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# Executive Summary

## Purpose

Amid reindustrialisation and intensifying regional competition, concerns about the dwindling competitiveness of Hong Kong's youth have resurfaced, shedding light on the inability of the current education system in facilitating dynamic careers and driving future socio-economic development. This report exemplifies the need for a future-ready pool of talents to support the sustainable growth of a knowledge-based society, enabled by flexible and socially-integrated modes of education. The message has reverberated globally: for instance, China's 14th 5-year plan has outlined its commitment to invest in human capital, deepen industry-school collaborations, and cultivate technically-skilled talents. The integration between academia and employers, and between work-based and classroom-based learning, underscores the importance to build a lifelong learning ecosystem that every individual can access in order to stay ahead of the curve.

More than half of OECD's jobs will be replaced by artificial intelligence in the next 20 years. The constant cycle—redundancy, creation, and re-creation of jobs—enriches the notion of education beyond just “grooming young talents”, but also as a relentless effort in upskilling and reskilling human capital. Lifelong education, therefore, should be viewed through a different lens, as a device to stay competitive and achieve career progression rather than merely as interest classes. The report finds that applied education plays an integral role in this process with its ability to bridge employers, future competencies, and academic standards.

Through a rejuvenation of Hong Kong's education system, this report seeks to:

- 1) Equip the next generation with **socially-relevant knowledge and skills**; and
- 2) Create a **learning society that enables upskilling and reskilling** amidst ongoing innovation and disruption.

## Context

Hong Kong's talents are falling behind in the global competition. The 2020 IMD World Talent Rankings show that Hong Kong ranked 14th out of 63 countries and regions, compared to 10th in 2016; while Singapore climbed from 15th to 9th. Hong Kong's investment and development of talents only ranked 23rd, and public expenditure on education ranked 53rd. The drop in competitiveness has brought to light the pressing need to discover and groom young talents, and to upskill and reskill existing human capital.

There is an increasing skills mismatch between learners and employers' expectations. 58% of businesses identify talent shortage as a key obstacle to their upgrade and transformation plans, while every three in four employers find it difficult to employ staff with the right skills. Current collaborations between academia, industries, and other sectors are insufficient and peripheral, limited to selected Vocational and Professional Education and Training (VPET) institutions and courses. Specification of Competency

Standards, designed by Industry Training Advisory Committees to set industry standards for course curricula, are rarely used in QF-accredited programmes, and as such are unable to facilitate up-to-date skills development.

In the ever-changing world, lifelong education is critical for the workforce to stay relevant. However, the absence of a lifelong learning culture entails that Hong Kong's education system is unable to support flexible, inclusive, and continuous education. Despite 20 years of effort in promoting the Continuing Education Fund (CEF), Hong Kong's continuing education participation rate remains at 20%, significantly lower than Singapore's 49%. CEF's coverage of Continuous Professional Development (CPD) for different sectors is limited, and is often used for recreational purposes. The misalignment between academic and industry accreditation has exacerbated the issue, lowering the incentive for the public to acquire professional certifications and competencies crucial for career development.

This report proposes three key recommendations, not as a single strategy for the multifarious industries, but as a flexible framework to improve Hong Kong's future talent landscape. **Nascent** industries require greater government foresight and support, while **mature** industries with well-established standards require greater integration with accreditation frameworks to facilitate constant rejuvenation. Relative to **consolidated** industries with oligopolistic players, **fragmented** industry players require greater funding incentives to engage in school-industry partnerships and lifelong education.

## Policy Directions

### 1. Governance

Education policies must take into consideration the associated social development strategies, hence its formation must consider the following:

Firstly, the development of industry policies. High-level inter-bureau structures such as the Chief Executive's Council of Advisers on Innovation and Strategic Development, or the Committee on Innovation, Technology and Re-industrialisation chaired by the Financial Secretary, have so far not materialised into tangible development plans. In contrast, Singapore's Industry Transformation Maps drawn up by the Future Economy Council are examples of translating strategic planning into task forces involving relevant authorities and industry leaders. These policy initiatives not only build and facilitate industry ecosystems but also groom suitable skilled talents. As Hong Kong seeks to upgrade industries such as arts technology, biotechnology, logistics, and construction, the Hong Kong SAR Government (the Government) must facilitate education programmes that supply necessary skills for the ecosystem to operate sustainably.

Secondly, industry strategies must not be confined to a local context, with education policies operating under a vacuum, but rather be designed with a view to supply talents for regional development, including the Guangdong-Hong Kong-Macao Greater Bay Area (Greater Bay Area), to ensure that Hong Kong's talents stay competitive.

Thirdly, education strategies need to be developed in consideration of the industry policies and landscape. The report points out that the Human Resources Planning Commission (HRPC), chaired by the Chief Secretary for Administration, should design training and talent policies according to the above industry development strategies. The HRPC should coordinate with bureaux, governmental institutions, and statutory bodies to facilitate the translation of industry strategies to education policies, such as institutional specialisation (e.g., Applied Degrees), resource allocation, and school-industry collaboration, supported by a designated administrative department. With an appropriate governance framework in place, chambers can take a central role to identify skill demands, and to design and assess academic programmes.

Sustainable social development requires a comprehensive review and consolidation of lifelong education programmes. However, the Government currently does not have a centralised strategy to upskill the population, resulting in the inability to create a learning society. Among publicly-funded organisations, the Employees Retraining Board (ERB) primarily focuses on vocational courses of shorter duration for immediate placements; the Vocational Training Council (VTC), meanwhile, runs in-service programmes on a self-financing basis and on a limited scale.

The gap in lifelong education is consequential to the population and the economy's competitiveness. The report therefore recommends the Government to devise an employer-led strategy to facilitate

skilling initiatives of in-service practitioners. The positioning of the ERB, VTC, CEF, and other authorities involved should be re-examined, so as to align, consolidate, and expand relevant programmes. The Government needs to give an institution an integral mandate of upskilling the population, including funding and course provision, in order to provide comprehensive support. Ultimately, a system should be set up where learners can flexibly enter or exit study, thereby institutionalising a culture of lifelong learning.

## 2. Accreditation

The current accreditation system does not provide sufficient flexibility and transferability between academic and applied credentials, best illustrated through the rigidity of post-secondary admissions. This report argues that stringent input controls to lower attrition rates, i.e., to ensure that those admitted can graduate in order to secure government funding, are prone to barring certain potential talents from the system and causing those in the system to choose subjects of study that may not best align their interests. As such, the report calls for the focus of quality assurance and funding control to be placed on outcome rather than input, through the adoption of aptitude-based admissions up to 30-50% of the total headcount, especially for programmes with an applied focus; this overhaul ultimately contributes towards an applied progression pathway from Applied Learning (ApL) subjects to Higher Diploma and Applied Degrees.



Other than opening up learning opportunities, the credentials themselves must be recognised transferable currency in academia and the workplace. Industry competencies and academic standards need to be better aligned under the Qualifications Framework (QF); the QF needs to become employer-led rather than academic-oriented. Concerted efforts are required from industry chambers, academia, and the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ), where employers and chambers should identify key skills required for schools to incorporate into applied programmes, and accreditation institutions need to link practical skills with academic standards. Similarly, bite-sized learning or even corporate in-house training should be made compatible with school credits and exemption requirements in order to combine certifications with employability. The report calls for the Government to take the lead to align its hiring, promotion, procurement, and licensing practices to applied qualifications and accreditations listed in the QF, such that industries would follow suit.

Accreditation should be developed with a view to facilitate regional development and youth opportunities. Cross-accreditation between Hong Kong and the Greater Bay Area would not only support national plans on educational development (e.g., joint professorships and credit transfers), but also create possibilities for learners to access training, accreditation, and employment beyond Hong Kong. HKCAAVQ should coordinate with mainland accreditation authorities and employers with mainland presence to develop regional cross-accreditation, moving beyond individual qualification-matching into broader benchmarking and mutual recognition; chambers can take the lead to employ talents possessing cross-border qualifications.

### 3. Funding

Resource allocation in Hong Kong's education sector is primarily focused on formal and academic education. Less than 1% of the Government's education funding is placed in lifelong education, as compared to the United Kingdom, Germany, and Singapore; however, as the society develops, lifelong education is no longer merely a reimbursement scheme for disadvantaged groups, but an opportunity for all citizens to develop crucial in-demand skills and remain relevant in the economy. Therefore, this report calls for a lifelong skills development grant, which entitles each individual aged between 18 and 65 to HKD 100,000 for unleashing their potential. The report further recommends the Government to revamp the CEF to target its funding on forward-looking skills and industries, broaden its course selection, and open up on eligibility.

Currently, VPET only accounts for around 20% of public resources spent on senior secondary and sub-degree education. This report calls for the Government to allocate resources to courses most closely aligned with market needs and to incentivise industry participation. For example, the scope and subsidy model of the Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) should be reviewed, and part-time courses should be included. Its funding criteria should be more narrowly targeted to better support programmes with higher costs but also earnest need.

Funding could be leveraged to incentivise industry participation. The report finds that school-industry partnerships are either limited to monopolistic industries (such as the Corporate Tech Academy Network) or conducted on a limited scale. Nascent industries booming with start-up communities have little representation.

Hence, this report calls for the Government to provide financial incentives such as grant funds, tax deductibles and absentee payroll subsidies to deepen industry participation in the design, provision, evaluation, and implementation of academic programmes. Closer partnerships with the academia would allow industry-based programmes and pathways to blossom over time, including but not limited to models such as the Jockey Club Multiple Pathways Initiative–CLAP-TECH Pathway and the VTC Earn & Learn scheme. Small-medium enterprises should be incentivised to adopt industry skills frameworks in hiring practices, and to offer CPD programmes, through digital assistance and other forms of support.

For Hong Kong talents to keep ahead of the pack, the system must be reinvented to flexibly cater for every individual in every stage of life. This report calls for the society to rethink education—including curriculum design, delivery, assessment, and accreditation—as a collaborative effort between schools, industries, and society, breaking down the traditional boundaries between education and work. The Government needs to renew its focus on human capital development, lead by example, optimise the policy tools available, and build a culture that supports a sustainable learning society.

## I Key Recommendations

### **Recommendation 1: Establishing a policy blueprint to implement industry-led lifelong education that bridges economic, manpower, and skills development**

- 1.1. Propelling strategic talent development priorities through the Human Resources Planning Commission, based on inter-bureau economic review and industry policies
- 1.2. Facilitating and consolidating lifelong learning provision and funding to provide a flexible system with multiple entries and exits for individuals to upskill and reskill

### **Recommendation 2: Offering diverse and flexible progression pathways through an industry-integrated accreditation system**

- 2.1. Increasing aptitude-based admission quota for self-financing institutions' sub-degrees to 30%, with pilot schemes on Applied Degrees at 50%
- 2.2. Amplifying industry input through external assessment agencies and panels in the quality assurance process of the Hong Kong Council for Accreditation of Academic and Vocational Qualifications
- 2.3. Linking up academic institutions and industry stakeholders according to each industry's skilling priorities to develop dually-recognised applied certifications



- 2.4. Broadening the recognition of Qualifications Framework (QF) levels and skill descriptions in Government job listings, licensing requirements, and tender procedures to promote wider usage by jobseekers and businesses
- 2.5. Assigning QF levels to micro-credentials based on employer-identified and -recognised skills and encouraging schools to adopt them for credit requirements
- 2.6. Building an ecosystem of mutual recognition and equal transfer of academic and professional qualifications in the Guangdong-Hong Kong-Macao Greater Bay Area
- 3.4. Setting up a grant fund to support industry organisations to co-develop and co-deliver curricula with academic institutions, and ultimately to co-construct progression pathways
- 3.5. Encouraging Small and Medium Enterprises (SMEs) to adopt industry skills frameworks (such as Specification of Competency Standards) in recruitment, training, and promotion, by means of property rental, funding, and digital support
- 3.6. Providing financial incentives—such as tax deductibles and absentee subsidies—for firms to conduct more continuous professional development (CPD) and work-based training

**Recommendation 3: Building a targeted and future-oriented funding mechanism to support lifelong learning for all**

- 3.1. Offer a HKD 100,000 lifelong skills development grant to reskill and upskill every individual for their career progression
- 3.2. Revamping the Continuing Education Fund (CEF) to target innovative industries with regular industry trend forecasts, broader course selection and eligibility, and a time-limited injection mechanism
- 3.3. Enhancing financial aid under the Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) to target priority sectors, increasing the coverage of sub-degree programmes from 2,000 to 4,000 students, and including part-time courses

## Introduction: For a flexible, inclusive, and forward-looking education system and a lifelong learning culture

Confronted with sweeping socio-economic changes from Industry 4.0, the COVID-19 pandemic, and a global race for skilled talents, Hong Kong's youth risks falling behind the curve. Our education system has not been held accountable to ensure that students are equipped with the skills required for a dynamic career. The *IMD World Talent Rankings 2020* shows that while Hong Kong continues to rank highly (14th worldwide, 3rd in Asia Pacific), we only rank 23rd in terms of the investment and development of home-grown talent (IMD, 2020). Hong Kong must step up in the face of change.

Rapidly changing job competencies, coupled with longer life expectancy and sociocultural changes, have been shifting people away from a traditional three-stage life composed of education, work, and retirement. Correspondingly, a need has surfaced for education to go beyond pre-employment learning, to become a means for talents not just to build but to maintain their competitive edge throughout their lives, and to support Hong Kong's sustainable growth. However, our education system is still largely concerned with the schooling of students who have never entered the workplace, leaving out adults in need of education to better equip themselves over the course of their careers.



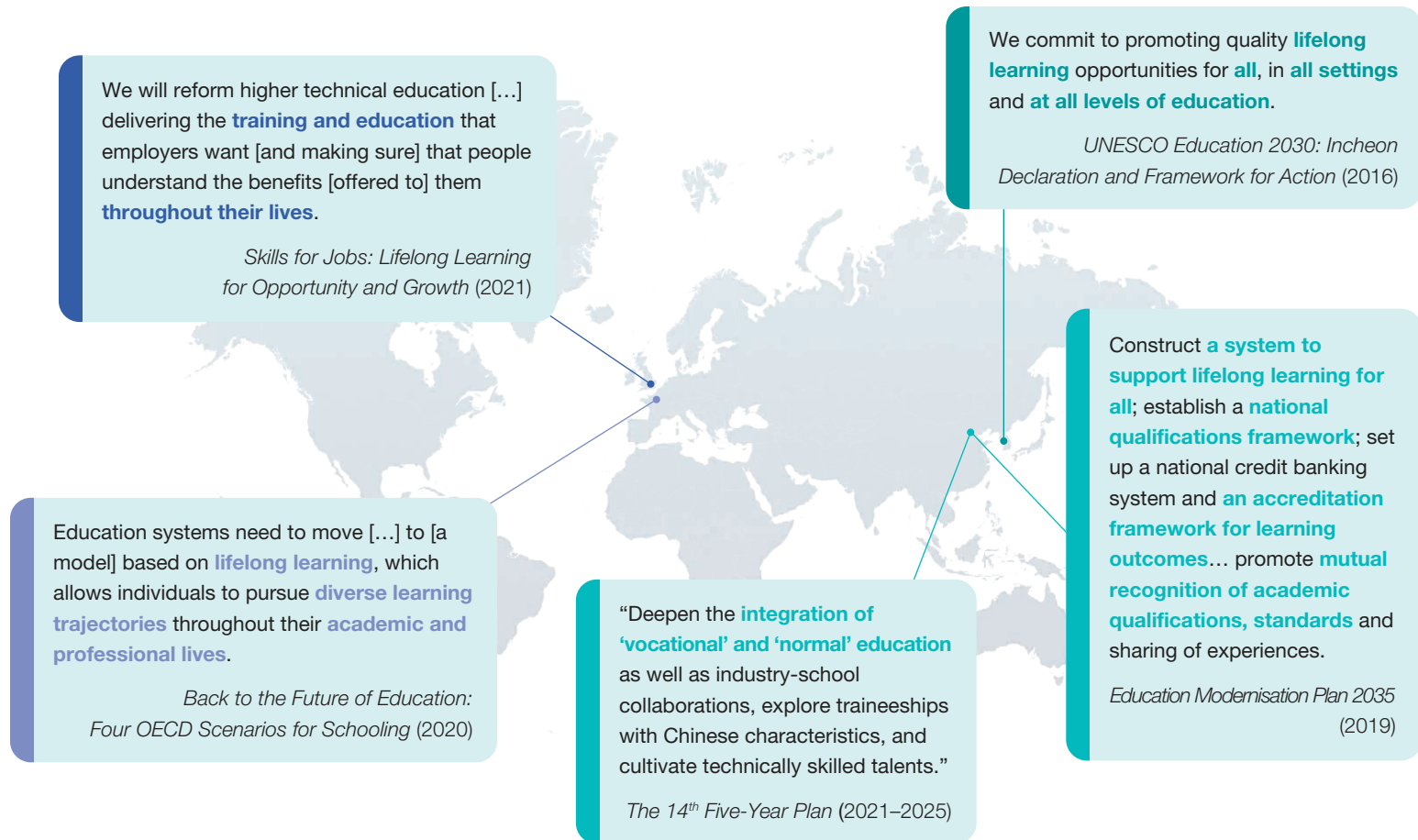
Our previous report, *Applied Education: A Flexible and Holistic Education System for the Digital Age* (2019), outlined ways to reform Hong Kong's education system so that it can cater to all types of talented students. Building upon the vision, this report looks to institute lifelong learning as an avenue towards true flexibility and inclusivity in our education system and a tool to support learners of all ages in building fulfilling and dynamic careers. This can only be achieved by thoroughly integrating the worlds of schools and employers, blurring the lines between work-based and classroom-based learning, and emphasising the importance of building a learning society that empowers every individual to stay competitive in a turbulent world.

The world has come to realise that our education systems are failing to provide skills critical for future social development. The World Economic Forum reports that “[a]utomation, in tandem with the COVID-19 induced recession, is creating a ‘double-disruption’ scenario for workers... in contrast to previous years, job creation is slowing while job destruction accelerates” (World Economic Forum, 2020). The Organisation for Economic Co-operation and Development (OECD) predicts that 46% of jobs in member countries can be replaced by artificial intelligence in the next 20 years (OECD, 2018). Calls to action have resounded worldwide: from the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s *Education 2030* report, to the OECD's *Future of Education and Skills 2030* project, to the United Kingdom (UK)'s *Skills for Jobs Lifelong Learning for Opportunity and Growth* White Paper (2021), and to the State Council of the People's Republic of China's Education Modernisation Plan 2035 (**Annex 1**).

