Vocational and Professional Education and Training 4.0 (VPET 4.0) – Shaping the Future of Work

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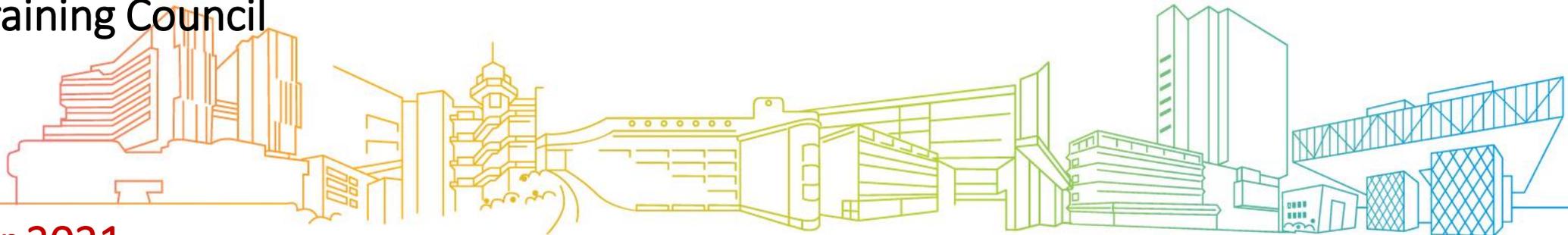
29 November 2021

The pace of acceleration in digitalisation across the globe is unprecedented in recent years, especially for post COVID-19.

The pandemic accelerated existing trends in **remote work, e-commerce, and automation**, with up to **25 percent more** workers than previously estimated potentially needing to switch occupations.

-The future of work after COVID-19 Report, McKinsey

Work from Home

Artificial Intelligence

5G Network
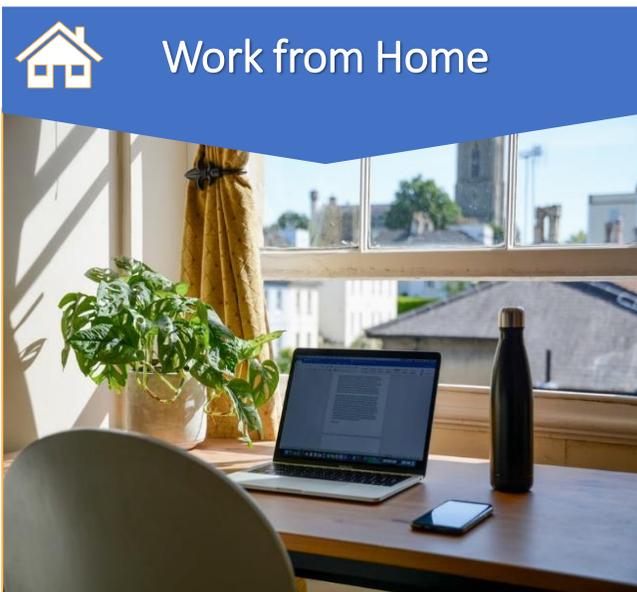
Major changes in the workforce landscape are expected to adapt to the era of digitization by 2025.

jobs disappearing
- 85 million

106 million with 25% more

emerging jobs
+ 97 million

The Future of Jobs Report 2020

OCTOBER 2020

WORLD ECONOMIC FORUM

Source: World Economic Forum

Future skills of the workforce

VPET will continue to play a central role to equip the workforce with the future skills needed.

Technology will displace some jobs

- Data entry clerks

- Factory workers

The growing demand for digital skills in future global development

- Data analysts

- AI and machine learning specialists

Also, skilled professionals who keep the daily operation of Hong Kong need to embrace the future of work!

Since early 1980s, VPET providers have trained over 907,000 graduates to support daily operations in HK.

CE's Policy address 2021: Northern Metropolis development project

Construction	Railway maintenance	Lift and escalator maintenance

Construction

- The construction sector had successfully delivered almost 300,000 private and public housing units over the last 10 years.
- Digital construction – BIM, MiC, DfMA, AR/VR/Wearable Devices, 3D Printing
- Construction Digitalisation Roadmap – released on 1st Nov

Vocational and Professional Education and Training 4.0 (VPET 4.0) – Shaping the Future of Work

https://www.pwchk.com/en/government/vocational-professional-education-training-jun2021.pdf

