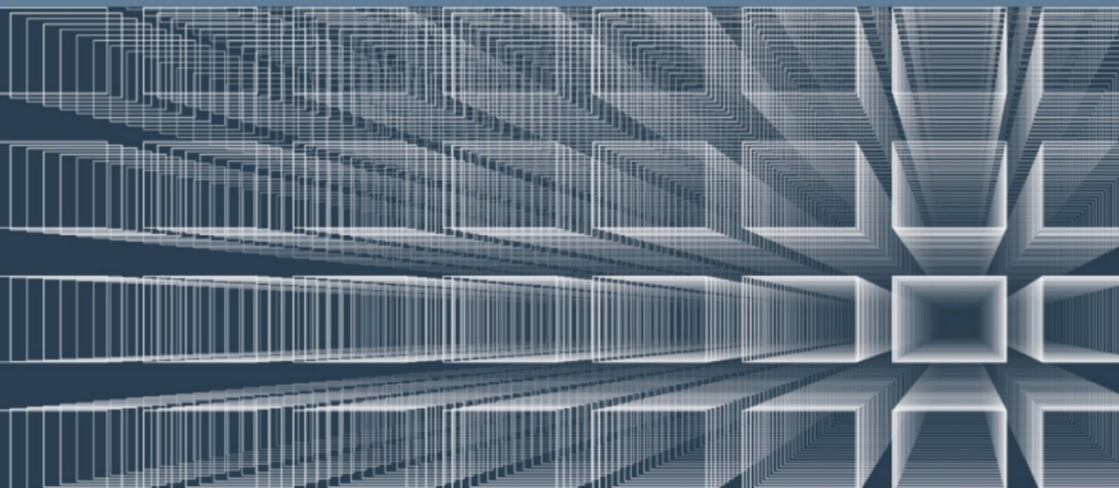


PoD-HKAPP
Occasional Paper No.9

Vocational and Profession Education and Training in HK—Do We Need a Reform?



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Nov 2024



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- promote a moderate political approach in a proactive manner, and carve out a new political horizon in the society;
- formulate an agenda and construct systematic political discourse; and
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Citation: Chan, L., Chiu, A., Kwok, A., & Wu, K. (2024). Vocational and profession education and training in HK—Do we need a reform? *PoD-HKAPP Occasional Paper No. 9. Hong Kong: Path of Democracy.*

Vocational and Profession Education and Training in HK— Do We Need a Reform?

Lawrence Chan, Anita Chiu, Amy Kwok and Karen Wu

Abstract

Vocational and Professional Education and Training (VPET) is vital for preparing individuals for specific professions, trades, and industries. Since the early 1980s, Hong Kong's VPET providers have trained over 900,000 graduates, contributing nearly 24% of the workforce. These programmes offer hands-on training, equipping young people with essential skills and knowledge.

In today's rapidly evolving economy, driven by technological advancements and automation, quality vocational training is more critical than ever for job market competitiveness.

This report provides a comprehensive overview of Hong Kong's VPET system, covering its history, development, providers, programmes, and industries served. It also reviews recent government policies and compares Hong Kong's VPET with Shanghai, Singapore, and Switzerland systems.

Despite ongoing government efforts, challenges remain for young people pursuing VPET in Hong Kong. By analyzing these issues and comparing them with other regions, the report proposes solutions and suggests expanding and innovating VPET to better prepare the workforce for the dynamic global landscape.

香港的職業和專業教育—我們需要改革嗎？

陳偉華 招雁翹 郭聖怡 鄺慧麗

摘要

職業和專業教育培訓 (VPET) 對於為個人準備特定職業、行業和工業至關重要。自上世紀 80 年代初以來，香港的 VPET 提供者已培訓了超過 90 萬名畢業生，佔勞動力總數的近 24%。這些課程為年輕人提供實踐培訓，裝備他們必要的技能和知識。

在當今由技術進步和自動化驅動的快速發展的經濟中，高質量的職業培訓比以往任何時候都更加重要，以增強就業市場的競爭力。

本報告全面概述了香港的 VPET 系統，涵蓋其歷史、發展、提供者、課程和服務的行業。還回顧了最近的政府政策，並將香港的 VPET 與上海、新加坡和瑞士的系統進行比較。

儘管政府持續努力，香港年輕人在追求 VPET 時仍面臨挑戰。通過分析這些問題並與其他地區進行比較，本報告提出了解決方案，並建議擴展和創新 VPET，以更好地為動態全球環境下的勞動力做好準備。

1. Introduction

Vocational and Professional Education and Training (VPET) is the education which prepares people for specific professions, trades and industries. In particular, VPET plays a crucial role in preparing young people with the expertise, skills and technical know-how for the workforce.

From the early 1980s, VPET providers trained over 900,000 graduates for a wide range of industries, contributing nearly 24% of the total workforce in Hong Kong. By offering hands-on training in specific trades and industries, vocational programmes equip young people with the skills and knowledge they need to enter the workforce with confidence and succeed in their chosen careers. In today's rapidly changing economy and the emergent automation by Artificial Intelligence, it is more important than ever for young people to receive quality vocational training that will set them up for success in a competitive job market.

This report aims to provide a comprehensive overview of the current landscape of VPET system in Hong Kong, including its history and development, VPET providers, the types of VPET programmes, the industries they serve, its position in the education system, and the level of participation. We will also discuss the government's policy on VPET for the past few years and look at VPET system in other places like Shanghai, Singapore and Switzerland.

Despite the government's continuous effort, there are challenges and issues facing young people in pursuing VPET in Hong Kong. By examining these issues in depth and also comparing with the VPET systems in Singapore, Switzerland and Shanghai, we will provide some proposed solutions to those challenges and further suggestions for the VPET providers to expand on some existing disciplines and create new ones to prepare for the ever-changing world we are all facing now.

2. History and development of VPET in Hong Kong

The history of VPET can be traced back to 1864 when the first

institution for technical education in crafts was established.¹ In the post-war period in the late 1950s, Hong Kong's commerce and manufacturing sectors boomed as a result of industrialization, resulting in the growing status as an important international re-export trade port and more technical and trade schools with different focuses were established.²

In 1970s, the focus of vocational training in Hong Kong has shifted and evolved, reflecting rapid growth demand for workforce in textile and garment manufacturing.³

3.1: Vocational Training Council

An important milestone was when Vocational Training Council (VTC) was established in 1982 replacing Hong Kong Training Council,⁴ to oversee the development of training programmes and standards, and the introduction of a system of vocational qualifications to recognize the skills and knowledge of young people who had

¹ In the early years, vocational training was mainly provided by individual tradesmen and artisans who passed on their skills to apprentices. The government established the first vocational school: The Technical Institute in 1907 to provide training in trades such as tailoring, shoemaking, and carpentry. The 1st Government-funded secondary trade school, The Junior Technical School was set up in early 1930, and The Government Trade School (later renamed as Hong Kong Technical College) was founded to provide secondary technical education in 1937.

² For examples, Tang King Po Trade School (1953); Ho Tung Technical School for Girls (1953); Mongkok Workers' Night School (1957); Kowloon Technical School (1961); Jockey Club Government Secondary Technical School (1963); Kwun Tong Vocational Training Centre (1965); Kwun Tong Skills Centre (1968) currently known as Shine Skills Centre (Kwun Tong).

³ The Morrison Hill Technical Institute was officially opened in October 1970 offering technician education and technical teacher training, followed by the establishment of Hong Kong Polytechnic in 1972, the Hong Kong Training Council in 1973 and Hang Seng School of Commerce in 1980.

⁴ The VTC is a statutory body established by the Government under the Vocational Training Council Ordinance (Cap. 1130).

completed vocational training programmes.⁵

As the economy of Hong Kong shifted from manufacturing to service industries, various centres were established by VTC subsequently to provide not just the traditional programmes but include a more diverse range of courses covering hotel, hospitality, tourism, maritime-related services.⁶

In 1992, the Employees Retraining Board (ERB) was established to provide employment-oriented reskilling and market-driven programmes,⁷ and in 1999, the Hong Kong Institute of Vocational Education (IVE) was established merging two former Technical Colleges and seven Technical Institutes under the VTC and becoming a major provider of Diploma and Higher Diploma programmes.

In 2018, the Corporate Tech Academy Network was jointly founded by six corporate academies⁸ to cater for specific industry needs with a skilled and qualified workforce.

Since 2000s, to facilitate the transformation of knowledge-based, high valued added and financial and business service hub economy,

⁵ The VTC is the largest VPET provider in Hong Kong which provides valuable credentials for some 200,000 students across its 13 member institutions each year through a full range of pre-employment and in-service programmes with internationally recognised qualifications.

⁶ They include: the Training and Development Centres (1984); Hospitality Industry Training and Development Centre (1985) and Maritime Services Training Institute (1988).

⁷ In the same year, the Open University of Hong Kong established the Centre for Continuing and Community Education, which was renamed as Li Ka Shing Institute of Professional and Continuing Education in 2000 and later retitled Li Ka Shing School of Professional and Continuing Education (LiPACE) in 2020.

⁸ MTR Academy, CLP Power Academy, Hong Kong International Aviation Academy, Hong Kong Institute of Construction, HKPC Academy and Towngas Engineering Academy.

the government promulgated policies to develop higher education.⁹ As a result, self-financing VPET programmes¹⁰ have since grown, and former pre-vocational schools and secondary technical schools were gradually reformed into conventional academic secondary schools. Also, many publicly funded universities extended their offering to provide self-financing programmes at sub-degree and degree levels with vocational focuses, like HKU SPACE¹¹ to cater for the needs for higher education for secondary school leavers.

Given the new business opportunities resulted from the increased collaboration with Mainland China, the VTC established a series of institutions¹² to open up more lifelong learning opportunities for working adults, to improve the employment rate of youths and to cater for the growing demand for talents in design and creative industries.

One can see that from the development of VPET in Hong Kong, not only the government has continued to play an active role in supporting youth vocational training in Hong Kong, but also the corporate sectors have started contributing and committing to providing young people with access to quality training and employment opportunities.

⁹ The government set a target of achieving 60% of upper secondary school graduates receiving tertiary education in 2000.

¹⁰ Tung Wah College (2010); Hang Seng Management College (2010); the Technological and Higher Education Institute of Hong Kong (2012) and Institute of Culinary (2014); Gratia Christian College (2015)

¹¹ School of Professional and Continuing Education established by the University of Hong Kong. Other examples include the Hong Kong Community College (HKCC) and the School of Professional Education and Executive Development (SPEED) established by Poly University

¹² Chinese Culinary Institute (2000), School for Higher and Professional Education and Institute of Professional Education and Knowledge (2003), Youth College (2004), Hong Kong Design Institute (2007), Integrated Vocational Development Centre (2008)

3. Current landscape of VPET system in Hong Kong

Currently there are 4 statutory bodies, 13 VTC Member Institutions, 27 College and University Extensions and 6 Corporate Academies,¹³ providing an extensive range of over 6,500 VPET programmes ranging from diploma to bachelor's degree in 8 core industries (as shown in the figure below) in supporting the growth of over 20 trades and industries in Hong Kong:

Figure 1. Number of VPET programmes



Source: South China Morning Post (16 July 2021)

3.1: Qualification framework

In 2008, the government launched the Qualifications Framework

¹³ For list of VPET providers, including the statutory bodies, VTC Member Institutions, Colleges and University Extensions and Corporate Academics, please refer to Appendix A.

(QF) with the objective of promoting lifelong learning and enhancing the competitiveness of the local workforce, as well as creating a credible system which facilitates the recognition of qualifications and supports mobility of the workforce. QF is a seven-level hierarchy, as illustrated below, which recognizes VPET qualifications are quality assured and level-rated in accordance with well-defined standards. At present, over 8,000 academic and vocational qualifications are recognized under and registered on the QF.¹⁴

Figure 2. The Qualifications framework



Source: HKSAR Government's VPET Portal

¹⁴ Under QF, Specification of Competency Standards are drawn up by different Industry Training Advisory Committees, which set out the skills, knowledge and outcome standards required of employees in different functional areas of the respective sectors and provide a basis for course providers to design training courses including in-house training to meet the needs of the sectors. The use of QF credits and the policy and principles for credit accumulation and transfer introduced under QF have further enhanced articulation among qualifications from different sectors.