The skills gap needs to be addressed, with employers at the forefront of such efforts. In the UK, National Skills Academies was launched by the Government in 2006 as employer-led and independent organisations. The organisations work with industry bodies to identify employers' skills needs, develop training infrastructure and arrange training provision to address sector-by-sector skills challenges. Recently, the UK's *Skills for Jobs* White Paper (2021) targets the post-pandemic skills gap and outlines an ambitious endeavour to “strengthen links between employers and further education providers” by balancing opportunities provided through “higher education” (predominantly academic) and “further education” (predominantly technical) pathways. The White Paper emphasises the need to “place employers at the heart of defining local skills needs”, promising a flexible Lifetime Skills Guarantee that commits to “allowing everyone to access the education and training they need throughout their lives”.

Vocational routes need to be seen as alternate, but not inferior, development options. During China's 13th Five-Year Plan (2016–2020), the idea of the lifelong learning “overpass” was introduced, wherein the dual routes of academic and vocational education were proposed to intersect, in order to allow those following each path to access the alternate. The 14th Five-Year Plan (2021–2025) further commits to “increase human capital investment to enhance the applicability of vocational education, deepen the integration of ‘vocational’ and ‘normal’ education as well as industry-school collaborations, explore traineeships with Chinese characteristics, and cultivate technically skilled talents.”

Figure 1 Policy frameworks in response to the evolving demands of education across the globe



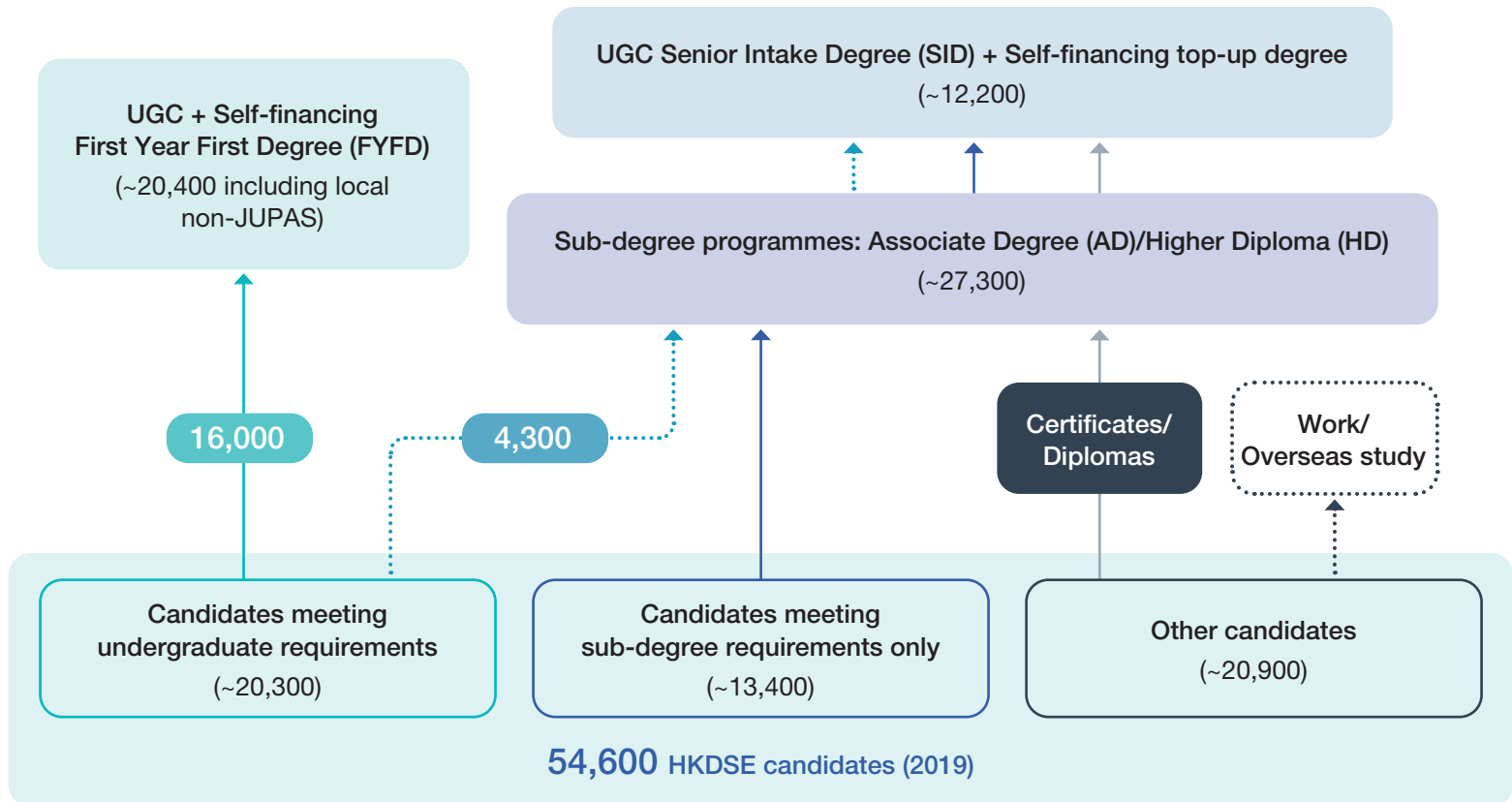
Sources: United Nations Educational, Scientific and Cultural Organization; Organisation for Economic Co-operation and Development; Department for Education (UK); and State Council of the People’s Republic of China

Flexible learning opportunities, multiple educational pathways, and lifelong learning have been deemed key objectives in this global effort (**Figure 1**). Educators have been seeking new strategies and pedagogies to better instil resilience and adaptability in our next generation.

In contrast, Hong Kong's education system has remained too rigid to adequately serve the diverse range of learners in our society, not to mention keeping them ahead of the curve. The stigma against Applied Education persists, and students who do not qualify for an undergraduate degree, along with adult workers, are often left out of schooling and work progression pathways. To illustrate: of the 54,600 Hong Kong Diploma of Secondary Education Examination (HKDSE) candidates in 2019, only around 16,000 proceeded to the first year of an undergraduate degree programme. Another 13,400 qualified for sub-degree programmes while the rest had to retake their HKDSE examinations, pursue other forms of study or directly enter the workforce (**Figure 2**). Consequently, they receive fewer resources for career progression compared to their peers.



Figure 2 Merely one-third of 2019 HKDSE candidates enter an undergraduate degree programme directly<sup>[1]</sup>



Sources: Education Bureau, Hong Kong Examinations and Assessment Authority, University Grants Committee, Committee on Self-financing Post-secondary Education, and Legislative Council  
 Note: [1] All figures are rounded to the closest 100, as of 2019/20



The deficit in lifelong education excludes not just HKDSE graduates who are shut out of undergraduate programmes, but everyone who requires Applied Education to stay competitive, such as in-service workers looking to gain a promotion or change careers, and retirees hoping to re-enter the job market. As labour participation of over 65-year-olds is estimated to rise from 3.0% in 2016 to 7.9% in 2066, steps must be taken to ensure that they too have the chance to access skilling programmes (Report on Manpower Projection to 2022, 2015).

Microsoft predicts that 48% of Hong Kong firms' business models will lose competitiveness in 5 years (Microsoft, 2020), while the Hong Kong Productivity Council highlights the need to reindustrialise innovation and technology (I&T) industries and beyond (Guide to Hong Kong's Reindustrialisation, 2020). Both suggested that every individual needs to consistently upgrade their skillset to support and contribute to the industrial modernisation brought about by technological upheaval. As the city seeks to expedite reindustrialisation through upgrading and transforming different industries, there is a pressing need to make Hong Kong's education system more flexible, celebrate diverse talents and skills, rethink the purpose of schooling, and popularise lifelong learning.

The entire system should shift from being academic-led to being employer-led. Continuing education, particularly publicly-funded initiatives, must undergo a reform to better support career progression. In this way, Applied Education can be put forward as an alternative pathway to create an educational overpass with different viable routes of progression throughout one's life. This can better support a lifelong learning culture in Hong Kong, vital for readying the workforce and the economy to overcome career obsolescence and stay competitive under digitalisation and globalisation.

This report explores how an inclusive and flexible education system may be established by enhancing our **governance structure, accreditation pathways, and funding mechanisms**. It aims to answer two questions key to Hong Kong's long-term development:

1. How can our education system and institutions equip the next generation with socially-relevant knowledge and skills?
2. How can we create a learning society that enables upskilling and reskilling amidst ongoing innovation and disruption?

## Reasons for change: Inadequacies in the current system

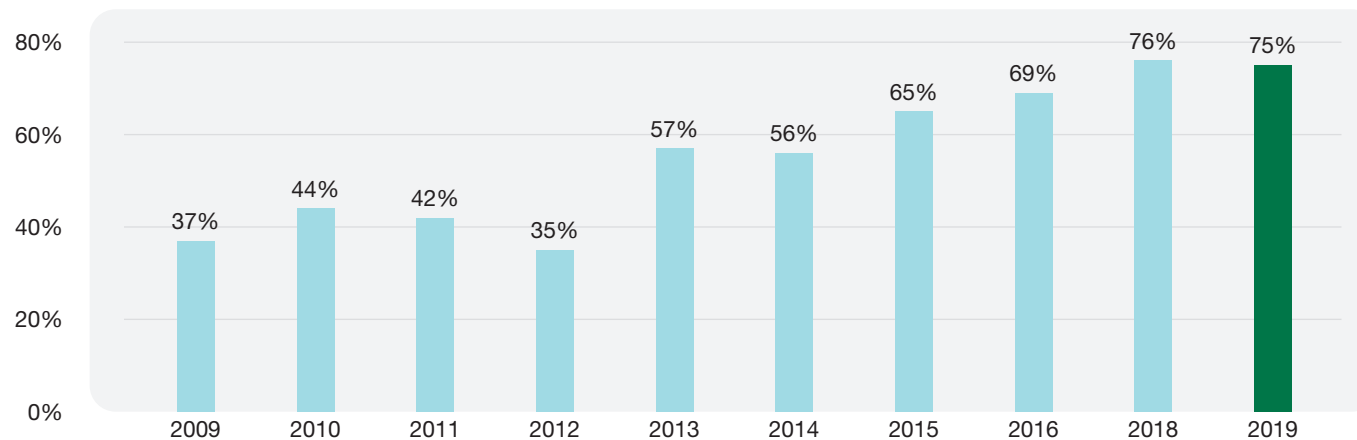
### The persistent divide and mismatch between talents and industry needs reduces Hong Kong's competitiveness

As evidenced by *IMD World Talent Ranking 2020*, Hong Kong has been remiss in its investment in and development of talents; its public expenditure on education ranked 53rd out of 63 countries. This has far-reaching implications for Hong Kong's long-term competitiveness, affecting both talents and the economy.

The underinvestment fuels the gap between human capital output from the education system and the in-demand skills required by employers. 75% of employers in Hong Kong experienced difficulties in finding staff with the right skills (**Figure 3**). A research survey by the Federation of Hong Kong Industries shows that amongst enterprises that are currently upgrading and restructuring their operations, 58% face hardships in recruiting the right talents in Hong Kong (**Figure 4**). Using technology-related functions as an example, a survey conducted by the American Chamber of Commerce in Hong Kong (2021) finds that half of 181 employers surveyed are unable to recruit employees with relevant technological skills. Another survey conducted by the Hong Kong Retail Management Association (2019) finds that over half of the 281 respondents attribute labour shortages to a lack of retail management knowledge among university graduates. 38% believe that a lack of vocational training is to blame.

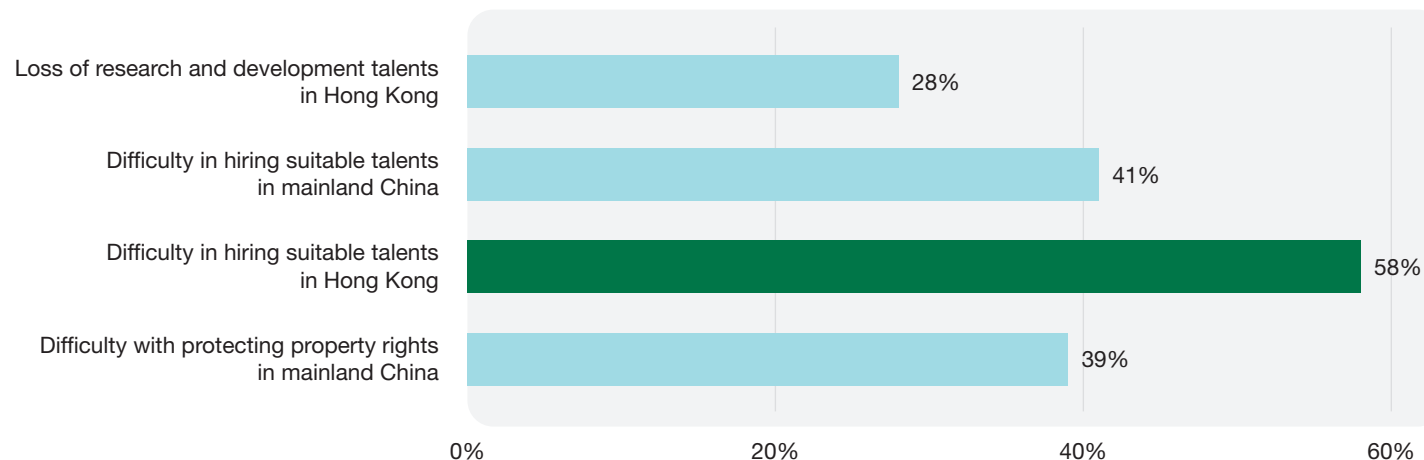


**Figure 3 75% of employers experienced difficulties in recruiting staff with the right skills**



Source: ManpowerGroup

**Figure 4 58% of surveyed businesses see hiring suitable talents in Hong Kong as a key obstacle as they seek to upgrade and restructure their businesses**



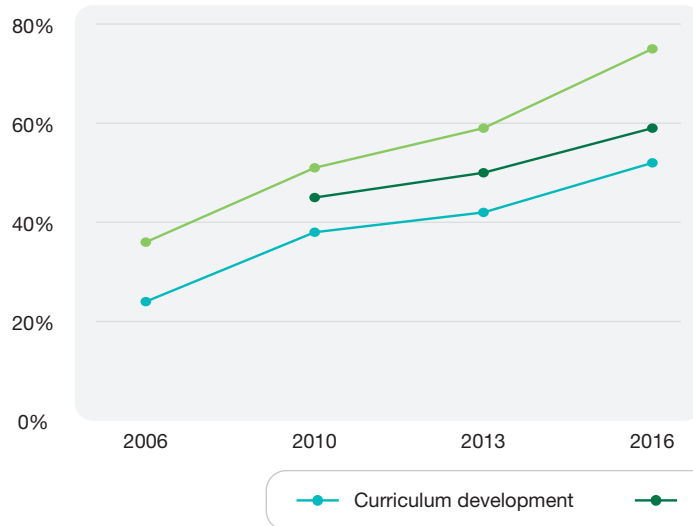
Source: Federation of Hong Kong Industries

The mismatch in skills refers not only to hard skills. As McKinsey states, “as workers interact with ever-smarter machines, the demand for soft skills is beginning to surge”. Soft skills, including social and emotional skills, are becoming more crucial in the workplace, for which workplace training also has a major part to play.

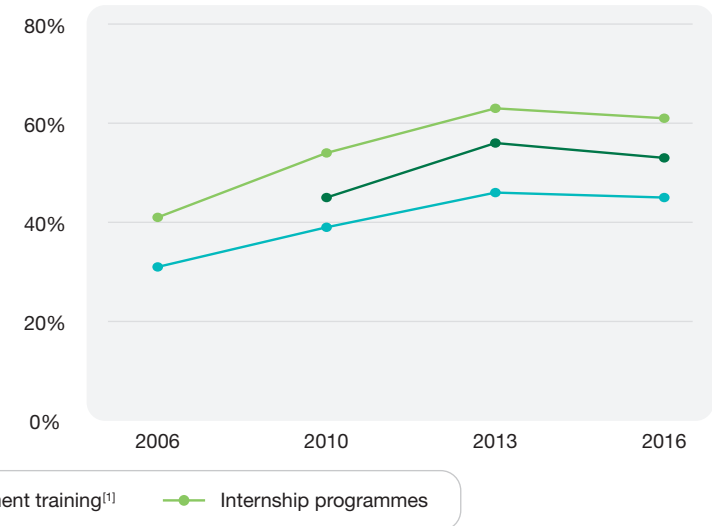
To tackle the demand-supply gap, employers have committed to providing more education and training opportunities. There has been a substantial increase in the number of employers willing to collaborate with schools in providing internship programmes, especially for sub-degree students (**Figure 5**). However, employers’ willingness to participate in more involved partnerships, such as curriculum development and pre-employment training, was found to be lower than that in internships.