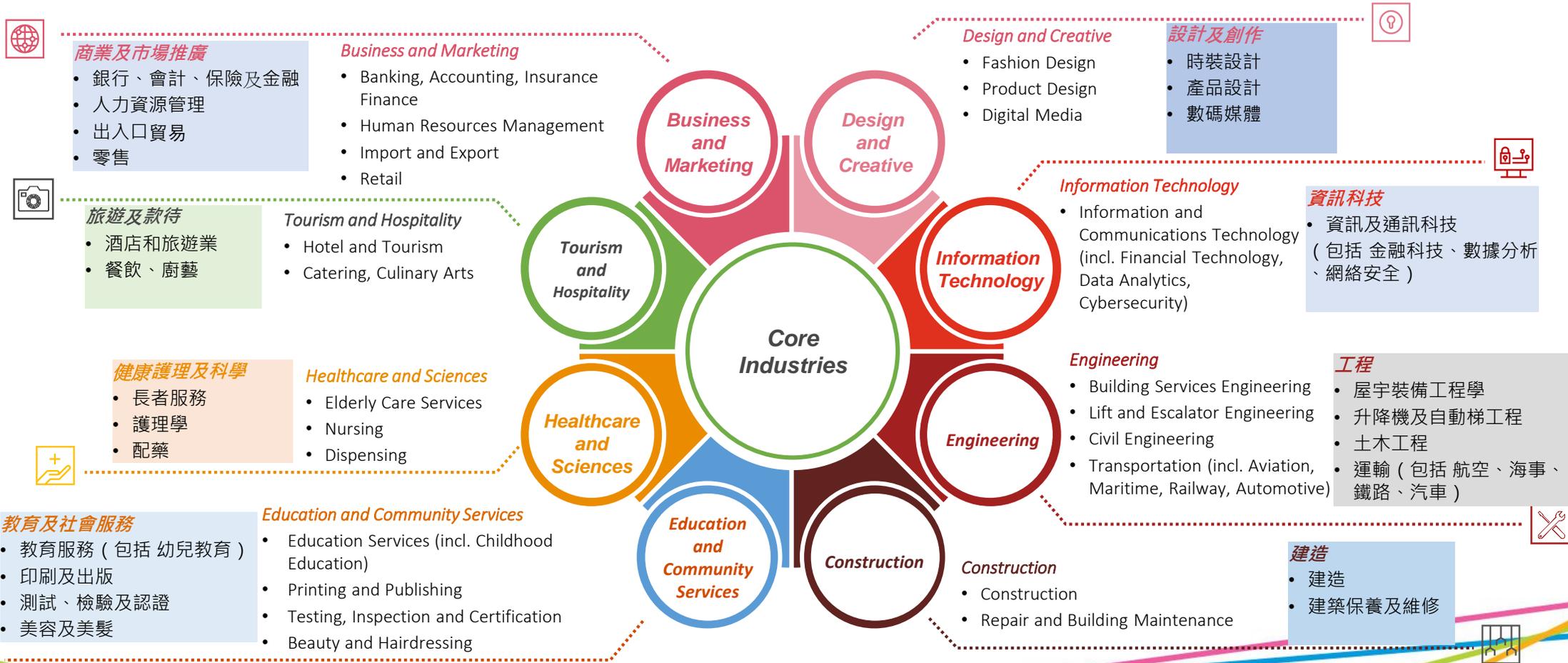https://www.pwchk.com/en/government/vocational-professional-education-training-jun2021-zh.pdf
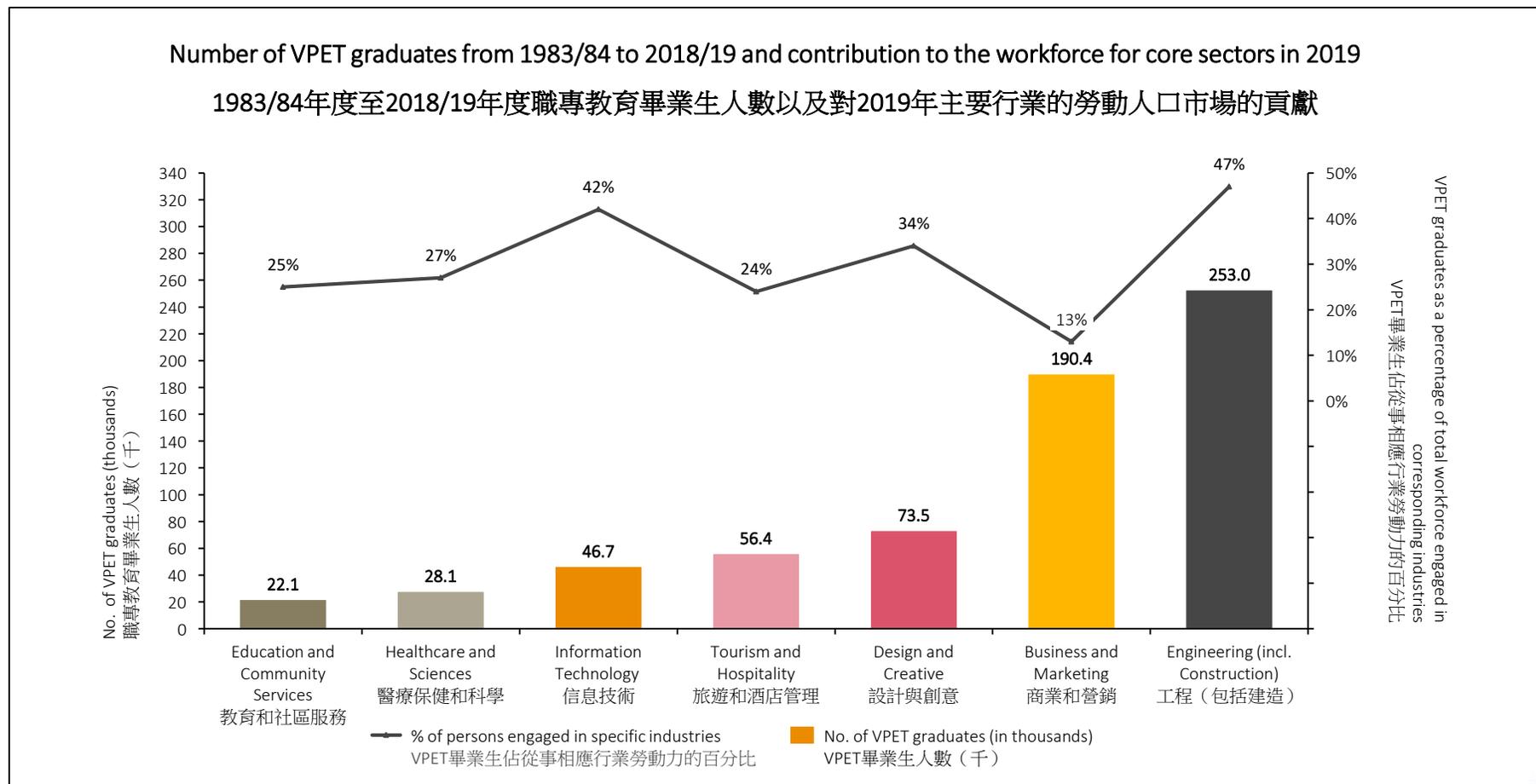
The Impact of VPET

Contribution to Total Workforce

VPET supports 8 core industries which account for over 70% of GDP in Hong Kong.

