurship Development Centre at each institution
- Development of entrepreneurship curricula and training
- Training for trainers to deliver entrepreneurship courses
- Capacity building for coordinators, teachers and managers of entrepreneurship programme centres

A survey of participants asked where policy support is most needed. Respondents highlighted four areas, with most emphasis on support for partnerships with business and the community. This echoed conference contributions underlining the nature of entrepreneurial learning in TVET, connecting to business and community for real-life relevant learning. Policy can also create the momentum for partner engagement, as illustrated by a participant from Jamaica:

'My experiences ... led me to understand that one of the most influential strategies is incorporation on a national level. That way more funding and partnerships are developed.'



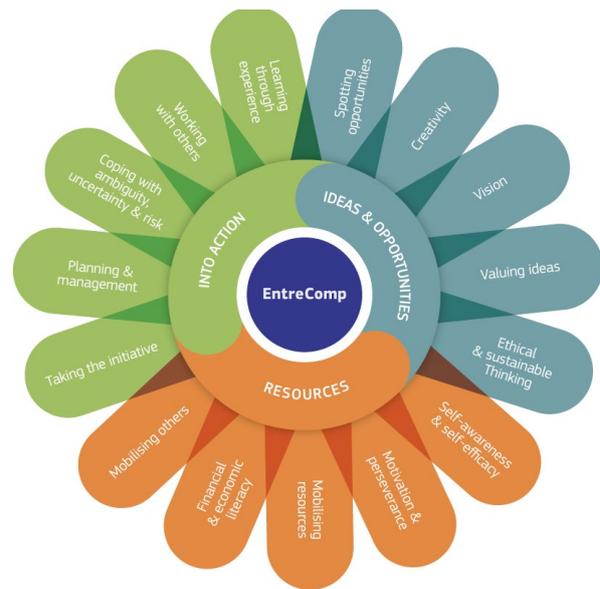
WEBINAR: Creating EntreComp - the European entrepreneurship competence framework

Link to recording: <https://youtu.be/8pxVKwNKxtM>

Launched in 2016, EntreComp is the new European entrepreneurship competence framework developed by the European Commission. Introduced by Margherita Bacigalupo through a conference webinar, this guidance tool, supporting both policy and practice, is being used as a model for creating common understanding of what is meant by entrepreneurial learning, and is supporting both design and implementation of entrepreneurial learning across education, employment, and enterprise settings. It is a detailed framework of fifteen entrepreneurial competences across three competence areas. These competences are those that enable individuals to achieve the vision for EntreComp:

“act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, or social.”

There is increasing recognition of its value as this tool can be used to create a consensus between stakeholders and to explain which competences should be developed through an entrepreneurial learning curriculum. As a result, the framework is now being used at policy and practice levels by international agencies, governments and national/local organizations across Europe, while engagement is increasing in areas of Africa, Asia and South America.



Topic 3: Entrepreneurial learning in TVET curriculum

Many TVET graduates will need to be work-ready by the end of their course. This takes more than professional knowledge, but also the ability to apply that knowledge in a fast-changing digital world.

This topic explored the TVET curriculum needed to develop these graduates, with online debate supported by a virtual conference panel of presentations representing insights from academia, TVET networks and a TVET lecturer from different corners of the world. Conference delegates clocked up over 450 views of the 5 recorded presentations on this topic.

Two approaches to an entrepreneurial learning curriculum

From the forum contributions, there was a clear conclusion that entrepreneurial learning is understood in two ways within TVET curriculum:

- 1 A broad interpretation - entrepreneurial mindset and skills applicable to being entrepreneurial in any area of life or professional practices;
- 2 A narrower interpretation - entrepreneurial mindset and skills for self-employment and business start-up.

Contributors agree that both of these curriculum approaches are important in TVET. In the discussions, contributors underlined the need for learning to be relevant to the local or national economic context, building the chances for graduates to secure an income after they leave college. TVET institutions could consider broadening the opportunities for students to develop entrepreneurial skills and mindset, to allow it to permeate across different curricula and reflect the economic imperative for self-employment in certain countries.

Practical entrepreneurial learning relevant to real-life

Practical was the word that came through repeatedly, as a powerful call for more action-based entrepreneurial learning in TVET from contributors in diverse countries including Brazil, South Africa, Jamaica and the Islamic Republic of Iran. While TVET often has practical elements, there is a real opportunity to develop more action or project-based entrepreneurial learning as pedagogical methods proven to help students develop entrepreneurial skills and mindsets. Programmes can also be designed specifically for women, as highlighted by a participant from Jamaica. Multi-disciplinary learning was also mentioned as a means to break down silos between subjects in TVET, and encourage cross-sector innovation (mentioned by a participant from the UK). Examples shared during the recorded presentations included the DUOC UC curriculum model from Chile, value-creation pedagogy shared by Martin Lackéus from Sweden or the Eight Dollar start-up activity presented by Caio Flavio Stettiner from Brazil. A common feature was the inclusion or emphasis of student-directed action-based learning, where there is a more flexible learning format and more ownership is placed with the student to increase their interest and engagement in learning.

