

**BILT Learning Forum**

# New Qualifications and Competencies: building the future of TVET

## MARKETPLACE

7-9 December 2021

The marketplace provides the opportunity to showcase and explore what happens when action and bottom-up innovation come together. Through the prism of new qualifications and competencies, the marketplace exhibitors will share concrete approaches in designing innovative TVET practices and solutions in the areas of digitalization, entrepreneurship, migration, and greening.

The marketplace is accessible throughout the event. Booths are staffed on 8 and 9 December 2021. Exhibitors are authors of '[Innovation and Learning Practices](#)' published in the BILT project, joined by the **Federal Institute for Vocational Education and Training (BIBB)** and the speakers of the 'International Roadshow: Digital Media in TVET'. The three co-hosting institutions of the BILT Learning Forum, the **Centre for Studies and Research on Qualifications**, France, the **Human Resource Development Council**, Botswana, and the **Human Resources Development Service of Korea**, will also be represented, just like **UNESCO-UNEVOC** and the **BILT** team.

## Exhibitors

### BIBB Online Toolbox - "Using Augmented & Virtual Reality in TVET"



#### Federal Institute for Vocational Education and Training (BIBB), Germany

*A member of the UNEVOC Network*

**Contact:** Ms Eva Hanau; [hanau@bibb.de](mailto:hanau@bibb.de)

The Federal Institute for Vocational Education and Training (BIBB) is recognized as a centre of excellence for vocational research and for the progressive development of vocational education and training (VET) in Germany. In the Marketplace, BIBB will present the Online Toolbox that puts a specific focus on the use of Augmented and Virtual Reality in TVET. For this purpose, BIBB has worked with experts and partners from around the world to produce practical guidelines and identify international project examples. During the BILT Learning Forum Marketplace, interested stakeholders can access the respective publications and gain further insights on the topic through discussion with BIBB representatives.

### GAIA – Collaborative platform for the management of professional training, creation and distribution of educational content



#### Cape Verde Competence Centre, Cape Verde

**Contact:** Mr Edson Mendes, [edson.mendes@cdc3c.com](mailto:edson.mendes@cdc3c.com)

The Cape Verde Competence Centre (CdC 3C) is a private energy transition facilitator that provides companies or institutions with advisory services to improve energy performance. The company uses a co-constructive approach to deliver solutions for capacity building and training with high quality standards. CdC 3C is prepared to respond to the technological challenges that Cape Verde and the countries of the sub-regions (ECOWAS and PALOP) face in terms of sustainable development in the fields of energy and industrial maintenance, considering the specificity of the political, economic and social reality of these sub-regions, as well as their professional and continual training needs in various sectors.

### MiniMaster

#### Cometa Formazione, Italy

*A member of the UNEVOC Network*



**Contact:** Mr Paolo Nardi, [paolo.nardi@puntocometa.org](mailto:paolo.nardi@puntocometa.org)

Many migrant minors and young adults risk unemployment and social exclusion due to low-skilled profiles or difficulties in accessing recognition of their prior learning and achievements. The MiniMaster initiative at Cometa Formazione aims to reduce the risk of social exclusion and unemployment of migrants, close skills gaps faced by local companies, and change the negative attitudes of host communities towards this vulnerable group.

## DHET - CISCO Partnership for Aligning TVET with 4IR Developments



higher education  
& training

Department:  
Higher Education and Training  
REPUBLIC OF SOUTH AFRICA

### Department of Higher Education and Training (DHET), South Africa

**Contact:** Mr David Modiba Masilu, [Modiba.d@dhet.gov.za](mailto:Modiba.d@dhet.gov.za)

This project was designed to provide curricular updates that reflect **industry needs** on a regular basis. The key benefit is that even though the same outcomes and standards are delivered, it does not require full amendments to curricula. In short, it adds value to certifications and gives learners better employment prospects without the need to fully overhaul curricula at a pace that keeps up with rapidly changing developments in technology.