商業及市場推廣
- 銀行、會計、保險及金融
- 人力資源管理
- 出入口貿易
- 零售

Business and Marketing
- Banking, Accounting, Insurance Finance
- Human Resources Management
- Import and Export
- Retail

Design and Creative
- Fashion Design
- Product Design
- Digital Media

設計及創作
- 時裝設計
- 產品設計
- 數碼媒體

旅遊及款待
- 酒店和旅遊業
- 餐飲、廚藝

Tourism and Hospitality
- Hotel and Tourism
- Catering, Culinary Arts

Information Technology
- Information and Communications Technology (incl. Financial Technology, Data Analytics, Cybersecurity)

資訊科技
- 資訊及通訊科技（包括 金融科技、數據分析、網絡安全）

健康護理及科學
- 長者服務
- 護理學
- 配藥

Healthcare and Sciences
- Elderly Care Services
- Nursing
- Dispensing

Engineering
- Building Services Engineering
- Lift and Escalator Engineering
- Civil Engineering
- Transportation (incl. Aviation, Maritime, Railway, Automotive)

工程
- 屋宇裝備工程學
- 升降機及自動梯工程
- 土木工程
- 運輸（包括 航空、海事、鐵路、汽車）

教育及社會服務
- 教育服務（包括 幼兒教育）
- 印刷及出版
- 測試、檢驗及認證
- 美容及美髮

Education and Community Services
- Education Services (incl. Childhood Education)
- Printing and Publishing
- Testing, Inspection and Certification
- Beauty and Hairdressing

Construction
- Construction
- Repair and Building Maintenance

建造
- 建造
- 建築保養及維修

Core Industries

- Business and Marketing
- Design and Creative
- Information Technology
- Engineering
- Construction
- Education and Community Services
- Healthcare and Sciences
- Tourism and Hospitality

From the early 1980s through to 2019, VPET providers trained over 907,000 graduates for a wide range of industries, contributing nearly 24% of total workforce in Hong Kong.

Number of VPET graduates from 1983/84 to 2018/19 and contribution to the workforce for core sectors in 2019

1983/84年度至2018/19年度職專教育畢業生人數以及對2019年主要行業的勞動人口市場的貢獻

No. of VPET graduates (thousands) 職專教育畢業生人數（千）	VPET graduates as a percentage of total workforce engaged in corresponding industries VPET畢業生佔從事相應行業勞動力的百分比

Data labels on chart:
- Education and Community Services 教育和社區服務: 22.1, 25%
- Healthcare and Sciences 醫療保健和科學: 28.1, 27%
- Information Technology 信息技術: 46.7, 42%
- Tourism and Hospitality 旅遊和酒店管理: 56.4, 24%
- Design and Creative 設計與創意: 73.5, 34%
- Business and Marketing 商業和營銷: 190.4, 13%
- Engineering (incl. Construction) 工程（包括建造）: 253.0, 47%

Legend:
- % of persons engaged in specific industries VPET畢業生佔從事相應行業勞動力的百分比
- No. of VPET graduates (in thousands) VPET畢業生人數（千）

Source: CSPE , VTC , PwC Analysis
資料來源：自資專上教育、職業訓練局、羅兵咸永道分析

Reduction of Youth Unemployment

VPET contributes significantly to enhancing the employability of its students and reducing youth unemployment in Hong Kong.

Youth and overall unemployment rates in Hong Kong (%)