3.2: VPET in the education system

3.2.1: VPET at the secondary education

At the stage of secondary education,¹⁵ which is a critical starting point to kindle youth's aspirations, they begin to have some thought about their future education and career directions and to make decisions accordingly. Although VPET programmes are available at the secondary school level, the majority of local and international schools do not provide VPET-oriented programmes. VPET providers remain the main providers of VPET programmes at the secondary school level.

At the junior secondary level, VPET is offered to students through various career-related activities and learning programmes such as Life Planning Education. At the senior secondary level, these are provided through a variety of learning opportunities: Applied learning (ApL) subject¹⁶ and career-related experiences in the other learning Experiences (OLE) activities.¹⁷

3.2.2: VPET at the post-secondary education

VPET route and Conventional academic route are the two main pathways for post-secondary education for students who have retained QF Level 3 through sub-degree level and undergraduate level. Some higher education institutions are offering degree programmes with a strong professional/vocational element.

¹⁵ There are 3 main types of schools providing secondary education in Hong Kong: local schools, international schools and VPET providers.

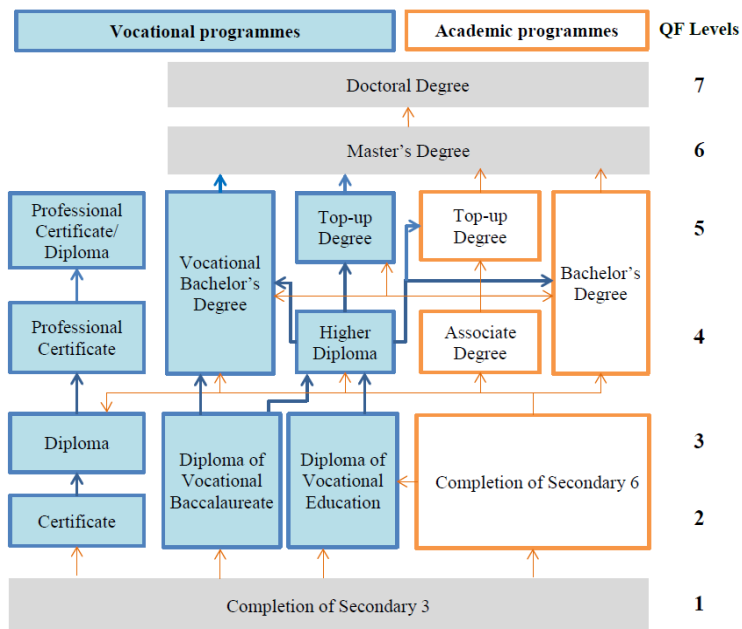
¹⁶ ApL courses, which are subjects with stronger elements of practical learning linked to broad professional and vocational fields, are introduced as Category B elective subjects of the Hong Kong Diploma of Secondary Education *HKDSE) Examination.

¹⁷ OLE are for complement students' learning in core and elective subjects. Through OLE, various career-related experiences are provided for them to enhance and update their knowledge about the world of work, strengthen their work ethics and facilitate their decision making as well as personal career planning.

Examples include Bachelor of Engineering, Bachelor of Science in Occupational Therapy, etc.

The figure on the right represents the progression pathways between academic and vocational streams for pursuing VPET from secondary 3 students all the way to Doctoral Degree:

Figure 3. Progression pathways between academic and vocational streams in VPET



Source: Task force on promotion of VPET (2020)

3.2.3: Other VPET programmes

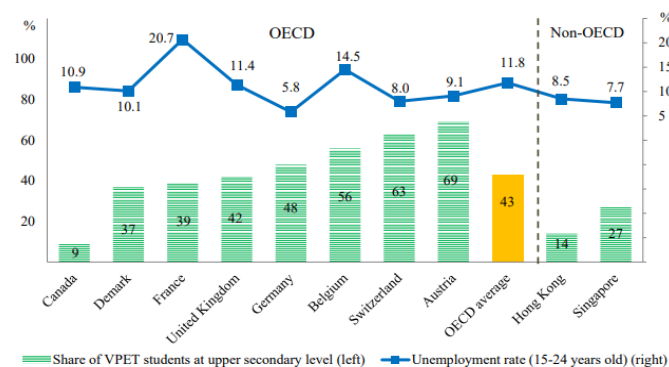
Apart from the above, there is a wide array of full-time and part-time certificate and diploma programmes (equivalent to QF Levels 2 and 3), primarily targeting young people that have completed Secondary 3 to 6, including the Diploma of Vocational Education, Diploma of Foundation Studies programmes, and apprenticeship schemes provided by the VTC as well as Diploma Yi Jin programmes offered by different institutions. Working adults who wish to acquire training or formal qualifications may also articulate using these alternative pathways. In addition, different training providers offer a range of

Professional Certificate and Diploma programmes with strong vocational content in specific disciplines, many of which are recognised under the QF at Levels 3 to 5, for in-service practitioners to upskill and pursue higher qualifications for career advancement.

3.2.4: Development of VPET outside the education sector

In recent years, as discussed above in the VPET development, with the increased demand for skilled manpower, more industries have played a more proactive role in promoting VPET through partnerships with education and training institutions in developing programmes for specific sectors/professions. For example, the Hong Kong and China Gas Company Limited and CLP Power Hong Kong have partnered with the VTC to offer more specialised training in nurturing professional industries. These joint programmes enable students to keep abreast of the latest industry knowledge and trends through theoretical learning and practice provided by partner companies. The rising prominence of corporate academies also plays a significant role in offering practical training to nurture more high-calibre and professional talents for their respective trades.

Figure 4. Participation of VPET programmes in Hong Kong

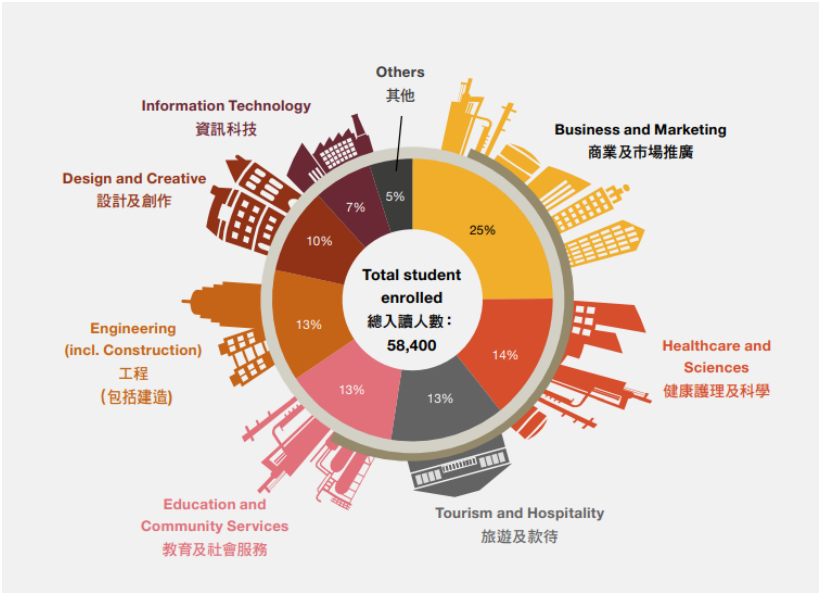


Note: (1) Upper secondary level.

Source: Organisation for Economic Co-operation and Development (2021, 2022), Census and Statistics Department (2021), Ministry of Education (2021a) and data.gov.sg (2022)

Unfortunately, the participation rate is observed to be much lower (less than 20%) comparing with over 80% of secondary school students going through the conventional school programme. Amongst selected jurisdiction, Hong Kong has the lowest participation rate of VPET in the upper secondary education as shown in the figure on the right: When it comes to the popularity by disciplines in VPET programmes, the figure below shows that although programmes related to business remain the most popular among VPET students in 2019/20, other programmes in the areas of healthcare and sciences, as well as education and community services have become increasingly attractive to VPET students.

Figure 5. Popularity of VPET programmes in Hong Kong



Sources: (1) Committee of Self-Financing Post-secondary Education; (2) VTC; (3) PwC Report

We believe that the trend will change given the rapidly changing world we are all facing now.

3.2.5: Emergence of generative artificial intelligence (AI)

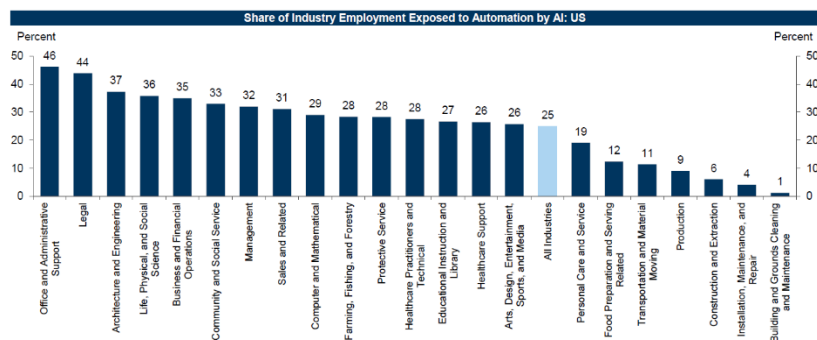
The recent emergence of generative artificial intelligence (AI) raises whether we are on the brink of a rapid acceleration in task

automation that will drive labour cost savings and raise productivity. Despite significant uncertainty around the potential of generative AI, its ability to generate content that is indistinguishable from human-created output reflects a major advancement with potentially large macroeconomic effects. If generative AI delivers on its promised capabilities, the labour market could face significant disruption. According to Goldman Sachs,¹⁸

“...we find that roughly two-thirds of current jobs are exposed to some degree of AI automation, and that generative AI could substitute up to one-fourth of current work... The good news is that worker displacement from automation has historically been offset by creation of new jobs, and the emergence of new occupations following technological innovations accounts for the vast majority of long-run employment growth...”

The figure below shows that the percentage of various different tasks that can be automated by AI in the US and Europe.

Figure 6. Share of industry employment exposed to automation by AI in the US



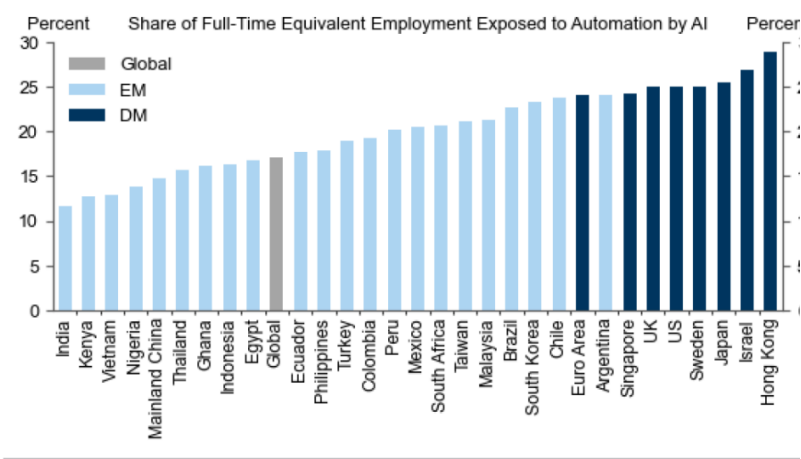
Source: Goldman Sachs Global Investment Research Centre

Although the above figure focuses on the position in the US, we cannot help but conclude that AI will have a significant impact on

¹⁸ In its article ‘*The Potentially Large Effect of Artificial Intelligence on Economic Growth (Briggs/Kodnani)*’

the future development or reform of many aspects of our lives, in particular, education to equip the youth's success in their career and VPET is certainly one of them. The figure on the left shows a more worrying scenario – Hong Kong seems to be most vulnerable to automation by AI due to our service-oriented nature.

Figure 7. Share of full-time equivalent employment exposed to automation by AI in the world



Source: Goldman Sachs Global Investment Research

4. Policy address and task force

Despite the government’s continuous effort, students’ interest in pursuing VPET remains at the lower end as VPET is still considered inferior to other academic articulation pathways, for example, degree programmes in universities.

In June 2014, the government set up a Task Force on Promotion of Vocational Education (the 2014 Task Force) to map out a strategy to promote and raise the public awareness of vocational education and recognition of its value. All 27 recommendations proposed by the

2014 Task Force, along with the three-pronged strategy¹⁹ were accepted by the government in the 2016 Policy Address, and relevant measures have been put in place.