**Figure 5** The demand-supply gap has raised employers’ willingness to engage in school-industry collaboration, especially for sub-degrees

Employers of sub-degree graduates’ willingness to participate in<sup>[2]</sup>:



Employers of first degree graduates’ willingness to participate in<sup>[3]</sup>:



Source: Committee on Self-financing Post-secondary Education

Notes: [1] Pre-employment training data for 2006 is unavailable

[2] The surveys had covered publicly-funded sub-degree graduates since 2000, and encompassed both publicly-funded and self-financing sub-degree graduates since 2006

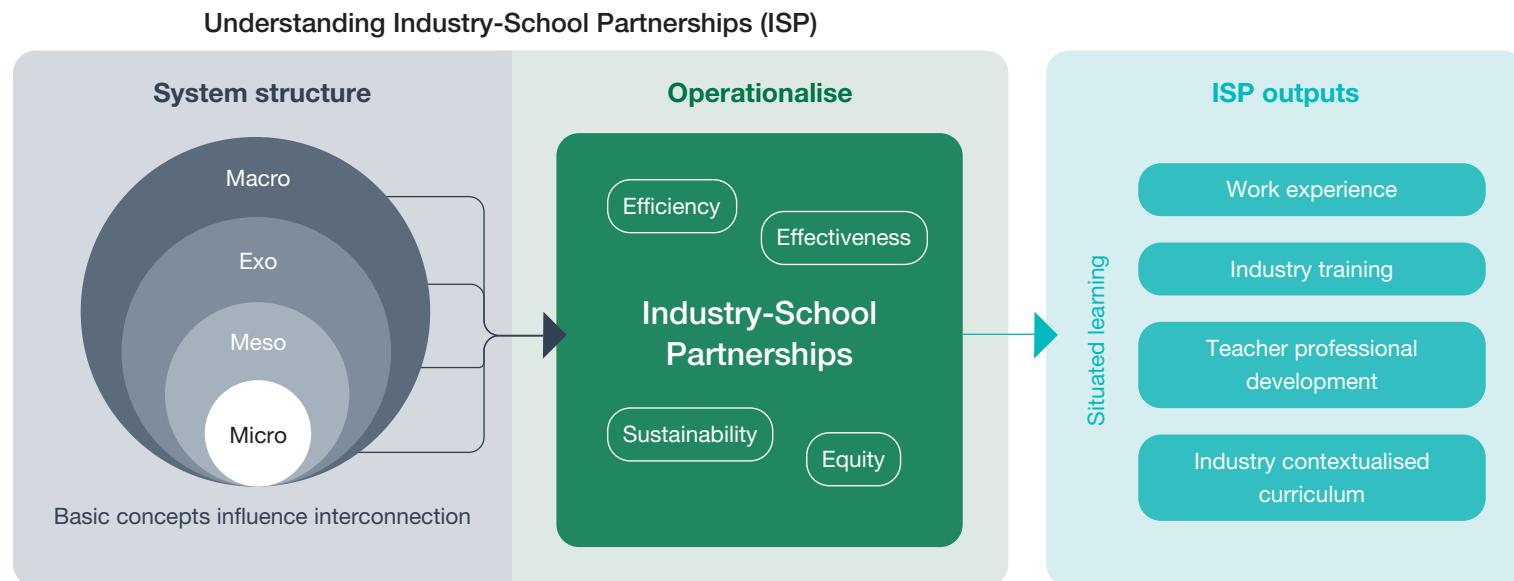
[3] The surveys had covered publicly-funded first degree graduates since 1998, and encompassed both publicly-funded and self-financing first degree graduates since 2010

Countries with exemplary vocational education systems, such as Germany, the United Kingdom, and other European states, have established cooperative institutional arrangements that integrate workplace and education through “work-integrated learning” (WIL) initiatives. The benefits of these arrangement have been discussed by the literature. For example, Jackson (2013)’s analysis of student surveys from an Australian university finds that WIL has resulted in significant improvements in undergraduates’ perceived ability to perform employable skills, including communication, critical thinking and data analysis skills. In discussion of 21st century skills training,

Barnett (2012) also describes WIL as a form of “transformational pedagogy” that fosters “adaptability, flexibility, and self-reliance” in new graduates (p. 75).

As shown in **Figure 6**, Flynn et al (2016) have further developed a “Industry-School Partnership Framework” that depicts an ideal school-industry partnership system. Under the framework, relevant stakeholders intersect across different levels of the policymaking, implementation, and operational processes to create WIL opportunities that smooth the transition from school to workplace.

**Figure 6** A comprehensive school-industry partnership framework is key to bridging the skills gap between education and employability



Source: Flynn et al. (2016), “Industry-School Partnerships: A strategy to enhance education and training opportunities”

The Australian government, universities, and industry bodies jointly developed the country's first "National Work-Integrated Learning Strategy" in 2015 (**Annex 2**). In 2017, one in three university students in Australia had a WIL experience (Universities Australia, 2019). Similarly, apprenticeships have risen in prevalence in the UK since the launch of the National Apprenticeship Service (NAS), a government agency responsible for supporting, funding, and coordinating the delivery of apprenticeships, in 2009. The NAS has facilitated over 2.3 million placements since 2015 (GOV.UK, 2021).

Conversely, school-industry collaborations in Hong Kong lack an overall government strategy to drive territory-wide employer-led learning and training (e.g., industry curriculum development, workplace assessment). Some key examples are shown below:

### **i. Specification of Competency Standards (SCSs) have yet to align industry competency requirements and academic standards**

Industry Training Advisory Committees (ITACs), set up by the Education Bureau (EDB), gather industry stakeholders to draw up Specification of Competency Standards (SCSs) for various industries. These SCSs "set out the skills, knowledge and competency standards required of the practitioners" (HKQF, 2021); in addition, they are supposed to serve as benchmarks for course providers to design curricula that meet each sector's needs. However, few education institutions adhere to these SCSs when developing programmes: for instance, only six out of 509 sub-degree programmes under the Qualifications Framework (QF) have based their curricula on relevant SCSs (Qualifications Register, 2021). The low usage of the SCSs by education providers indicates

that the SCSs have had limited success in bridging employers and schools, and facilitating up-to-date skills development.

### **ii. The lack of a territory-wide effort to promote school-industry partnerships or work-based learning initiatives**

The Vocational Training Council (VTC) has been incorporating more work-based learning in their programmes through partnerships with businesses in recent years. Approximately 6,700 trainees have taken part in the "Earn and Learn" (E&L) apprenticeships since 2014, and all Higher Diploma (HD) and certain Diploma of Vocational Education (DVE) students are required to attend at least 90 hours of work-based learning, known as "Student Industrial Attachment Programmes", and at least 30 hours of workplace attachment respectively. In addition, starting from the 2018/19 academic year, VTC rolled out the "Workplace Learning and Assessment" (WLA) initiative, which aims to strengthen employer partnerships and improve the quality of training. Up to 15% of some specific VTC HD programme content is now made up of work-based learning (**Annex 3**).

However, despite individual efforts to provide industry training opportunities, these schemes are not implemented on a territory-wide scale; even VTC is hard-pressed to scale up their presence given widespread social aversion to Applied Education. Moreover, given that there are not many post-secondary institutions actively promoting school-industry partnerships, there are a limited number of courses available that are aligned to employer-led standards, and emphasise work-integrated learning experiences.



## Weak lifelong learning culture cannot support multiple entries and exits between work and education

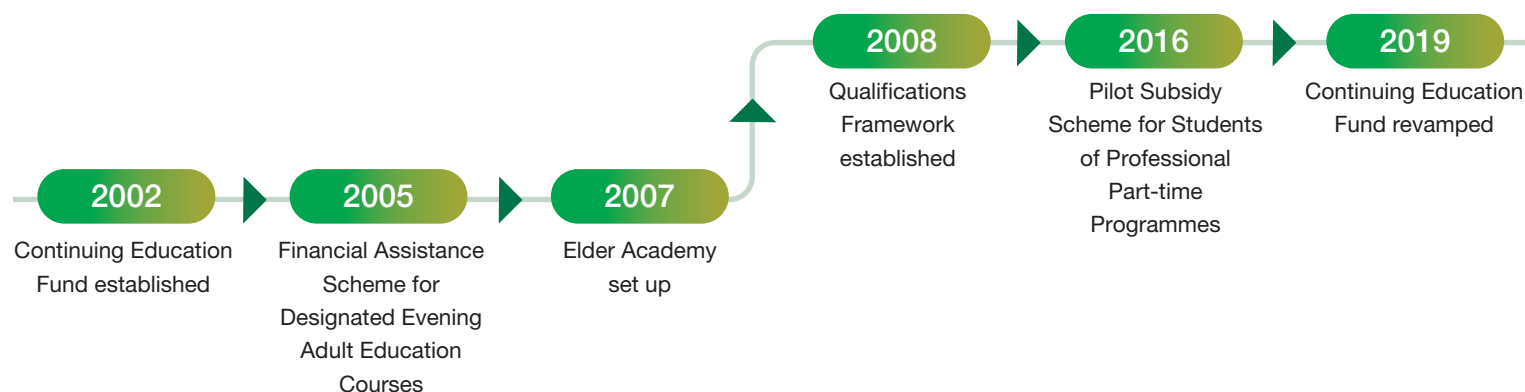
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In response to volatile labour markets characterised by worldwide technological and economic changes, there is an increasing demand for workers to acquire new skills and knowledge. By 2025, employees will need to update 40% of their core skillsets in order to adapt to market trends; employers “expect to offer reskilling and upskilling to just over 70% of their employees” (World Economic Forum, 2020).

Hong Kong’s education system is unable to provide inclusive and flexible upskilling and reskilling pathways for adult learners. Despite the Government’s efforts to promote continuing education in the

last 20 years (**Figure 7**), according to the Census and Statistics Department’s *Thematic Household Survey Report No. 66* (2019), only 20.4% of “economically active persons” in Hong Kong “had attended job-related training/retraining courses arranged by employers and/or on their own initiative during the 12 months before enumeration”, and only 6.5% “had plans to attend job-related training/retraining courses”. This is a strikingly low number in comparison with other countries like Singapore and the Netherlands (**Figure 8**). This could be attributed to how most citizens still view continuous learning as a hobby rather than a necessity for future career development.

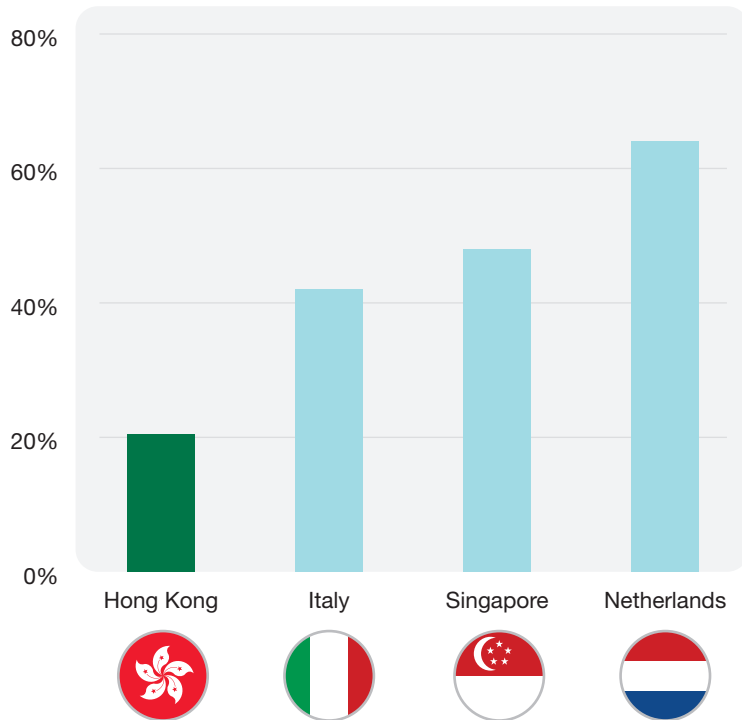
Figure 7 Past government efforts to promote lifelong learning



Sources: Hong Kong SAR Government

Figure 8

### Adult continuing education participation rate is relatively low in Hong Kong<sup>[1]</sup>



Sources: Organisation for Economic Co-operation and Development, Legislative Council

Note: [1] Hong Kong and Singapore data refers to 2018; Italy and Netherlands to 2019.

For Hong Kong, participation rate based on 3.69mn individuals involved in economic activity; for Singapore, participation rate refers to formal/non-formal job-related training participation in the past 12 months of 15-64 year olds; for Italy and the Netherlands; participation rate refers to formal and non-formal education and training in the past 12 months of 25-64 year-olds.

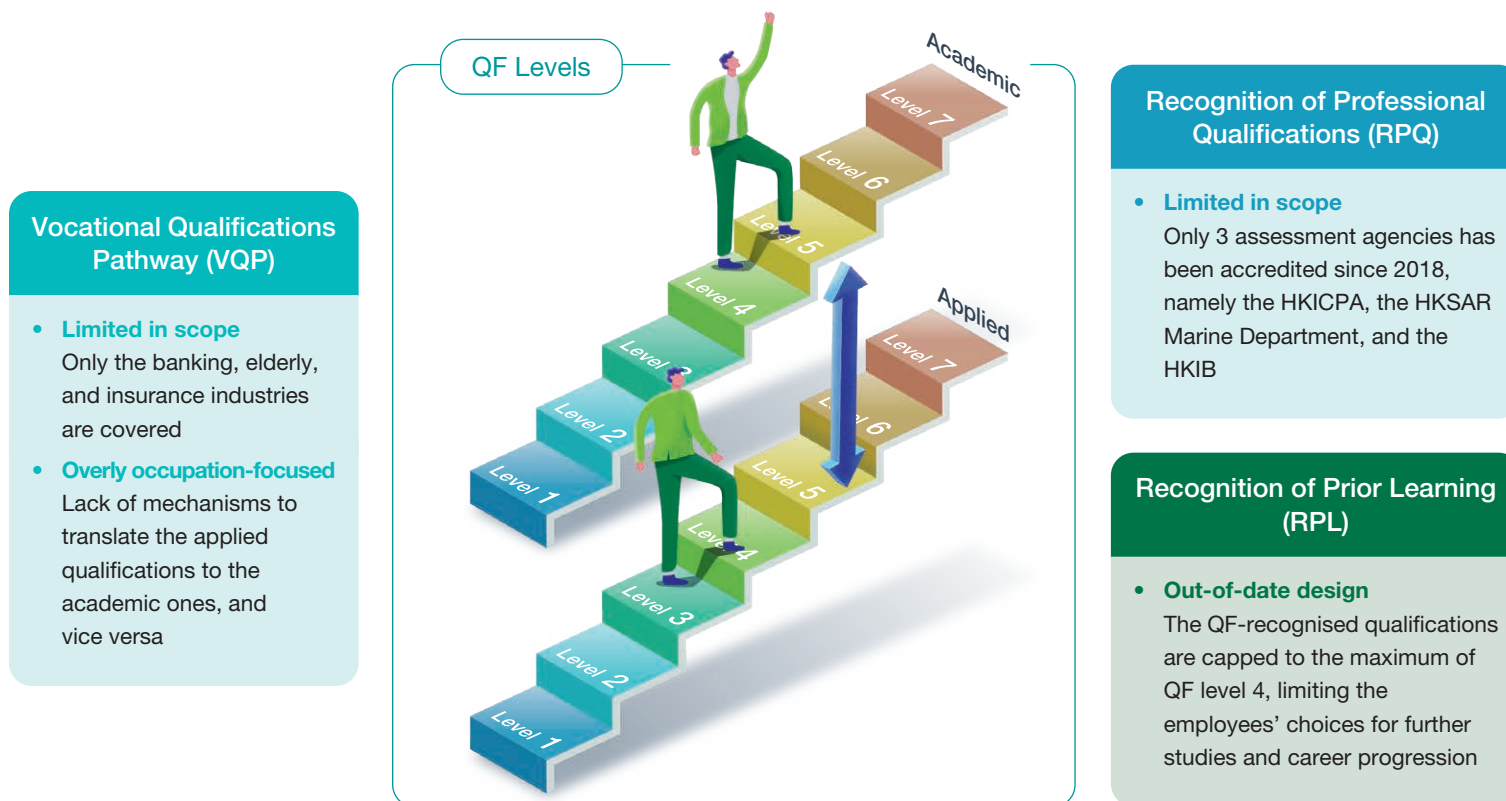
The phenomenon can also be explained by the fact that the qualifications acquired may not be a transferable currency in academia and the workplace, suggesting a misalignment between industry competencies and academic standards. In Hong Kong, only a few traditional industries such as banking and legal professions have established career progression pathways and have mandated in-service practitioners to comply with continuing professional development requirements (e.g., minimum training hours). Despite the existence of schemes which promote industry-recognised progression pathways (**Figure 9**), these are limited in scale: for instance, the Vocational Qualifications Pathway (VQP) has provided roadmaps for learning and employment since 2018, but courses are only available for the banking, insurance, and elderly care sectors.

The QF is not yet able to achieve its original intention of supporting “articulation among academic, vocational and continuing education by providing a comprehensive network of learning pathways” (VPET, 2021). Instead, the QF has become a benchmarking tool for learning outcomes by grouping them under different QF levels, but not evaluating and awarding individual progress on learning pathways. As an example, the Recognition of Prior Learning (RPL) scheme allows practitioners to obtain QF-recognised qualifications based on a thorough evaluation of the applicant’s competencies and relevant experience acquired in the workplace. These qualifications are capped at QF level 4, a level of educational attainment that is becoming more common amongst young people; it is therefore ineffective as a basis for further study or career progression.

Figure 9

## A lack of recognition and transferability discourages industry involvement in schemes to bridge the school-industry gap

21



Source: Hong Kong Qualifications Framework

While no single tactic is likely to solve the systemic failings, this report aims to evaluate existing policy gaps and suggest how public and private sectors can work together towards a flexible, inclusive, and forward-looking education system that supports learners from

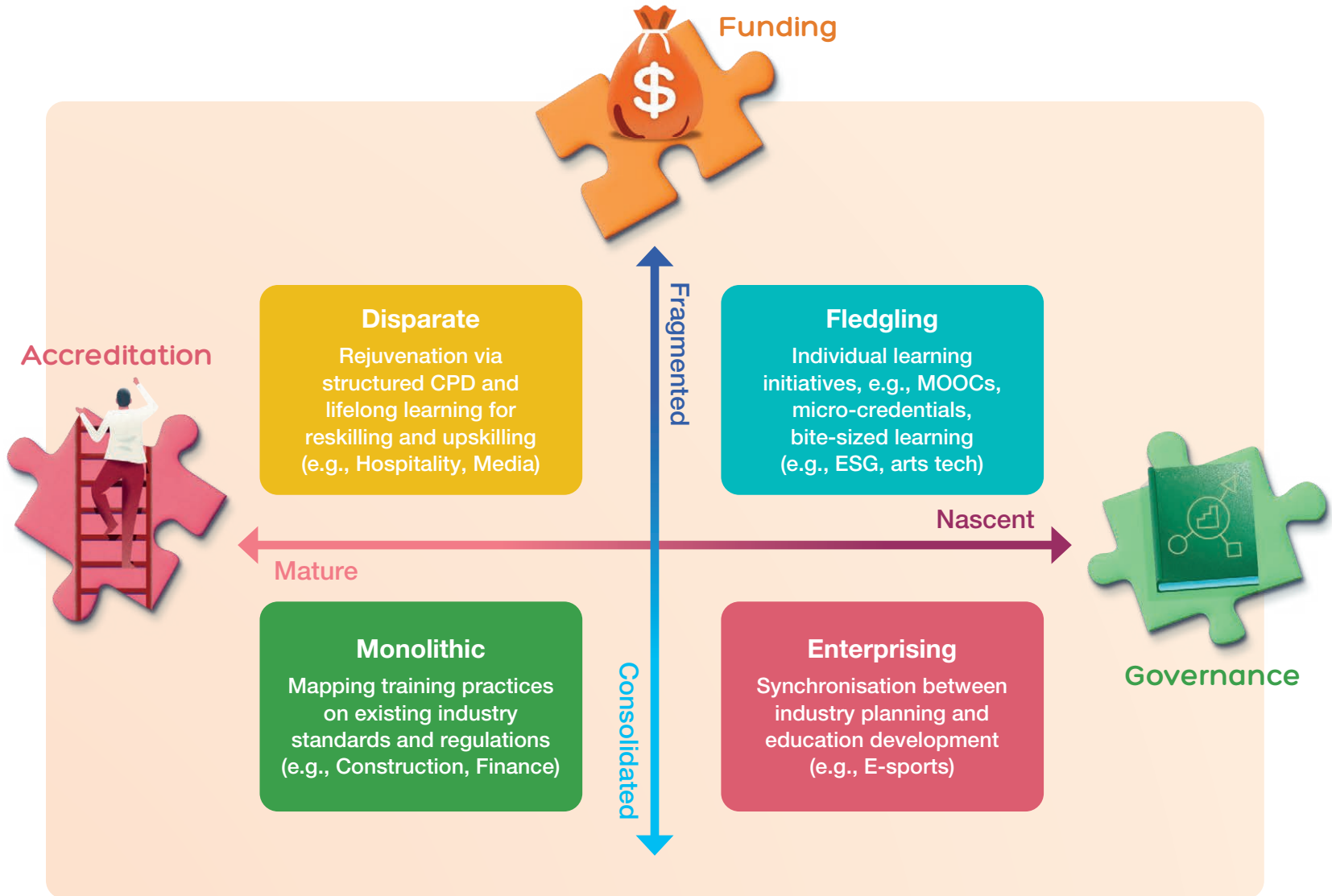
all walks of life. The report hopes to leverage existing institutions to encourage school-industry collaboration, foster lifelong learning, and from there cultivate a learning society that helps enhance Hong Kong talents' long-term competitiveness.