香港青年及整體失業率 (%)
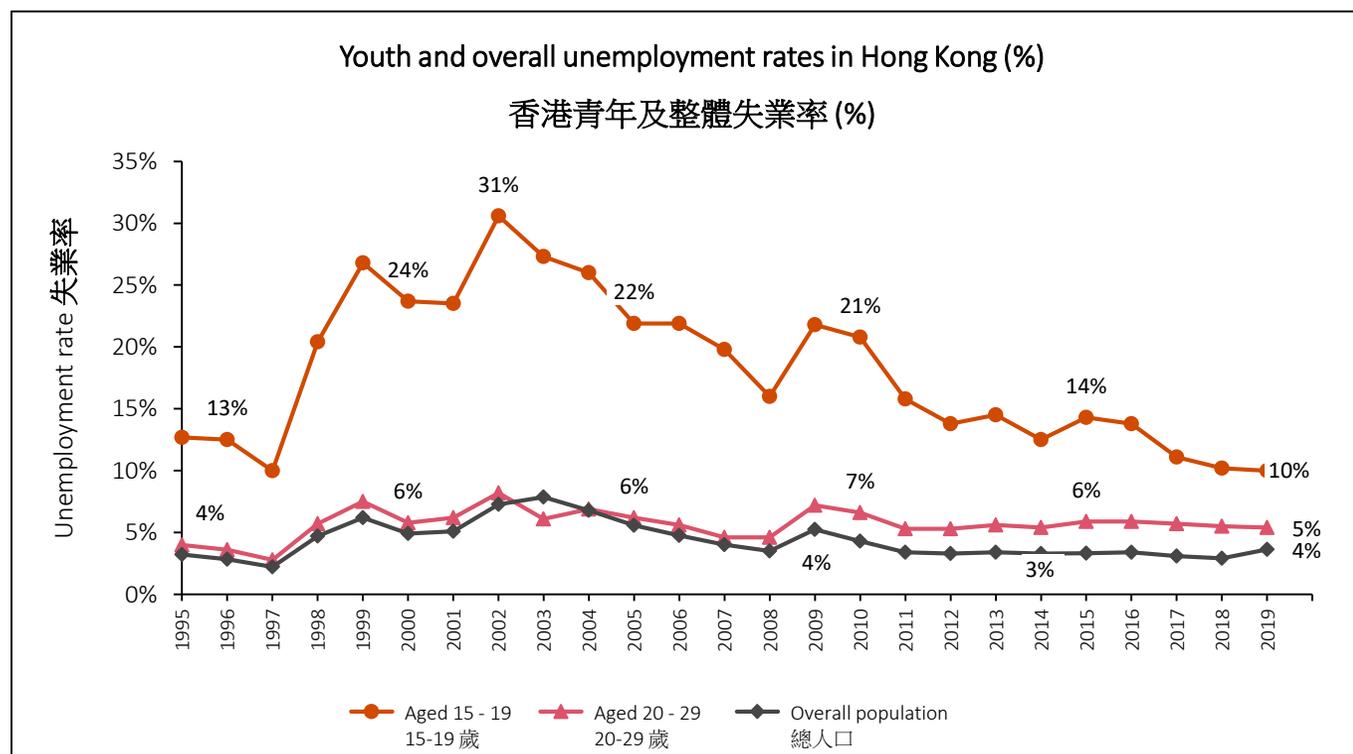
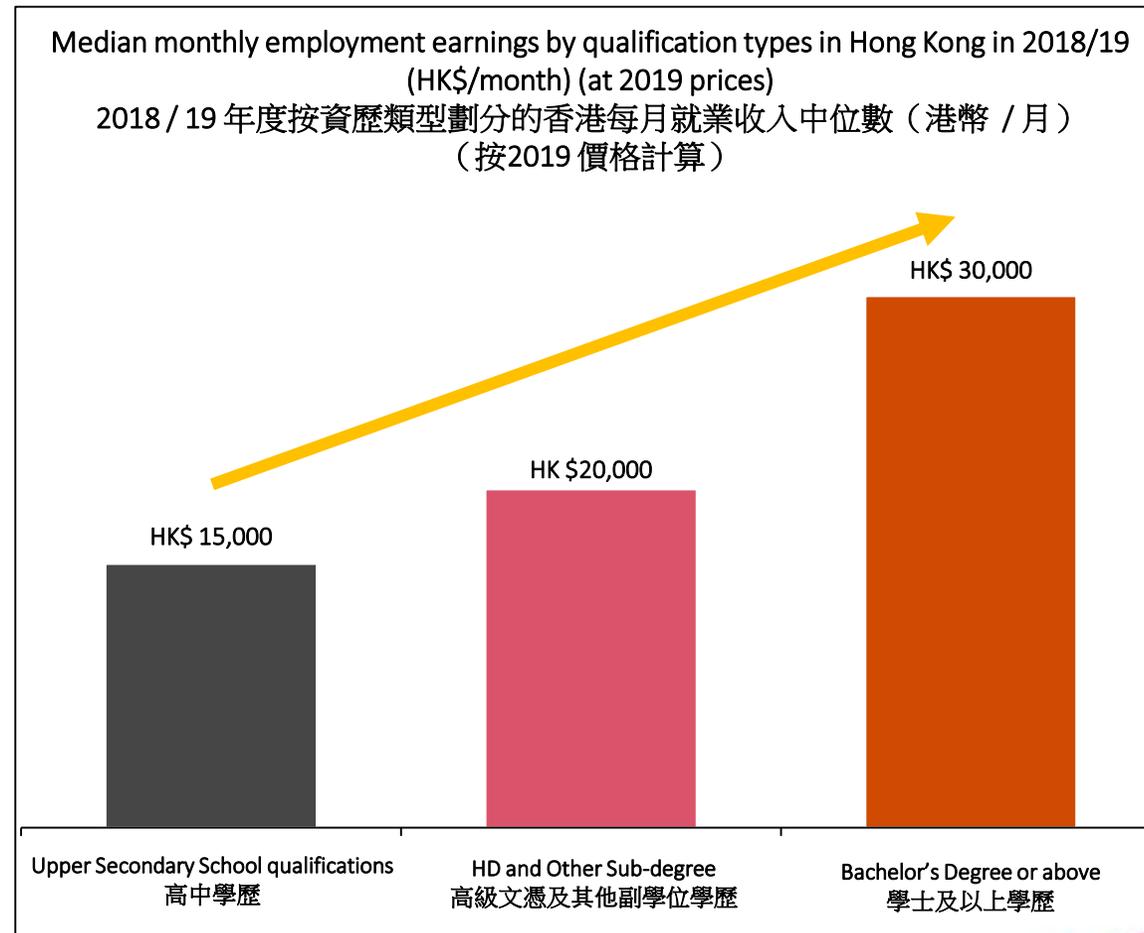Source : Census and Statistics Department, PwC Analysis
資料來源：政府統計處、羅兵咸永道分析

24 June

11

Key Impact 2 – Economic Contribution

Productivity

VPET assisted graduates to increase 30% - 100% in salary as compared to upper secondary school graduates.

Median monthly employment earnings by qualification types in Hong Kong in 2018/19 (HK$/month) (at 2019 prices)
2018 / 19 年度按資歷類型劃分的香港每月就業收入中位數（港幣／月）
（按2019 價格計算）

HK$ 30,000

HK $20,000

HK$ 15,000

| Upper Secondary School qualifications 高中學歷 | HD and Other Sub-degree 高級文憑及其他副學位學歷 | Bachelor's Degree or above 學士及以上學歷 |

Source : Census and Statistics Department, PwC Analysis
資料來源: 政府統計處、羅兵咸永道分析

Lifelong Learning and Social Mobility

VPET providers play a crucial role in offering lifelong learning opportunities for upskilling and reskilling the workforce.