In the 2017 Policy Address, the Chief Executive announced that the government needs to carry out in-depth reviews on eight key areas of education. VPET is among one of the eight areas. The government has all along stressed the importance of VPET in sustaining social and economic development of Hong Kong. However, VPET is still not well understood by many students, parents and employers. As a result, the Chief Executive announced the setting up of a task force (the Task Force) to review and consider enhancements to the promotion of VPET in Hong Kong with a more targeted approach.

In the 2017 Policy Address, the Chief Executive announced that the government needs to carry out in-depth reviews on eight key areas of education²⁰. VPET is among one of the eight areas. The government has all along stressed the importance of VPET in sustaining the social and economic development of Hong Kong. However, VPET is still not well understood by many students, parents, and employers. As a result, the Chief Executive announced the setting up of a task force²¹ (the Task Force) to review and consider enhancements to the promotion of VPET in Hong Kong with a more targeted approach.

VPET was not discussed in the 2020 Policy Address. The 2021

¹⁹ (a) rebranding “vocational education and training (VET)” as “VPET”; (b) strengthening promotion; and (c) sustaining efforts

²⁰ Under the principles of “Led by Professionals” and “Listening to Views Directly”

²¹ The Task Force was established in April 2018. Its members comprise representatives of schools, parents and employers, as well as community service and labour sectors. It completed its public consultation from May to July 2019, and submitted its review report to the government on 23 January 2020. In the review report, the Task Force discussed and recognized the challenges and listed out 18 recommendations.

Policy Address simply states that the government “will continue to promote Applied Learning as a valued senior secondary elective subject by developing more diversified and up-to-date courses, as well as placing equal emphasis on practice and theory to cater for the diverse interests of students and facilitate their exploration of multiple pathways for further study and career pursuits.” One may doubt if the government did pay any attention to and made use of the recommendations given in the Task Force’s Review Report 2020.

Fortunately, the government seems to be looking into VPET more closely now.

In the 2022 Policy Address, it provides that:

“Vocational and Professional Education and Training

122. We will, through the strategy of fostering industry-institution collaboration and diversified development, promote VPET as a pathway parallel to conventional academic education, providing diversified learning and employment opportunities for young people.

We will:

- (i) expand the Study Subsidy Scheme for Designated Professions/Sectors²²;*
- (ii) explore the introduction of more applied degree programmes²³;*

²² *“To meet the keen manpower demand of designated industries (e.g. nursing and information technology), the respective numbers of subsidised places for self-financing higher diploma programmes and undergraduate programmes will be increased in phases by 1 000 and 2 000 per cohort respectively starting from the next academic year, increasing the total number of places from the existing 5 000 to 8 000. Top-up degree programmes will be covered for the first time and priority will be accorded to programmes of applied nature that involve industry-institution collaboration.”*

²³ *“The first batch of programmes under the Pilot Project on the Development of Applied Degree Programmes have been launched in the current academic*

- (iii) *expedite the development of Vocational Qualifications Pathway (VQP)²⁴;*
- (iv) *launch the Diploma of Applied Education (DAE) Programme²⁵;*
- (v) *enrich applied learning and workplace experience of secondary students²⁶ ; and*
- (vi) *enhance VPET promotion²⁷."*

We are yet to see the effectiveness and what measures the government will employ to execute the policy address. In the next chapter of this report, we will discuss various challenges facing VPET and its potential solutions including our view on these policies.

5. Overview of VPET systems in Shanghai, Singapore and Switzerland

Before we dive into the discussion on other challenges and propose any recommendations for improving the VPET system in Hong Kong,

year, covering four disciplines: nursing; testing and certification; horticulture, arboriculture and landscape management; and gerontology. We are actively exploring the introduction of more applied degree programmes."

²⁴ *"We will increase the number of industries adopting the VQP under the Qualifications Framework from 6 to at least 18 in the next five years."*

²⁵ *"The DAE Programme will be launched on a regular basis starting from the next academic year, incorporating substantial VPET elements and providing a pathway for Secondary Six school leavers as well as adult learners to obtain a formal qualification."*

²⁶ *"We will enhance the senior secondary applied learning courses by offering more course options and support, and launch the Business -School Partnership Programme 2.0 with more business partners covering more industries."*

²⁷ *"We will organise an array of activities to enhance the public's positive understanding of VPET and promote its professional image, including supporting the Vocational Training Council to organise the "Future Skills Community Event" this December to make VPET an attractive progression pathway."*

it would be helpful to examine the VPET systems in other places to see if any useful lessons could be learned and examples can be followed. For the purpose of this report, we will examine the VPET system in Shanghai, Singapore and Switzerland. In general, the governance structure of VPET in Shanghai is similar to that in Singapore, while different from that in Switzerland.

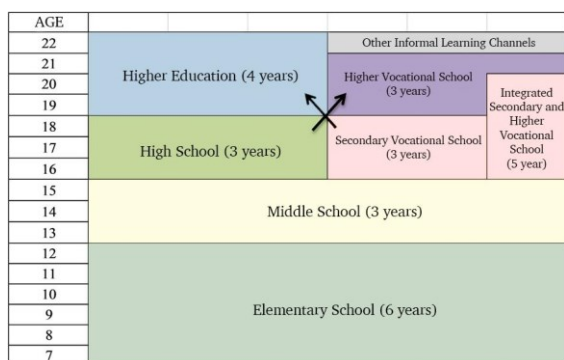
We believe that these three places are good benchmarks. Shanghai is a Chinese society with the same cultural background and is mainland China's top city. Singapore is the usual suspect as a comparison to Hong Kong. Switzerland is a western country, has a very high VPET participation rate, focuses on high value-added services and products, and has a similar population to Hong Kong.

5.1: VPET system in Shanghai

As one of China's top tier cities, Shanghai's consistent promotion of vocational education stands to contribute to further growth in the industry²⁸. In 2022, the total number of graduates from higher vocational education in Shanghai is 40,661, and about 96.91% of these graduates have been employed after graduation, which remains a quite high number under the influence of the pandemic. The figure on the right shows the general education progression pathway in China.

²⁸ In the *"Medium and Long-Term Education Plan 2010-2020"*, Shanghai has clearly stated the importance of vocational education, stating that it will make further efforts to make *"students become knowledgeable and developmental skilled personnel who can adapt to job changes"*, and has proposed reform plans in four areas: (1) Reforming vocational education personnel training methods; (2) Building a modern vocational education system; (3) Building a modern vocational education teaching staff; (4) Encouraging the participation of industry, enterprises and society in the development of vocational education.

Figure 8. VPET system in Shanghai



Source: Vocational Education in Shanghai, Taiwan, Hong Kong and Macau, 2018

However, since under the cultural context of China, traditionally the students who take the vocational education path are the ones with poor academic performance, VPET system is linked to negative social perception. Therefore, reforms to vocational education in recent years do not just seek to expand the size of vocational education, but more importantly improve the quality.

5.1.1: Practice cases of the VPET system in Shanghai

(a) Government-Vocational institution cooperation

Many Shanghai vocational schools have "counterpart" training programs, such as the Shanghai Public Utilities School, which is part of the Shanghai Transport and Port Authority. The school's curriculum is closely linked to Shanghai's urban utilities²⁹, and most of its graduates go on to work for companies or public services related to urban utilities. As the complexity of urban utilities often deepens with the development of cities, the market demand has given rise to a number of new professions, which requires

²⁹ For example, urban drainage engineering, gas distribution and application, urban rail transit.

that the curriculum of the vocational schools keeps up with urban development.³⁰

(b) University-Vocational institution cooperation

This type of cooperation relies on Shanghai's well-developed higher education system. Shanghai has a number of nationally recognized higher education institutions and renowned programmes with significant disciplinary strengths. By collaborating with these institutions and relying on their strong research capabilities, many vocational and technical schools have been able to improve their curriculums.³¹

(c) Enterprise-Vocational institution cooperation

The third type of vocational school relies on partnerships with large enterprises. Since Shanghai is one of the leading economies in the mainland, many well-known companies are located in the city. Not only do these companies have a stable

³⁰ There are many examples, such as Shanghai Harbor School (port container transportation, logistics), Shanghai Urban Construction Engineering School (water supply and drainage engineering, landscaping), Shanghai Environmental School (environmental management technology), etc. These are all direct counterparts to the public utility needs arising from urban development.

³¹ For example, the cooperation between Jiguang Vocational and Technical College and Tongji University has enabled Jiguang Vocational School to transplant a number of specialties focusing on architecture, engineering and design, which are the signature disciplines of Tongji University. Jiguang Vocational and Technical College has the educational idea of "the disciplines comes from Tongji, the dean comes from Tongji, the teachers are mainly from Tongji, and the school relies on Tongji", which makes the close cooperation with higher education institution possible. While the main goal of universities is academic research, vocational schools can transplant many job-oriented majors in parallel. Similarly, the Health School affiliated with Shanghai Jiaotong University School of Medicine and set up a national nursing program and a medical testing program. Since there are several general hospitals affiliated with their alma mater, Jiao Tong University Medical College, students are able to complete their studies and internships with much more practice.

and large-scale demand for employees, they are also ahead of the curve in terms of technology reserves. Therefore, many vocational schools are actively going out to cooperate with enterprises to run schools.³²

(d) The new trend in VPET in Shanghai

Recently a new approach has been tested out in Shanghai. Some vocational schools have started to have integrated secondary and higher vocational education. In this approach, students' studies can generally be completed in five years, with the first three years following the curriculum of a secondary vocational school and the other two years following the content of a higher vocational school. It treats vocational education as a continuous training process, aims at skill-based talent development, and seeks to provide a coherent and progressive learning environment for the younger generation.

5.1.2: Advantages of VPET in Shanghai

- (a) Stable employment: Counterpart training programmes with the urban utility service has stable direction of employment. And as long as the city continues to develop, the demand for similar types of work will only increase.

³² Other large multinational companies, such as Toyota and General Motors, have also been active in introducing their respective production and after-sales service systems after entering the mainland market. The Toyota-Technical Education Program (T-TEP) is a pre-vocational training program for automotive mechanics, and is currently taught and certified at 31 secondary vocational schools throughout China, one of which is Shanghai's Jiaoyuan School. The entire T-TEP program takes about four years of training, with students taking basic mechanical engineering and automotive repair courses in the first two years and more hands-on training in the following two years. If students can finish the entire T-TEP program, they will not only receive a school diploma, but also a Toyota Certified Automotive Engineer certificate, which is a double win. This greatly enhances the student's competitiveness in the job market.

- (b) Up-to-date curriculum: By partnering with research universities, vocational education schools can ensure that their curricula are up-to-date. And as cutting-edge technologies evolve, vocational schools will be able to train new generations of technicians.
- (c) High adaptability: Through joint school-enterprise training, students graduating from vocational institutions will acquire skills that are directly adapted to the hiring needs of companies, enabling them to get employed

5.1.3: Disadvantages of VPET in Shanghai

- (a) Social perspective: Shanghai's vocational education system still divides students into the general education path or VPET path based on academic performances, which does lift the general negative social perception of VPET.
- (b) Limited academic focus: Students who take the VPET path can only obtain training in vocational skills. The vocational schools generally neglect general education, which is detrimental to students' personal development.
- (c) Limited flexibility: Students can only choose between the general education paths or the vocational paths at the end of compulsory education and cannot change them subsequently, forcing students to make choices without fully understanding their career preferences.

Overall, VPET in Shanghai is one of the more successful examples in mainland China. It includes the participation of the government, educational institutions, enterprises and other parties so that students who take the VPET path have better chances in terms of employment.

5.2: VPET in Singapore

In Singapore, the secondary school system is designed to provide students with a broad-based education that prepares them for further studies or entry into the workforce. It consists of two main streams: the Express stream and the Normal stream.

The Normal stream is further divided into two sub-streams - Normal (Academic) and Normal (Technical).³³ Students in the Normal (Academic) stream take a range of academic subjects, but at a pace that is more suited to their abilities. Students in the normal (technical) stream focus on vocational and technical subjects, such as design and technology, hospitality services, and automotive technology.

