



Digitalization in TVET

4.0

Huawei Certification to ICT Programmes

Innovation and Learning Practice**Bridging Innovation and Learning in TVET (BILT) Project****Submitted by Shenzhen Polytechnic, China**

Employees equipped with qualifications and competencies relating to the information and communications technology (ICT) industry are in high demand around the world. This is particularly true in Shenzhen, a global hub of ICT companies and innovation. To keep pace with demand for skilled labour in the ICT sector, Shenzhen Polytechnic (SZPT) has worked closely with Huawei on jointly developing programmes, designing courses and cultivating new qualifications and competencies that match the needs of the ICT industry.

Start date: 2014

Type of implementing institution: Training provider

Target group: Students at SZPT (17 to 23 years); teachers and instructors at SZPT

Shenzhen Polytechnic, China

Shenzhen Polytechnic (SZPT) is a public higher TVET institution funded by the Shenzhen municipal government for TVET. When it was established, it was one of the earliest independent public higher TVET institutions in China. It now strives to be a pioneer of innovative development in TVET, a cradle of technical skills and entrepreneurship, a research and development centre for small and medium enterprises in Shenzhen, a lifelong learning school and a TVET teacher training base.

Description of activities

In China, Huawei is the leading provider of information and communication technology products. With its global headquarters in Shenzhen, SZPT and Huawei have worked together for more than a decade on analysing roadmaps for developing digital technologies and forecasting future qualification and competency needs in the world of work.

SZPT and Huawei have jointly developed an innovative ICT education model by coupling elements of the TVET curriculum with ICT certification. In practice, SZPT integrates Huawei's enterprise certification into its TVET programmes and develops related curricula for students.

In addition, SZPT instructors regularly participate in Huawei's training workshops to learn the latest ICT technologies, which helps enhance ICT teaching and learning processes. SZPT has also worked with Huawei in developing a series of training platforms targeting specific areas of ICT, such as the company's Enterprise Network Simulation Platform, LTEstar simulation software or 5G.

Relevance

How does the partnership with Huawei address the ICT skills gap?

With the rapid development of emerging ICT technologies and the increased use of 5G, previous curricular systems, learning content, training conditions, faculty capacity and technical services were beginning to show their age when it came to meeting the demands of the ICT industry. The new 'coupling model' reshapes TVET curricula in ICT to be competency-based and designed to match the needs of the ICT industry.

Why is the pursuit of Huawei certification at a TVET institution an attractive option?

By coupling the TVET curriculum and Huawei certification in an ICT programme, students can attain ICT-related qualifications and competences as part of their TVET studies. Graduates emerge from these programmes ready for jobs in the ICT industry, which makes pursuing these qualifications and certifications via TVET an appealing option.

Furthermore, the broader labour market in ICT now emphasises soft skills such as creative thinking, emotional intelligence and communication, and complex problem solving. Students equipped with these skills are well prepared to participate in a broad range of occupations and industries.

Do students have a wide range of options?

Following four semesters of introductory coursework and ICT basics, students can specialize in several fields, such as data communication, mobile communication or cloud computing. In each field, there are three levels of Huawei certification: ICT Assistant, Professional and Expert. This framework – a diploma certificate plus any number of vocational skill level certificates – is part of China's National Vocational Education Reform Implementation Plan of 2019. The education ministry recognizes SZPT's implementation as a promising practice.

Added value

What is the benefit of working with an industry partner like Huawei?

The coupling model is an innovative practice in TVET because it engages the private sector in programme and curriculum development. TVET students have access to enterprise certification during schooling, which make use of various open educational resources (OER) and training platforms. Working with Huawei specifically allows SZPT to meet competency demands of the ICT industry in China and beyond. SZPT also benefits from Huawei's industry expertise in identifying new qualifications and competencies in advance of ICT industrial development.

How is content delivery transformed at SZPT through the partnership with Huawei?

SZPT and Huawei have set up co-teaching teams to engage in innovative teaching and learning practices for delivering new qualifications and competencies to students.

In addition, Huawei provides development opportunities for educators to gain experience in the latest ICT industry developments. In turn, SZPT educators are active participants in developing training platforms, OER, and other learning materials as part of the certification programmes.

How have students responded to the Huawei certification opportunities?

More than 5,000 students at SZPT – including more than 500 international students from some 30 countries – have studied the courses and benefited from the coupling model. Graduates who have received Huawei certificates generally find well-paying jobs in ICT-related positions. SZPT students who have received the HCIE (Huawei Certificate of ICT Expert) make up the highest proportion of all university and college graduates in the world who hold this certification.

Transferability

SZPT and Huawei are both in Shenzhen – does the coupling model work in other contexts?

Across China, more than 200 colleges and universities are studying the coupling model of Shenzhen Polytechnic and Huawei. In addition, Huawei has extended the model to similar colleges and universities in other countries. While the specific pairing of SZPT and Huawei is unique, the coupling model thrives on TVET programmes matched with a sector or enterprise that makes sense in a local context.

What are potential roadblocks to implementing the coupling model?

A lack of infrastructure and professionals to implement the coupling model in another setting could be problematic. This could include equipment shortages or a lack of qualified teachers/trainers. SZPT could provide other institutions with support in overcoming these challenges through capacity building workshops or other measures (see contact details below).

Are there resources available to other TVET institutions?

SZPT has built the National Teaching Resources Database for ICT Majors. It includes more than 30 online courses, which can help global students learn about ICT. Outside of China, SZPT has provided several ICT online courses in English, which are also available on the [UNESCO-ICHEI IIOE website](#). In addition, the materials provided by Huawei ICT Academy are available in English (such as the [Huawei Certification Platform](#)).

SZPT's coupling model with Huawei is one of the BILT project's Innovation and Learning Practices that address systemic challenges within the five work streams of the project. Specifically, SZPT's project addresses digitalization and TVET:



Digitalization and TVET

Providing response to new skills demands, as technology has permeated the world of work and is changing the profile of jobs.

Additional Innovation and Learning Practices cover the following areas:



New Qualifications and Competencies



Entrepreneurship in TVET



Greening TVET



Migration and TVET

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For more information about this practice:
<https://english.szpt.edu.cn/>

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About the BILT Project

UNESCO-UNEVOC's Bridging Innovation and Learning in TVET (BILT) project is a reference point for innovation and learning in TVET. It utilizes the international UNEVOC Network to create opportunities for collaboration and a platform for bridging innovation and learning between Europe, Africa and the Asia-Pacific region. BILT complements developments at the national level in supporting innovative, market-oriented and attractive modes of learning and cooperation in TVET.

The BILT project explores the process of identifying, integrating and implementing new qualifications and competencies in TVET. This is known as the 'three I's process'. In addition to the broad focus on new qualifications and competencies, BILT addresses four complementary themes: Digitalization and TVET, Greening TVET, Entrepreneurship in TVET, and Migration and TVET.

For more information, please visit

www.unevoc.unesco.org/bilt

or contact us at

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New Qualifications and Competencies in TVET

- **Identifying** new qualifications and competencies in a timely manner;
- **Integrating** them into appealing and flexible curricula and training regulations; and
- **Implementing** them in innovative training approaches

Entrepreneurship in TVET

Unlocking the potential of innovative entrepreneurial activities and fostering entrepreneurial culture

Greening TVET

Responding to new development paradigms for sustainability and reduced environmental impact

Digitalization in TVET

Providing response to new skills demands, as technology has permeated the world of work and is changing the profile of jobs

Migration and TVET

Accelerating the integration of migrants into their host communities, and allowing them to become productive members of the workforce

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