'Those skills that enable sustainable partnerships, innovative businesses, purpose-focused and/or value-driven enterprises and partnerships developed through: Learning through self-discovery; Focus; Practice of relevant authentic activities over the years till a culture of excellence is achieved.'

Participant from Nigeria

Action-based learning also needs to include real-life relevance, and participants echoed this in the discussions. Practitioners mentioned field visits, guest-speakers and entrepreneurial role models as useful tools to bring real-life into the classroom. A participant from the Netherlands highlighted that learning activities can be based on real-world problems or societal challenges, asking students to come up with workable solutions which create value for others. Students can also set up actual social or business ventures based on their creative ideas to test them out with the wider community. A number of curriculum resources were shared directly:

- YouthStart entrepreneurial learning challenges initiative² (Europe)
- Fazenda Contecer workshops on entrepreneurial skills for personal development³ (Brazil)
- Welsh BaccaLaureate challenge-based learning as a nationally recognised curriculum and qualification⁴ (Wales)
- Practice Firms offering international network of virtual trading companies based in TVET⁵ (Austria)
- The EntreComp giant⁶ (Greece)
- ETC Toolkit – subject based curriculum ideas and resources for entrepreneurial learning in TVET and higher education⁷ (UK)

Real-world learning spaces are already relevant across TVET, where on-the-job training is widespread. The dual system, workplace learning and internships are clear opportunities for entrepreneurial learning, where the learner gains experience of real workplaces. A number of participants mentioned this, including those representing Brazil, Iran, South Africa, Jamaica and India. However, it is important to emphasize that entrepreneurial skills and mindsets can only be effectively developed through work-related learning, if the learning activities explicitly support them. Learning in the work place can also be taken a step further, as suggested by a participant from the Netherlands, through the emerging opportunities of living labs, makerspaces or entrepreneurial hubs as the new classroom.

² <http://www.youthstart.eu/en/>

³ <https://www.fazendocontecer.org.br>

⁴ <https://www.wjec.co.uk/qualifications/levels/welsh-baccalaureate.html>

⁵ <https://www.act.at>

⁶ <http://mypdcourses.blogspot.com/p/my-entrecomp-giant.html>

⁷ <https://www.etctoolkit.org.uk>

‘Entrepreneurial learning should be based on the development of specific projects, but without a solid content-based perspective. Without this, it may not enhance substantially the capacity of students to innovate and find the solutions needed in their environment and life courses.’

Participant from Brazil

Creating a learning continuum

Entrepreneurial learning should not happen only in TVET, but can be part of a continuum of learning. A participant in Jamaica put the focus firmly on entrepreneurial learning as part of lifelong learning, including greater encouragement of entrepreneurial skills from early childhood education. This would map the curriculum at every stage of the educational life cycle, to allow a progression of learning and development throughout education and training, where competence frameworks and progression models such as EntreComp can demonstrate how this can be conceptualized.

Embedding entrepreneurial learning into TVET

Finally, for entrepreneurial learning to be effective, it must be embedded across the TVET learning experience. A participant from Iran emphasized the importance of including entrepreneurial learning at each stage of the curriculum or training process, from the initial needs assessment and design of training through to development, implementation and evaluation.

Using entrepreneurial competences and related learning outcomes in curriculum design can strengthen the entrepreneurial skills and mindset, empowering students through their experience and understanding of their own capacity and potential. The role of assessment is also important. A participant from Sweden highlighted that more formative assessment approaches can place the assessment emphasis on progress and development of the learner over time, rather than only the final result or product. Teacher and student/student teams can discuss and agree what the measures of success are in a specified activity, and/or involving business and community stakeholders in assessing student effort can offer real-world perspective and exposure.

Developing partnerships and collaborations with community and business is also key to supporting an entrepreneurial curriculum, from influencing curriculum content, to delivering in the classroom or being directly involved in the assessment of learners entrepreneurial learning activities.

‘...in TVET we can prepare young people for more than just a career within a specific sector but for an entrepreneurial life.’

Participant from Wales

These discussions helped to frame the next topic which addresses the frontline of TVET, supporting TVET teachers and trainers.



Topic 4: Support for teachers and trainers

Teachers and trainers are the primary catalysts of change within any education system, working at the frontline of learning. There is a wealth of practice available about how TVET can support teachers and trainers, but at the basic level this is about ensuring those working directly with learners are equipped with the pedagogical knowledge and skills to deliver entrepreneurial learning through their teaching.

Training provision is the most common route to this, delivered through four main paths:

- Pre-service training (this can include induction training);
- In-service training, also known as continuing professional development;
- Teacher work placements in industry to build understanding of industry and sector-specific practical knowledge;
- International training courses.

Does your TVET institution provide training in entrepreneurial learning?



A snap survey of the conference indicates that most respondents have either pre-service or in-service training for TVET educators, while few have both. Training can be particularly important in a sector where educators are often recruited for their sector expertise and may not have previous experience of teaching.