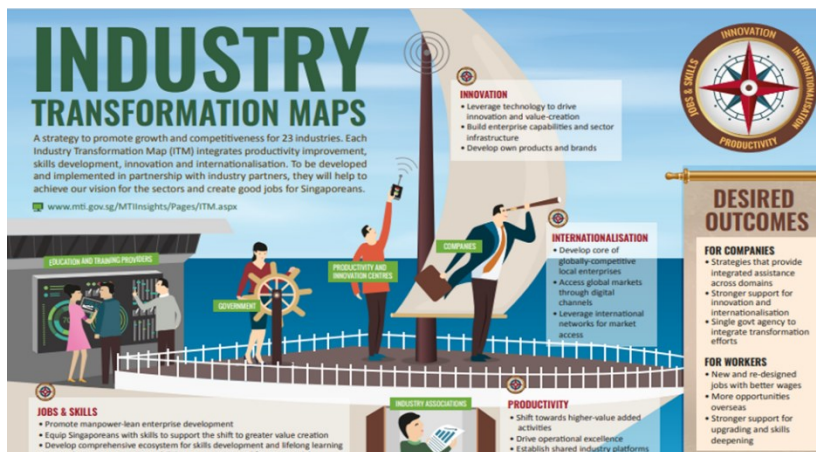
After completion of secondary education, the vast majority of students (74% in 2020) would pursue VPET either through the Institute of Technical Education (ITE) or the five polytechnics (accounting for 30% and 44% of the 2020 cohort respectively). The remaining school leavers would pursue the academic route in the format of pre-university Advanced Level courses lasting for two to three years to follow the academic path.

At the university level, two of the six public universities in Singapore in 2009 and 2017 with "applied learning University" positioning established.³⁴ These two institutions of higher learning account for 2020 total university enrolment is 17%, mainly for polytechnic graduates, but completed pre-university advanced degree students may also be enrolled.

³³ The Express stream is a 4-year program that leads to the Singapore-Cambridge General Certificate of Education Ordinary Level (GCE O-Level) examination. Students in the Express stream take a range of academic subjects, including English, Mathematics, Science, Humanities, Mother Tongue Language, and a range of electives. At the end of the 4-year program, students take the GCE O-Level examination, which is a key qualification for entry into post-secondary education. The Normal (Academic) stream is a 4-year program that leads to the GCE N-Level examination, while the Normal (Technical) stream is a 4-year program that leads to the Nitec (National ITE Certificate) qualification.

³⁴ i.e. Singapore Institute of Science and Technology and Singapore University of Social Sciences

Figure 9. The Industry transformation map (ITMs) in Singapore



Source: Ministry of Trade and Industry Singapore (2016)

In 2017, the Singapore Future Economic Council (FEC) launched ITMs for 23 industries.³⁵ Through task forces, these national industry plans are then developed into policies that enhance human capital and promote industry growth and transformation.

ITMs are key components of the Singaporean government's efforts to establish a smart nation and encourage economic growth through innovation and productivity. They are sector-specific roadmaps that outline the government's vision and strategies for transforming traditional industries into high-tech, high-value industries. There are 23 short-listed industries as shown in the figure on the right:

³⁵ The Singapore Future Economic Council is chaired by the Deputy Prime Minister and comprised of government, industry, unions, and education representatives.

Figure 10. 23 short-listed industries for ITMs

S/N	Cluster	Sector
1	Manufacturing	Energy & Chemicals
2		Precision Engineering
3		Marine & Offshore
4		Aerospace
5		Electronics
6	Built Environment	Construction (incl. Archi & Engineering services)
7		Real Estate
8		Cleaning
9		Security
10	Trade & Connectivity	Logistics
11		Air Transport
12		Sea Transport
13		Land Transport (incl. Public Transport)
14		Wholesale Trade
15	Essential Domestic Services	Healthcare
16		Education (Early Childhood and Private Education)
17	Professional Services	Professional Services
18		ICT and Media
19		Financial Services
20	Lifestyle	Food Services
21		Retail
22		Hotels
23		Food Manufacturing

Source: Media Factsheet Government Singapore 2022

5.2.1: Some key features of the ITMs

- Focus on innovation and productivity: The ITMs encourage the adoption of new technologies and business models to drive improvements in productivity and competitiveness.
- Sector-specific strategies: Each ITM is tailored made to the specific needs and challenges of the industry it covers and outlines specific goals and initiatives that are designed to support the transformation of that industry. The ITM group monitors progress and may adjust roadmaps or introduce new ITMs as needed.
- A long-term vision: ITMs are designed to be long-term roadmaps that will guide the development of Singapore's industries over the next decade and beyond.
- The ITMs take a long-term, whole-of-industry approach. The goal is not just to help individual companies, but to

transform entire industries and the economy as a whole.

- (e) The ITMs aim to future-proof Singapore's industries and jobs, so people can have opportunities in new growth areas. The corporation can have the government support on talents, skill sets, and subsidies.
- (f) The ITMs group works with other government agencies like EDB and Enterprise Singapore to coordinate resources and incentives for companies to support the ITMs.
- (g) The progress and outcomes of the ITMs are regularly assessed by the MTI group. Impact is measured in areas like industry growth, productivity, innovation, and job creation. The results help determine if any changes are needed to the ITMs.

5.2.2: Advantages of ITMs

- (a) Enhanced competitiveness: ITMs help to enhance the competitiveness of specific industries by identifying key areas for improvement and implementing targeted solutions. This helps to increase productivity, innovation, and efficiency, making companies more competitive in the global marketplace.
- (b) Job and Skills development: ITMs include initiatives to upskill and reskill the workforce to meet the evolving needs of the industry.
- (c) Innovation and technology adoption: ITMs promote the adoption of new technologies and innovative practices, which can lead to increased efficiency, productivity, and competitiveness.
- (d) Sustainability: Many ITMs incorporate sustainability goals, such as reducing carbon emissions and promoting circular economy practices. All help to ensure the industry is environmentally and socially responsible.

5.2.3: Disadvantages of ITMs

- (a) Implementation challenges: Implementing ITMs can be complex and require significant resources, including time, funding, and expertise. All help to delays in achieving the desired outcomes.
- (b) Uneven distribution of benefits: The benefits of ITMs may not be evenly distributed across different segments of the industry.
- (c) Dependence on government support: Companies that rely heavily on ITMs may become overly dependent on government support. This could lead to a lack of competitiveness in the long term.
- (d) Lack of flexibility: The long-term nature of ITMs may make it difficult to adapt to changes in the industry or the broader economic environment. This could limit the ability of companies to respond to emerging trends.

5.2.4: Example IMT - construction industry

As an example, the Construction ITM gave rise to the Built Environment Skills Future Tripartite (BEST) Taskforce. With the aim of training 80,000 technicians, professionals, managers, and executives in using state-of-the-art construction technology (e.g., Building Information Modelling, Modular Integrated Construction) by 2025, the task force devised policies to promote pre-employment training, internships, and continuing education to address the future skill demands of the sector.

Figure 11. Singapore's future economy council and 23 industry transformation maps



Sources: Ministry of Trade and Industry (Singapore), Building and Construction Authority (Singapore)

Overall, the ITMs are an important part of the Singaporean government's efforts to promote economic growth and competitiveness and to position Singapore as a leader in innovation and technology.

5.3: VPET in Switzerland

VPET, or Vocational and Professional Education and Training, is an important part of the Swiss education system. Switzerland has a long tradition of vocational education, and the VPET system³⁶ is highly regarded both nationally and internationally.

5.3.1: Summary on Swiss VPET system

- (a) **Characteristics of Swiss VPET system** Dual-track system: As mentioned earlier, VPET in Switzerland is a dual-track system that combines vocational education with practical training in the workplace. Students generally spend three

³⁶ The VPET system is overseen by the State Secretariat for Education, Research and Innovation (SERI), which is responsible for setting the standards and regulations for VPET programs. There are also various industry-specific and regional organizations that play a role in the development and implementation of VPET programs.

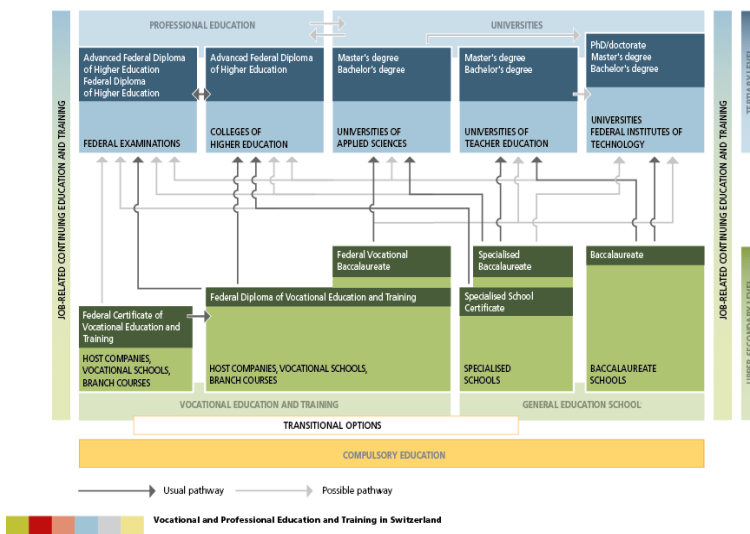
days a week on the job, learning relevant skills and knowledge, and two days a week at a vocational school, learning general subjects. They continue to receive German, mathematics, French and physical education, just as they do in high school, and have to pass a basic subject exam and some technical exams each school year. In addition, the practical work is also assessed by the company where they work.

- (b) Duration: VPET programmes in Switzerland typically last between two and four years, depending on the field of study and level of qualification. Some programmes also offer the opportunity to continue on to higher education.
- (c) Qualifications: There are four main levels of VPET qualifications. Federal Vocational Education and Training Certificates, Federal Vocational Baccalaureate, Federal Diploma of Vocational Education and Training, and Federal Certificate of Competence. These qualifications are recognized by employers across Switzerland and can lead to a variety of career opportunities.
- (d) Recognition: VPET qualifications obtained in Switzerland are recognized both nationally and internationally. This makes it easier for graduates to find employment both in Switzerland and abroad.
- (e) Funding: VPET programmes in Switzerland are funded by a combination of government subsidies, contributions from employers, and student fees. This ensures that VPET remains accessible and affordable for students from all backgrounds.
- (f) Industry involvement: As mentioned earlier, industry plays a key role in the development and implementation of VPET programmes in Switzerland. Employers are involved in the design of training programmes and often provide the practical training component of the curriculum. This ensures that students are learning the skills and knowledge that are relevant to the job market.

- (g) Flexibility: VPET programmes in Switzerland are designed to be flexible, allowing students to choose from a variety of vocational fields and to tailor their education to their individual interests and career goals.

The figure below shows the progression pathway of the Swiss VPET system:

Figure 12. Progression pathway of the Swiss VPET system



Source: www.berufsbildung.ch

5.3.2: Advantages of VPET in Switzerland:

- Practical skills:** The VPET system in Switzerland provides students with practical skills and training that are directly applicable to the workplace. This can help graduates to be more effective and productive employees.
- High-quality education:** Swiss VPET programmes are known for their high quality and are recognized both nationally and internationally.

- (c) Industry partnerships: The close partnerships between industry and VPET programmes in Switzerland ensure that students are learning skills that are in demand in the job market.
- (d) Career opportunities: VPET qualifications in Switzerland can lead to a wide range of career opportunities in a variety of fields.
- (e) Flexibility: The VPET system in Switzerland is flexible, allowing students to choose from a variety of vocational fields and to tailor their education to their individual interests and career goals.

5.3.3: Disadvantages of VPET in Switzerland

- (a) Limited academic focus: The VPET system in Switzerland is focused more on practical skills than academic knowledge. This may not be ideal for students who want to pursue careers that require a strong academic background.
- (b) Limited social mobility: Although the VPET system in Switzerland is accessible to students from all backgrounds, it may not provide the same level of social mobility as traditional academic pathways.
- (c) Limited international recognition: Although VPET qualifications are recognized internationally, they may not be as widely recognized as traditional academic qualifications like university degrees.
- (d) Limited access to higher education: Although some VPET programmes in Switzerland offer the opportunity to continue to higher education, this is not always the case. This may limit the career opportunities available to some graduates.
- (e) Limited language options: VPET programmes in Switzerland are typically taught in German, French, or Italian. This may limit the accessibility of VPET programmes for students who do not speak one of these languages fluently.

Overall, VPET in Switzerland is a highly regarded and effective

system in VEPT that provides students with valuable skills and training that can lead to successful careers in a variety of fields.