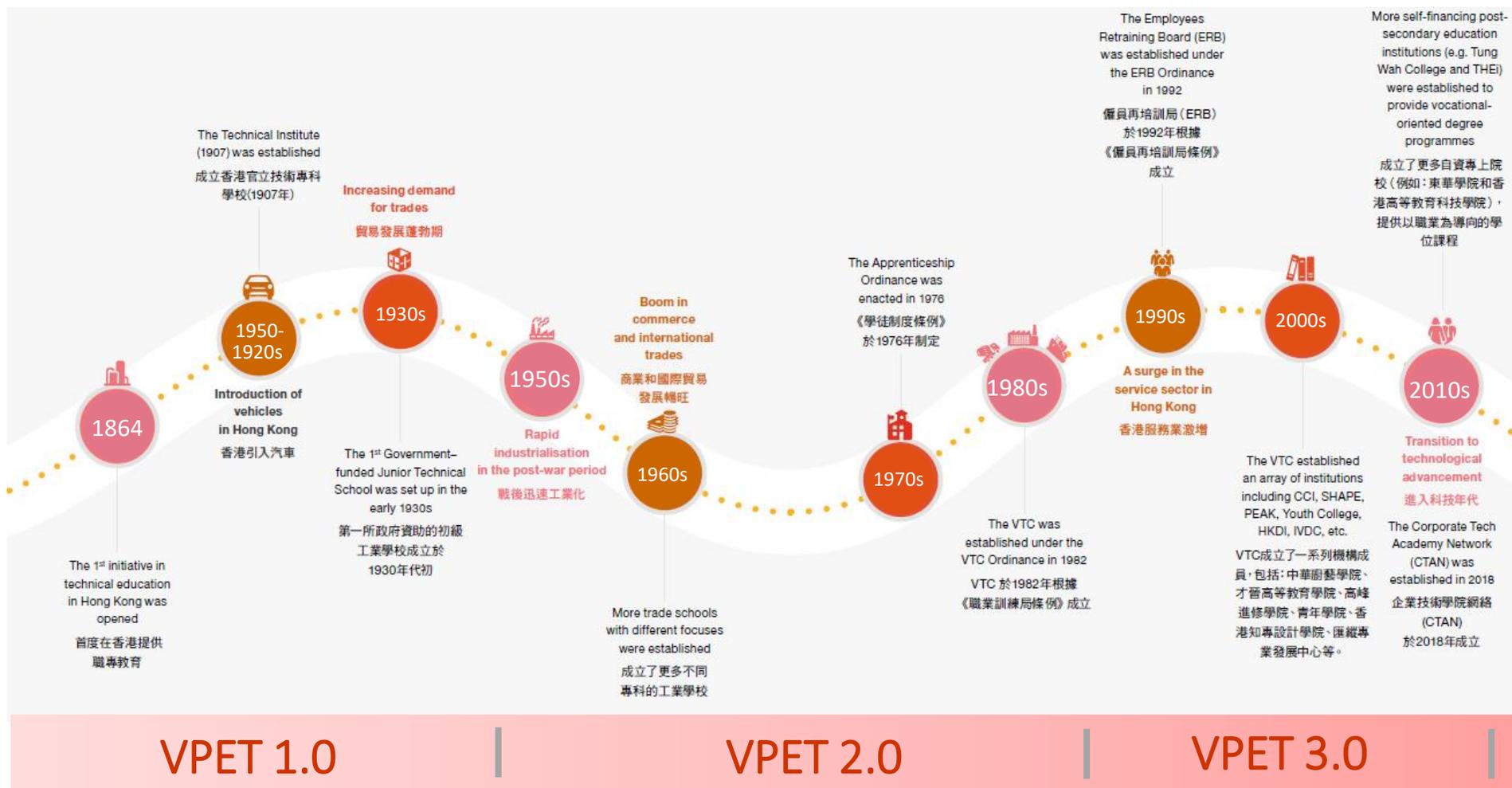VPET significantly improves social mobility through education and career enhancement.
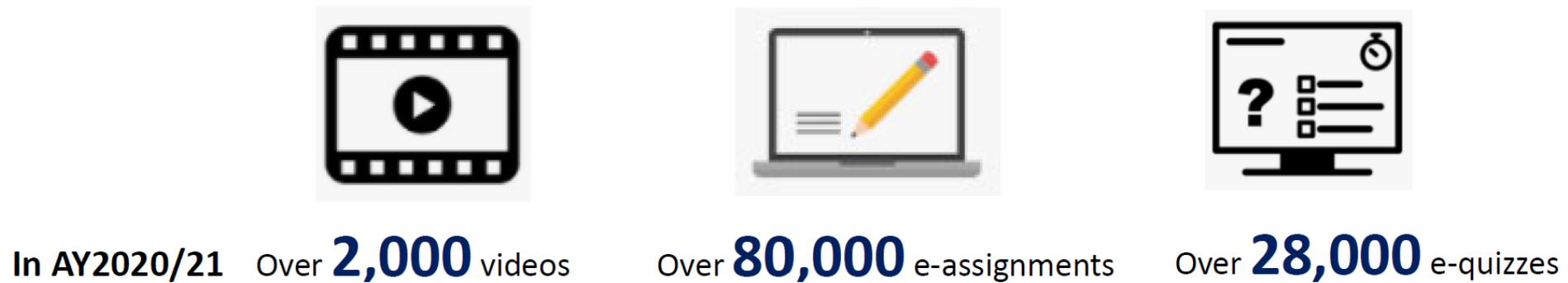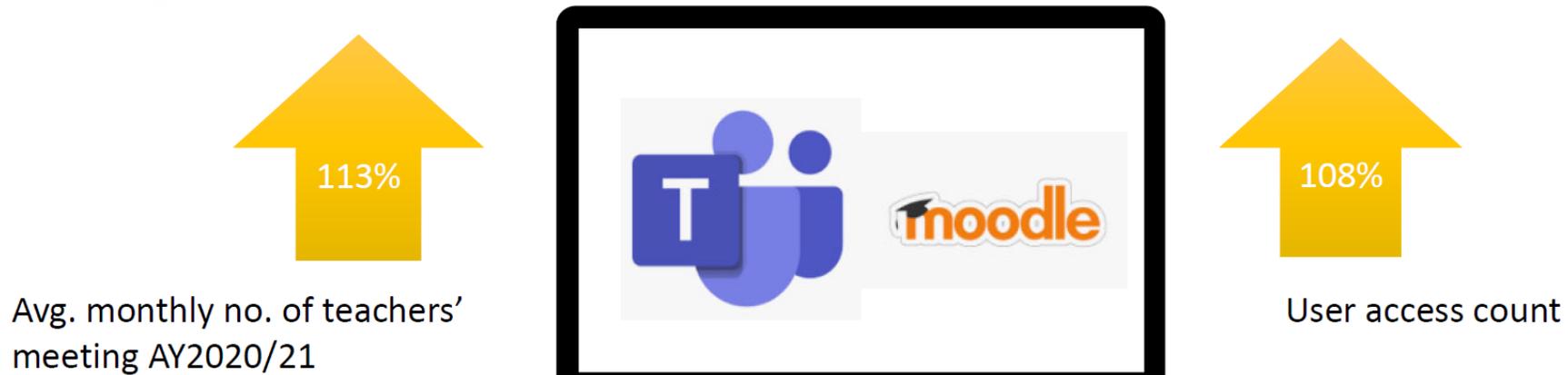
VPET 4.0