'The discipline of teaching itself should be done entrepreneurially.'

Participant from Nigeria

Training for educators

There was broad consensus among respondents on how important it is for teachers to understand the competence-based approach to education and training, mentioned by participants from Iran and Spain. Participants from Iran and Nigeria highlighted the need for both hard and soft skills, while the participant from Iran also mentioned meta-skills. A summary of responses would see the outline of training include:

- 1 TVET field of specialism - related to understanding of the economic sector and labour market needs relevant to their subject area;
- 2 TVET pedagogies relevant to entrepreneurial learning such as entrepreneurial project-based learning;
- 3 Understanding of the specific entrepreneurial mindset and skills to be developed through their teaching [for more insight see highlighted competence frameworks in topic 1].

Courses highlighted through the conference as examples of effective training included:

- TKNIKA in Spain has developed a TVET training course for educators⁸
- CREATE, the Highlands and Islands Centre for Enterprise and Innovation in Scotland, has developed a bespoke course to teach Entrepreneurship and train Enterprise Educators from TVET⁹ (UK)
- European School Net Teacher Academy previously offered an online course (MOOC) for educators called 'Boosting a sense of initiative and entrepreneurship'¹⁰

Professional development beyond training

Training can also take other approaches, such as teachers developing their understanding of entrepreneurial learning through the delivery of entrepreneurial learning itself. Teach A Man To Fish runs a global school enterprise challenge also open to TVET, offering a simple and straightforward learning-by-doing opportunity for teachers seeking a first step into this work¹¹.

Yet professional development cannot only be about training, but must also extend to the sources of support, resources and networking for teachers and trainers. Online networking forums can be very useful places to discuss and find ideas and support, or through creating offline small teacher dialogue/discussion groups or networks. In Iran, they have connected formal and non-formal TVET educators into a single network, while the South East European Centre for Entrepreneurial Learning created a knowledge lighthouse as a central networking and resource hub¹².

Building support at the institutional level

It is key to provide institutional level support to teachers and trainers in their work, whilst recognizing the importance of the TVET manager or leaders to the teaching and learning culture within an institution. A participant from the South East European Centre for Entrepreneurial Learning highlighted their work across eight countries to drive culture change among school and TVET managers as well as the educators themselves, using a training competence framework as the basis for developments¹³.

'Institutional leadership support is vital in building/establishing an entrepreneurial culture which in turn drives the development of entrepreneurial learning in the curriculum.'

Participant from Wales

'Once [the] school starts to act as a lighthouse for the entrepreneurial way of thinking, there is also a cascade effect happening in the parents' generation, especially in industrially deprived and post-conflict areas.'

Participant from Croatia

The recognition of individual teachers' expertise through awards or specialist certification can be a powerful motivator. Nigeria has a strong focus on entrepreneurial learning in TVET with an Entrepreneurship Development Centre established in each TVET institution. They have called for teachers to be recognized when new products are launched or patents registered, rather than the more traditional approach of academic papers published. In Iran, they have Best Teaching Model Festivals to recognize excellence. While this was not evidenced widely in the conference, there is a shift needed towards valuing the quality of teacher's knowledge and skills in delivering effective entrepreneurial learning.

⁸ See a recorded presentation on the programme here https://youtu.be/l0zYW_QyJZY

⁹ <https://www.createhighland.com/educators/see-programme.aspx>

¹⁰ <https://www.mooc-list.com/cour...nts-european-schoolnet-academy>

¹¹ <http://www.schoolenterprisechallenge.org>

¹² <http://seecel.hr/knowledge-lighthouse-5028>

¹³ www.seecel.hr

Topic 5: Entrepreneurial learning beyond the formal TVET curriculum

In an ever-changing world, TVET learning takes place in a variety of different settings. This might mean non-formal alternatives to learning such as online courses or MOOCs (massive open online courses) offered by TVET institutions, or taking part in TVET extra-curricular entrepreneurial learning activities, such as use of entrepreneurial clubs, makerspaces, hackathons, social challenges, business competitions or initiatives like ENACTUS. Sometimes

'Municipal economic promotion and education services act as promoters and coordinators of the project, putting their resources at the service of the entrepreneurial spirit of the students.'

Participant from Spain

- Entrepreneurial clubs and student networks are highlighted by Bow Valley College in Canada. The college emphasizes the role of peer-to-peer networking as well as bringing in entrepreneurs to inspire and motivate students. These visits from entrepreneurs give students the chance to ideate and offer solutions to a specific real-life challenge being faced by the visiting entrepreneur.
- Job fairs can include an entrepreneurial focus, such as in Iran where a one-day event for 100 graduates featured entrepreneurial (soft) skills workshops alongside job-matching interviews.
- Non-formal learning initiatives may be propelled by international partners or industry funding. Bow Valley College highlighted the different partners that are engaged to fund and support entrepreneurial learning opportunities beyond the formal curriculum.

entrepreneurial learning takes place in extra-curricular student activities that are not usually associated with entrepreneurial learning, such as student parliaments, student societies or youth forums taking entrepreneurial action at local level.