5.4 Key Take-away from the VEPT system in these 3 jurisdictions

5.4.1: *Shanghai*

Strong governments led VPET policy and system driving true collaboration of (i) Government-vocational institutions (ii) academic universities-vocational institutions and (iii) enterprise-vocation institutions (such as Toyota-technical education programme) which would be role-models to Hong Kong. Hong Kong Government shall develop long term strategic policy on VPET and take more proactive role to drive tri-party collaboration between government bureaus, businesses, UGC-funded universities and VPET providers so as to enhance quality of VPET system as a whole.

5.4.2: *Singapore*

Setting up high-ranked Future Economic Council chaired by deputy prime minister and comprising government heads, business leaders, trade unions and education representatives to develop long-term economic and manpower strategy including 23 industry transformation roadmap which were translated into policies to support industry development, optimize talent pool and upskill & reskill workforce. This organization structure is worth to be adopted by HK as we lack long-term strategic planning on economy, industry and manpower policy.

5.4.3: *Switzerland*

Dual-track model on VPET programmes is well established with great diversity (~245 different occupations) in Switzerland with strong business support (~30% of total companies) combining work-based training and classroom learning. Companies and trade associations are responsible for the training materials which has high labor market relevance.

More than 60% of upper-secondary students joined the VPET programmes and the students are given high flexibility of changing routes between VPET routes and academic routes at different

stages. VPET degrees or above are supported by Universities of Applied Science and professional education via federal examinations and study programmes at professional education institutions. Contents of VPET programmes are subject to comprehensive review every 5 years to ensure they are updated and necessary.

6. Challenges and potential solutions VPET in Hong Kong

Given the long history and different phases of development in VPET in Hong Kong, it is not surprising that there are some challenges associated with VPET that need to be addressed to ensure its continued success.

6.1: Singapore

Setting up a high-ranked Future Economic Council chaired by the deputy prime minister and comprising government heads, business leaders, trade unions and education representatives to develop long-term economic and manpower strategies including 23 industry transformation roadmaps which were translated into policies to support industry development, optimize talent pool and upskill & reskill workforce. This organization structure is worth adopting by HK as we lack long-term strategic planning on economy, industry and manpower policy.

6.2: Switzerland

Dual-track model on VPET programmes is well established with great diversity (~245 different occupations) in Switzerland with strong business support (~30% of total companies) combining work-based training and classroom learning. Companies and trade associations are responsible for the training materials which has high labor market relevance.

According to the *Review Report January 2020*,³⁷

³⁷ Prepared by the Task Force on Promotion of Vocational and Professional

*"The major challenge faced by the VPET sector in Hong Kong is VPET's inferior public perception vis-à-vis other academic articulation pathways... many stakeholders, including students, parents, and teachers, still hold a relatively narrow view of VPET. In fact, many of them are not aware of the diverse opportunities available through VPET, and often associate VPET with relatively lower qualifications. They also consider that career opportunities for VPET graduates are limited to those involving manual work while maintaining the traditional mentality that only academic pursuit could promise a reputable and successful career pathway for young people. Such a narrow view of VPET has been entrenched in the minds of many and cannot be easily reversed in a short period of time, which is not conducive to the promotion of VPET in Hong Kong."*³⁸

This seems to be the general perception of the root problem but is this really the major challenge in the VPET?

6.3: Challenges and their potential solutions

Rather than focusing on improving the general perception of the status of VPET in Hong Kong, we believe that there are various root causes to it. Without resolving them, the government's continuous effort to promote VPET or having a piecemeal policy to change the situation may not work. We will discuss below 6 major challenges and their potential solutions that we consider are the keys.

Education and Training.

³⁸ The quote goes on "...the 2018 survey revealed that about half of the respondents (48.7%) still did not have knowledge of the academic attainment one could achieve by pursuing VPET. Moreover, only about 13.1% respondents had the first impression that VPET was related to professional skills training in 2018, even after the rebranding efforts. Among the student respondents, while more considered VPET a valuable choice for further academic or career pursuit (54.0% in 2018 as compared with 44.0 in 2015), only 20.7% were interested in pursuing VPET in 2018 (rather stagnant as compared with 19.3% in 2015). In addition, the top reason quoted by students for not pursuing VPET was that "their academic results allowed them to pursue better education opportunities", whereas the main reason for others' interest in VPET was "interest in career opportunities available through VPET".

1. Lack of centralised long-term strategic planning and coordination across multiple government units. We believe that subsidizing more VPET places may help but is simply not the solution:³⁹
2. The key objective of VPET is to support the long-term manpower requirement of Hong Kong by training and upskilling the workforce on a consistent basis. The government shall work closely with the business sectors, and other key stakeholders (such as employees, universities, VPET providers, economists, etc.) to formulate the industry policy, forecast the long-term manpower requirements in different sectors and develop the corresponding VPET policy. But HK government does not seem to have such long-term strategic planning.

Education Bureau is responsible for VPET. They have done lot of work like VTC, Qualification Frameworks, and monitoring the 50+ VPET providers. But it is far from enough as it needs to work closely and coordinate better with other government bureaus and institutions. Many of the works are overlapped and have room for streamlining such as the below:

Figure 13. Roles at VPET for various government bureaus and other institutions

<u>Government bureau & Other institutions</u>	<u>Roles at VPET and Issues</u>
Labor & Welfare Bureau	(a) The Labor and Welfare Bureau oversees the Employee Retraining Board (ERB), which aims to upskill and retrain eligible employees aged 15 and above who have an educational attainment level at sub-degree or below. The ERB's objective is to assist

³⁹ In the 2022 Policy Address, the government is planning to expand the Study Subsidy Scheme and aim to increase the total number of places from the existing 5,000 to 8,000.

	<p>these individuals in re-entering the job market, supporting them to sustain their roles in new positions and helping them advance along their career paths.</p> <p>(b) Additionally, the ERB has many similarities and overlaps in resources with the Vocational Training Council (VTC), as both institutions offer common courses in fields such as catering, hotel and tourism, healthcare services, retail, construction, and electrical and mechanical engineering. This overlap suggests potential for consolidating the two institutions to enhance efficiency.</p> <p>(c) In December 2019, the Labor and Welfare Bureau released the Manpower Projection Report to 2027, which provides long-term manpower forecasts that are essential for Vocational and Professional Education and Training (VPET) planning. However, there appears to be limited collaboration between the Education Bureau and the Labor and Welfare Bureau when developing VPET curricula. For instance, VTC's 25 industry training boards, each with industry representatives, conduct their own manpower forecasts without necessarily referencing this government-led report.</p> <p>(d) In November 2022, the government announced a new Manpower Projection scheduled to begin in mid-2023, though it did not specify the projection timeline. Given the rapid advancements in technology and shifts in the geopolitical landscape, more frequent updates to the Manpower Projection are deemed</p>
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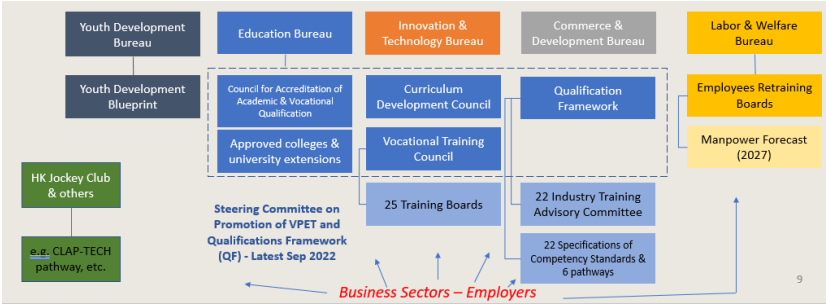
	essential. Furthermore, closer collaboration among the Education Bureau, business employers, and VPET providers is necessary to align these projections with industry needs.
Innovation and Technology Bureau	The Innovation and Technology Bureau should serve as a strategist on emerging innovation and technology trends, taking a leading role in shaping the future technological and economic roadmap.
Commerce and Business Bureau	The Commerce and Business Bureau has established strong connections and a deep understanding of the business sectors, positioning it well to mobilize these sectors in support of the dual-track VPET program. The Bureau can encourage businesses to offer work and training opportunities within their corporations, collaborate closely with VPET colleges to develop program content, and provide financial support to enhance the program's effectiveness.
Youth Development Bureau	The Youth Development Bureau is expected to have a strong understanding of young people's interests and preferences regarding VPET subjects, enabling it to provide valuable input on VPET program selection. It should also play a central role in promoting VPET to youth.
HK Jockey Club Charities Trust	The Hong Kong Jockey Club Charities Trust has substantial resources and experience in sponsoring youth employment initiatives, including multi-pathway programs such as the CLAP-TECH Pathway. This five-year program currently involves 500 students from 11 pilot schools. It includes three years of study under the DSE Applied Learning Course (covering foundational technology skills or multimedia

storytelling) and a two-year Higher Diploma in Data Science at Baptist University, in collaboration with esteemed industry partners like IBM, Microsoft, and Equinix.

While the program demonstrates strong industry partnerships and serves as a promising model, several questions arise: Why is it led by the Hong Kong Jockey Club Charities Trust rather than the Vocational Training Council (VTC), which might have greater resources or business connections for this purpose? Why is it limited to just 11 pilot secondary schools? And why does it only connect to a Higher Diploma from Baptist University rather than providing access to a degree program or involving other universities or colleges for broader options?

Overall, the program is a valuable pilot scheme but would benefit from expansion on a larger scale, with more coordination and higher standards to reach a broader audience effectively.

Figure 14. The working flow of various government bureaus and other institutions



Besides, there are overlaps within the Education Bureau. Examples under the qualification framework, there are 22 industry training advisory committees working on the specifications of competency standards while there are another 25 training boards formed by industry representatives under VTC to help develop the VPET curriculums and forecast manpower requirements. We noted that most of the industry representatives in the VTC training board are different from those sitting in QF's committee even under the same industry (e.g. auto).

6.4: Potential solution

A high-ranked cross-bureau organization “Hong Kong Future Economy and Talent Council” is proposed.

Like Singapore’s “Future Economy Council” established in 2017 which has been driving 23 industrial transformations through 7 sub-committees, we recommend forming a “Hong Kong Future Economy and Talent Council” to be led by very senior officials like Chief Executive to oversee the overall future economic strategy, industry policy, manpower requirement forecast of HK, and related VPET policies formulation & execution (to support the development, upskilling, reskilling and training those required manpower or through the import of talents). The committee members shall include the Chief Secretary of Administration, Financial Secretary, Head of Education Bureau, Labor & Welfare Bureau, Innovation and Technology Bureau, Commerce & Development Bureau and Youth Development Bureau, business leaders (with representatives from big ones like Tencent, Alibaba, JD, BYD, SHKP, HSBC, etc.), trade associations, business chambers, trade unions as well as education representatives from VPET providers & UGC-funded universities.

It shall develop a concrete economic development roadmap, industry roadmap and manpower roadmap including VPET policy for the next 5 years and deliverables, and review regularly the progress. It shall be a continuous organization.

3. Numerous VPET Providers but in Lower Recognition & with Insufficient Collaboration and Lack of Information and Resource Sharing:

According to PWC Report in 2021, there were ~50 VPET programmes providers in Hong Kong.⁴⁰ VTC has been the leading VPET provider and took ~50% of the post-secondary VPET students in 2019-2020. It was formed by 13 institutions. However, its number of students dropped by 29% between 2010 and 2021 (from 62.1k to 44.2k) but its total costs rose by 39% from 3/2011's HK\$3.6bn to 3/2022's HK\$5.0bn which sounds not efficient. Cost per students increased from HK\$58k per student in 3/2011 to HK\$113k per student in 3/2022 (+95%).

In particular, VTC-Post Secondary students fell 37% or -15.9k from 2010's 43.2k to 2021's 27.3k while VTC-Upper-Secondary students lost merely by 11% or -2.0k from 18.9k in 2010 to 16.9k in 2021.

On the other hand, approved post-secondary colleges posted a 13.2k or 400% rise of students from 2010's 3.3k to 2021's 16.5k and they got the post-secondary students moved from VTC.

Figure 15. Number of students enrolled in VTC

Number of students enrolled '000	2010	2016	2021	Vs 2010
VTC – Upper Secondary	18.9	21.0	16.9	-2.0; 11%
VTC – Post Secondary	43.2	39.7	27.3	-15.9; 37%
VTC Total	62.1	60.7	44.2	-17.9; 29%
Approved Post- Secondary colleges	3.3	10.1	16.5	+13.2; +400%
Other Post-Secondary institutions	9.3	7.4	6.9	-2.4; -26%

Source: Hong Kong Annual Digest of Statistics 2021 and 2022

Competition among VPET providers is keen. Subjects like health

⁴⁰ Please refer to Appendix A

care & community services; hotel, catering & tourism; IT and media & communications, etc. are provided by multiple institutions. How many of them are supported by work-based learning? It is hard for students to select and hard for employers to provide support to many institutions at the same time.

