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Advancing TVET through industry partnerships and BILT Bridging Event

19-21 May 2026, Umhlanga, KwaZulu-Natal, South Africa



Future-ready TVET systems: Digital innovation, AI and flexible learning pathways

Thursday, 21 May 2026





Moderator

Kenny Muscat
UNESCO-UNEVOC





Impulse talk
Future-ready TVET systems: Integrating
digital innovation and AI

Helen Brown

*Tshwane University of Technology (TUT),
South Africa*



Panel

Digital innovation ecosystems in TVET



Panel

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Kenny Muscat
UNESCO-UNEVOC



Affero Ismail
*Head of Digital
Innovation Centre,
Universiti Tun Hussein
Onn Malaysia
(UTHM), Malaysia*



Binaben Akoobhai
*Director: Research and
Innovation Swiss
South African Co-
operation Initiative
(SSACI), South Africa*



Luiz Eduardo Leão
*Educational
Technologies
Manager, National
Service for Industrial
Training (SENAI),
Brazil*



Yang Congkun
*Deputy Director of the
Office of International
Exchange and
Cooperation,
Shenzhen Polytechnic
University (SZPU),
China*



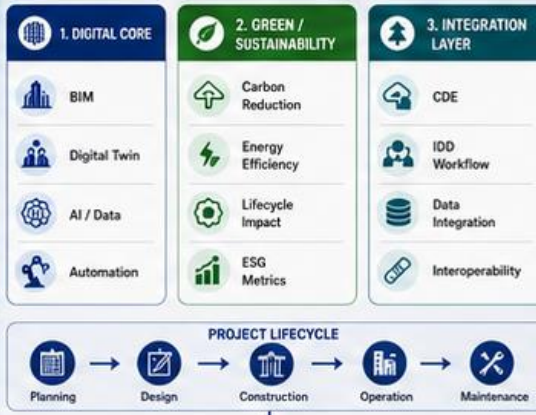
SYNTHESIS: THE QUADRUPLE HELIX COLLABORATION



DEFINING THE TECHNOLOGICAL CORE: THE CDE



INTEGRATED DIGITAL & GREEN FRAMEWORK



THE BIM IMPACT MATRIX

	TRADITIONAL STATE	BIM-EMPOWERED STATE
INDIVIDUAL / TVET LEVEL	Manual drafting and fragmented task execution.	Mastery of digital modelling, higher per-capita productivity, and elevation to high-value, knowledge-based technical roles.
PROJECT LEVEL	Siloed design, manual clash detection, and costly delays.	Automated 4D simulations, precise resource allocation, reduced errors, and streamlined timelines.
TECHNOLOGY & LIFECYCLE LEVEL	Disparate, legacy software, 2D CAD, and disconnected data across phases.	Integrated digital platforms, AI-driven analytics, 4D/5D/7D BIM for whole-life asset management.



DIGITALIZATION OF THE CONSTRUCTION SECTOR THROUGH PUBLIC-PRIVATE PARTNERSHIP DEVELOPMENT OF AN INTEGRATED DIGITAL AND GREEN FRAMEWORK



GLOBAL LEADERSHIP

Positioning Malaysia as the regional BIM hub in Southeast Asia. Capitalizing on the EPPTIP to export local expertise and seamlessly integrate with global AEC firms.

Target exports to increase by % in 2030.

Regional market share expected to reach %.



DIGITAL TRANSFORMATION

Implementing unified Common Data Environments (CDE), AI-assisted workflows, and Digital Twins across public and private sector infrastructure to achieve international standards.

CDE adoption in public projects to reach %.

Digital Twin implementation target is % for new infrastructure.



HUMAN CAPITAL (TVET)

Executing a structural shift to a knowledge-based economy through robust upskilling, TVET Centers of Excellence, and Quadruple Helix public-private capability building.

Aiming for advanced digital skills of % by 2030.

Number of TVET Centers of Excellence to increase by %.