Different approaches were highlighted in the conference:

- Online learning was showcased through Fundación Romero, a successful initiative in Peru that offers online entrepreneurial skills development and business training accompanied by opportunities to encourage start-ups from competitions to incubator places. Fundación Romero was established and is led by a group of Peruvian companies seeking to support economic development in rural areas¹⁴.
- Mini-company programmes are seen in Barcelona, where an extra-curricular cooperatives programme enables students to set up an entrepreneurial cooperative over the course of one year, as part of the municipality entrepreneurship education initiatives¹⁵.
- Entrepreneurial competitions can act as motivators. The TVET competition in Iran gathered 140 TVET graduate entries and awarded the top 5 with the national title of Successful Skill Entrepreneur. In Nigeria, the TVET sector has significant engagement with ENACTUS as an entrepreneurial learning initiative that places the focus on student-led development of entrepreneurial actions, thereby creating social value for others¹⁶. In Canada, Bow Valley College offers a range of competitions allowing different types of entrepreneurial learners to engage.

¹⁴ <https://www.fundacionromero.org.pe/nosotros>; <https://www.campusromero.pe/que-es>; <https://www.incubadorapqs.pe/pde/>

¹⁵ <https://www.diba.cat/en/web/cueme/inici>

¹⁶ <https://enactus.org/>

'...it is believed that when ... youths are taught the right knowledge and skills, given the right attitude, it could spur self-reliance and potentially reduce youth unemployment in the country.'

Participant from Nigeria



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The importance of non-formal entrepreneurial learning

The importance of these alternative modes of learning cannot be underestimated. The UNESCO Recommendation concerning TVET identifies extra-curricular activities as a key activity for TVET institutions. They can be a driver to increase access, engagement and skills development, and may allow more student-influenced learning outside the structure of the formal curriculum framework. While the value of this learning is widely accepted, it is not often formally recognized through additional academic credit in TVET. In some parts of the world, things are changing to allow extra-curricular learning to be recognized either on its own or as part of the course credit driving recognition of this experience for employment or further formal learning. However the pace of change remains slow¹⁷.

Topic 6: Support for career paths and start-ups

Career guidance should recognize the value of entrepreneurial competences for the wider labour market, highlight business start-ups as a specific career pathway within the student advice and information process, and identify start-up support sources for aspiring entrepreneurs. This becomes ever more important in TVET as learners are only a step away from entering the world of work or start-ups. This conference gathered a pool of ideas on how career pathways and start-ups can be supported through TVET. Participants offered a number of examples demonstrating specific support for start-ups. However, there were fewer examples of career-related entrepreneurial actions not linked to start-ups, which may indicate a potential for further research.

Supporting career pathways

At subject level, courses or departments can place a focus on developing the creativity and innovation of students through visits to industry, targeted speakers, innovation challenges, business plan competitions or idea pitching sessions (see also those mentioned in topic 5). One respondent suggested linking revenue generation opportunities with practical entrepreneurial learning for students, where students are involved in real businesses run through and by TVET programmes, developing products and services relevant to the area of specialism. Actions that embed elements of career guidance directly into curriculum are regarded as a best practice approach in lifelong guidance policy¹⁸.

¹⁷ <http://www.oecd.org/education/skills-beyond-school/recognitionofnon-formalandinformallearning-home.htm>

¹⁸ http://www.cedefop.europa.eu/files/5514_en.pdf; http://www.eucen.eu/images/posts/elgpn_resource_kit_2011-12_web.pdf

Beyond the classroom, thirty-one TVET institutions in Iran provide career guidance kiosks that could be developed to include a focus on entrepreneurial careers and business start-ups. Other ideas emerging from the conference was the creation of a pool of career counsellors to provide virtual mentoring to connect the relevance of entrepreneurial skills and mindsets to career pathways, or the development of connections between students and entrepreneurial role models from different walks of life. In Wales, entrepreneur role models deliver powerful curriculum sessions to make different career choices, including start-ups, a more desirable option¹⁹.

Inadequate mentoring is becoming a major issue in linking career guidance to entrepreneurial skills and mindsets, causing an increase in youth unemployability!

Participant from Nigeria

Supporting start-ups

Active support for those interested in developing start-ups was highlighted throughout the conference as a priority for TVET. It is worth noting that the economic context of a country may impact on the services offered by TVET; and some participants highlighted that in areas with high youth unemployment, it can be imperative to prepare TVET graduates to start their own businesses. Business start-up training can be offered to all TVET graduates, and tailored to support young people or women entrepreneurs to address the specific challenges youth and women face in the start-up process. Participants highlighted the following features across the conference discussions:

- Having a central contact for start-up support at the international level can be a powerful driver at the institutional level, increasing visibility and student engagement, as shown in examples from Canada²⁰ (an entrepreneur-in-residence) and the UK²¹ (an entrepreneurship champion);
- Access to finance such as microfinance and potential investor networks (Jamaica, South Africa);
- Business incubators to nurture new businesses by TVET graduates (UK, Nigeria, Zambia, Canada);
- Entrepreneur networks and peer-to-peer support (Canada, UK);
- TVET-based Entrepreneur Development Centres to combine services (Nigeria) and allow increased visibility of and access to start-up support services within the institution;
- TVET institutions supporting students to develop their business plans before they finish their course, giving them experience of the proposal process in a safe environment and potentially linking them with sources of finance (Paraguay).