# 3

## Recommendation outline: For the sustainable talent development of Hong Kong's multifarious industries

The three key recommendations (**governance, accreditation, and funding**) in this report are not intended to be a one-size-fits-all framework; there are too many specific constraints for such a generalisation to be effective. Rather, the lifelong learning framework established should serve as a versatile guide for different industry contexts. Some recommendations are better suited to talent development in some particular industries, which requires the Government to target specific industries with corresponding strategies.





While **nascent** industries in their debut require greater government oversight and support to plan their talent development roadmaps, **mature** industries would have more established standards and regulations, which need to be joined with accreditation frameworks to facilitate the constant rejuvenation of skills. **Fragmented** industries with a lot of small businesses and startups may require greater funding incentives to engage in school-industry partnerships and to reskill and upskill learners, whereas **consolidated** industries have oligopolistic leaders to initiate and fund lifelong learning efforts.

**Mature** industries will become more susceptible to job redundancies as we make headway towards reindustrialisation. In preparation for this change, the Government needs to construct a system of lifelong learning (**Recommendation 1.2**), and act as a role model to increase the adoption of industry standards in its hiring practices (**Recommendation 2.4**).

**Monolithic** industries (**consolidated** and **mature**), such as construction or finance, are better suited to mapping existing training practices onto industry standards and regulations. By leveraging well-established industry standards, admissions can be revamped to become more aptitude-based (**Recommendation 2.1**), with greater industry participation in the curriculum design and accreditation processes, while matching industry and academic standards (**Recommendations 2.2 and 2.3**). Accreditation authorities, education providers, and major employers or chambers should work with counterparts in the Greater Bay Area to boost cross-border qualifications transfer (**Recommendation 2.6**).

**Disparate** industries (**fragmented** and **mature**) like hospitality or media require rejuvenation via structured continuing professional development and training programmes. These mature but fragmented businesses should be incentivised to adopt industry standards (**Recommendation 3.4**) and to actively reskill and upskill their workforce (**Recommendations 3.5 and 3.6**).

**Fledgling** industries (**fragmented** and **nascent**) such as arts technology and Environmental, Social, and Governance (ESG) benefit most from personalised individual learning initiatives, such as micro-credentials. To better integrate these green shoots with existing frameworks, HKCAAVQ, post-secondary institutions, and industry bodies should partner to integrate micro-credentials into the QF (**Recommendation 2.5**). The Government should review and revamp funding mechanisms, including grants and loans, to better support forward-looking skill development fuelled by lifelong learning initiatives (**Recommendations 3.1 and 3.2**).

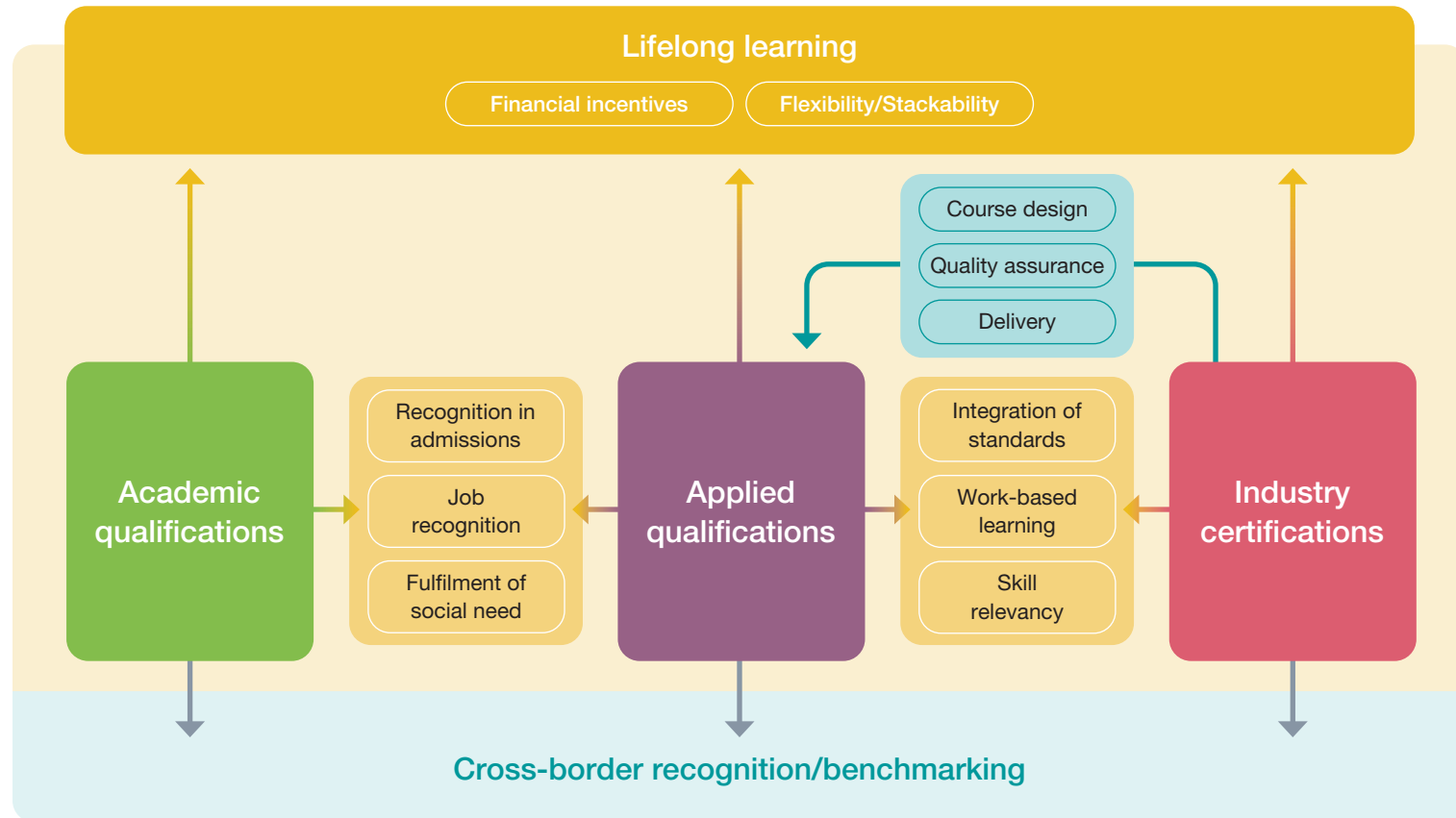
**Enterprising** industries (**consolidated** and **nascent**), including e-sports, demand close synchronisation between industry planning strategies and education development, so that burgeoning key players can direct talent development. The Government should utilise inter-bureau governance structures, not just to develop industry blueprints, but to deploy them to guide education and manpower policies (**Recommendation 1.1**). With the presence of significant industry players, forward-looking and skill-based study programmes can be better supported (**Recommendation 3.3**).

In effect, these four quadrants all call for the Government to closely tailor its talent development strategies to specific industry characteristics.



The below theoretical framework, distilled from evidence-based research and international best practices, demonstrates how to build an educational ecosystem that can successfully foster lifelong learning. The improvement of talent pools and establishment of a culture of lifelong learning requires integrating the three pillars of

academic qualifications, applied qualifications, and industry certifications in tandem. By utilising different approaches, all three types of qualifications can be matched correspondingly. The entire ecosystem can then be used as a benchmark for cross-border accreditation with other jurisdictions.

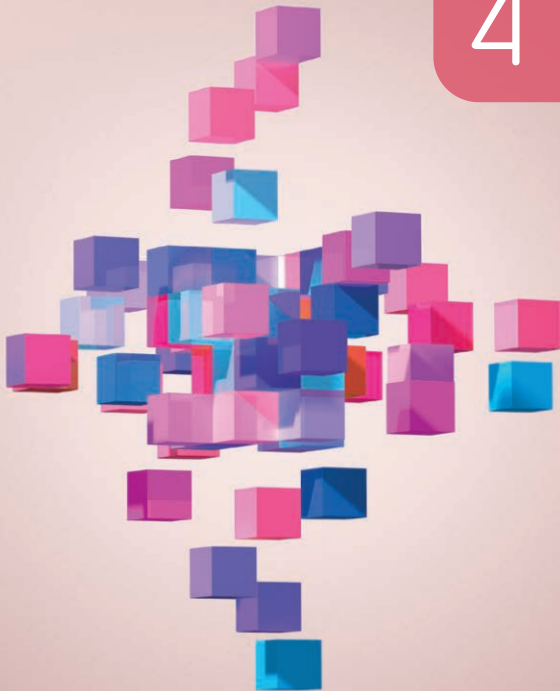


# 4

## Recommendation 1: **Governance—Establishing a policy blueprint to implement industry-led lifelong education that bridges economic, manpower, and skills development**

As industries reinvent themselves worldwide, Hong Kong risks being replaced as an economic powerhouse. To maintain its competitiveness, the Government must take stock of where nascent industries are headed, in order to establish long-term industry policy blueprints to project future growth and transformation trajectories and the associated education and manpower development policies. Such visionary planning requires a robust education system with a continuing education sector that promotes lifelong learning.

Singapore offers an example of how inter-bureau governance frameworks may be established to stimulate cross-sector economic and talent development planning. In 2017, the Singapore Future Economic Council (FEC), chaired by the Deputy Prime Minister and comprised of government, industry, unions, and education representatives, launched Industry Transformation Maps for 23 industries. Through task forces, these



national industry plans are then developed into policies that enhance human capital and promote industry growth and transformation (Ministry of Trade and Industry Singapore, n.d.). As an example, the Construction Industry Transformation Map gave rise to the Built Environment SkillsFuture 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 10**).

**Figure 10** Singapore's Future Economy Council and 23 Industry Transformation Maps



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

To support in-service practitioners in remaining competitive amid market uncertainties, SkillsFuture Singapore (SSG) has launched a series of skilling initiatives to help individuals acquire the knowledge and skills they need to meet evolving career demands. For example, SSG subsidises 50-95% of adult skilling course fees; the SGUnited Skills Programme provides training courses for in-demand and emerging skills, especially in sectors with good employment opportunities; and the SGUnited Mid-Career Pathways Programme provides company attachment and company training opportunities for mid-career individuals to boost their employability and potentially switch careers.

In Hong Kong, the Chief Executive's Council of Advisers on Innovation and Strategic Development ("the Council"), a similar high-level body composed of government officials, industry and community leaders (PICO, 2021), was established in 2018 (**Figure 11**). Supposedly "discuss[ing] and map[ping] out Hong Kong's future development and strategies for driving innovation", little information regarding the Council's decisions has been publicised, while follow-up policy actions have also been unclear.

**Figure 11** The Chief Executive's Council of Advisors on Innovation and Strategic Development

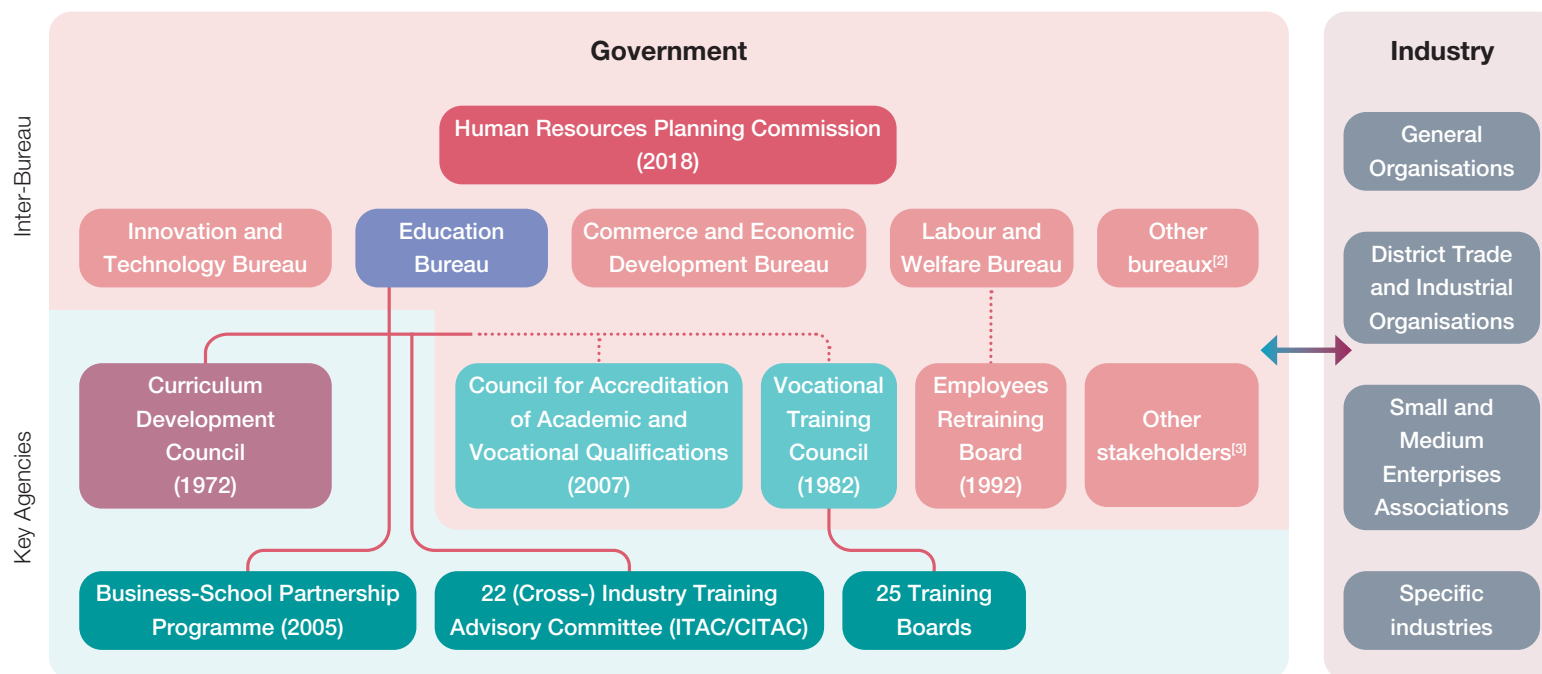


Source: Policy Innovation and Co-ordination Office

Inter-bureau progress, made under the Human Resources Planning Commission (HRPC) to translate economic planning into educational and manpower planning, remains limited. Given its unique position, the HRPC should not only serve as a platform for

bureaux to cooperate and formulate more coherent human resources strategies, but also link up industries and education providers to enhance the quality of talent and skills training (Figure 12).

**Figure 12 The Human Resources Planning Commission could act as a bridge between industry and education development<sup>[1]</sup>**



Source: Hong Kong SAR Government

Notes: [1] Illustrations are non-exhaustive; red background colour denotes organisations involved in the Human Resources Planning Commission

[2] Includes Constitutional and Mainland Affairs Bureau, Financial Services and the Treasury Bureau, Food and Health Bureau and Security Bureau

[3] Includes Commissioner for Census and Statistics and Government Economist

Similarly, the University Grants Committee (UGC), an integral part of Hong Kong's higher education system, has fallen short of its role in providing a steady supply of work-ready graduates, especially for more technical areas such as engineering and IT. At present, the Government does not specify manpower requirements for individual

disciplines for the purpose of allocating student numbers to the universities, except for certain programmes in the healthcare and teacher training disciplines. This gap between UGC curricula, government policy directions, and industry realities creates an increasing disparity between graduates' skillsets and employers' requirements.

## Recommendation 1.1: Propelling strategic talent development priorities through the Human Resources Planning Commission, based on inter-bureau economic review and industry policies

To support Hong Kong's future talent, manpower, and education development, a robust governance framework is needed to guide industry planning, followed by coordinated policy actions carried out by government units, industry groups, and education providers.

The Government should designate agencies responsible for developing long-term economic growth strategies and implementing industry policy blueprints accordingly. This can be achieved through setting up a Council on Economic Planning and Development to conduct targeted economic reviews and formulate an overall economic strategy every 10 years—as suggested by Our Hong Kong Foundation's Land and Housing report *Strategic Land Development for Jobs: From Brownfields to Modern Logistics* (2020)—and an industry transformation department in charge of translating the industry blueprints into specific initiatives. The process should involve collaboration between industry representatives and government officials to conduct industry trend forecasts and map out skills requirements according to different sectors' contexts and future needs, in order to align economic, industry, and education policies (Figure 13).

Critically, industry development planning should not only be confined to a limited view of Hong Kong industries, but also include a broader consideration of regional economic development, especially that of the Guangdong-Hong Kong-Macao Greater Bay Area (Greater Bay Area, or GBA). Corresponding economic, talent, and skill policies can then be developed to groom talents that are competitive both locally and regionally, simultaneously boosting talents' employability and supporting local and regional development.

Thus, it is important to ensure that industry strategies are translated into education and skills policies. The HRPC should designate roles and responsibilities for different stakeholders to work together to support industry priorities through education and skilling initiatives. Given their strong business links, chambers should assume a central role to forecast skill requirements, set employer-led standards, and design, implement, and assess work-based programmes. Educational institutions should work more closely with chambers and employers to improve education provision (e.g., offer industrial attachment opportunities), so that learners develop up-to-date skills.