Industrial Progression

Industrial 工業 1.0

Mechanisation, steam power, weaving loom

Industrial 工業 2.0

Mass production, assembly line, electrical energy

Industrial 工業 3.0

Automation, computers, electronics

Industrial 工業 4.0

Cyber physical systems, internet of things (IoT), networks

1784   1870   1969   Today
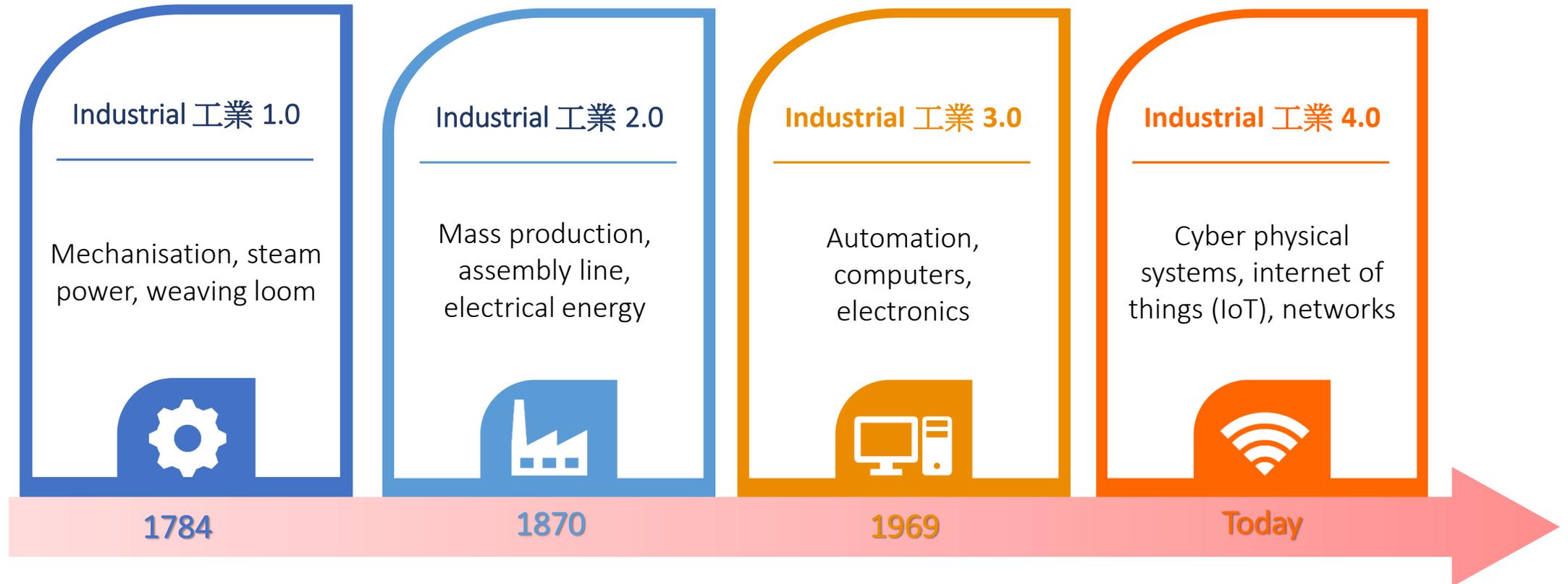
VPET supports the labour supply and plays an integral role in the development of Hong Kong.

1864 — The 1st initiative in technical education in Hong Kong was opened / 首度在香港提供職專教育

1950-1920s — Introduction of vehicles in Hong Kong / 香港引入汽車 — The Technical Institute (1907) was established / 成立香港官立技術專科學校(1907年)

1930s — Increasing demand for trades / 貿易發展蓬勃期 — The 1st Government-funded Junior Technical School was set up in the early 1930s / 第一所政府資助的初級工業學校成立於1930年代初

1950s — Rapid industrialisation in the post-war period / 戰後迅速工業化

1960s — Boom in commerce and international trades / 商業和國際貿易發展暢旺 — More trade schools with different focuses were established / 成立了更多不同專科的工業學校

1970s — The Apprenticeship Ordinance was enacted in 1976 / 《學徒制度條例》於1976年制定

1980s — The VTC was established under the VTC Ordinance in 1982 / VTC 於1982年根據《職業訓練局條例》成立

1990s — A surge in the service sector in Hong Kong / 香港服務業激增 — The Employees Retraining Board (ERB) was established under the ERB Ordinance in 1992 / 僱員再培訓局（ERB）於1992年根據《僱員再培訓局條例》成立

2000s — The VTC established an array of institutions including CCI, SHAPE, PEAK, Youth College, HKDI, IVDC, etc. / VTC成立了一系列機構成員，包括：中華廚藝學院、才晉高等教育學院、高峰進修學院、青年學院、香港知專設計學院、匯縱專業發展中心等。

2010s — Transition to technological advancement / 進入科技年代 — The Corporate Tech Academy Network (CTAN) was established in 2018 / 企業技術學院網絡（CTAN）於2018年成立 — More self-financing post-secondary education institutions (e.g. Tung Wah College and THEi) were established to provide vocational-oriented degree programmes / 成立了更多自資專上院校（例如：東華學院和香港高等教育科技學院），提供以職業為導向的學位課程

What's next?