CISCO's Network Academy is a key component of the project. By utilizing existing information and communications technology (ICT) courses provided by CISCO, learners in South Africa can complete a wide range of supplementary offerings and have them recognized and accredited toward their certification standards in South Africa. Curriculum mapping activities ensure that each CISCO training is properly recognized within the existing curricular structure, while opportunities for teachers and instructors ensure that they are equipped with the latest industry knowledge as they prepare their lessons.

## Virtual training environment for electricians

### FOSH Learning, South Africa



**Contact:** Harald Fleischmann; [harald@fosh.co.za](mailto:harald@fosh.co.za)



The interactive and dynamic virtual learning environments by FOSH Learning are provided within a digital BIM (Building Information Modelling) environment and contextualize required theoretical knowledge and practical skills as defined in South African occupational qualification standards. By pursuing a project-based training approach, the FOSH learning application does not provide readymade knowledge and answers. Instead it creates the conditions for learners to independently plan, carry out and control work tasks in the context of specific customer requests in the area of electro installation. The application thus draws on advanced cognitive and technical skills required of artisans in an increasingly digitalized working environment and aims to strengthen the professional competencies of apprentice electricians in South Africa.

## GRÆDUCATION

### Institute for Innovative and Preventative Job Design (fiap e.V.), Greece



**Contact:** Ms Silke Steinberg, [s.steinberg@fiap-ev.de](mailto:s.steinberg@fiap-ev.de)

In order to contribute towards modernizing and strengthening the Greek TVET system, the GRÆDUCATION project conducts research, development and testing of educational services to improve the teaching of environmental professions in Greece. Aimed specifically at increasing training and opportunities in the renewable energy sector, the project emphasizes the dual aspects of vocational education and training to support partnerships between training institutions and the private sector. The project seeks to do so through Greek-German co-development of innovative curricula and knowledge transfer. Such efforts contribute towards the ongoing cultural reform of TVET in Greece, with the implementation of technical green skills helping to modernize the TVET system and support the attractiveness of TVET as an education pathway.

## Makerspace Training Centre Project



### Gearbox, Kenya

**Contact:** Ms Tessa Bella, [tessacalleb@gmail.com](mailto:tessacalleb@gmail.com)

Gearbox is a research, product development and prototyping organization aiming to improve the lives of hardware entrepreneurs in Africa. Machine Africa Networks of Industries (MachineANI) is a constituent of Gearbox. It is a shared production space – known as a makerspace – that houses manufacturing equipment for use by entrepreneurs, trainees and other aspiring craftworkers. The makerspace allows for the sharing of resources across a wide range of manufacturing processes and creates a culture of openness and collaboration.



## Youth Start Entrepreneurial Challenges



### Initiative for Teaching Entrepreneurship (IFTE), Austria

**Contact:** Mr Johannes Lindner, [johannes.lindner@kphvie.ac.at](mailto:johannes.lindner@kphvie.ac.at)

This programme responds to an increasing need for modern methods to teach entrepreneurship to TVET students. It offers entrepreneurial challenges in different fields, which can be combined in multiple ways and implemented at all levels of TVET. Thanks to an online selection tool for suitable challenges and accompanying teaching material, the method can be directly implemented in teaching and training. The Youth Start Entrepreneurial Challenges project was carried out in close collaboration with the ministries of education of Austria, Luxembourg, Portugal and Slovenia.

## Advanced Manufacturing 4.0 Lab



### Miguel Altuna, Basque Country, Spain

**Contact:** Mr Unai Ziarsolo, [uziarsolo@maltuna.eus](mailto:uziarsolo@maltuna.eus)

The introduction and teaching of new technological, social and environmental trends is not possible without the adaptation of learning spaces and labs required by Industry 4.0 training. To make this a reality, new technologies must be included in training programmes and specific equipment procured. Moreover, mature processes and technologies, for example the industrial Internet of Things, communications, data management, and automation, must be adapted for use in training. In Basque Country, Spain, Miguel Altuna's Advanced Manufacturing 4.0 Lab/Workshop addresses these challenges with the creation of a Learning Cyber Physical Space.