The table below shows the list of VPET providers and Post-secondary VPET programmes by industries, which, to us, looks rather overwhelming:

Figure 16. List of VPET providers and Post-secondary VPET programmes by industries⁴¹

VPET Providers/ programmes by	1 ^a	2 ^a	3 ^a	4 ^a	5 ^a	6 ^a	7 ^a	8 ^a	9 ^a	10 ^a	11 ^a	12 ^a	13 ^a	14 ^a	15 ^a	16 ^a	17 ^a	18 ^a	19 ^a	20 ^a	21 ^a	22 ^a	23 ^a
Caritas Bureau ⁴²	°	°	°	°	°	°	°	°	°	H°	H°	°	°	°	°	H°	°	°	°	°	°	°	°
Caritas Institute of CE ⁴³	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Caritas Institute of HE ⁴⁴	°	°	°	°	°	°	°	°	°	D°	°	°	°	°	°	°	°	°	°	°	°	°	D°
Centennial College ⁴⁵	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Chu Hsi College of HE ⁴⁶	D°	°	°	°	D°	°	D°	°	°	°	°	°	D°	°	°	D°	°	°	°	°	°	°	D°
CityU School of CPE ⁴⁷	°	°	°	°	°	°	°	°	°	°	°	°	D°	°	°	°	°	°	°	°	°	°	D°
CUHK School of CPSE ⁴⁸	°	°	°	°	°	°	°	°	°	H°	°	°	H°	°	°	H°	°	°	°	°	°	°	°
Gratia Christian College ⁴⁹	°	°	°	°	°	°	°	°	°	D°	°	°	°	°	°	°	°	°	°	°	°	°	°
HKBU Academy of Film ⁵⁰	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	H°	°	°	°	°	°	°	°
HKBU College of Int E ⁵¹	°	°	°	°	°	°	°	°	°	°	°	°	D°	°	°	D°	°	°	°	°	°	°	°
HKBU School of CE ⁵²	D°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	H°	°	°	°	°	°	°	H°
HKCT Institute of HE ⁵³	H°	°	°	°	°	°	°	°	°	H°	D°	°	H°	°	°	H°	H°	°	°	°	°	°	H°
HKU School of PCE ⁵⁴	D°	°	°	°	°	°	°	°	°	°	°	°	D°	°	°	°	D°	°	°	°	°	°	°
HKU SPACE PLK Stanley H ⁵⁵	H°	°	°	H°	°	°	°	°	°	H°	°	H°	°	°	°	°	H°	H°	°	°	°	°	°
HKU SPACE Com Coll ⁵⁶	°	°	°	°	°	H°	H°	H°	°	H°	°	°	H°	°	°	°	°	°	°	°	°	°	°
HK College of Tech ⁵⁷	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
HK Institute of Tech ⁵⁸	D°	°	°	°	°	°	°	°	°	D°	°	D°	°	°	°	°	°	°	°	D°	°	°	°
HK Ngan Yau CHE ⁵⁹	D°	°	°	°	°	°	°	°	°	H°	D°	°	°	°	°	D°	°	°	°	°	°	°	°
HK Shue Yan University ⁶⁰	D°	°	°	D°	°	°	°	°	°	D°	°	D°	°	°	°	D°	°	°	°	°	°	°	D°
Lingnan Institute of FE ⁶¹	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Metro U LKS SPACE ⁶²	D°	°	°	D°	D°	°	°	D°	H°	H°	D°	D°	D°	°	°	D°	°	°	°	°	D°	D°	H°
PolyU HK Community College ⁶³	°	°	°	°	°	°	H°	°	°	H°	°	°	°	°	°	°	°	°	°	°	°	°	°
PolyU SPEED ⁶⁴	D°	°	°	D°	°	D°	°	°	°	D°	D°	D°	D°	°	°	D°	°	°	°	°	°	°	D°
Hong Kong U of HE ⁶⁵	°	°	°	°	°	°	°	°	°	°	°	°	D°	°	°	D°	°	°	°	°	°	°	°
Tung Wah College ⁶⁶	°	°	°	°	°	°	°	°	°	H°	D°	°	°	°	°	°	°	°	°	°	°	°	°
UOW College of HE ⁶⁷	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Yew Chung College ⁶⁸	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	H°
YMCA College of career ⁶⁹	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
VTC – THE ⁷⁰	D°	D°	°	°	°	D°	D°	°	D°	D°	D°	D°	D°	°	°	D°	°	°	°	°	D°	°	D°
VTC – SHARP ⁷¹	°	°	°	°	°	D°	D°	°	D°	D°	D°	D°	D°	°	°	D°	°	°	°	°	°	°	D°
VTC ⁷²	H°	H°	H°	H°	H°	H°	H°	H°	H°	H°	H°	H°	H°	°	°	H°	°	H°	H°	°	H°	H°	H°

D: Degree; H: High Diploma Source: VPET.edu.hk

Also, many colleges including VTC are extending their subjects from diplomas to degree/top-up degrees which are competing

⁴¹ Notes for numbering on the first row: Accountancy; Arboriculture & Horticulture; Automobile; Banking & Finance; Beauty care & hairdressing; Building, civil engineering & build environment; Electrical & mechanical services; Electronics/ telecommunications; Fashion & textile; Health care & community service; Hotel, catering & Tourism; HR, management & supervisory; Information & technology; Insurance; Jewelry, watch & clock; Media & Communications; Print media & publishing; Real estate services/ property management; Retail; Security service; Testing, inspection & certification; Transports & logistics; and others.

government's subsidy scheme (8,000 places) via the Study Subsidy Scheme for Designated Profession/Sectors (SSSDP). Students are choosing degree courses offered by the UGC-funded universities under academic routes, VPET courses under university extensions, other post-secondary colleges and VTC, and students would be easy to be biased to prefer the former (UGC-funded universities) given the better facilities, higher recognition of the underlying universities in general and more financial support from government.

In addition, per a report by HK Foundation, for the 500 VPET sub-degree programmes at Qualification Framework level 4, only 6 of them were designed based on the competency standards set by the industries. The very low adoption of QF's competency standards reflected the lack of collaboration for resources and standards under the Education Bureau and the quality of VPET programmes is under question.

6.5: Potential solutions as to VPET programmes

Consolidate and upgrade the VPET providers and standardize the VPET programmes.

- (a) Restructure on VTC – consolidate and focus on sub-degree courses:
 - restructure VTC with a comprehensive review of its 13 members – the organization, the premises, the staff and their courses, etc.;
 - incorporate ERB as part of VTC;
 - all VTC members shall no longer carry their own college name and become faculties under VTC;
 - work out a plan to consolidate courses, resources and savings;
 - work out a plan to upgrade the VPET programmes and enhance training for teachers; and
 - VTC shall provide courses up to a high diploma and shall not provide degree courses or above; Consider renaming VTC as “Institute of VPET”.

- (b) Establishment of 3 Universities of Applied Science / Subjects to hold all VPET degree or above with enhancing quality:
- convert Hong Kong Metropolitan University, Hang Seng University and one more institution into 3 Universities of Applied Science / Subjects (UAS) with upgrading and re-training. All VPET degree courses or above shall only be provided by the above three UAS; and
 - The only way to promote VPET as the same pathway of the academic route is to lift the standard of VPET programmes to be the same as those of UGC-funded universities. With more resources and better structure at UAS, we would expect better research on VPET subjects, and higher teachers' quality which would help attract more partnerships from businesses and more students to join.
- (c) Upgrading and standardizing VPET programmes – adopting QF competency standards and enhancing work-based learning as key:
- VPET programmes shall adopt the competency standards under the QF within 2 years;
 - critically review the content of all VPET programmes and set minimum work-based learning proportion (dual-track work model) which is a critical success factor of VPET; and
 - other sub-degree VPET courses like high diploma, diploma, associate degree, and certificate shall be provided by the other approved colleges which shall be subject to stronger oversight on programme content.
- (d) Enhancing training to the trainers: provide regular and adequate training as jointly led by education sector and business sector to the teachers of VPET programmes given the fast-changing business requirements.
- (e) All VPET programmes shall be subject to comprehensive review every 5 years by a quality assurance committee

(mirroring the Switzerland VPET system). Some obsolete subjects may be removed entirely. Some subjects with high potential shall be incorporated at the earliest possible timeframe.

6.6: Insufficient industry participation

There is insufficient employer participation in VPET curriculum formulation and provision of work-based training. In Switzerland, ~30% of companies supported their VPET programmes. No formal statistics were provided in HK and according to VTC, more than 500 employers had supported the Earn and Learn Programme in the past years. Apparently, we do not find strong business sectors' support to provide work-based studies and develop the VPET programmes which are however key success factors of VPET.

6.7: Potential solutions as to supporting VPET development

Government shall take a more proactive role in soliciting businesses' support on VPET development.

Figure 17. Proposed actions for the government to support VPET development

Item	Proposed Actions	Remarks
(a)	Coordinated and higher-ranked solicitation to business sectors	Having many colleges and secondary schools approach business sectors for VPET programme support does not work. Having low-rank officials contact business sectors does not work. The government need a coordinated high-ranked channel to solicit support from the targeted business employers
(b)	Bringing in targeted leading corporations in different	One of factors for the key success of VPET is the

<p>sectors:</p> <p><u>E-commerce</u>: Alibaba, JD, PDD, Kuaishou</p> <p><u>Fin-tech</u>: Tencent, Ant Financial, Lufax</p> <p><u>Food Delivery</u>: Meituan, Deliveroo</p> <p><u>E-sports</u>: Tencent, Netease, Bilibili,</p> <p><u>Cloud</u>: Alicloud, Tencent Cloud, Kingsoft</p> <p><u>AI</u> : BAIDU, Senstimes</p> <p><u>Logistics</u>: SF Express, DHL, Cailiao,</p> <p><u>Conglomerate</u>: China Resources, Hutchison</p> <p><u>5G and Telecom</u>: HKT, Smartone, Huawei</p> <p><u>Transportation</u>: KMB, New World Bus</p> <p><u>Electric Vehicle</u>: BYD, Geely, Nio, Li Auto</p> <p><u>Construction</u>: China Construction, Gammon</p> <p><u>Infrastructure</u>: China Communication, CRRC</p> <p><u>Data centre</u>: SunEvision, CITIC Tel, China Mobile</p> <p><u>Optical technology</u>: Sunny Optical, AAC, Q-Tech</p> <p><u>Semiconductor</u>: SMIC, Hua Xiong</p> <p><u>Brand Mgt</u>: LI-Ning, Anta,</p>	<p>employers' support in providing work-based training in dual-track mode, updating the programme content and offer jobs to VPET graduates.</p> <p>It is much helpful to promote VPET if some prestigious anchor employers commit to offering long-term support to VPET programs.</p> <p>For example, if Tencent sponsored a e-Sports VPET programmes from High Diploma to Degree with target recruitment of 50 graduates per year from HK. Would it be attractive to promote the status of VPET?</p> <p>The latest VPET programmes lacked this kind of anchor employers.</p> <p>From ESG perspective and to secure adequately trained employees, those leading employers shall support VPET.</p>
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	<p>L'OCCITANE</p> <p><u>Catering</u>: YUM-China, Haidilao, Maxim</p> <p><u>Biotech</u>: Wuxi Bio, CSPC Pharma, CR Pharma</p> <p><u>Electronics</u>: V-TEC, Lenovo, Xiaomi, Haier Smart</p> <p><u>Manufacturing</u>: Techtronic, Kingsboard, L&M</p> <p><u>Marine</u>: OOCL, CNOOC, Pacific Basin, STIC</p> <p><u>Property</u>: SHKP, CRL, NWD, Sinoland</p> <p><u>Ppy Mgt</u>: China Overseas, Kaisheng, Vanke</p> <p><u>Jewelry</u>: Chow Tai Fook, Luk Fook, CSL</p> <p><u>Apparel</u>: Li & Fung, Esquire, Crystal</p> <p><u>Insurance</u>: AIA, Manulife, Prudential, Ping An</p> <p><u>Accounting & Audit</u>: Big 4 Audit firms</p> <p><u>Food & Beverage</u>: Nissin, Vitasoy, Watson</p> <p><u>Integrated Resorts</u>: Sands, Galaxy, Disneyland</p> <p><u>Cleaning</u>: Bauccio, Johnson,</p>	
(c)	In major government tenders, consider adding VPET support requirements	Examples like street cleaning contracts, waste recycling, land sales, infrastructure construction works, IT service

		contracts, etc.
(d)	Solicit VPET support from quasi-government institutions, like MTR, Airport Authority, Hospital Authority, HKMA, etc.	
(e)	For long contracts with CLP Power, HK Electric, KMB, City Bus, ferry operators, HK Telecom, Smartone, China Mobile, etc., consider adding VPET support requirements	Scheme of Control agreement with CLP Power and HK Electric, license to public transport and telecom (5G, fixed line), etc.
(f)	Solicit VPET support from companies that the Government has lent or invested in Cathay Pacific (& therefore Swire), SenseTime, HKEX, CU Hospital (owed CUHK HK\$4bn) etc.	
(g)	Provide tax incentives and or subsidies to target corporations.	Corporate VPET expenses including running costs and first years' wages of VPET graduates are tax deductible for 4 times of VPET expenses. For example, VPET expenses of HK\$5million can turn into HK\$20million tax deductible expenses or equivalent to HK\$3.3million tax savings (HK\$5mn x 4 x profit tax rate of 16.5%) and/or