'BongoHive provides a range of start-up and tech programmes...in addition to start-up programmes, they organize issue-specific workshops and seminars, support community developer groups on a variety of topics such as gaming and robotics, and host a wide range of industry networking events.'

Participant from Zambia

A clear pathway from learning to start-ups can encourage people to see the opportunities offered by self-employment within their context. TVET institutions around the world are well placed to support their learners to create their own jobs, and it is evident from this conference that even a small selection of practices yields a breadth of activity being undertaken globally.

¹⁹ <https://businesswales.gov.wales/bigideas/our-role-model-network-wales>

²⁰ <https://cm.bowvalleycollege.ca/about/news-media-releases/2018/entrepreneur-in-residence-from-bow-valley-college-wins-gold-at-world-conference>

²¹ <https://businesswales.gov.wales/bigideas/explore-business-ideas/enterprise-entrepreneurship-college-and-university>

Drawing conclusions for the entrepreneurial learning ecosystem to be put into practice across TVET

'The three steps to take in a pathway to mainstreaming entrepreneurial learning?'

Look for champions, pilot new practices, create new collaborations.

European Training Foundation

Through contributions spanning every region of the world, this conference provided insight and evidence of action being taken to drive forward entrepreneurial learning, part of a global process of educational transformation from knowledge-based learning towards the firm and explicit inclusion of skills-based learning.

In **topic 1**, this virtual conference explored the understanding of entrepreneurial learning, and discovered that there is a common understanding of its relevance beyond business. There is a genuine commitment in the TVET community to developing entrepreneurial skills and mindsets, and a broad consensus on what we understand as the specific entrepreneurial skills and attributes - from creativity to opportunity spotting, from working with others to planning and taking actions.

In **topic 3**, this virtual conference addressed the very complex question of curricula. There are diverse approaches to entrepreneurial teaching and learning as highlighted by contributors, including practical learning, work-based learning, project-based learning, venture creation based learning, and entrepreneurial learning that creates community, social or cultural value. However, from the wealth of evidence, it is most often linked to entrepreneurial learning through venture creation, using business-related curricula or business creation experiences to ensure the relevance for the learner entering the world of work or set to launch a business start-up. Based on participants' level of interest during the conference, there may be scope to explore entrepreneurial learning practices more aligned to creating community, social or cultural value.

In **topic 5**, participants saw the nature and potential of learning beyond formal education, with examples provided from around the world. These comprised of online entrepreneurial learning provisions and MOOCs, to more locally based extra-curricular entrepreneurial learning activities including mini-company activities, job fair-based sessions or entrepreneurial clubs and networks.

In **topic 2**, participants explored different policy approaches and strategies. Various governmental or regional policies might not necessarily offer a coherent strategy to promote entrepreneurial learning, which causes challenges of consistency and messaging when trying to implement in TVET institutions. This is where clearer frameworks and definitions, such as EntreComp, can be useful to create a common understanding and vision between government and its wider community or business stakeholders.

In **topic 4**, the discussions explored the support that teachers and trainers need at the frontline of learning. There is a global need for access to good quality teacher training in this area, which might take place via pre-service or in-service training. However, the experience of participants highlighted that this training should build the competences of TVET educators to understand the relevance to their own vocational area, to have knowledge of the associated pedagogies and to comprehend the specific entrepreneurial mindset and skills to be developed such as those outlined in EntreComp. Contributors also stressed the importance of institutional support, peer networks to encourage collaboration and exchange of ideas at grassroots level, and the use of placements and mobilities to broaden educators professional and industry experience.

In **topic 6**, the virtual conference extended the discussion started in topic 5 to cover career pathways and start-up support. TVET has a vital role within the local ecosystem for employment and start-up support. Careers development can be supported through extra-curricular activities, as the basis of an engagement pathway for developing employability and for aspiring entrepreneurs to discover and engage with start-up support. Many examples of start-up support aligned with the earlier emphasis on learning through business contexts. Going beyond this, TVET could consider expanding thinking to explore living labs, makerspaces or other community spaces as creative learning environments where different actors from TVET and beyond can come together to encourage entrepreneurial thinking and action.

'The modern world doesn't reward you for what you know, but for what you can do
with what you know.'

Andreas Schleicher, OECD²²

The engagement and contributions across all areas of this conference have allowed us to explore these six topics. This conference outlined the practical actions being taken in countries, municipalities and TVET institutions. We can see how they contribute to the process of mainstreaming entrepreneurial learning into TVET. There are multiple factors which play a role in the development of the entrepreneurial learning ecosystem around and within TVET, but the six topics specifically addressed in this conference are arguably the most prominent.