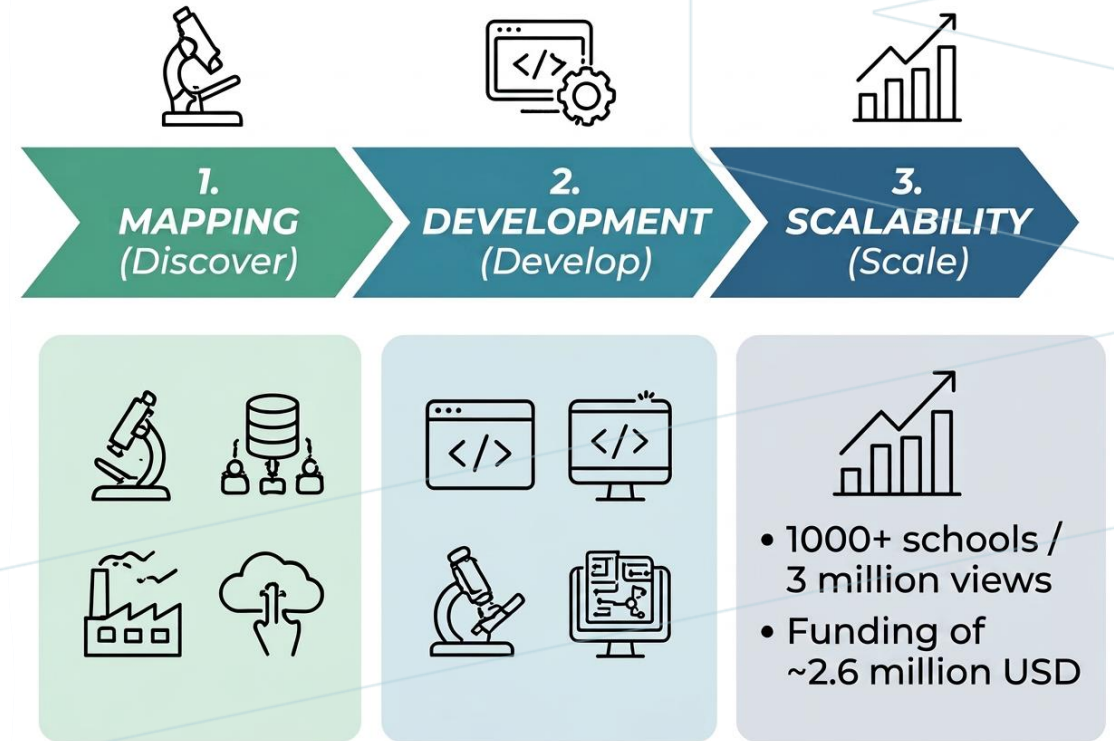
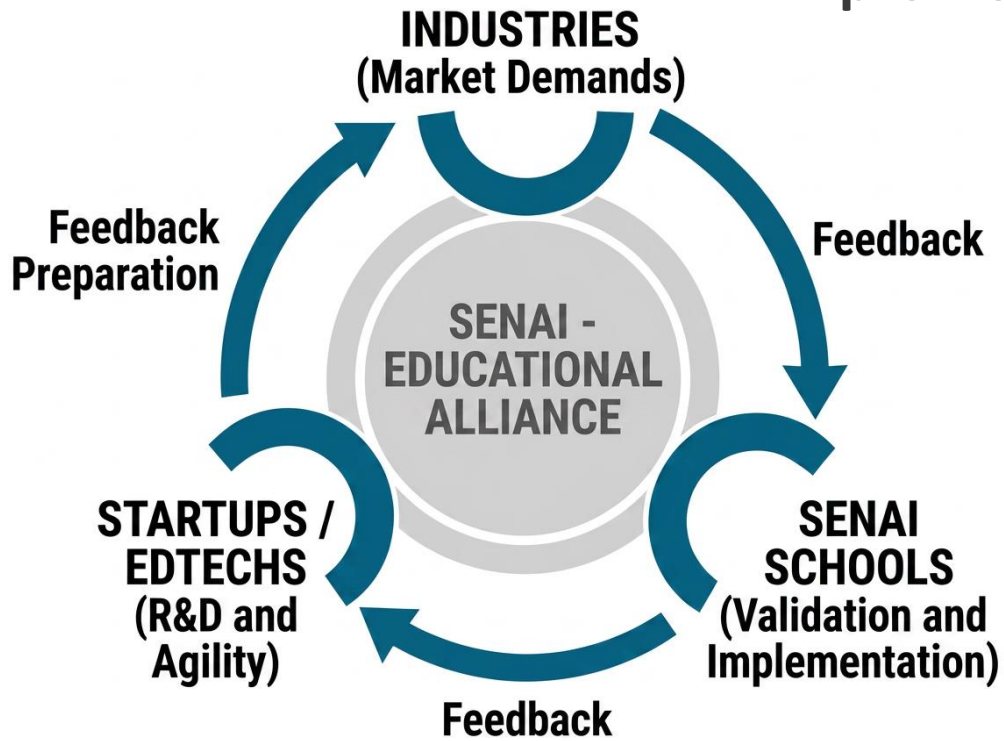


DRIVING GLOBAL COMPETITIVENESS THROUGH
DIGITAL TWIN, SMART CONSTRUCTION AND HUMAN CAPITAL TRANSFORMATION.