Figure 13 Governance framework to develop and execute economic development strategies



Note: Dotted lines denote proposed structures/organisations

The HRPC could also help institutions specialise in different areas (such as providing Applied Degrees), help chambers and businesses identify academic partners, and work closely with educators to develop initiatives tackling manpower and skills shortages. In 2018, the South Korean government released a national strategy to invest USD 2 billion to increase its AI research and development (R&D) capabilities and manpower, with the intention of becoming a global Artificial Intelligence (AI) powerhouse by 2022. It aims to cultivate 5,000 top-tier AI talents every year; part of the funding is allocated to six universities to establish graduate schools specialising in AI programmes (University World News, 2018). These AI graduate schools currently collaborate with different companies on AI-related R&D initiatives, programme delivery, and internships.

To keep up with new business trends, the Government must support the development of emerging industries, such as biotechnology, financial technology, and creative arts, etc., to diversify Hong Kong's economy. For **nascent** industries without established standards, it is crucial to develop robust industry policies supporting the growth of these sectors and transform them into education and training opportunities that can build a talent pipeline.

The Government should make use of the HRPC and other such inter-bureau institutions to partner with industry stakeholders and educators, and tailor industry policies to guide educational development in different areas of society.



## Case Study 1 Development of arts tech in Hong Kong

The Chief Executive announced plans to support the development of arts technology in the 2020 Policy Address, which included setting up an “Inter-departmental Task Force on Arts Technology” and setting aside HKD 100 million under various funds, such as the Arts and Sports Development Fund and the CreateSmart Initiative etc. (The Chief Executive’s 2020 Policy Address, 2020).

Are current policy initiatives sufficient to create a sizeable talent pool to support industry growth? One of the foci of the CreateSmart Initiative is nurturing talents and facilitating startups in the creative industries; while it funds projects that provide employment and on-the-job-training opportunities for graduates, it focuses less on skill development in school programmes.

## Case Study 2 Investment in immersive technologies to boost creative industries in the United Kingdom

In the United Kingdom, the “Creative Industries Sector Deal” was put forward in 2018 by the Creative Industries Council, a joint forum between government departments and creative industry bodies. Designed to boost the number of creative businesses utilising immersive technologies to create new content, products and services (e.g., virtual reality video games, interactive art shows, augmented reality experiences in tourism) and to raise the creative industries’ competitiveness, various funding initiatives were launched to encourage R&D collaborations between universities and companies **(Figure 14)**.

To ensure a sufficient supply of talents, a training centre jointly funded by the government and industry was established in 2018 to provide cutting-edge training in virtual, augmented and mixed reality technologies. Co-designed and delivered by industry and academic professionals, the academy offers a range of skilling programmes (e.g., short courses, placements, workshops) to practitioners, as well as train-the-trainer schemes to local universities to help them build their own courses. In the first two years since its establishment, the academy trained 447 professionals and created more than 200 jobs related to immersive technology (StoryFutures, 2020).

Figure 14 The United Kingdom's Creative Industries Sector Deal

“... harness the power of immersive technologies and double the UK's share of the global creative immersive content market by 2025.”



### Creative Industries Sector Deal (2018)

- Devised by the Creative Industries Council, a government-industry forum represented by:
  - Department for Digital, Culture, Media & Sport
  - Department for Business, Energy & Industrial Strategy
  - Creative businesses and industry bodies



### Examples of R&D initiatives

- **Demonstrator Programme**
  - Funds industry-led consortia to create new immersive experiences and test them with large audience
  - Covers e-sports and gaming, performance, visitor experience sectors, etc.
- **Immersive Technology Investment Accelerator**
  - A competition offering grant funding and venture capital investment in early stage projects



### StoryFutures Academy

- Run by the National Film and Television School and Royal Holloway, University of London
- Industry professionals and educators co-design and deliver immersive technology training programmes for the creative workforce

## Recommendation 1.2: Facilitating and consolidating lifelong learning provision and funding to provide a flexible system with multiple entries and exits for individuals to upskill and reskill

Digital transformation overhauls the workforce composition of various industries; to stay relevant, companies need to upskill and reskill employees. For example, as logistics operators increasingly leverage data analytics, automation, and robotic solutions to improve their operating efficiency and service quality, professionals are expected to pick up specialised skills; in 2018, Cainiao Smart Logistics Network, the logistics arm of Alibaba Group, announced that they would build a digital logistics centre at the Hong Kong International Airport (Alibaba, 2018), creating new demand for digitally-skilled logistics workers. Similarly, the Government started requiring construction consultants and contractors to use Building Information Modelling (BIM) technology for major Government capital works projects since 2018, meaning that construction companies must train or recruit talents equipped with BIM-related skills to qualify for contract bidding. Against this backdrop, lifelong education has become a vital component of sustainability in the workplace. However, there is currently no governance framework to drive territory-wide reskilling and upskilling.

Current upskilling schemes in Hong Kong are not sufficiently expansive and inclusive. For instance, the majority of courses offered by the Employees Retraining Board (ERB) ranges from QF levels 1 to 2 for applicants holding sub-degrees or lower qualifications only (**Figure 15**). Elsewhere, VTC's Institute of Professional Education And Knowledge (PEAK) offers in-service training programmes to some industries on a self-financing basis.

In addition, the Pilot Programme to Enhance Talent Training for the Insurance Sector was launched in 2016 by the Financial Services and Treasury Bureau, with PEAK as the Secretariat, to enhance the sector's professional competency. That being said, part of its work-study programme has been inactive since 2019. Meanwhile, the Adult Education Subvention Scheme provided by the Labour and Welfare Bureau (LWB) primarily targets new arrivals, elderly, disabled, or ethnic minorities, leaving out the majority of the workforce. This indicates a significant gap in the continuing professional development (CPD) sector, in which the aforementioned government agencies either lack sufficient funding or mandate.

**Figure 15** The majority of courses offered by the Employees Retraining Board is limited to QF levels 1 or 2

QF level	No. of accredited courses
1	1,277
2	1,119
3	111
4	3

Source: Qualifications Register

This also means that the Government needs to rely on the CEF to leverage the private sector for course provision. However, it merely reimburses courses without a regular review and update of the course selection according to industry skills demand.

The roles and responsibilities of the ERB, VTC, CEF, and other stakeholders involved in lifelong learning should be comprehensively reviewed based on workforce needs. Moreover, the Government must improve funding provision and consolidate existing official skilling initiatives for in-service practitioners. As an example, the government of Italy launched the Italian National Coalition for Digital Skills and Jobs (Coalizione Nazionale per le Competenze Digitali) in 2020, an initiative to consolidate government departments, business groups, and schools to tackle its digital skills shortage problem. With the aim of tripling the number of Information and Communication Technology (ICT) graduates, increasing the share of SMEs hiring ICT specialists by 50%, and equipping 70% of the population with basic digital skills by 2025, the Coalition has already started more than 100 upskilling and reskilling initiatives, with more than three million potential beneficiaries (European Commission, 2021; Minister for Technological Innovation and Digital Transition (Italy), 2020).

As such, the report recommends that the Government set up or designate an agency with a mandate to coordinate funding and skilling provisions of continuing education, so as to provide targeted skill development opportunities to in-service practitioners and other learners. It is essential that this agency involve chambers in the skill planning process and leverage their industry connections to promote workforce skilling on a territory-wide scale. Education providers should work with industry organisations to align existing and new CPD courses with industry standards.



## Recommendation 2: Accreditation— Offering diverse and flexible progression pathways through an industry-integrated accreditation system

Progression pathways in learning and careers for the workforce are central to ensuring that Hong Kong's talents can maintain their competitive edge and support the city's economic development. Given that time is such a precious commodity in Hong Kong, people expect to see tangible returns if they invest their efforts into further education or career-related upskilling and reskilling. However, the current lack of recognition of work and learning experiences either through more flexible school admissions, career mobility and advancement, or the chance to explore opportunities outside of Hong Kong, discourages workers from pursuing any further learning or training. Accreditation of applied educational and work experiences by relevant academic and industry bodies alike is therefore vital to transforming these learning outcomes into milestones on a learner's progression pathway.

In Hong Kong, the Qualifications Framework (QF) is designed to “enhance the capability and competitiveness of the workforce” through “defining clear and objective standards applicable to qualifications in the academic, vocational and professional as well as continuing education sectors,” and “assuring relevancy of learning to industry needs”. In order to achieve these policy objectives, the academic and applied qualifications as well

as industry certifications must be integrated for learners to obtain skills crucial to their learning journeys and career development. As part of the coordinated effort, the Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) was renamed in 2007 to focus more on accrediting and recognising applied qualifications, hence to support citizens building their career paths.

Regrettably, in its current state, the QF is insufficiently flexible to allow for equal transfer and progression between academic, applied, and industry credentials, or to bridge the gap between schools and firms. On paper, the three qualifications hold comparable weight in the QF, but this is often not the case in reality: an electrician holding a QF level 4 applied qualification would have difficulty seeking admission to a tertiary institution for a QF level 5 bachelor's degree, while a QF level 4 Higher Diploma in Maritime Studies would not be equivalent to a QF level 4 Class 3 Deck Officer Certificate of Competency for a job applicant (VTC, 2021; Marine Department, 2021). Similarly, for industry certifications, a tour guide with a Tourist Guide Pass issued by the Travel Industry Council would not be able to use their licence for admissions purposes at a relevant tertiary programme.

Employability is also a pressing issue given that workers are primarily motivated by job opportunities and career progression when taking up new studies. To ensure that applied qualifications can be dually recognised and translated into tangible benefits in the workplace and in academia, the QF's standards and quality assurance procedures need to be more practically focused. At present, skill-based Applied Education courses have little involvement on the part of industry representatives and employers.

**Recommendations 2.1 to 2.6 form a sequence of actions to help learners to build their career paths and stay relevant in the labour market.** Admissions must be broadened and sharpened to give diverse talents more study opportunities in applied further education. These applied programmes should be developed and accredited with industry representatives to ensure that employers of the same industries will recognise them in hiring and job promotions, while ensuring that academic institutions will also accept them as equal to traditional qualifications. The Government should take the lead in recognising applied certifications in hiring, promotions, and contracts to help validate them and promote wider usage amongst workers and employers. This can help build a lasting culture of continuing education for career and business purposes in society.

## Recommendation 2.1: Increasing aptitude-based admission quota for self-financing institutions' sub-degrees to 30%, with pilot schemes on applied degrees up to 50%

Admission procedure in Hong Kong are rigid compared to the rest of the world, as post-secondary institutions have set strict grade requirements for incoming students. For undergraduate-level admission, students must have obtained two Level 3s and two Level 2s in the Hong Kong Diploma of Secondary Education Examination (HKDSE). For sub-degree admission, students must have achieved five Level 2s in the HKDSE. This reflects the post-secondary admissions system's grade-oriented focus, even for students whose strengths lie elsewhere. This stringent system could be problematic in the long run for both schools and industries, given that dedicated students are unable to match their educational journeys with career goals. Students may not be cut out for the qualifications they end up studying, and graduates may not join the industries associated with their programmes at all.

Compounding the problem is the fact that alternative pathways to access higher education are little-known and rarely used. Schools are allowed to admit 5% of their student intake through "non-standard entry", a mechanism that allows students to submit qualifications such as work experience, awards, extra-curricular activities, and portfolios to demonstrate their passion and capacity. However, schools typically treat "non-standard entry" applications as exceptional cases rather than a conventional ingress point, and few students see this mechanism as a viable way of entering post-secondary education, leading to underutilisation of the existing 5% quota. This creates a vicious cycle where the number of students making use of non-standard entry do not fully utilise the quota, giving schools no incentive to raise the 5% limit. As a result, the reliance on academic grades for admission is further reinforced, barring otherwise qualified students from their preferred programmes or further education entirely.



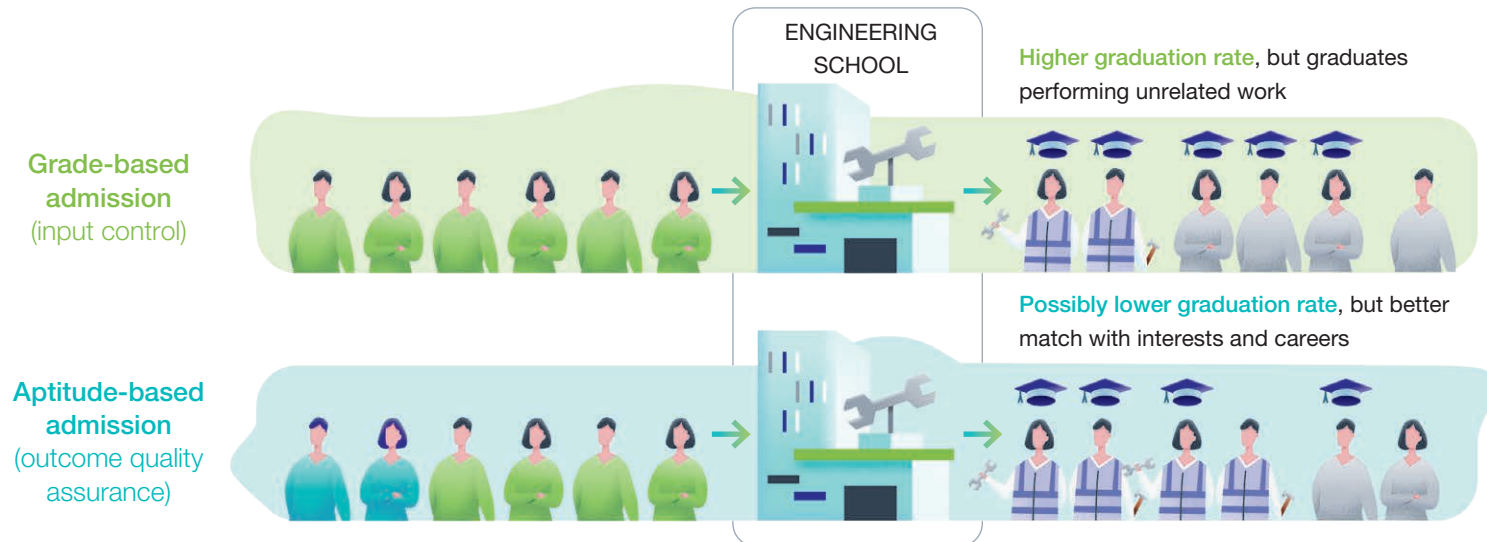


Singapore has launched initiatives to tackle this exact same issue, moving from allocating 15% of undergraduate intake for “discretionary” admission—similar to our “non-standard entry” paths—to 30% for “aptitude-based” admission, while polytechnics admit 30% to 50% of students based on aptitude (Straits Times, Joint Portal of the Polytechnics of Singapore, 2020) (**Annex 4**). Their commitment to making post-secondary education more accessible manifests in expanding their flexible intake, in order to ensure that admitted students are truly suited to their programmes of choice.

This is indicative of a much-needed mentality shift in Hong Kong, where the focus of our post-secondary admission system should change from input control to outcome quality assurance, i.e., the

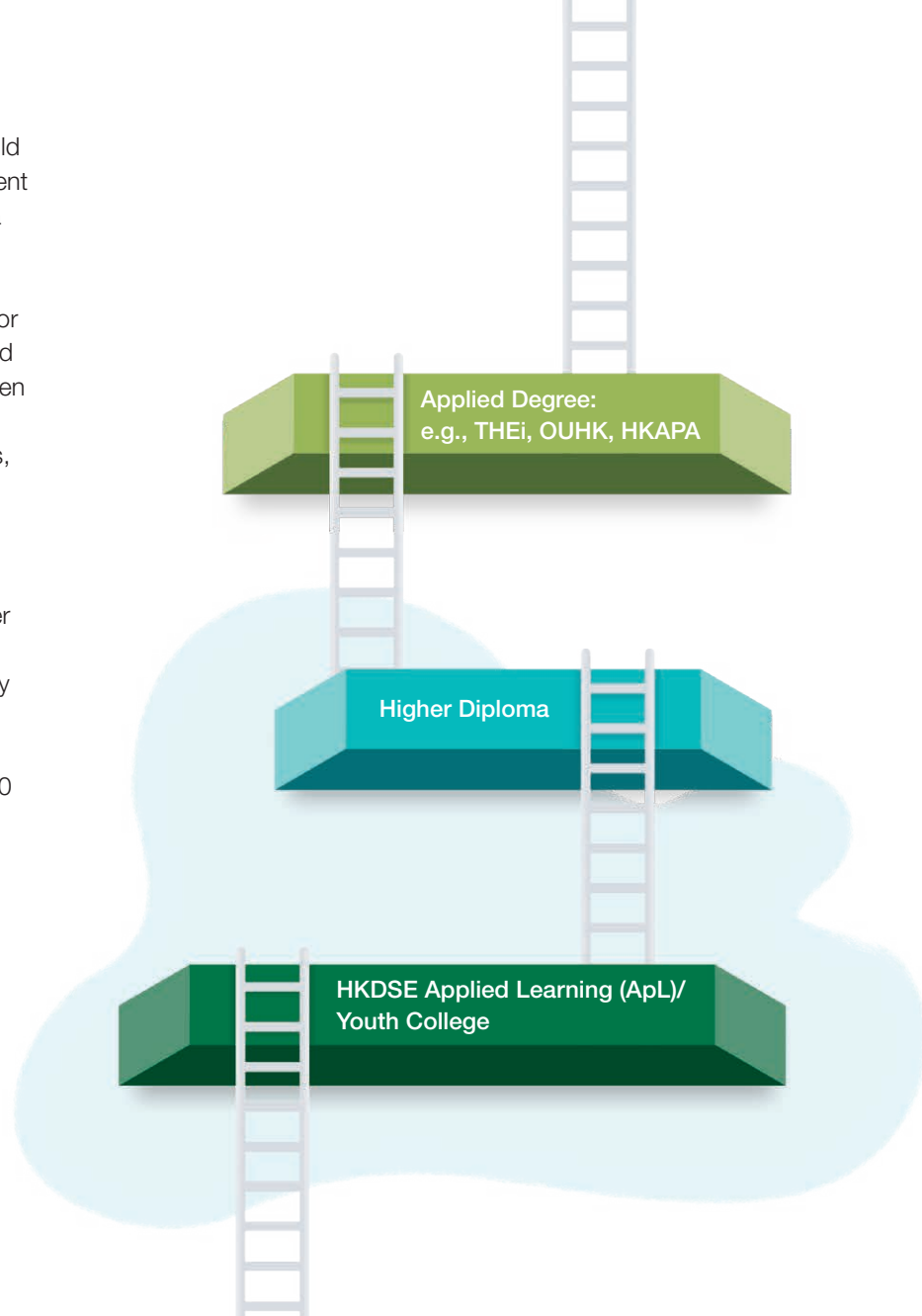
academic profile of student intake should matter less than the resultant talent and potential of graduates (**Figure 16**). Schools should pivot to students with appropriate skills and interests, who may not necessarily have the best academic grades but are more likely to join the industry following graduation. This would possibly lead to a lower overall graduation rate, but even dedicated students who fail to complete their exams would have gotten more out of their schooling, which would enable them to progress in their preferred industries. This would change the current funding priorities for post-secondary institutions, where the Government prioritises graduation rates as a sign of educational success, leading to stringent admission control in order to guarantee little to no dropouts to gain more funding.