		Subsidize VPET expenses upto [50%] with certain cap
(h)	<p>Solicit targeted MNC to support and provide overseas training opportunities to upgrade skills and provide incentives to VPET students</p> <p><u>Big techs:</u> Apple, Microsoft, Amazon, GOOGL,</p> <p><u>Auto:</u> Tesla, Benz, BMW, Benz</p> <p><u>Brands:</u> LVMH, Prada, Cartier, IWC</p> <p><u>Hospitality:</u> Marriot, Ritz Carton, St. Regis</p> <p><u>Aviation:</u> Airbus, Boeing, Singapore Airline</p> <p><u>Consumer Staple:</u> P&G, Unilever, Colgate</p> <p><u>Financial:</u> JPM, Goldman Sachs, Morgan Stanley</p> <p><u>Manufacturing:</u> Philips, Siemens</p> <p><u>Airconditioning:</u> Carrier, Daikin, Mitsubishi</p> <p><u>Elevator & Lifts:</u> Schneider, Otis, Fujitec</p>	<p>For example, Jockey Club's Clap-tech programme – Microsoft, IBM, Equinix provide some internship to students</p> <p>Put more efforts into soliciting targeted MNC to support VPET students, particularly in the focused industries identified by the Hong Kong Future Economy and Talent Council</p>

There has been a general bias that VPET paths are inferior to academic paths. We have touched on this briefly above. We consider that promotion is important but we do not think that

promotion alone without resolving the underlying structural issues is sufficient. We will examine the reason for this perception and propose some solutions to change it here.

Figure 18. Proposed actions for the government to support VPET development

Why VPET path look inferior to the academic path in HK?		Potential solution:
<p>Lower recognition of VPET programmes providers compared with UGC-funded universities but with similar or higher tuition fees</p>	<p>VPET degrees are provided by VTC's THEI & SHARP and ~20 post-secondary colleges, which have fewer resources and lower recognition (lower international ranking of post-secondary colleges) than the UGC-funded universities.</p> <p>Although government subsidies are provided for certain 8000 VPET courses (degree and high diploma) under SSSDP, most of the VPET degree or high diploma courses are not under SSSDP and charge higher tuition fees than degree courses under academic route provided by UGC-funded universities.</p>	<p>Upgrade the quality of VPET degree or above courses under Universities of Applied Sciences / Subjects.</p> <p>Consolidate VPET providers for sub-degree courses and put in place scoring on each of them and be transparent to students & parent</p>
<p>Pilot Scheme of development of Applied Degree Programme is too small and with unclear objective</p>	<p>The government started in 2022/2023 pilot scheme of development of Applied Degree Programme for only 4 disciplines:</p>	<p>Standardize minimum requirement of all VPET programmes in term of</p>

<p>& quality</p>	<ul style="list-style-type: none"> • Nursing by Caritas Institute of Higher Education • Testing and certification by HK Metropolitan University • Horticulture, arboriculture and landscape management by THEi (Technological and Higher Education Institute of HK VTC) • Gerontology by Tung Wah College <p>The coverage is small and the differentiation of Applied Degree Programmes vs other VPET degree courses is not clearly communicated.</p>	<p>adoption of industrial competency standards of QF, portion of work-based learning, quality of teachers, updates of curriculum to meet latest market requirement, etc.</p>
<p>Quality standard of VPET programmes are in question</p>	<p>Lack of transparent and consistent assessment standards to evaluate programme quality offered by so many different VPET providers. Any scoring on them and the VPET courses?</p>	

	Insufficient work-based learning and jobs offer opportunities from prestigious industry employers.	
Second-tiered status of Applied Learning subjects at DSE	Grading of DSE syllabus B Applied Learning subjects are not counted into bachelor degree of university admission criteria and thus dampen incentive to take learning subjects. Hence, the participation rate was low at below 10% in 2022. Applied Learning lessons are still school-based and lack of attraction that dual-track courses in Switzerland or Germany can provide.	UGC-funded universities shall accept the grading of Applied Learning subjects (Syllabus B of DSE).

One of the big hurdles in attracting VPET students and their parent's support is that the current VPET route does not provide a flexible way back to the academic route if the VPET students change their minds.

6.7.1: Potential solution as to Lower Level of Student Intake

We suggest that the UGC-funded universities reserve more admission quota (e.g. 10%) for VPET students who want to change course back to academic route and with strong performance (maybe through an admission test and interview). By establishing a flexible way to change course from VPET route to an academic route at some points, more students would be willing to take VPET routes at upper secondary and even post-secondary level.

6.7.2: Lack of Structural and Follow-through Career Planning Programmes

The latest career planning programmes for the youth are considered inadequate. In secondary school, career planning activities are arranged by only a few dedicated teachers with materials from the Education Bureau. Participation from student is more on voluntary basis (such as company visits). Career planning questionnaires may need to be completed by the students but lack consistent follow-up.

Some high-profile project like Strive and Rise Programme seems not work well given their one-off nature and lack of training for the mentors and big disparity in values between mentors and mentees.

We definitely agree that career planning would be very helpful for the development of the youth as they need adequate guidance and assistance when they grow.

6.7.3: Potential solution:

- (a) Structured and professional life counselling support to the Youth

We suggest to centralize resources to provide structured and professional life counselling support to students starting from primary school say Primary 5, then secondary school, post-secondary and then up to 2 years from graduation to work.

- Provide regular career counselling sessions to students say one hour on a bi-weekly basis to introduce different jobs and roles in the societies (e.g. via videos/YouTube, etc.) and install the concept of equality on people in different roles.
- Make use of technology like Apps for career planning assessment, follow-up, information sharing and ad hoc enquiry from students (with prompt responses from career counsellors via the Apps and with records of interaction for future follow-up).
- Suggest to follow up the career planning for all students upto at least two years after graduation. Youths need career guidance

most when they need to make education & career decisions and in the first two years from graduation, they also need career guidance. The government shall support and follow through.

- May train retired citizens as career counsellors.
- Shall take reference to some successful programme like HK Jockey Club's CLAPJC.

(b) Education to Parents

Moreover, education to parents is also important as many parents have a bias on the types of careers favouring traditional professional works to new emerging works like e-sports, and e-commerce; or have bias on VPET programmes vs academic programmes. And the correct information on VPET systems and updates shall be provided to not only students but also their parents timely and consistently.

7. Further recommendations – expansion of VPET disciplines

The World Economic Forum estimates that automation and digitalisation could eliminate 85 million jobs while creating 97 million new emerging jobs in the “new economy” – many requiring practical and vocational skills. VPET seems to be more important now than ever.

Apart from those required structural reforms that we discussed above, it is paramount that Hong Kong needs to encourage and foster a lifelong learning culture for skilling, upskilling and reskilling the workforce. As technical and practical skills are essential for Industry 4.0⁴², VPET providers can help bridge the skills gap by providing up-to-date training to equip industry practitioners with new

⁴² Industry 4.0—also called the Fourth Industrial Revolution or 4IR—is the next phase in the digitization of the manufacturing sector, driven by disruptive trends including the rise of data and connectivity, analytics, human-machine interaction, and improvements in robotics.

skills and knowledge in high-demand areas such as artificial intelligence, big data and analytics. This will also help build a stronger talent pipeline to meet demand and support the development of a smart economy.

In addition to the more traditional and long-established industries, the new industries under the rapid development of the Internet are also worthy of attention. Industries such as e-sports, e-commerce, and AI applications are all industries that attract the interest of young people and are growing rapidly. How to introduce a mature vocational education system into the fast-growing new industries, and to guide the industry to a more standardized direction, is also a topic that VPET system needs to pay attention to.

In Hong Kong's development planning in recent years, large infrastructure construction is expected to become a major industry to activate the economic recovery after the pandemic. In the next five years, about 10 major infrastructure projects will be completed, including the Hong Kong International Airport three-runway system, SKYCITY development, Cyberport Park expansion and Science Park Phase II. These traffic hubs and commercial and mixed-use development projects will be the engines that drive Hong Kong's future development. As a result, the local construction industry is in dire need of a large number of professionals. However, through the research, it is noted that the construction industry is not very attractive to the young generation as a career choice. Therefore, we would like to take the construction industry as a typical traditional industry for the study and analyze how to introduce young talents into the industry through vocational education.

On the other hand, as opposed to large-scale development, environmental conservation cannot be ignored. Hong Kong's natural resources are a valuable local asset, and how to balance development and conservation as well as adhering to sustainable development is an important issue for the future development of Hong Kong. Therefore, we have also included vocational education on environmental conservation in our study.

As such, we will discuss two industries: construction and

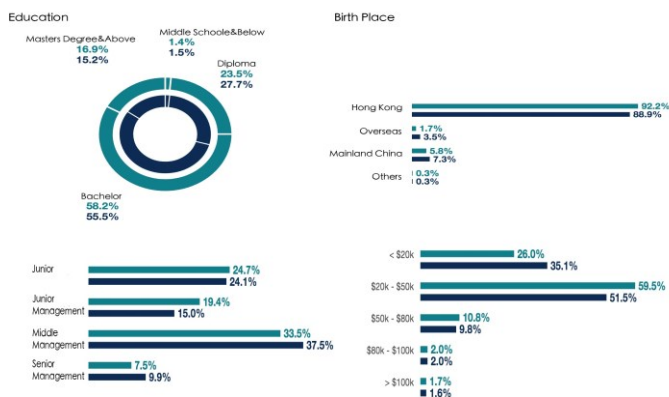
environment conservation which we think more can be done to facilitate growth, and also a few new industries: e-sports, e-commerce, and business applications of AI that we consider it be worth developing in Hong Kong.

7.1: Construction, building management and maintenance

Hong Kong's construction companies have a reputation for high-quality commercial and residential buildings efficiently and on schedule.

The trends in Hong Kong's construction industry clearly show a steady decline in labor productivity since the mid-1990s. This sector has maintained a relatively stable employment ratio in spite of declining demand, probably partly because older construction workers have not been able to switch jobs. Today, the construction industry is not attractive to young people and new blood is hard to come by.

Figure 19. Basic information of construction employees in Hong Kong



Source: JobsDB, 2018

The cumulative number of residential units in Hong Kong increased from approximately 2,276,900 units in 2012 to approximately 2,352,300 units in 2016, representing a compound annual growth

rate of 0.8%. And the figure further increased at a compound annual growth rate of 1.2% from 2016 to 2021 to approximately 2,501,200 units in 2021.

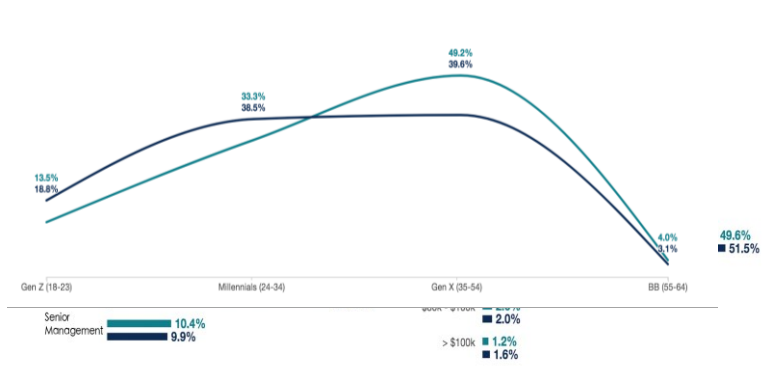
Between 2017 and 2021, the Government built over 94,000 public housing units. In addition, according to the 2017 Policy Address, the planned public housing supply for the next ten years from 2017/18 is 280,000 units, implying a surge in public housing supply in the second half of the next decade, creating significant development potential for the property management market.