We are a collaborative environment with the goal of promoting innovation in TVET



• The program connects the **needs of the industry** with the **agility of EdTechs**, and **SENAI's TVET knowledge**, operating within a clear innovation journey.



Educational Alliance Program
An Open Innovation Ecosystem



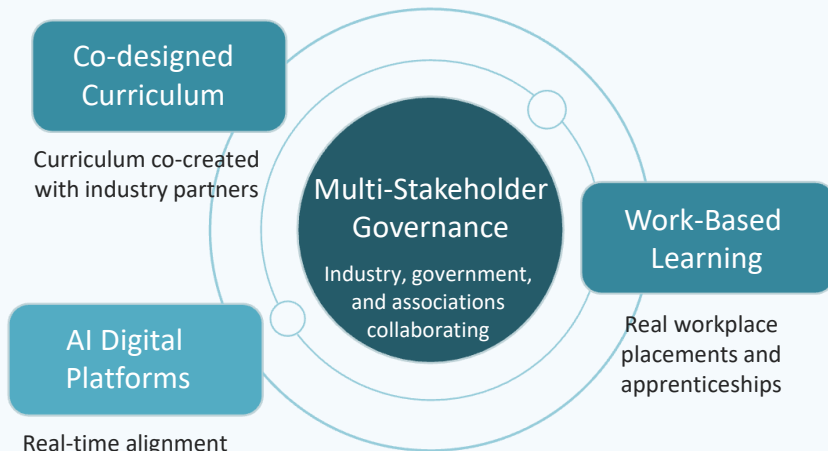
Integrating digital innovation, scalability, and sustainability in TVET–Industry collaboration

Building Sustainable TVET–Industry Collaboration in the AI Era: Insights from Shenzhen Polytechnic University

Dr. YANG Congkun

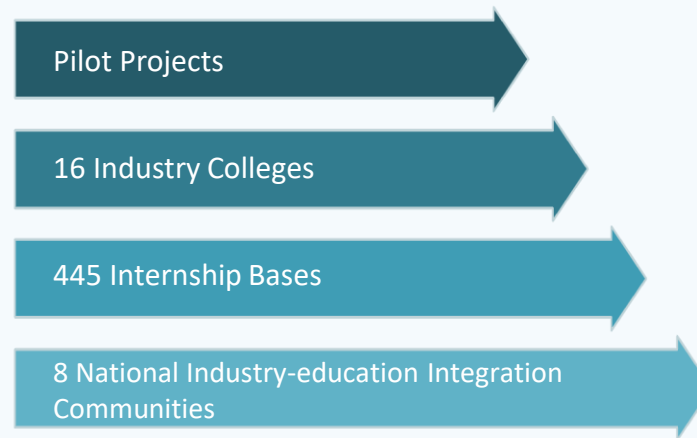
Coordinator, UNESCO Chair on Digitalization in TVET
Executive Director, UNEVOC Centre
Shenzhen Polytechnic University, China

What SZPU Built (Ecosystem)



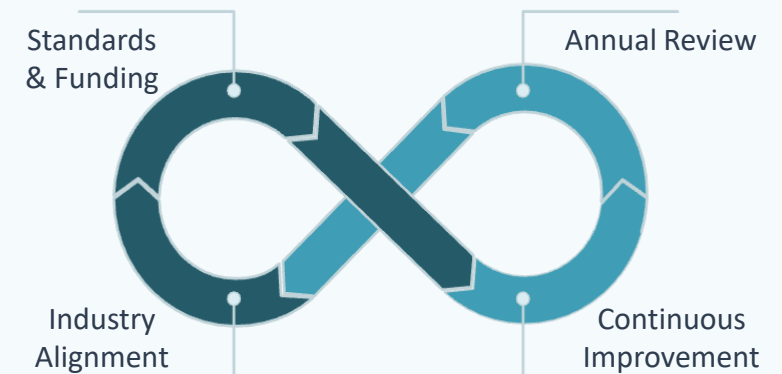
- Multi-stakeholder governance with industry, government, and associations
- Co-designed curricula and work-based learning
- AI-enabled digital platforms for real-time industry alignment

How It Is Scalable



- Institutionalized mechanisms and modular learning structures
- Pilot with Huawei expanded to 16 industry colleges and 445 internship bases
- Digital tools enable replication across sectors and regions

How It Is Sustainable



- Rigorous standards, annual funding, and digital monitoring
- Continuous feedback loops and industry alignment
- Transparent reporting and adaptive processes



PROJECT POWER UP ⚡

EMPOWERING YOUTH FOR SOUTH AFRICA'S NEW ENERGY VEHICLE (NEV) FUTURE



Developing the next generation of skilled technicians for the New Energy Vehicle (NEV) economy.