## Competency Based Training in automotive for apprentices

**Sigalagala National Polytechnic (SNP)**  
in partnership with Humber College,  
representing the KEFEP 02 consortium, Kenya



**Contact:** Mr Tom Makomere, [makomeretom@yahoo.com](mailto:makomeretom@yahoo.com); Ms Nalini Andrade, [Nalini.andrade@humber.ca](mailto:Nalini.andrade@humber.ca)  
[Sigalagala National Polytechnic website](#) | [KEFEP website](#)

Sigalagala National Polytechnic is one of three Kenyan institutes participating in the Kenya Education for Employment Programme. The initiative seeks to equip Kenyan youth with the qualifications and competencies required to compete in the country's workforce and support the country's vision of transforming to a middle-income country by 2030.

## iVideo.education

**Swiss Federal University for Vocational Education and Training (SFUVET), Switzerland**

*A member of the UNEVOC Network*



**SFUVET**

SWISS FEDERAL UNIVERSITY  
FOR VOCATIONAL EDUCATION  
AND TRAINING

*Swiss excellence in vocational  
education and training*

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iVideo.education is a tool that supports active video-based learning. It promotes the creation of interactive videos using small pieces of footage, in order to foster knowledge acquisition, collaborative learning and students' reflection on work practice. iVideo.education allows vocational school teachers and in-company trainers, with no particular computer skills, to customize and structure didactic material for their own teaching or training activity, using existing footage and linking it to all sorts of different resources (text documents, images, audio files etc.). It also enables individual learners or groups of learners to insert notes directly into the video. During the BIBB International Roadshow 2021, the presenter will illustrate a few concrete applications of iVideo.education in VET contexts and present related research evidence at support of its adoption. In conclusion, future directions of development will be highlighted, especially in relation with 360-degree hypervideo.

## Innovation and Entrepreneurship Initiatives

**Temasek Polytechnic, Singapore**

*A member of the UNEVOC Network*



**Contact:** Mr Wallace Lim, [Wallace\\_LIM@TP.EDU.SG](mailto:Wallace_LIM@TP.EDU.SG)

'Every student is a unicorn' goes the saying at Temasek Polytechnic in Singapore. To broaden students' entrepreneurial horizons beyond the concept of chasing 'unicorn' start-ups, Temasek's approach to innovation and entrepreneurship focuses on equipping students with competencies for innovative thinking and developing entrepreneurial mindsets.

## Sri Lanka National Skills Passport Project



### Tertiary and Vocational Education Commission (TVEC), Sri Lanka

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**Contact:** Mr Janaka Jayalath, [jayalath@tvec.gov.lk](mailto:jayalath@tvec.gov.lk)

The National Skills Passport is a digital portfolio of a worker's skills and qualifications, references and informally acquired knowledge, all conveniently located on a smart identification card. Migrant labourers and workers returning from abroad can use the card to prove qualifications and work experience and connect to continuing education or employment opportunities. The National Skills Passport facilitates upward mobility in employment and entrepreneurial opportunities for people in Sri Lanka and beyond.

## "Reform of TVET in Viet Nam" Programme, GIZ



### College of Machinery and Irrigation (VCMI), Viet Nam



**Contact:** Mr Bach Hung Truong, [truong.bach@giz.de](mailto:truong.bach@giz.de)

In Viet Nam, the general level of environmental awareness is low, and the proportion of the economy that is devoted to green industry is relatively small. However, a willingness to shift towards a greener society is beginning to emerge, which creates a growing demand for green jobs and competencies. A technical and vocational education and training (TVET) reform programme is transforming the country's TVET system into an important facilitator of the green economy and turning institutes like the College of Machinery and Irrigation into regional hubs for green TVET.

## Virtual & Augmented Reality Learning

### Vocational Training Council (VTC), Hong Kong, China



**Contact:** Ms Ciny Lau; [ciny@vtc.edu.hk](mailto:ciny@vtc.edu.hk)

While Hong Kong has experienced manpower shortage in various industry sectors, the situation is more acute in traditional "dirty, dangerous and demanding jobs". The VR Training Simulator for lift repair and maintenance makes use of immersive technologies to make learning fun and interesting, and to promote a new approach to training through technology in vocational and professional education (VPET) in Hong Kong. The application raises trainee's safety awareness and improve trainee's ability in responding to emergency and accidents in the lift maintenance sector. The VR Training Simulator is recognised as an official Continuing Professional Development (CPD) training unit for registered workers in the lift maintenance industries. The project has received award at the 2020 Hong Kong ICT Awards and received the best performance award – Gold Award in the 19th Hong Kong Occupational Safety & Health Award in 2020.