The UNESCO-UNEVOC diagram provides a picture of the priority elements which underpin mainstreaming in TVET. Six of the elements were explicitly addressed within this conference, while the remaining three were highlighted through discussions and will deserve further research via future actions.

TVET learners need to be able to use entrepreneurial skills and mindsets to apply the knowledge and understanding they gain through their subject specialism, whilst responding to the needs and demands of the labour market. Increasingly, learners themselves are demanding change in the way they experience their education.

Evidence from relevant research and the contributions in this conference suggests that no country has managed to mainstream entrepreneurial learning seamlessly into the culture, teaching and learning of TVET. Across all elements of the entrepreneurial education ecosystem, identified by UNESCO-UNEVOC in the diagram above, there is much work to be done to drive change and support learners. To develop entrepreneurial learning takes partnership at policy, institutional and classroom levels, bringing together those individuals and organisations who need to see the value in this work and those who can support its implementation. It takes a vision, where each of those partners can see their place. It takes action and reflection, as the basis for learning by doing and learning by doing better. The catalyst sparking change can begin in any one of the topics we have addressed in this conference.

If these skills are proven to support young people in understanding and fulfilling their potential to be active and entrepreneurial citizens in their community, then working on these different elements of the ecosystem will bring us closer to seeing a mainstreamed approach within TVET systems around the world.

²² Quoted in <https://www.thestage.co.uk/news/2019/arts-teaching-become-important-maths-tech-based-future-education-expert/?fbclid=IwAR3GB-1ZlafI96ke05nTFLBt5zHAyXu1kxbrqfU7x-V6tf3J0q-uwdz7j5E>



Shared presentations

Topic 1 – Introduction to entrepreneurial learning

- Elin McCallum providing a short video to introduce conference: <https://youtu.be/m5sL3wCgqos>

Topic 2 – Policy and strategy

- Margherita Bacigalupo (European Commission, Spain) presenting on EntreComp – a reference framework for the entrepreneurship competence designed by the European Commission: <https://youtu.be/8pxVKwNKxtM>

Topic 3 – Entrepreneurial learning in the TVET curriculum

- Martin Lackeus (LoopMe.io / Chalmers University of Technology, Sweden) on entrepreneurial learning – how to support students to create shared value through their learning: https://youtu.be/JWqgh_loEpk
- Pablo Vaillant and Alejandra Shaw (DUOC UC, Chile) present the curriculum approach of their TVET network: <https://youtu.be/GsbuPOKvKSU>
- Caio Flavio Stettiner (FATEC, Brazil) sharing practical ways to introduce entrepreneurial learning into TVET curriculum: <https://youtu.be/F5ZgfsGbWTg>
- Colin Jones (Queensland University of Technology, Australia) presenting on entrepreneurial learning methods: <https://youtu.be/HU2EO-huxYw>
- Colin Jones in a question and answer session to explore entrepreneurial teaching and learning: <https://youtu.be/EJ15X5dWfao>

Topic 4 – Supporting teachers and trainers

- Inge Gorostiaga (Tknika, Spain) on how TKNIKA promotes entrepreneurial culture in the TVET schools in the Basque Country: <https://youtu.be/aeNE83OjNoc>
- TVET Teacher question and answer session with TKNIKA (Spain): https://youtu.be/l0zYW_QyJZY
- Ikasnpresa Congress organized by TKNIKA (Spain), showing how teachers play a key role in facilitating student-centred learning experiences: <https://www.youtube.com/watch?v=CceX0gpvE4o&t=5s>

Topic 5 – Entrepreneurial learning beyond the formal curriculum

- Craig Elias - Entrepreneur-in-Residence at Bow Valley College in Canada. Recorded presentation on the extra-curricular activities he has developed to help identify and support aspiring entrepreneurs (also links to start-up support theme): <https://youtu.be/bQfqzIDkWJg>

Topic 6 – Support for career paths/start-ups

- Craig Elias - Entrepreneur-in-Residence at Bow Valley College in Canada. Live Q&A on practical 'how-to' steps to developing extra-curricular and start-up support initiatives and what he has learned along the way: <https://youtu.be/dUPAIRw6YQQ>
- Luis Cateura - Head of the Programme for Self-Sufficient Schools at Fundacion Paraguaya . Sharing how his works supports student to practice self-employment before they finish their course: <https://youtu.be/A3IW3YQxl4I>

Drawing conclusions for the entrepreneurial learning ecosystem to be put into practice across TVET

- Olena Bekh of European Training Foundation understanding the 'what' and 'how' ecosystem that may be able to drive this work and how it all centres on creating partnership with a common vision: <https://youtu.be/NTUIPZ0yHj4>