TECHNICAL TRAINING

Hands-on training in EV & HEV systems, diagnostics, repair & maintenance



WORK READINESS

Training in workplace behaviour, communication, teamwork, problem solving & professionalism



ONLINE ENTREPRENEURSHIP

Online training to build business skills for self-employment & opportunities in the green economy



WORKPLACE EXPERIENCE

Real workplace experience with industry partners



EACH TRAINEE RECEIVED
A TABLET & DATA
FOR THE DURATION
OF THE PROJECT



OUR TRAINEES



Youth from
4 TVET Colleges

- ✓ NCV Level 4 Learners
- ✓ N6 Engineering Students
- ✓ Electrical & Automotive Graduates



4 TVET COLLEGES

- Tshwane North TVET College
- Ekurhuleni West TVET College
- West Coast TVET College
- Buffalo City TVET College



INDUSTRY PARTNERS

- AIDC
- Stroom
- Golden Arrow Bus Services
- McCarthy Automotive Group
- Other Dealerships & Workshops

OUR TRAINING JOURNEY



2 MONTHS
THEORETICAL
TRAINING
AT COLLEGE

Classroom learning on EV & HEV systems, theory & diagnostics



3 MONTHS
SIMULATOR
TRAINING

Hands-on practice using advanced EV/HEV simulators



4 MONTHS
WORK
PLACEMENT

Real workplace experience with industry partners



JOB READY

Equipped with skills for the NEV workforce

OUR IMPACT



SKILLED
NEW TECHNICIANS



INCREASED
EMPLOYABILITY &
PLACEMENTS



STRONGER TVET
COLLEGE
CAPACITY



SUPPORTING SOUTH AFRICA'S
JUST ENERGY
TRANSITION



Swiss South African
Cooperation Initiative
www.ssaci.org.za

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SIFA

Skills Initiative for Africa



PROJECT DURATION
2025 – 2026

Panel

Digital innovation ecosystems in TVET



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Feedback form



Event photos
on UNEVOC's flickr album



The background of the slide is a faded, artistic photograph of a tea set. It features a silver-colored tray with ornate patterns, holding several round, white, fluffy pastries. Next to the tray is a small, dark-colored cup of tea on a matching saucer. The overall tone is warm and inviting.

Tea and networking break

11:45 – 12:00 SAST



Panel

Micro-credentials for digital and flexible learning pathways



Panel

Micro-credentials for digital and flexible learning pathways

Moderator: **James Keevy**, JET Education Servies



Kirti Menon
*Associate
Professor,
University of
Johannesburg,
South Africa*



**Maggy Beukes-
Amiss**
*Senior Lecturer,
University of
Namibia, Namibia*



Maili Vilson
*Acting Head:
Johan Skytte
Institute of
Political Studies,
University of Tartu,
Estonia*



Moeketsi Letele
*Chief Executive,
Council on Higher
Education (CHE),
Lesotho*



Noshmee Baguant
*Acting Head:
Regulatory Affairs
and Accreditation
Division, Higher
Education
Commission (HEC),
Mauritius*



Nuala McGuinn
*Director, Centre for
Adult Learning and
Professional
Development,
University of
Galway, Ireland*



Event photos
on UNEVOC's flickr album



Closing





Moderator

Sello Mokoena

*UNEVOC Centre Coordinator, UNISA,
South Africa*





Closing remarks

Matsheliso Molapo

*Acting Vice-Principal, Strategy, Risk and
Advisory Services, University of South
Africa (UNISA), South Africa*





Closing remarks

Vaola Sambo

*UNEVOC Centre Manager, UNISA,
South Africa*





Closing remarks

Pinkie Ntola

*UNEVOC Centre Coordinator, DUT,
South Africa*





Closing remarks

James Keevy

*Chief Executive Officer, JET Education
Services, South Africa*





Closing remarks

Friedrich Huebler
Head of UNESCO-UNEVOC



Feedback to Event "Advancing
TVET through industry partners
hips and innovation"



Lunch time

Goodbye...
...and a safe trip home!