## Centre for Studies and Research on Qualifications (Céreq), France



Co-host of the BILT Learning Forum 2021

*A member of the UNEVOC Network*

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Get to know the links training - employment - work.

Since 1971, the Céreq has produced studies and research to help professionals, decision-makers, social partners and, more broadly, all those involved in training, work and employment.

The Céreq is a public institution under the supervision of the Ministry responsible for Education and the Ministry responsible for Labour and Employment.

The Céreq's mission is to better understand the links between training, work and employment, to enlighten those involved in training and work by drawing lessons from studies and research, to support and equip professionals in setting up evaluation or observation systems. The Céreq conducts [field studies and research](#), builds statistical surveys and disseminates the knowledge acquired [by promoting its work](#) to a wide audience.



## Human Resource Development Council (HRDC), Botswana



Co-host of the BILT Learning Forum 2021

*A member of the UNEVOC Network*

**Contact:** Ms Ellah Matshediso, [ematshediso@hrdc.org.bw](mailto:ematshediso@hrdc.org.bw)

The Human Resource Development Council (HRDC) is the former Tertiary Education Council of Botswana which was established in 2002 and transformed into the Human Resource Development Council in 2013. Its mandate is Planning and Funding for Education and Training in Botswana. It is a semi-autonomous body (parastatal) established under the Ministry of Education and Skills Development and now Ministry of Tertiary Education Research and Technology. It is amongst others responsible for coordinating the implementation of the National Human Resource Development Strategy (NHRDS), policy advice on education and training, workplace learning, promote internship and apprenticeship, determine approaches to skills development. HRDC's mission is to advise, plan, fund and coordinate the development of Botswana's human resources to achieve a knowledge-based economy by engaging and integrating stakeholders.

## Human Resources Development Service of Korea (HRDK), Republic of Korea



Co-host of the BILT Learning Forum 2021

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HRDKorea performs a core role in comprehensive ways to develop and manage Korea's national human resource in the areas of lifelong competency development, qualification management, foreign workforce employment support, overseas employment support, international cooperation, skills promotion and skills competition.

## BILT Innovation and Learning Practices



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Ms Barbara Hiller, [hiller@bibb.de](mailto:hiller@bibb.de)

In the context of the BILT project, an Innovation and Learning Practice is a new approach that makes TVET more relevant to the needs of the economy, society and the environment. The publications describe practical examples of how TVET stakeholders have addressed specific challenges within one of the BILT thematic areas. They offer a learning opportunity for other TVET stakeholders, with the possibility to implement key elements in their own context. To learn more about the concept and how to submit your innovative initiative to UNESCO-UNEVOC, please contact our staff.

## UNESCO-UNEVOC International Centre for TVET



**unesco**  
International Centre for  
Technical and Vocational  
Education and Training

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UNESCO-UNEVOC acts as a clearinghouse for comparative data, innovative initiatives and practical resources focused on TVET. Through its ever-expanding collection of publications and its facilitation of online knowledge exchange, UNESCO-UNEVOC provides a resource-rich environment for the global TVET community to access valuable information that allows for strategic action.

UNESCO-UNEVOC's online services include:

- [The TVET Forum](#)
- [TVET Country Profiles](#)
- [The publications library](#)
- [Promising and innovative practices database](#)
- [TVETipedia glossary](#)

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### UNESCO – a global leader in education

Education is UNESCO's top priority because it is a basic human right and the foundation for peace and sustainable development. UNESCO is the United Nations' specialized agency for education, providing global and regional leadership to drive progress, strengthening the resilience and capacity of national systems to serve all learners. UNESCO also leads efforts to respond to contemporary global challenges through transformative learning, with special focus on gender equality and Africa across all actions.



### The Global Education 2030 Agenda

UNESCO, as the United Nations' specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to *“ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”* The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.



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## Stay in touch

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