Over the years, some public housing has been managed directly by the Housing Authority and the Hong Kong Housing Society, while some public housing management has been outsourced to private service providers.

The total revenue of the public housing property management services market in Hong Kong increased from approximately HK\$4.8 billion in 2012 at a compound annual growth rate of 4.3% to approximately HK\$5.7 billion in 2016. And such revenue further increased at a compound annual growth rate of 5.5% from 2016 to 2021 to approximately HK\$ 7.5 billion by 2021.

Property management services for public housing have been growing steadily in the past few years. Driven by the development of the public housing market in Hong Kong, the public housing property management services market will continue to grow steadily in the near future.

Figure 20. Basic information of building management employees in Hong Kong



Source: JobsDB, 2018

7.2: Recommendations

- (a) For the construction industry, since most construction companies in Hong Kong are small companies with less than 50 employees and may not be bound by contracts in the process of hiring labor, the rights of construction workers are sometimes not protected. Construction work is also a high-risk occupation where work-related injuries often occur. Therefore, it is recommended that a comprehensive monitoring system be established so that construction workers' basic rights such as working hours, minimum wages, and medical coverage are protected.
- (b) It is recommended that, under the supervision of the Construction Industry Council, vocational institutes of construction should be encouraged to join hands with construction companies to provide field training for their students in order to establish a standardized practice standard and to help outstanding graduates of vocational institutes to join local construction firms.
- (c) At the general education level, career interest development can be incorporated into the curriculum in elementary and junior high schools, such as organizing field trips to visit construction sites and communicating with construction workers to guide the future young generation to consider their career paths from an early age.
- (d) For the property management industry, Hong Kong's internationalization advantage should be given full play, and it is suggested that vocational and technical schools carry out joint projects with excellent property management institutions in Europe, so as to train a group of high-quality property management talents and to improve their professional competitiveness, and also to build Hong Kong's property management industry as a leading model in Asia

and export excellent talents to neighboring countries and regions.

7.2.1: Environment conservation

Nature conservation is a major topic in the government's planning for the future development of Hong Kong⁴³. More specific conservation measures include:

- identifying, designating and managing suitable areas as country parks, special conservation areas, marine parks and marine reserves to protect the natural environment;
- protection of important marine flora and fauna;
- making recommendations on development proposals, planning strategies and providing environmental impact assessments;
- enforcement of environmental legislation;
- identifying and managing Sites of Special Scientific Interest (SSSI);
- monitoring the natural ecology of the Ramsar site at Mai Po Inner Deep Bay;
- developing and managing the Hong Kong Wetland Park; and
- promoting public awareness and participation in nature conservation through public education.

In the field of environment conservation, the Environmental Protection Department (EPD) has created positions such as Environmental Protection Inspector and Environmental Protection Officer. Enterprises also need to hire environmental assessment

⁴³ In November 2004, the government announced a new nature conservation policy with an expectation to achieving nature conservation goals more effectively. The new nature conservation policy aims to regulate, protect and manage in a sustainable manner, to preserve the natural resources that are essential for the conservation of Hong Kong's biodiversity, while taking social and economic considerations into account.

technicians to assess and control the environmental impact of construction and manufacturing causes, such as noise, air pollution and wastewater, in order to meet the standards set by the government.

Environment and Ecology Bureau launched the Green Employment Scheme: Graduates Subsidy Programme (GSP) in 2020 and 2022, which has received overwhelming support from employers and graduates. The GSP subsidizes private companies and suitable organizations to employ fresh graduates working in areas⁴⁴, with a view to providing job opportunities to graduates interested in environment-related fields and to nurturing talents for meeting needs on various environmental fronts.

The GSP subsidizes about 300 jobs with \$5,610/month for a period of 18 months. Moreover, the Environmental Academy of the EPD collaborates with various professional societies and organizations to provide participating graduates with free professional training (the GreenPro Training Programme) to help them be better equipped with the latest knowledge and experience in various environmental-related areas.

7.2.2: Recommendations in Details

- (a) The EPD and related departments set up separate vocational qualifications for different jobs in environmental conservation, and young students can obtain these certificates to increase their chances of being employed by the government or enterprises.
- (b) At the general education level, it is important to raise environmental awareness and knowledge of nature conservation among children and teenagers. This will not only help to establish an eco-friendly social atmosphere among the citizens but will also make young people more

⁴⁴ For examples, related to environmental protection, ecological conservation, green energy and energy conservation, climate change, sustainable development and more.

likely to consider jobs in the field of nature conservation when choosing their career path.

- (c) Environmental conservation also relies heavily on the contribution of civil organizations, which often have limited resources to hire staff because they are usually non-profit. It is recommended that the government establish a special fund to support environmental organizations and subsidize eligible groups to encourage them to hire more graduates trained through the vocational education system to join the career of environmental conservation.

7.2.3: New VPET programmes

New occupations are emerging and adding those to new VPET programmes which has good potential and are of great interest to the new generation such as e-Sports, e-commerce, and business applications of AI is worth considering.

(a) E-Sports

Hong Kong e-sports started in 2010 or even earlier. There were many big-scale e-sports in Hong Kong and created revenue of HK\$20 million. We consider that e-sports can bring many benefits to Hong Kong.

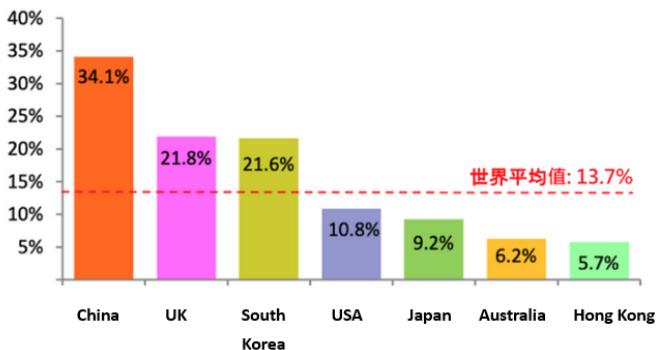
- Economic growth: The e-sports industry has contributed to the growth of Hong Kong's economy by creating new job opportunities, attracting investment, and boosting tourism.
- Development of local talent: The rise of e-sports in Hong Kong has led to the growth of a local gaming talent pool.
- Promotion of the tech industry: The e-sports industry requires advanced technology, such as high-performance hardware, software, and gaming peripherals.
- Opportunities for education: E-sports-related courses and programmes have been introduced in educational institutions across Hong Kong, providing students with the chance to learn about game design, marketing, event management, and other relevant subjects.

- Tourism: International e-sports events hosted in Hong Kong have attracted tourists from around the world. These events not only boost local businesses, such as hotels, restaurants, and retail stores, in Hong Kong.
- Youth engagement: E-sports has captured the interest of Hong Kong's younger generation. By engaging in e-sports, young people can develop skills such as teamwork, strategy, communication, and problem-solving.
- Positive international exposure: Hong Kong's e-sports teams and individual players have achieved success on the global stage, raising the city's profile and fostering a sense of pride and accomplishment among residents.

(b) E-commerce / KOL

More and more retailers in Hong Kong have set up online businesses, which is a great trend in the world. In 2022, the revenue of Hong Kong's e-commerce market is expected to reach US\$25.498 billion, and the penetration rate of e-commerce in Hong Kong is also expected to reach 76.7%, and e-commerce sales will continue to rise. However, Hong Kong e-commerce is much behind the average e-commerce revenue when comparing to other places (see the figure below). We see it as an opportunity and have a big room for growth.

Figure 21. Revenue of e-commerce markets



(c) There are three key trends in e-commerce:

- more Hong Kong retailers open online stores and Apps;
- more and more consumers choose to use bank transfers and e-wallets when shopping online; and
- people in Hong Kong are more receptive to the KOL to promote the products.

One of the biggest industries of e-commerce is not only just to sell the products, but also to train up the professional KOLs for their career. For KOLs in Hong Kong, they can build up their career not only in Hong Kong, but also in Greater Bay Area.

(d) Business application of AI

Hong Kong has been actively promoting the development and application of AI in various industries, including the commercial. The below are some examples of AI applications in business in Hong Kong:

- Chatbots: Many businesses in Hong Kong have implemented chatbots to provide customer service and support.
- Fraud detection: AI is being used by financial institutions in Hong Kong to detect fraudulent activities. Machine learning algorithms can analyze large amounts of data to identify patterns and anomalies that may indicate fraudulent behavior.
- Predictive analytics: AI is being used by businesses in Hong Kong to analyze customer data and predict customer behavior. This information can be used to develop targeted marketing campaigns and improve customer engagement.
- Supply chain optimization: AI is being used to optimize supply chain management in Hong Kong. Machine learning algorithms can analyze supply chain data to identify inefficiencies and suggest ways to improve the process.
- Personalized recommendations: AI is being used to provide personalized product recommendations to customers in Hong Kong.

Kong. The AI can analyze customer data to understand their preferences and make recommendations.

Overall, the use of AI in business applications in Hong Kong is growing rapidly, and it is expected to continue to play an important role in driving innovation and growth in the region.

8. Conclusion

Do we need a Reform? Definitely.

It is without a doubt that Hong Kong cannot afford to lose its competitiveness as it strives to maintain and further develop into a high value-added and diversified economy.

While the Government and different sectors have been spending a lot of effort in promoting VPET and are receptive to recommendations to enhance it, we consider that those are only interim measures but do not offer a holistic answer.

We consider that the Government must develop a long-term strategy and reform the whole VPET ecosystem. This will be a very long and painful journey, and require a lot of collaboration, support and commitment from the education, industrial and public sectors. We firmly believe that it is a very difficult but not impossible task given we have numerous talents in Hong Kong

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Appendix

1. List of VPET Providers

Statutory Bodies	Colleges and University Extensions				
<p>Clothing Industry Training Authority (CITA)</p> <p>Construction Industry Council (CIC)</p> <p>Employees Retraining Board (ERB)</p> <p>Vocational Training Council (VTC)</p>	<ul style="list-style-type: none"> • Caritas Bianchi College of Careers • Caritas Institute of Community Education • Caritas Institute of Higher Education • Centennial College • Chu Hai College of Higher Education • CityU School of Continuing and Professional Education • CUHK School of Continuing and Professional Studies • Gratia Christian College • HKBU Academy of Film • HKBU College of International Education • HKBU School of Continuing Education • HKCT Institute of Higher Education • HKU School of Professional and Continuing Education • HKU SPACE Po Leung Kuk Stanley Ho Community College • HKU SPACE Community College • Hong Kong College of Technology • Hong Kong Institute of Technology • Hong Kong Nang Yan College of Higher Education • Hong Kong Shue Yan University • Lingnan Institute of Further Education • OUHK Li Ka Shing School of Professional and Continuing Education • PolyU Hong Kong Community College • PolyU School of Professional Education and Executive Development • The Hang Seng University of Hong Kong • Tung Wah College • UOW College Hong Kong • YMCA College of Careers 				
VTC Member Institutions					
<ul style="list-style-type: none"> • Technological and Higher Education Institute of Hong Kong (THEi) • Institute of Professional Education And Knowledge (PEAK) • School for Higher and Professional Education (SHAPE) • Hong Kong Institute of Vocational Education (IVE) • Hong Kong Design Institute (HKDI) • Hotel and Tourism Institute (HTI) • Chinese Culinary Institute (CCI) • International Culinary Institute (ICI) • Maritime Services Training Institute (MSTI) • Youth College (YC) • Pro-Act by VTC • Integrated Vocational Development Centre (IVDC) • Shine Skills Centre (SSC) 					
Corporate Academies					
 <p>MTR Academy</p>	 <p>Towngas Engineering Academy</p>	 <p>Hong Kong International Aviation Academy</p>	 <p>CLP Power Academy</p>	 <p>HKPC Academy</p>	 <p>Hong Kong Institute of Construction</p>