**Figure 16** Moving from grade-based admission to aptitude-based admission



In our previous report, we have recommended that degrees should allow for 15% aptitude-based admission, as opposed to the current 5%. Similarly, post-secondary institutions should raise their quota for aptitude-based admission for sub-degrees up to 30%, while running pilot schemes up to 50% of the total student intake. This would give schools more flexibility in choosing students suitable for their programmes, especially for those containing more skill-based education, with more students of diverse talents and interests given access. Technical disciplines, predicated on their subject matter and level of difficulty, should be allowed to set study prerequisites, such as stipulating compulsory subjects at secondary level for applicants.

Our 2019 report raised the possibility of setting up a University of Applied Sciences offering Applied Degrees in Hong Kong. In order to help students acquire these degrees and embark upon compatible career paths, through-trains from secondary to tertiary level need to be established so that students can transform their strengths and passions into study paths and careers. The pilot scheme on Applied Degrees launched by the Government in 2020 should set a baseline of 50% aptitude-based admissions.



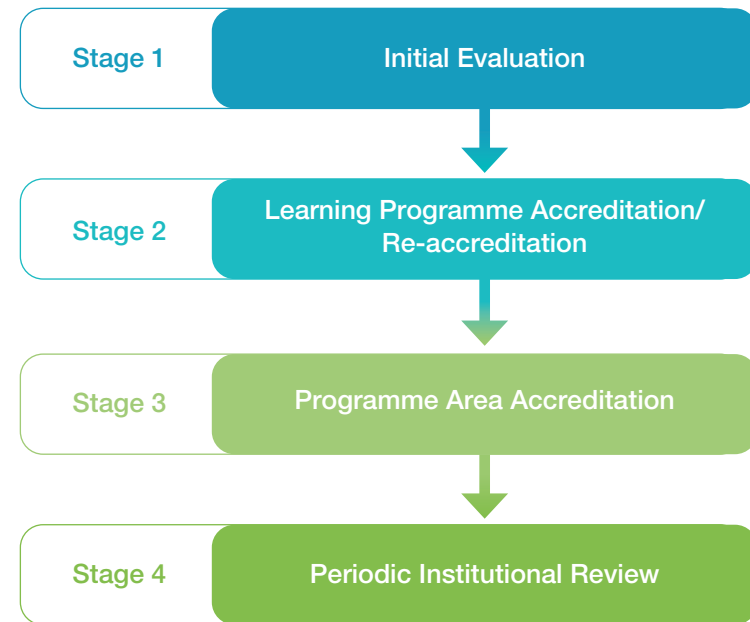
## Recommendation 2.2: Amplifying industry input through external assessment agencies and panels in the quality assurance process of the Hong Kong Council for Accreditation of Academic and Vocational Qualifications

Accreditation in Hong Kong has long been divided into either academic qualifications or industry certifications. The creation of the Qualifications Framework (QF) was an attempt to bridge the two via one universal and official framework; however, HKCAAVQ is regarded first and foremost as an academic accreditor, and it would be a tremendous challenge for it to ensure that the quality assurance (QA) of professional qualifications truly fit industry needs.

HKCAAVQ currently uses a four-stage QA process to accredit different programmes and course providers under the QF, consisting of Initial Evaluation (IE), Learning Programme Accreditation/Re-accreditation (LPA), Programme Area Accreditation (PAA), and Periodic Institutional Review (PIR) (**Figure 17**). These four stages focus on assessing a programme or its operator's planning and management, syllabi, delivery arrangements and assessment methods, and ensuring that its domains of standards are based on ensuring learner, programme, and organisational outcomes (**Annex 5**).

Course providers would find it challenging to adapt to market trends due to the lengthy process all courses must undergo during accreditation. LPA procedures for new programmes take nine months in general, extending over a year where administrative procedures are taken into account. For example, substantial change, i.e., changes to an accredited programme or course that

Figure 17 HKCAAVQ's four-stage QA process



Source: Hong Kong Council for Accreditation of Academic and Vocational Qualifications

affect 10% or more of the original curriculum, takes at least 3 months of review. This time lag obstructs course providers from updating curricula in a timely manner, which prevents them from teaching students the newest industry knowledge and produces graduates who do not possess the most in-demand skills. In some cases, course providers hesitate to make any significant changes to their curricula to avoid triggering substantial change.

Some accreditation authorities around the world have made efforts to include more industry bodies in recognising applied qualifications. The Ministry of Education of Austria appointed six *NQR-Servicestellen* (Service Points) for its National Qualifications Framework (NQF) in 2019 in an effort to incorporate more vocational and professional qualifications. These Service Points act as intermediaries between education providers and the National Coordination Point for the NQF (NCP), performing quality assurance for the accreditation of training courses with the NQF. These six Service Points either have strong industry ties or were founded by chambers and businesses themselves, guaranteeing that their quality assurance process will contain industry-relevant procedures and standards (**Annex 6**).

The Recognition of Professional Qualifications (RPQ) initiative under the QF, launched by the Education Bureau in 2018, bears some similarities to that of Austria's *NQR-Servicestellen*. It allows external assessment agencies to administer assessments and issue Professional Qualifications. However, significant drawbacks to RPQ include its limited scope and participation: as opposed to the

Austrian case, the three agencies approved so far—the Hong Kong Institute of Certified Public Accountants (HKICPA), the HKSAR Marine Department, and the Hong Kong Institute of Bankers (HKIB)—are not permitted to issue qualifications outside of their profession. The registration of RPQ partner organisations is also strongly influenced by the presence of their respective Industry Training Advisory Committees (ITACs), which do not include traditional professional fields such as medicine or law.

This issue is compounded when course providers attempt to launch new applied programmes in disciplines related to **nascent** industries. Given the obvious lack of established practitioners, it is more challenging for accreditation panels to fully assess a programme's industry links and the viability of its graduates in the labour market.

HKCAAVQ should endeavour to increase industry input when devising its accreditation procedures and quality assurance reviews, to ensure that QF-accredited courses are more closely aligned to industry needs and job competencies. This could be done by expanding the RPQ initiative to appoint key industry bodies as external assessment agencies for Professional Qualifications, minimising the lead time involved in the four-stage QA process as well as Substantial Change, and appointing international industry practitioners and experts where none suitable can be found in Hong Kong.

## Recommendation 2.3: Linking up academic institutions and industry stakeholders according to each industry's skilling priorities to develop dually-recognised applied certifications

At present, academic qualifications and industry certifications are viewed as separate entities in the workplace, and tricky to translate or transfer in usage. This split devalues certain qualifications and disincentivises workers to obtain new ones, as they perceive little to no tangible benefits from doing so. Industry competencies and academic standards require more recognition from employers and

schools alike to methodically build career paths; this is best achieved through aligning them with each other to form skill-based, applied certifications that demonstrate an individual's skillset and knowhow. These applied certifications would galvanise employers, chambers, regulators, and accreditation institutions to synchronise field evolution with educational progress.

### Case Study 3 Google's Career Certificates

Google has launched a variety of online professional courses to teach job-ready skills for in-demand careers in technology, finance, etc.

#### Career Certificates



3-6 month IT professional courses, including data analytics, IT support, project management



No working experience required



61% learners enrolled do not hold a degree

#### Career Prospects

- Google recognises these certificates **as the equivalent of a four year degree**
- **80%** learners report a career impact within 6 months, e.g., finding a new job, getting a raise, or starting a new business
- Connected with top employers worldwide, such as Intel, Deloitte, and Bank of America etc.

Source: *Grow with Google*

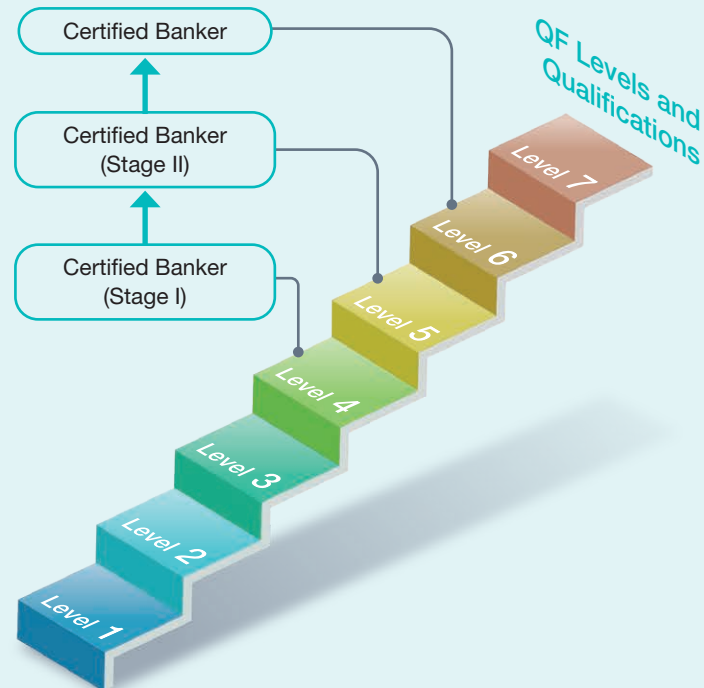
Employer-led school-industry partnerships in Hong Kong typically involve regulators or large employers with more resources at their disposal. Corporate in-house training, when linked to the QF, exemplifies how applied certifications can both upskill employees and further their educational development. For instance, the A.S. Watson Group Retail Academy offers advanced and professional

diplomas at QF levels 2-5 as part of their in-house training programmes (**Annex 7**), while the Café de Coral Management Academy offers advanced diplomas and professional certificates at QF levels 3-4 (Qualifications Register, 2021); however, the problem remains that only large corporations have the capacity to offer accredited in-house programmes.

### Case Study 4 Hong Kong Institute of Bankers (HKIB) and the Enhanced Competency Framework (ECF)

The partnership of the HKIB with the HKCAAVQ and the Hong Kong Monetary Authority (HKMA) is an example of a coordinated initiative to link professional trends with education development and accreditation. The HKIB has designed a continuous series of training programmes for banking practitioners and accredited them with both the HKCAAVQ under the Vocational Qualifications Pathway scheme, and the HKMA. Under the programme, in-service practitioners can obtain a Certified Banker (Stage I) qualification at QF level 4, then a Certified Banker (Stage II) qualification at QF level 5, and finally a Certified Banker qualification at QF level 6. This is designed to create a career advancement pathway for bankers that correlates promotions, industry-standard certifications, and academic qualifications. The Certified Banker qualification includes content from the Enhanced Competency Framework (ECF) developed by the HKMA. As a benchmark for banking practitioners' professional competence, the ECF incentivises training institutions and firms to reference it when designing and delivering both in-house and external training programmes.

Source: Hong Kong Institute of Bankers



## Case Study 5 VTC's partnership with Amazon Web Services

VTC also offers a Higher Diploma in Cloud and Data Centre Administration in conjunction with Amazon Web Services' Educate initiative (AWS Educate). The two-year programme trains students with an amalgamation of hard fundamentals, hands-on labs, professional development, and self-initiated learning. Students take five courses from the AWS Academy in preparation for AWS Certification exams that highlight and validate individuals' in-demand skills. Courses are taught by industry professionals, with hands-on experiences included to help students acquire more applied work experience and demonstrate their practical knowledge, preparing them for careers in cloud technology.

Sources: Vocational Training Council, Amazon Web Services

For other industries, however, the way forward is not as clear; they may be too brand new and too scattered to leverage existing training programmes or key industry figures to establish a cohesive education development plan. Arts tech is such an industry in chrysalis—its status as a **fledgling** industry means that it would be extraordinarily difficult to gather different stakeholders to build applied certifications for its cutting-edge skills and competencies.

Tools such as virtual production, soundscape, and augmented reality are changing rapidly as the industry makes headway. The industry, and others like it, are changing too rapidly to be certified at each visible change by academic institutions. A possible solution is to amplify HKCAAVQ's status as an accreditor of industry certifications by working closely with industries that have less continuing professional development (CPD) opportunities. The employer-led lifelong learning agency suggested in

**Recommendation 1.2** could be supported by HKCAAVQ to offer accredited CPD courses and progression pathways for workers in both professional and other industries to upskill and reskill as new requirements come along.

The Government can consider the nature and contexts of different industries when linking professional trends with education development, consulting key industry organisations to set up industry training bodies and design standards that can be incorporated into training courses for each sector. **Mature** industries with established standards and players will find it easier to leverage regulators, chambers, and accreditation authorities to align professional training with industry standards while providing CPD, while **nascent** industries may not be suited to such an approach. The Government should instead rely on collaboration with frontrunners and encourage individuals to participate in relevant training to acquire and certify their innovative skills. A coherent, nuanced approach is needed to boost the dual recognition of applied certifications both in workplace and in academia.



## **Recommendation 2.4: Broadening the recognition of Qualifications Framework (QF) levels and skill descriptions in Government job listings, licensing requirements, and tender procedures to promote wider usage by jobseekers and businesses**

The Government has taken a relatively passive approach towards marketing QF levels for use in the workplace. Currently, job listings for government positions do not specify QF levels or associated skills amongst its entry requirements; instead, specific educational attainments are listed along with language proficiency requirements, and in certain cases, industry-related licences or certifications. By failing to broadly recognise QF levels as a more flexible, accessible method of demonstrating learning pathways, the Government in turn discourages private businesses from recognising QF levels when hiring.

QF in Action (QFIA), launched in 2020, promotes wider use of the QF by industries and firms by “encouraging different organisations to develop QF-related projects [and ... promoting] lifelong learning with a view to enhancing the capability and competitiveness of the human capital and facilitating a sustainable professional development of various trades.” The Housing Department requires certain contract positions, such as frontline Field Technicians and their supervisors, to hold qualifications at a minimum of QF level 3. In practice, only selected government departments and statutory bodies have participated.

The Government should take the lead in adopting QF levels and skill descriptions as part of its job listings, hopefully sparking a knock-on effect of broader recognition of applied qualifications by jobseekers and businesses. They should specify the breadth and duration of the pertinent qualifications and corresponding QF levels, as one QF level can cover many different qualifications, ranging from a 2-month Certificate to a 2-year Associate; these obviously do not cover the same range of competencies. The EU distinguishes between different qualifications at the same level by “specifying domains of learning outcomes [... of] different types of qualifications with different purposes and profiles (general and vocational, practical and theoretical) [...] at all levels” (CEDEFOP, 2018). The QF can serve as a reference point, allowing the Government to list examples of competencies or qualifications at a particular QF level, and specifying smaller qualifications that demonstrate specific skills as modular components to satisfy job requirements. In this way, attaining applied competencies should lead to higher employability for candidates in both public and private sectors. A step further would be rewarding continuing education achievements with corresponding promotions, which could do much to encourage lifelong learning.

The usage of applied qualifications can be extended to cover licensing requirements as well as tender and procurement processes. This already begun in the construction industry: Government contracted capital works projects with estimates over HKD 30 million must include Building Information Modelling (BIM)

skills and technology in its execution, as per DEVB TC(W) No. 7/2017. This practice should be enforced in multiple industries to raise the usage and recognition of paraprofessional certifications through government practices other than hiring.

## Recommendation 2.5: Assigning QF levels to micro-credentials based on employer-identified and -recognised skills and encouraging schools to adopt them for credit requirements

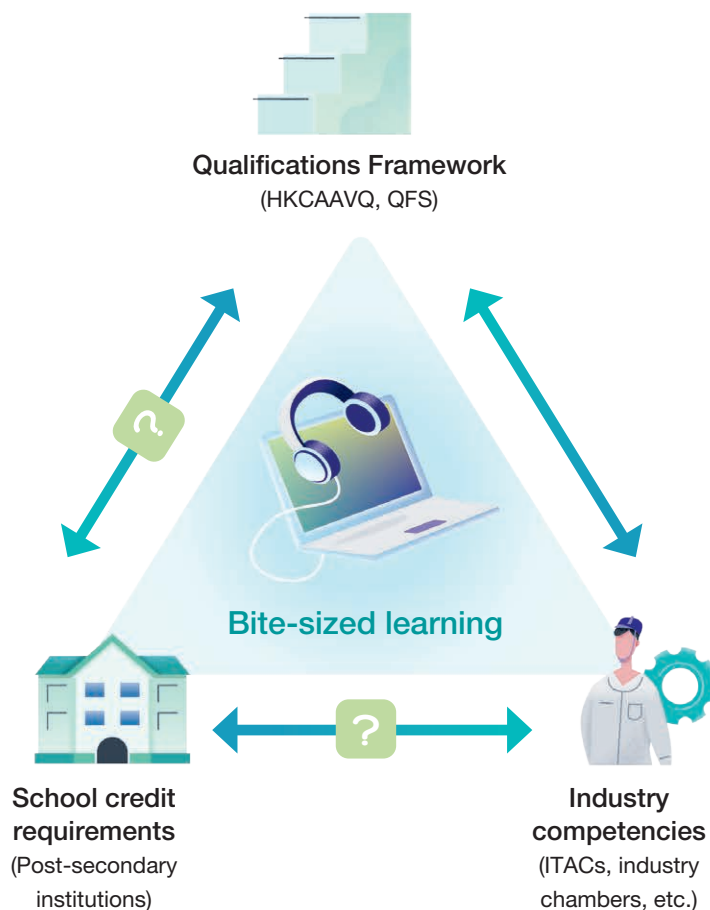
Rapid technological advancement and complications of the COVID-19 pandemic have propelled education technology to transform learning and teaching. Micro-credentials have become indispensable to lifelong learning, given their bite-sized nature, flexible configurations, and easy access. They are defined by Pickard, Shah, and de Simone (2018) as “credential[s] that cover more than a single course but are less than a full degree.” There are more than 1,180 micro-credentials around the world (Class Central, 2020), comprised of different Massive Open Online Courses (MOOCs), and often delivered by university instructors in an online or blended learning environment. Compared with traditional academic qualifications, micro-credentials allow those who cannot access formal full-time education to learn in-demand abilities at their own convenience and validate them to current and potential employers. In a study by Columbia University, it was reported that 38% of those who had completed a micro-credential claimed to have improved their performance at their existing jobs (Hollands and Kazi, 2019). In addition, micro-credentials’ modularity, convenience, and personalised approach enable learners to access education unbundled with the aid of technology.