VPET 1.0 | VPET 2.0 | VPET 3.0 | VPET 4.0

16

Essences of VPET 4.0

Essences of VPET 4.0 - Digital Teaching and Learning

Virtual Learning Platform: Moodle, MS Teams and other online learning tools

113%

Avg. monthly no. of teachers' meeting AY2020/21

108%

User access count

In AY2020/21   Over **2,000** videos   Over **80,000** e-assignments   Over **28,000** e-quizzes

Digital Curriculum - Digital Elements

Common IT Essentials Modules enhanced for VTC's 7 Academic Disciplines

Relevant digital elements embedded in VTC's degree, higher diploma and diploma curricula, helping students understand the new business models emerging from digitalization in different trades.

Intelligence

Cybersecurity

Connectivity

Automation

Digital Ethics

Digital ethics incorporated into the Whole Person Development module and trade curricula, and delivered through project work and workplace learning

Digital Ethics In the Internet Era

World Wide Web is a place where values are considered in the broadest sense

Internet is not a value-free zone

Everything posted in the internet can stay forever and go around the world

Everything written in the internet can receive unimaginable feedback and lead to unintended consequence

Digital Etiquette Treating other Internet users with respect and avoiding inappropriate behavior

Digital Security Personal data protection (data of yourself and others)

Digital Rights & Responsibilities Personal rights and rights of others in cyber world

Digital Communication Use of digital apps for communication

Digital Health & Wellness Be aware of one's health Practice of stretching and proper posture

Essences of VPET 4.0 – Project-based Learning

Project-based Learning 專題為本研習

- Project-based Learning (PBL) is considered as the essential skills-based training thereby strengthening the characteristics of VPET.

- PBL aims to nurture students with the 21st century competencies for solving problems in workplace and in life.
  - Teamwork and collaboration
  - Self-directed learning
  - Communication
  - Project management
  - Reflection

Integrating PBL with QA system

Real-life, authentic and inter-disciplinary

Collaborating with industry

PBL in VTC

Student-driven
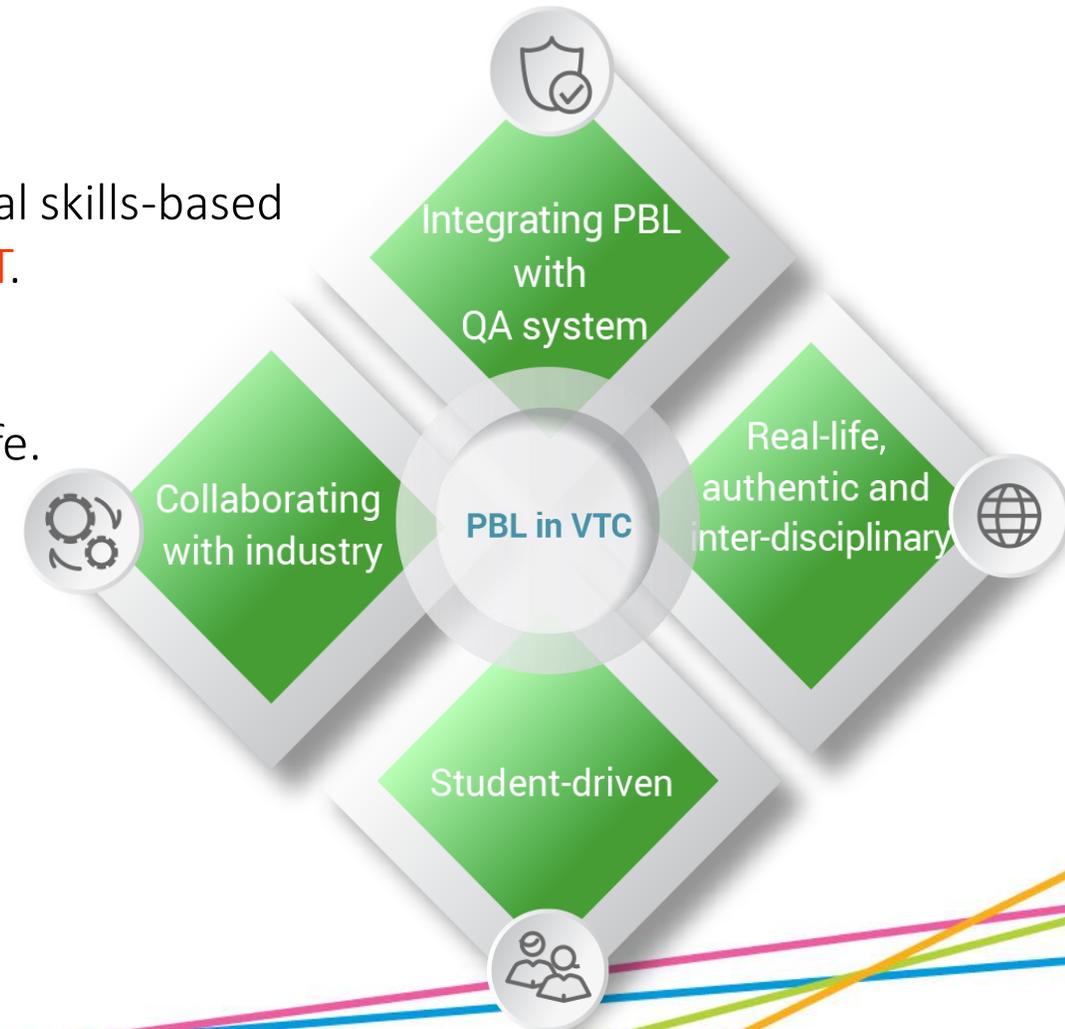
Essences of VPET 4.0 – Workplace Learning

VTC Earn & Learn Scheme integrates structured classroom learning with on-the-job training, providing young people with a clear career progression pathway and preparing them to join those trades and industries with great manpower demand.