Shared resources and links

Topic 1 – Introduction to entrepreneurial learning

- Boosting a sense of initiative and entrepreneurship in your students – a MOOC about entrepreneurial learning for teachers developed by European School Net: <https://www.europeanschoolnetacademy.eu/web/boosting-a-sense-of-initiative-and-entrepreneurship-in-your-students>
- Understanding Future Skills – a short film on the impact of the digital era on skills published by Skills Scotland: <https://www.youtube.com/watch?v=ITJUQre19Mg>
- What are the 21st century skills every student needs – a World Economic Forum blog article by Rebecca Weicht: <https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students/>
- A Taxonomy of Entrepreneurship Education developed by the Danish Foundation for Youth Entrepreneurship, the nationally funded and recognised centre leading this work in Denmark: <http://eng.ffe-ye.dk/media/44723/Progression-model-English.pdf>
- South East European Centre for Entrepreneurial Learning - Key Competence model (published in 2014): <http://www.seecel.hr/UserDocsImages/iscsed-1>
- Entrepreneurship education: Road to Success. A European Commission publication from 2015 providing an overview of the available evidence for the efficacy of entrepreneurial learning: https://ec.europa.eu/growth/content/entrepreneurship-education-road-success-0_en
- UK Quality Assurance Association Guidance on Enterprise and Entrepreneurship: https://www.qaa.ac.uk/docs/qaa...ion-2018.pdf?sfvrsn=15f1f981_8
- Information on the British Council collaboration with the Thai Vocational Education Commission (OVEC) to develop a new approach and curriculum for student enterprise and entrepreneurship for vocational education in Thailand: <https://www.britishcouncil.org/education/skills-employability/success-stories/entrepreneurship-skills-thai-vocational-education>
- Access to list of student text books, including employability, in India: http://psscive.ac.in/stud_text_book.html

Topic 2 – Policy and strategy

- EntreComp into Action: Get Inspired, Make it Happen. A user guide to the European entrepreneurship reference framework published in 2018: <http://europa.eu/!fb73BK>
- EntreComp YouTube Playlist – a set of 3 minute films explaining each of the 15 competences: <https://www.youtube.com/playlist?list=PLGI5zHT2w7jAPsfSjWfatN4tlxJhvbj7->
- EntreComp introduction film – a short animation explaining the European EntreComp framework: <https://europa.eu/!NB83VB>
- UNCTAD Entrepreneurship Policy Hub – an online resource hub for those seeking advice and lessons learned on why and how to develop policy supporting entrepreneurial learning: <https://unctad.org/en/pages/di...ementation-guidance.aspx?Ne=4>
- UNCTAD Policy Guide on Youth Entrepreneurship - designed to support countries to develop effective policies driving youth entrepreneurship: https://unctad.org/en/PublicationsLibrary/webdiaeed2015d1_en.pdf?user=17
- European Commission Eurydice Report on Entrepreneurship Education in Schools. This includes a section on strategy, identifying types of strategy and the priorities they address alongside a short overview of the policy approach in each country: <http://bit.ly/2FLYVds>
- Wales Youth Entrepreneurship Strategy – an example of a specific strategy. Wales launched the first Youth Entrepreneurship Strategy in 2004, followed by the second in 2010: <https://businesswales.gov.wales/bigideas/youth-entrepreneurship-strategy>. Outputs and impact results are available here: <http://bit.ly/2AtesJ3>
- India launched the National Policy for Skill Development and Entrepreneurship was launched alongside a new ministry in 2015 to fulfil the vision of a 'Skilled India'. More information can be found here: <https://www.msde.gov.in/National-Policy-2015.html>

Topic 3 – Entrepreneurial learning in the TVET curriculum

- ETC Toolkit is an online subject-based resource repository with entrepreneurial learning resources mapped against the UK's QAA Guidance, offering insights into what educators are doing in enterprise in their different subject areas: <https://www.etc toolkit.org.uk>
- Link to a short film from PeerMont Global illustrating their corporate social interest approach and how it also supports entrepreneurial learning (Peermont Global) for the work we doing in Pre-Schools, Primary Schools , High Schools and Communities where they do business as a CSI initiative: <https://www.youtube.com/watch?v=MaNdDFggXKI&authuser=0>
- Fazendo Acontecer is a non-profit foundation providing curriculum and learning resources supporting entrepreneurial learning, used mainly in Brazil and USA: <https://www.fazendoacontecer.org.br/en/how-we-work/>
- EMPRETEC supports capacity-building for the promotion of entrepreneurship and micro, small and medium sized enterprises to facilitate sustainable development and inclusive growth. Led by UNCTAD: http://empretec.unctad.org/?page_id=30
- Youth Start EU project is an EU funded project providing teaching and learning resources around a set of entrepreneurial challenges for students in primary and secondary school: <http://youthstartproject.eu/>
- The Welsh Dragon: The success of enterprise education in Wales – a publication by Carnegie UK outlining the youth entrepreneurship strategy approach and activities in Wales: <https://www.carnegieuktrust.org.uk/publications/the-welsh-dragon-the-success-of-enterprise-education-in-wales/>
- Big Ideas Wales – the online hub for all things youth entrepreneurship in Wales: <http://www.bigideaswales.com>
- ACT – Austrian network of practice firms for TVET: <https://www.act.at/>
- Setsquared is a UK business incubator initiative ranked top globally: <https://www.setsquared.co.uk>