Some educators in Hong Kong have begun to pioneer micro-credentials as a pathway in lifelong learning. There are now 11 micro-credentials offered by Hong Kong universities, covering a spectrum of subjects such as coding, finance, and fashion (HKU, CUHK, HKUST, PolyU, 2021) (**Annex 8**). The Hong Kong University of Science and Technology (HKUST) offers students the chance to take proprietary MOOCs in exchange for school credit. Likewise, the Yidan Prize Foundation has launched a MicroBachelors' programme with edX, a major MOOC platform, that contributes credit towards an undergraduate degree and is industry-endorsed (Yidan Prize Foundation, 2020). Micro-credentials should be incorporated into official accreditation and qualification frameworks to facilitate wider recognition in professional settings. This would allow the working population to access lifelong learning for reskilling and upskilling.

Several models could be put into practice when considering the accreditation of micro-credentials. The Common Microcredential Framework (CMF), developed by the European MOOC Consortium, is based on the European Qualification Framework and other national frameworks to provide courses that can be approved for academic credit. The Microcredentials Marketplace, established by the Australian Department of Education, Skills and Employment in 2020, also awards academic credit for micro-credentials that can be stacked together to contribute to a larger qualification, and more importantly, recognised by higher education institutions across the country. These frameworks demonstrate international precedence to integrate micro-credentials into pre-existing qualification systems (**Annex 9**).

**Figure 18** Tripartite partnership is needed to institute bite-sized learning in Hong Kong



Consequently, a three-pronged approach must be taken to fully utilise bite-sized learning as a tool for citizens to reskill and upskill **(Figure 18)**. For micro-credentials to be of full use, they must be linked with industry competencies and skills, bestowed with school credits upon completion, and accredited by assigning congruous QF levels. These three features must necessarily be reciprocal: industry competencies must be tied to both the QF to academic credit allotments, and so on. In its current state, micro-credentials

have yet to accomplish the links between the QF and school credit, and between industry competencies and school credit. Without all three elements working in tandem, micro-credentials would be unable to achieve their full potential for promoting lifelong learning in Hong Kong. It is important that these micro-credentials be legitimised by establishing a common online platform for their compilation and display, so that employers and school officers alike can access and verify as needed.

## Recommendation 2.6: Building an ecosystem of mutual recognition and equal transfer of academic and professional qualifications in the Guangdong-Hong Kong-Macao Greater Bay Area

The rapid growth of the Greater Bay Area has introduced multiple opportunities for Hong Kong's economic, social, and cultural prospects, opening up possibilities of developing qualifications frameworks in other cities in coordination with Hong Kong's system **(Figure 19)**. When citizens choose to pursue newly available career opportunities in the GBA, the lack of collective standard for

transferring academic or professional certifications across the border poses a challenge to talent mobility. Currently, only four local certificates in two industries, hairdressing and beauty, have been bestowed equivalent National Occupational Qualification Certificates in Guangdong.



Figure 19 Qualifications and accreditation frameworks in the Greater Bay Area

Guangdong Province Lifelong Education Qualifications Framework							
General Education	Vocational Education	Qualification level	Vocational certificates and awards				
Postgraduate/ Doctorate	Postgraduate/ Professional Doctorate	7	N/A				
Postgraduate/ Academic Master	Postgraduate/ Professional master	6	NCVQ1	National Vocational Qualification Certificate (NCVQ)	Professional certificates	Training Certificates	Awards
Undergraduate/ Bachelor	Applied Undergraduate/ Bachelor	5	NCVQ 2				
Sub-degree education	Higher vocational education	4	NCVQ 3				
Senior secondary education	Secondary vocational education	3	NCVQ 4				
Junior secondary education		2	NCVQ 5	N/A			
Primary education		1	N/A				

Zhaoqing

Guangzhou

Huizhou

Foshan

Dongguan

Shenzhen

Zhongshan

Hong Kong

Jiangmen

Zhuhai

Macao

QF Levels

Equivalent Qualifications

Level 7	Doctor
Level 6	Master/Postgraduate Diploma/Postgraduate Certificate
Level 5	Bachelor/Professional Diploma/Professional Certificate/Advanced Diploma/Advanced Certificate
Level 4	Associate/Higher Diploma/Higher Certificate
Level 3	Diploma
Level 2	Certificate
Level 1	Foundation Certificate/Certificate

Quick reference table of qualifications – Evaluation criteria for professional and technical qualifications in Shenzhen									
	Application for professional title evaluation								
	Not obtaining the next higher level qualification					Obtaining the next higher level qualification			
	Junior rank	Assistant rank	Intermediate rank	Deputy senior rank	Senior rank	Assistant rank	Intermediate rank	Deputy senior rank	Senior rank
After graduating from specialised schools	1 year	5 years	15 years	/	/	4 years	8 years	3 years	3 years
College graduate	/	3 years	8 years	/	/	/	4 years	3 years	3 years
Undergraduate	/	1 year	5 years	/	/	1 year	3 years	3 years	3 years
Dual bachelor degree graduate	/	1 year	4 years	/	/	1 year	2 years	3 years	3 years
Postgraduate	/	1 year	4 years	/	/	1 year	2 years	3 years	3 years
After obtaining master's degree	/	3 months	2 years	/	/	3 months	2 years	3 years	3 years
Before and after obtaining master's degree	/	/	Accumulation of 3 years	/	/	/	Accumulation of 3 years	3 years	3 years
Obtained doctorate degree	/	/	/	Declare according to specified procedures	/	/	/	Declare according to specified procedures	3 years



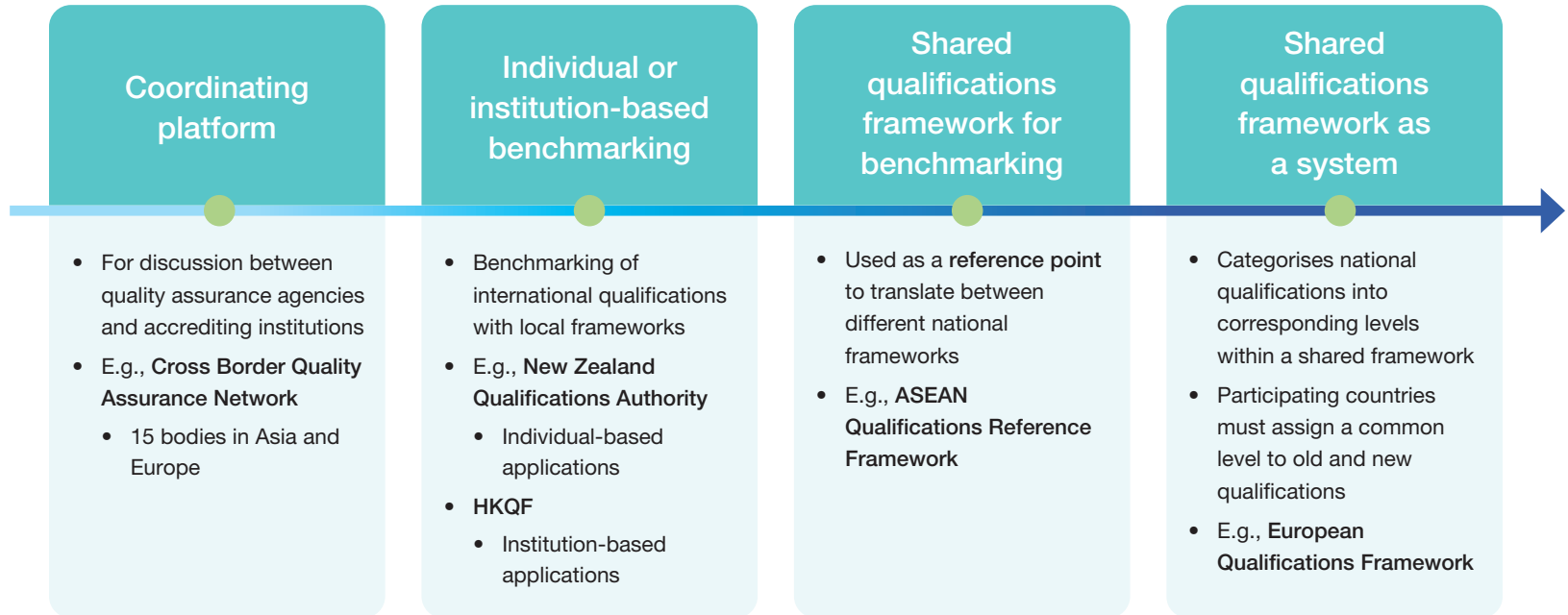


As the development of the Greater Bay Area gathers pace, Hong Kong talents must redouble their efforts to keep up with the region's progress and seek more diverse career paths in a greater variety of innovative industries. Nowhere are efforts more needed to encourage talent exchange within the Greater Bay Area than in standardising training, accreditation, and employment, so that people across the region can access broad opportunities without excessive bureaucratic obstacles. Easier transfer of qualifications, shared education and training institutions, and accommodating hiring practices would all contribute towards inspiring Hong Kong citizens to live and work across the border.

International approaches of cross-border qualification benchmarking and recognition can be divided into four ascending stages: coordinating platforms, individual or institution-based

benchmarking, shared qualifications framework for benchmarking, and shared qualifications framework as a system (**Figure 20**). Currently Hong Kong's accreditation partnerships with the GBA merely takes the form of coordination platforms and individual benchmarking, and have yet to move towards a broad-based benchmark, which in turn enables mutual recognition. The European Qualifications Framework (EQF) could serve as a reference when creating a cross-accreditation mechanism for the GBA: it categorises national qualifications into different EQF levels, so that any qualification will be equally valid in other member countries. This system allows workers to seek employment without going through additional procedures or examinations, facilitating cross-border talent exchange (**Annex 10**).

Figure 20 Examples of different international approaches to cross-border qualifications recognition and benchmarking



Sources: Hong Kong Qualifications Framework, Cross Border Quality Assurance Network, New Zealand Qualifications Authority, ASEAN Qualifications Reference Framework, and European Qualifications Framework



The fusion of Applied Education in the GBA corresponds neatly to national development plans. The Key Points issued by the Education Bureau of Shenzhen Municipality in 2021 (深圳市教育局2021年工作要點) laid out Shenzhen's targets for the development of education and accreditation in the GBA: to create synergies for joint hiring of professors, shared courses and curricula, transfer of school credits, and collective diplomas. Elements of the Key Points central to Hong Kong's involvement include creating 20 community colleges and 20 industry training institutes, building a credit accumulation and certification transfer system, accrediting and employing Hong Kong and Macao citizens as teachers in mainland China, and jointly developing a regional vocational education and training centre (**Annex 11**).

A GBA cooperative mechanism needs to be built to validate equivalent academic and professional qualifications and broaden talent development pathways. Cross-border accreditation should encompass first the academic and applied qualifications of the QF, and later the industry and professional certifications. Hong Kong's education providers and accreditors, such as the Federation for Self-financing Tertiary Education (FSTE), the HKCAAVQ, and VTC should take the lead in designing a qualifications transfer system; mainland accreditation authorities and educators, such as the Administration of Quality and Technology Supervision of Guangdong Province, Department of Education of Guangdong Province, and Shenzhen Polytechnic should collaborate with Hong Kong and match equivalent qualifications across the GBA; finally, major Hong Kong employers and chambers, such as the Chinese General Chamber of Commerce of Hong Kong, the Hong Kong General Chamber of Commerce, and the Guangdong-Hong Kong-Macao Greater Bay Area Industry and Commerce

Federation should take the initiative to hire more Hong Kong workers based on these cross-border qualifications. As mentioned in **Recommendation 1.1**, since these chambers have extensive networks both in Hong Kong and mainland China, they are uniquely positioned not just to design, deliver, and assess learning programmes, but also to provide internships and industry attachment programmes for Hong Kong youth in the GBA.

The function of accreditation authorities as quality assurance (QA) providers is significant as they deliver confidence to employers and education counterparts alike from both sides of the border, concerning the calibre and suitability of the qualifications. After collaborating with the Department of Education of Guangdong Province to help set up their own qualifications framework, HKCAAVQ and the Qualifications Framework Secretariat can continue to leverage their experience to assist them in setting up a QA mechanism to ensure that the cross-border certifications are up to standard.

These parties should work together to establish a cohesive and fair accreditation transfer mechanism. This would lay a good foundation for self-regulatory organisations to join the effort and broaden the scope of cross-border mutual recognition to include other professions, such as accounting, law, engineering, and surveying. This could in turn build up mutual recognition of Hong Kong certifications in the GBA, enabling citizens to secure work and business opportunities with greater ease.



## Recommendation 3: Funding— Building a targeted and future-oriented funding mechanism to support lifelong learning for all

Public funding for education in Hong Kong is significantly skewed towards formal and academic education programmes (**Figure 21** and **Figure 22**). A forward-looking and inclusive society should cultivate skills and talents amongst citizens of all ages, and in turn, support the development of emerging economic sectors and innovative industries. While any imagination of Applied Education cannot exclude pedagogies that enable more abstract social and emotional capabilities, courses that train learners in practical knowledge and skills should be given more support.

In the 2019-20 fiscal year, a total of HKD 125.3 billion public funding was spent on formal learners from primary to post-secondary levels (Legislative Council, 2021). In contrast, only around HKD 600 million was spent on the rest of the population through the Continuing Education Fund (CEF) and the Employees Retraining Board (ERB). Within formal education, while HKD 14.2 billion was allocated for senior secondary and UGC sub-degree students undertaking a primarily academic education, only HKD 3.3 billion was allocated for Vocational and Professional Education and Training (VPET) students at similar stages, including VTC students and sub-degree students under the Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) (*ibid.*; VTC, 2021).

**Figure 21 Government funding for academic- and applied-focused programmes at senior secondary and sub-degree stages (2019–20)**

Category	Funding (HKD billion)
<b>Senior secondary</b>	13.8
<b>UGC sub-degree</b>	0.4
<b>Total</b>	<b>14.2</b>

Category	Funding (HKD billion)
<b>VTC</b>	3.2 <sup>[1]</sup>
<b>SSSDP sub-degree</b>	0.1
<b>Total</b>	<b>3.3</b>

Sources: Legislative Council, Vocational Training Council, and 2021/22 Budget  
 Note: [1] Figure provided by Education Bureau

**Figure 22 Government funding for formal and informal education (2019–20)**

Category	Funding (HKD billion)
<b>Recurrent</b>	
Primary education	22.5
Secondary education	29.9
Post-secondary education	23.9
Others <sup>[2]</sup>	16.1
<b>Nonrecurrent and capital</b>	<b>32.9</b>
<b>Total</b>	<b>125.3</b>

Category	Funding (HKD billion)
<b>CEF</b>	0.2 <sup>[1]</sup>
<b>ERB</b>	0.4
<b>Total</b>	<b>0.6</b>

Sources: Education Bureau, 2021/22 Budget, and Employees Retraining Board  
 Notes: [1] A total operational cost of HKD 0.03 billion for CEF is included

[2] "Others" include government recurrent expenditure on pre-primary education, special education, vocational and professional education and bureau support

Moreover, existing grant and loan schemes for post-secondary and tertiary education are comprehensive but not targeted (**Figure 23**) (**Annex 12**). While it is commendable that students are financially assisted to pursue further and higher education, this report holds that targeted grants and loans in alignment with industry policy—

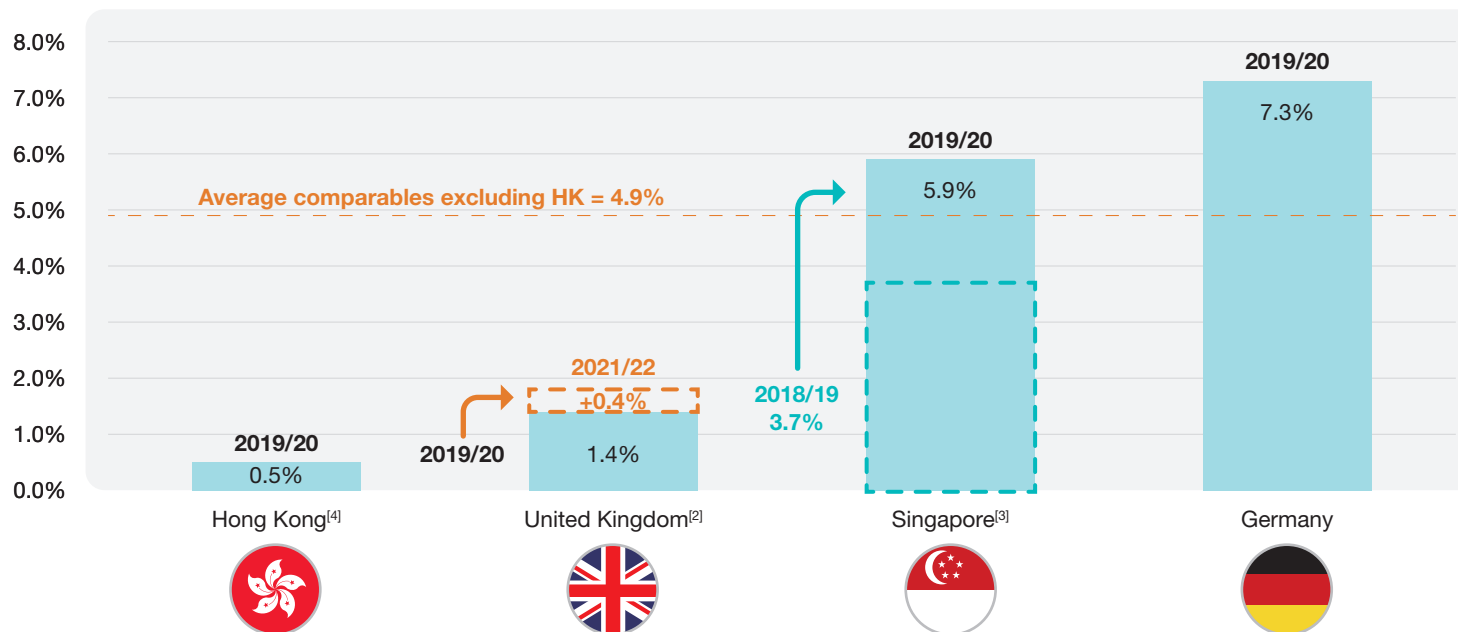
and not just the financial need of the applicant—are needed to direct citizens' acquisition of specific skills, such as digital and cognitive capabilities, thus to facilitate innovation and diversification in our economy.