The Government and the participating industries will provide an allowance and a guaranteed salary. Participants can earn a steady income while acquiring knowledge and developing skills to pursue a Bright Future.

Essences of VPET 4.0 – VPET Recognition

International and Regional Recognition

Collaboration with partners in Mainland China and Greater Bay Area (GBA)

"Agreement on Comprehensive Enhancement of Sichuan-Hong Kong Vocational Education Collaboration between the Department of Education of Sichuan Province and the Vocational Training Council of Hong Kong" was signed by government departments and statutory bodies of HKSAR and Sichuan in September 2021.

The Alliance will extend the cooperation between Zhejiang and Hong Kong to vocational education. Members of the Alliance will also continuously improve the quality of talent training, and strive to build a modern vocational education system so as to facilitate the economic and social development of Zhejiang and Hong Kong.

Applied Education?

Concrete Experience

Reflective Observation

Abstract Conceptualisation
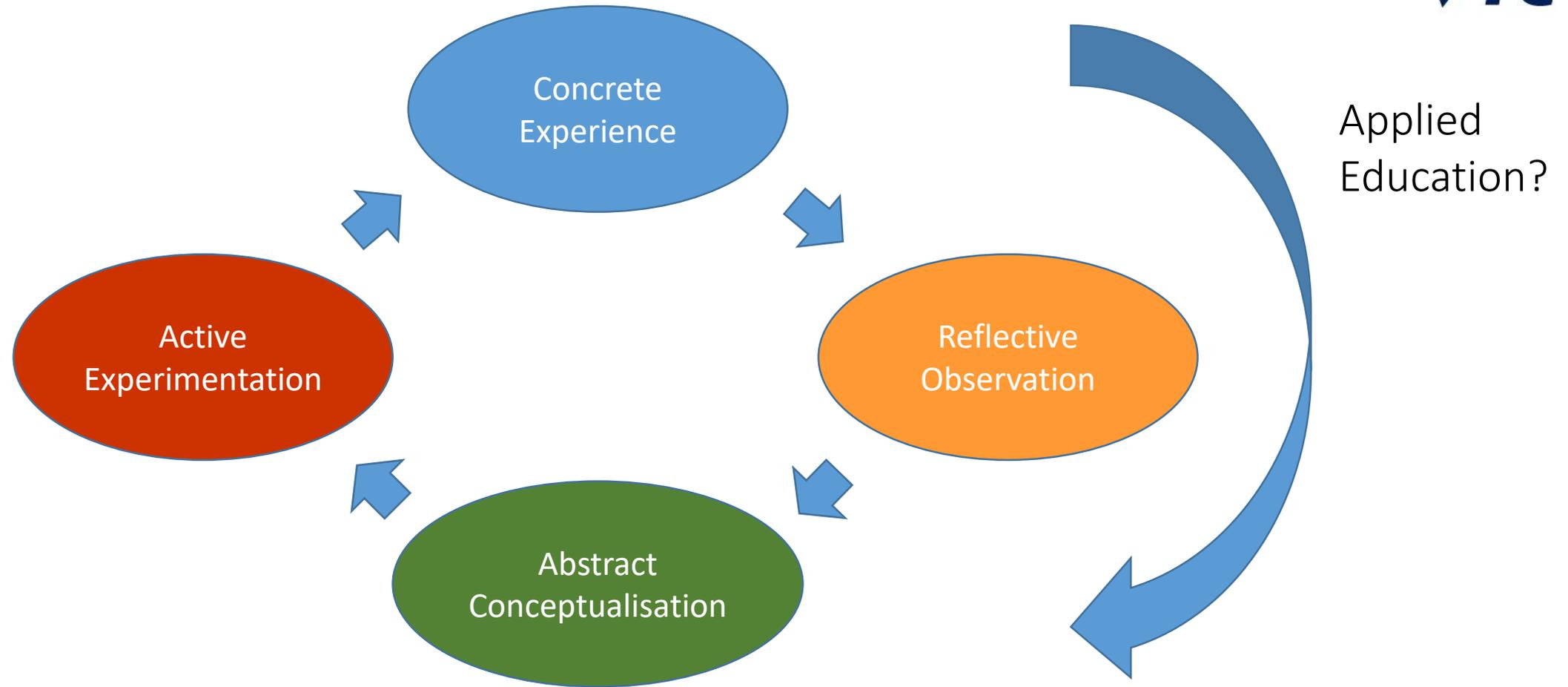
Active Experimentation

Kolb's Learning Cycle

Emerging Trends in VPET 4.0

Blended Learning of VPET – Bite-size course, micro-credential and credit bank

Provide diverse programmes to promote culture of lifelong learning and give youths chances for continuous upgrading to cater the latest and event the future industrial requirements.

Robotic Process Automation (RPA) for Business Application

Multi-functioned Aerial Shooting

Environmental Protection Course for Environmental Supervisors

Innovative Smart City Applications

Introductory Workshop on Building Information Modelling for Management

Structural Analysis and Design with SAP2000

Certificate in NAO and Pepper and Object Recognition AI Programming Workshop

Practical Blockchain Concepts and Applications

Cybersecurity and Security by Design Workshop

Machine Learning with Python

Professional Diploma Meister in Lift and Escalator Engineering

provide seasoned practitioners with a skill-based education and training in various important domains of the lift and escalator engineering industry, viz. installation, maintenance, testing and commissioning, and modernization.

VTC students swept 3 Innovation Awards in the City I&T Grand Challenge by Co-Creation

AllScreens

(雲端智能虛擬助教系統)

IT Discipline, IVE

SmartPresenter (智能演講訓練系統)
IT Discipline, IVE

智能健身站 (FIT)
Hospitality Discipline, IVE and
University of the West of England, SHAPE

Thank You