Topic 4 – Supporting teachers and trainers

- Teach A Man To Fish – The School Enterprise Challenge Awards Programme available to schools and TVET globally. It offers schools a guided approach to getting started in entrepreneurial learning and project-based teaching, which can be used as resources for extra-curricular activities such as a business club or can be integrated in the curriculum as formal education tool: <http://www.schoolenterprisechallenge.org>
- Enterprise and Entrepreneurship Educator - The Institute of Enterprise Education in the UK offers a national framework for teachers called "Enterprise and Entrepreneurship Educator" to support teachers to plan and develop entrepreneurial learning in the curriculum: <http://campus.ioee.uk/national-enterprise-standards>
- EcoSystemApp –An European project offering an online platform with freely available resources, training materials and self-assessment tool, designed to be a one-stop shop for teacher training in entrepreneurial learning: <https://ecosystemapp.net>
- EntreComp MOOC - An online course which ran as a supported MOOC and resources are still freely available for download: <https://www.mooc-list.com/courses/entre-comp-mooc-2017-18-ants-european-schoolnet-academy>
- EntreCompEdu – This is a project in development which will produce online remote learning courses in entrepreneurial learning for secondary and TVET. Sign up to the newsletter to keep updated: www.entrecompedu.eu
- Scotland's Enterprising Schools is dedicated to supporting entrepreneurial learning in Scotland. They have developed a free online course available to any teacher globally (there are some Scotland specific references included): <http://enterprisingschools.scot/cpd/?platform=hootsuite>
- National standards for enterprise and entrepreneurship educators developed in the UK by SFEDI Institute of Enterprise and Entrepreneurship: <http://campus.ioee.uk/national-enterprise-standards>

Topic 5 – Entrepreneurial learning beyond the formal curriculum

- Fundación Romero launched the Virtual Campus Romero in 2014 to provide online entrepreneurial education accessible to the most remote and poorest areas of Peru. It now has 140000 people registered for its courses which include training on entrepreneurial skills, hosts a national business ideas competition called Para Quitarse el Sombrero (roughly translated to Tip Your Sombrero for Success) and has just launched PQS Incubadora, a four-month specialised start-up programme
<https://www.fundacionromero.org.pe/nosotros>
<https://www.campusromero.pe/que-es>
<https://www.incubadorapqs.pe/pde/>
- Enactus is a global initiative now active in 39 countries. Usually working via extra-curricular engagement with TVET and university institutions, student teams are tasked to create socially innovative projects for social impact and so develop their entrepreneurial skills, with approaches tailored to local needs or addressing regional/global issues. <https://enactus.org/> (TVET presentation from Nigeria: <https://www.youtube.com/watch?v=S04UEsKhe9M>)
- In Mexico, the CONALEP TVET network of institutions run the Santander-CONALEP entrepreneurship competition with categories for student companies offering services, products and prototypes: <https://www.youtube.com/watch?v=LQTDj7Ilg6wI&feature=youtu.be>

Topic 6 – Support for career paths/start-ups

- BongoHive: a hub for aspiring entrepreneurs and startups to guide them through the entrepreneurial journey; from idea through to getting investment. They offer a range of startup and tech programmes, networking, workshops and events including issue-specific workshops and seminars such as gaming and robotics: www.bongohive.co.zm
- Innovation Challenge – using design thinking to find solutions to different problems (by Bow Valley College): <http://www.innovationrodeo.com/innovation-challenges/>
- Link to the powerpoint by Craig Elias with all links mentioned in his recorded presentation: <http://bit.ly/VEC-Handout>
- Caribbean Centre of Excellence for Sustainable Livelihoods supports young people through competency-based skills development to guide young people and individuals in their entrepreneurial journey. They match this with practical support for aspiring entrepreneurs to develop their businesses: <https://www.facebook.com/COESL/>

About the moderator

Originally a youth worker and TVET teacher, Elin McCallum has specialized in entrepreneurial education for the past 15 years. After education and economic development policy roles with the European Commission and Welsh Government, she co-founded Bantani Education in 2016 to drive forward entrepreneurial learning across education and training. Bantani is a non-profit involved in innovating entrepreneurial learning through creating networks, building new collaborations, developing stronger networks and experimentation, with a particular focus on educator skills, employability and links to active citizenship. She has contributed to a wide range of publications including academic papers, policy guidance, Eurydice studies on entrepreneurship and citizenship education, co-authored the recent 'EntreComp into Action' publication by the European Commission and co-authored a European Commission study into the use of EntreComp for employability related actions.



Participation

- Number of participants: 295
- Number of countries represented: 83
- UNEVOC Network Members: 48
- Male: 181
- Female: 114



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