



Digitalization in TVET

4.0

DHET partnership with CISCO for aligning TVET with 4IR developments

Innovation and Learning Practice**Bridging Innovation and Learning in TVET (BILT) Project****Submitted by Department of Higher Education and
Training, South Africa**

In South Africa, TVET curricula are developed centrally at the national level. With the outcomes and standards already established, curriculum mapping adds new technological developments to existing curricula without the need for large-scale changes. By working with an established ICT company in a public-private partnership, changes to content and assessment standards are easy, up-to-date and relevant for learners.

Start date: January 2020

Type of implementing institution: Ministry

Target group: Students pursuing National Certificate Vocational (NCV) and National Accredited Technical Education Diploma (NATED) or Report 191 programmes.

Department of Higher Education and Training, South Africa

The Department of Higher Education and Training (DHET) is the government ministry in charge of higher education institutions in South Africa. This includes 50 TVET colleges on 270 campuses that enroll more than 750,000 students per year. DHET offers long and short programmes under for National Certificate Vocational (NCV: three years) and National Accredited Technical Education Diploma (NATED: 18 months theory, 18 months practical application).

Description of activities

The 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 of the curriculum. In short, the project adds value to certifications and gives learners better employment prospects at a pace that keeps up with rapidly changing developments in technology without the need to fully overhaul curricula.

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 new 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.

Relevance

How was the curriculum mapping conducted?

Existing curricula and programmes under DHET do not fully address areas relevant to the Fourth Industrial Revolution (4IR). The curriculum mapping exercise allowed DHET to recognize areas where CISCO's learning content overlapped with existing curricular outcomes and could be used as supplementary material. Even in a system in which curricula and programmes are regularly reviewed, they can become out of synch with

quickly shifting 4IR demands and technology. With learning content from CISCO that is at the forefront of 4IR developments, DHET can continue to teach relevant skills and competencies without the need for disproportionate or hasty changes to curricula and programmes.

Within this system, students can complete optional assessments of CISCO-based certification programmes and acquire optional CISCO certificates while pursuing a normal NCV programme. The resulting certificate is issued by the college and endorsed by CISCO. Certified courses and certificates are available in **Internet of Things** and **cybersecurity**, which are integrated within the Life Orientation and the Information Technology and Computer Science (IT&CS) NCV programmes. Introduction to Cisco certified Networking is integrated within the subject of Data Communication, and **CCNA: Introduction to Network** is integrated within the subject Hardware and Software in the same NCV.

What steps were taken to ensure instructor buy-in?

Part of the curriculum mapping process included identifying gaps for ICT lecturers and ensuring they had the capacity to upgrade their own competencies and learn new methods for integrating new competencies into lesson plans. Instructors want this training, and the partnership with CISCO offered a cost-effective and straightforward way for instructors to receive it. Curriculum mapping also ensured that the new instruction options were in line with existing lesson plans and curricular goals, which increased uptake among instructors.

Added value

What are the main benefits of certification for learners?

Fields such as cybersecurity and the Internet of Things are only increasing in importance in terms of valued workforce skills. By making sure its programmes are as up-to-date as possible and utilizing the latest resources and technology, DHET ensures that its students are better placed on the job market when they finish a programme. By including CISCO certification options within existing programmes, students gain a higher level of ICT competency, which makes them more competitive on the job market.

Do obtained CISCO certifications have wider applications?

The certificates are widely recognized as valid proof of competency in the ICT sector, and therefore a benefit to students no matter what company or ICT job they choose to pursue. DHET took steps to ensure that the new integration of CISCO's training offerings could

continue beyond the company's formal participation and that the application for students and instructors would be universal. CISCO certification platforms and delivery methods support DHET's curricular goals, but these goals are not focused or dependent on the company in terms of content or outcome.

What are other long-term benefits?

This public-private partnership has led to other permanent changes and upgrades to 4IR-related programmes and ICT instruction. For example, DHET and CISCO worked together on ICT Centres of Excellence, a new 4IR NCV stream and establishing ICT champions on TVET campuses. Disseminating digitalization qualifications and competencies is a crucial part of 4IR, and an organization like DHET provides an existing infrastructure for education delivery once the content and resources are in place. The latter are supplied in this case by CISCO, which benefits in a general way from rapid and organized ICT uptake in any context.

Transferability

How is accepting a direct private sector offer beneficial?

By accepting CISCO's offer to use its Networking Academy (NetAcad) programme to review and update ICT offerings at DHET's TVET institutions, DHET was able to avoid significant red tape that would have otherwise come from a normal procurement process to instigate such a review. DHET was able to make a quick decision and sign a letter of intent with the company to get the review process up and running. This made tangible benefits for the TVET institutions, instructors and students more readily available.

How are priorities set for implementing such a broad programme?

The sheer volume of resources, coupled with potential connectivity issues or equipment shortcomings, need not be an obstacle. DHET prioritized supplementing existing processes, curricula, and programmes with materials and resources from CISCO rather than starting from scratch. DHET also focused on what was most in demand: instructors had long desired the capacity and resources for additional ICT training and methods of delivery, while students and industry partners are interested in obtaining qualifications and competencies that have the most relevance on the job market. The private partner came with a sense of these occupational priorities and was able to target DHET curricula and programmes where they fit best.

DHET partnership with CISCO for aligning TVET with 4IR developments is one of the BILT project's Innovation and Learning Practices that address systemic challenges within the five work streams of the project. Specifically, DHET's initiative 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: [DHET's CISCO Lecturer Support Materials](#)

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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

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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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