**Figure 23** Current financial assistance schemes at post-secondary and tertiary level in Hong Kong

	Tertiary Student Finance Scheme – Publicly-funded Programmes (TSFS)	Non-means-tested Loan Scheme for Full-time Tertiary Students (NLSFT)	Financial Assistance Scheme for Post-secondary Students (FASP) <sup>[1]</sup>	Non-means-tested Loan Scheme for Post-secondary Students (NLSPS)	Extended Non-means-tested Loan Scheme (ENLS)
<b>Eligible programmes</b>	Exclusively UGC-funded or publicly-funded full-time programmes offered by recognised institutions under the TSFS		Self-financing full-time locally-accredited programmes		Specific post-secondary / continuing and professional education courses
<b>Means-tested?</b>	Yes	No	Yes	No	No
<b>Grant/Loan</b>	Grant for tuition fees, academic expenses, and compulsory union fees + loan for living expenses	Loan for tuition fees	Grant for academic expenses + loan for living expenses	Loan for tuition fees	Loan for tuition fees
<b>Life-time loan limit (2020/21)</b>	Not applicable	HKD 383,500 (Combined life-time loan limit for NLSFT and NLSPS)	Not applicable	HKD 383,500 (Combined life-time loan limit for NLSFT and NLSPS)	HKD 383,500

Source: Working Family and Student Financial Assistance Agency

Note: [1] FASP is available for registered full-time students aged 30 or below only, and it is the only existing financial assistance scheme with an age limit

**Figure 24 Continuing education as a percentage of total education spending: an international comparison<sup>[1]</sup>**


Sources: Federal Statistical Office of Germany, Government of Singapore, Workforce Singapore, SkillsFuture Singapore, Parliament of the United Kingdom, Department for Education (UK), Education Bureau, Employees Retraining Board, and 2021-21 Budget (HKSAR)

Notes: [1] When calculating the continuing education expenditure as percentages of total education expenditures,

Hong Kong = [Manpower Development (Labour and Welfare Bureau) + Continuing Education Fund disbursements (Working Family and Student Financial Assistance Agency) + Employees Retraining Board Expenditure (net of income)] / Total Education Expenditure

United Kingdom = [Adult Education Budget + Institutes of Technology (Department of Education)] / Total Managed Expenditure (Education)

Singapore = [SkillsFuture Singapore (Ministry of Education) + Workforce Singapore (net of income) (Ministry of Manpower)] / Total Education Expenditure

Germany = [Continuing Vocational Education + Expenditure on Other Educational Opportunities + Assistance to Participants in Continuing Education (Federal Ministry of Education and Research)] / Total Expenditure for Education, Research and Science

[2] 2021/22 data for UK predicts an additional GBP 375m for the National Skills Fund to support national upskilling. The amount is added on top of the 2019/20 figures assuming all other expenditure items remain unchanged

[3] The increase of Singapore continuing education expenditure from 2018/19 to 2019/20 is driven by an increase in transfers from SSG to external institutions and organisations to support reskilling under Mid-Career Enhanced Subsidy and Enhanced Training Support for SMEs; and an increase of grant disbursements from WSG

[4] In the 2020-21 Budget, the HKSAR Government announced an injection of HKD 2.5 billion into the Employees Retraining Fund to enhance the Love Upgrading Special Scheme. While the exact appropriations over years are unknown, the one-off injection amounts to 2.3% of the planned total education expenditure

While Hong Kong only earmarks 0.5% of total education expenditure for continuing education, international counterparts have been increasing their proportionate spending, especially as a response to the COVID-19 pandemic and the dire need for workforce upskilling (**Figure 24**).

Reskilling and upskilling the workforce has become a pressing issue on policy agendas worldwide. Singapore, for example, has increased its continuing education spending for both Workforce Singapore and SkillsFuture Singapore by SGD 183 million and SGD 146 million respectively in the 2019/20 fiscal year. The UK has also budgeted GBP 375 million for the National Skills Fund, as part of the Lifetime Skills Guarantee to provide industry-relevant technical courses, funding for traineeships and loan entitlements.

Hong Kong pales in comparison to the 4.9% average spending of other countries/regions. Even when considering the one-off HKD 2.5 billion injection into the Employees Retraining Fund in 2020/21 and assuming that all funds are spent within the year,

continuing education still only accounts for around 3% of total education expenditure, and will revert to 0.5% the following year. Hong Kong needs to rethink its funding strategy towards continuing education.

Public funding should be used as a lever to promote Applied Education, incentivise private sector participation in upskilling and reskilling, ensure equitable support for learners with different talents and interests, and accelerate the development of high-value-adding industries. Complex and entrenched educational problems cannot be solved merely through resource dumping, which is where targeted financial resources in areas of need can provide effective catalysts for change.



## Recommendation 3.1: Offer a HKD 100,000 lifelong skills development grant to reskill and upskill every individual for their career progression

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Existing financial assistance schemes are either need-based grants or loans, both of which come without target courses and skills; while the latter is more accessible, it may risk placing a long-term strain on learners' finances. Hong Kong needs specifically directed grant schemes to stimulate population-wide upskilling and reskilling, and to sustain their long-term competitiveness. It is recommended that a new Lifetime Skills Development Grant be launched, where every person aged between 18 and 65 would be entitled to up to HKD 100,000 for acquiring targeted skills that they need for developing their careers and unleashing their potential.

As a targeted strategy for future-oriented skills development, eligibility for the Grant should be outcome-based. The applicant would have to provide evidence, verified by their employer or another authoritative agency, that their programme of choice will contribute meaningfully to their career development. If one is seeking a career change, the Grant may be offered conditionally as a loan, to be reimbursed if and only if the applicant can later prove that the course undertaken has meaningfully contributed to their career progression, either in the same or a different industry. To ensure conscientious application for the Grant, a 10–20% co-payment ratio shall apply.

### Case Study 6

#### Partial Tuition Refund Scheme under the Maritime and Aviation Training Fund (MATF)

As part of the HKD 100 million MATF, the “Partial Tuition Refund Scheme for the Specialised Aircraft Maintenance Programme” encourages young people to join the aircraft maintenance industry by providing conditional financial incentives.

One is eligible for the scheme if one has:

1. Completed either the Higher Diploma in Aircraft Maintenance Engineering or the Diploma of Vocational Education (Aircraft Maintenance), and
2. Be employed in a job related to aircraft maintenance at a local Approved Maintenance Organisation under Hong Kong Aviation Requirements—Part 145 (HKAR-145) within six months of graduation.

Eligible applicants may receive a 50% refund of total tuition fees paid for their study programme, subject to an upper limit of HKD 50,000.

Source: Transport and Housing Bureau





The MATF's Partial Tuition Refund Scheme offers an example of how outcome-based conditional grants may be leveraged to promote career development initiatives, that lead to economy-wide upskilling and reskilling. Such schemes should not be limited to singular industries. Instead, a Lifetime Skills Development Grant with broad coverage should be launched for citizens in any profession to participate in and collectively lead the upgrading and transformation of their industry sector. Moreover, the Grant should not be limited to full-time programmes; flexible learning options—such as part-time, online, or hybrid programmes—should also be promoted to attract wider participation.

As mentioned in **Recommendation 1.1**, the HRPC should lead and coordinate efforts to set employer-led standards and to conduct industry trend forecasts and skills mapping. They would serve as useful references for workers seeking career progression either in the form of a promotion or a job change. With the HRPC providing references for in-demand skills and the QF benchmarking skill and competency levels, the Lifelong Skills Development grant shall then support citizens in funding targeted learning and training. Together, industry blueprints, the QF, and the Lifelong Skills Development Grant will create an ecosystem that incentivises targeted lifelong learning.

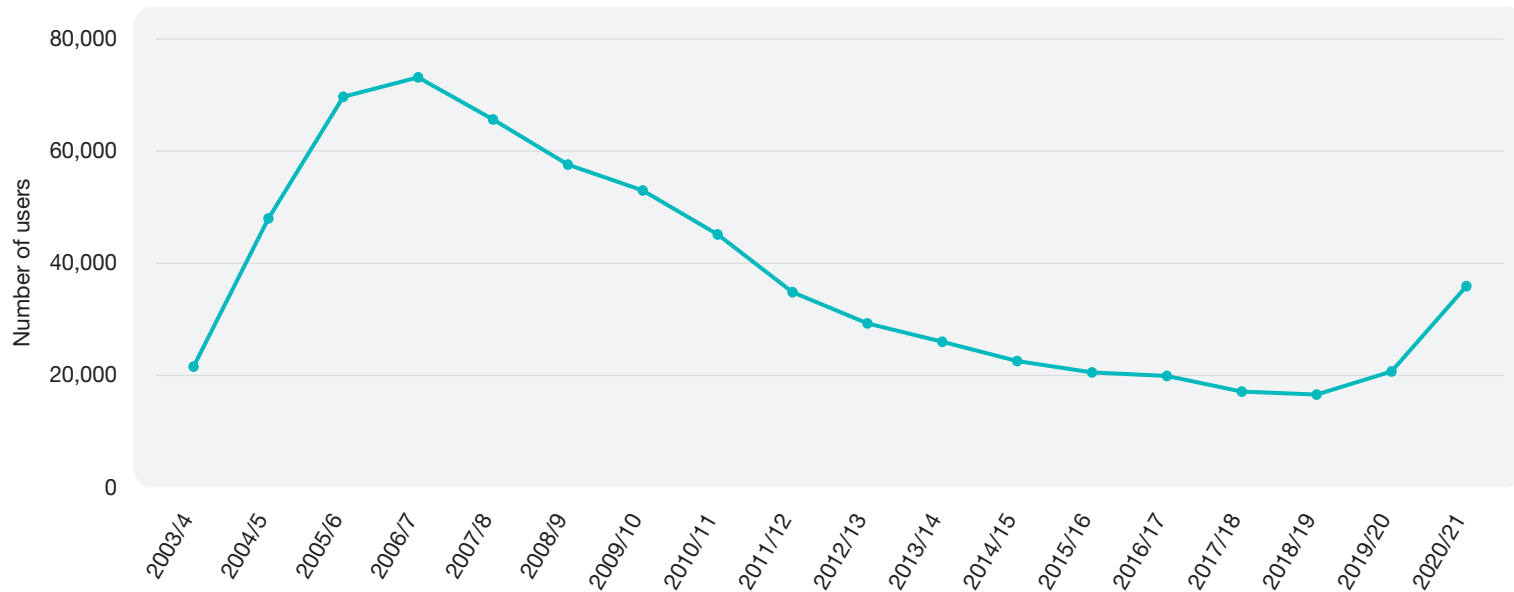


## Recommendation 3.2: Revamping the Continuing Education Fund (CEF) to target innovative industries with regular industry trend forecasts, broader course selection and eligibility, and a time-limited injection mechanism

The Continuing Education Fund (CEF) plays a critical role in stimulating lifelong learning among the general public. However, the CEF is merely a fee-reimbursement mechanism at present. It reimburses, minus a co-payment ratio, learners after they have

undertaken registered “continuing education” courses and has helped motivate course providers reach more students (WFSFAA, 2020).

Figure 25 The CEF has seen a continuous drop in participation after an initial spike



Source: Working Family and Student Financial Assistance Agency

As **Figure 25** illustrates, CEF usage has dropped from a peak of more than 70,000 users per year during 2005 to 2007 to a trough below 20,000 in 2018/19. In order to raise the CEF's utilisation rate, the Government expanded the scope of the CEF to include all QF-recognised courses, increased the maximum amount of CEF credit per person from HKD 10,000 to HKD 20,000, and relaxed the upper age limit to 70 years old.

In contrast, SkillsFuture Singapore has achieved greater success in incentivising participation from all age groups. SSG injects one-off, time-limited credits that expire after five years to incentivise immediate usage. It offers over 28,000 courses, with the largest subject category being Information and Communications Technology (ICT). In addition, SSG credits are eligible for online courses, such as MOOCs. Singapore's "training participation rate for the resident labour force aged 15 to 64" reached 49% in 2020 (Singapore Government Manpower Research and Statistics Department, 2021), compared to a similar measure of 20.4% in Hong Kong (Legislative Council, 2020).

## Case Study 7 France's Personal Training Account (*Compte Personnel de Formation – CPF*)

Initially introduced in 2015 and later reformed in 2018, France's Personal Training Account (CPF) is a cumulative credit-based funding provision that encourages in-service workers to continuously access training throughout their working lives.

From 1 January 2020, each full-time employee or jobseeker is credited with EUR 500 per year in their CPF, and unskilled workers<sup>[1]</sup> are credited with EUR 800 per year in their CPF; the CPF is subjected to a cumulative ceiling of EUR 5,000 and EUR 8,000 for full-time employees or jobseekers and unskilled workers, respectively. Credits for self-employed workers and part-time employees working less than 50% of full-time hours are prorated.

Source: Perez and Vourc'h, 2020

Note: [1] Unskilled workers are defined as those who do not hold any qualification at or above the French diploma level 3

As a targeted funding mechanism to support workers' professional development, CPF credits can be used anytime until one reaches retirement age; however, given that CPF has a ceiling, workers are incentivised to continuously utilise their credits so that they can receive more. Within the CPF scheme, the Career Change Project (*Projet de Transition Professionnelle*) offers workers paid leave to access training, addressing the lack of time that often discourages training while being employed.

The CPF is financed by mutualised funds from employers' statutory contribution. Small businesses with less than 10 employees are not required to make any contribution but may still fund training under the CPF.

Instead of a reimbursement mechanism, the CEF should be enhanced as a targeted incentive system that promotes lifelong learning, boosting specific in-demand skills for economic development and innovation. For example, a more future-proof course selection that features ICT classes may attract a broader pool of users, and the WFSFAA would need to actively reach out to course providers. To equip citizens with knowledge and skills necessary for the digital transformation of our economy, a digital skills entitlement credit of HKD 5,000, which can only be used for selected course categories, could be injected to encourage all citizens to contribute to the technological upgrading of their professional fields. Regular and expiring injection of credits may encourage citizens to continually learn new skills, and overseas online courses may be included to offer additional choices and incentives for citizens to continuously upskill and reskill. Finally, the 70-year-old upper age limit for the CEF should be removed.



Forward-looking  
course selection



Regular, expiring  
injections



Removal of upper  
age limits



Inclusion of overseas  
online courses



Digital skills  
entitlement

### Recommendation 3.3: Enhancing financial aid under the Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) to target priority sectors, increasing the coverage of sub-degree programmes from 2,000 to 4,000 students, and including part-time courses





Launched under the 2014 Policy Address, the Study Subsidy Scheme for Designated Professions/Sectors (SSSDP) was designed to subsidise students pursuing “designated full-time locally accredited self-financing undergraduate programmes” covering ten disciplines (Concourse for Self-financing Post-secondary Education, 2021). However, three major problems exist in the SSSDP as a funding scheme.

Firstly, SSSDP does not sufficiently target emerging industries with the greatest transformative potential; the defined disciplines are overly broad, with too little variations concerning the amount allotted per student to cater for industry-specific needs. There should be a rigorous review process to ensure that courses covered will actually contribute to a promising career and support high-value emerging industries that will lead Hong Kong’s economic transformation. Instead of allocating a fixed amount of subsidy per

student, variable amounts of subsidies should be distributed according to each programme’s actual costs incurred. This would entail varying numbers of contact hours and distinct types of work-based learning components.

Secondly, funding for SSSDP, especially in the sub-degree category, still leaves out a significant portion of students. As **Figure 26** illustrates, government subsidies for SSSDP students, apart from constituting only around 20% of the subsidies for UGC-funded sub-degrees, only cover one-eighth of the self-financing sector (Legislative Council, 2021). As a result, 56% of sub-degree students in Hong Kong fall outside of government subsidy (*ibid.*; Vocational Training Council, 2021). The SSSDP should be expanded in its sub-degree coverage from 2,000 to 4,000 students to better support courses that feed into the economy’s emerging industries.

Figure 26 Unit costs and implied government subsidies vary among sub-degree students<sup>[1]</sup>

	 <b>1,095 students</b> (~4%)	 <b>8,359 students</b> (~32%)	 <b>1,922 students</b> (~7%)	 <b>14,408 students</b> (~56%)
(HKD)	<b>UGC-funded sub-degree</b>	<b>VTC HD</b>	<b>Self-financed HD (SSSDP)<sup>[2]</sup></b>	<b>Self-financed sub-degree (without SSSDP)<sup>[3]</sup></b>
<b>Unit cost</b>	193,000	105,000	64,160	64,160
<b>Implied government subsidy</b>	161,425	73,430 – 74,200	31,981	0

Sources: Legislative Council, Committee on Self-financing Post-secondary Education, and Vocational Training Council

Notes: [1] Data used for UGC-funded sub-degrees is as of 2019/20 while the others are as of 2020/21

[2] Takes average cost of all SSSDP units

[3] Assumes average weighted cost of SSSDP units



Finally, the SSSDP currently only supports full-time programmes. To allow learners of all ages to further their education more flexibly and support a society-wide lifelong learning culture, the SSSDP should cover part-time courses.

In December 2020, EDB launched the Pilot Project on the Development of Applied Degree Programmes (GovHK, 2020). The project invites experienced providers covered under the SSSDP to participate in the trial provision of Applied Degree programmes which emphasise the integration of theoretical and practical learning elements in close connection with industry developments. The Government could take this opportunity to review the mechanism by which resources are granted to degree programmes; Applied Degrees could provide an articulation pathway for Higher Diploma students.

### Recommendation 3.4: Setting up a grant fund to support industry organisations to co-develop and co-deliver curricula with academic institutions, and ultimately to co-construct progression pathways

In Hong Kong, industry participation in education is generally either limited to monopolistic industries or offered with limited scale and recognition. A conceptual gulf between “education” (academic) and “work” (industry) persists in the Government’s policymaking and hinders Hong Kong’s talent development. **Nascent** industries booming with start-up communities have masses of potential to contribute to the city’s development of Applied Education, but they are largely uninvolved. The Government should acknowledge the ability of industries in providing learning programmes that supply skilled talents, and the role of industry in education should be broadened and deepened. As such, a grant fund is proposed to amplify school-industry partnerships in the below three areas.

Firstly, to incentivise co-development of curricula. Applied Education involves not just in-classroom lectures or seminars but also practical learning activities outside the classroom. Work-based learning programmes, like the VTC’s Earn and Learn scheme where students have access to direct teaching for what they may encounter in future job positions, shall form an integral part of Applied Education. Thus, learning content in Applied Education needs to be redefined as not just textbook knowledge but also hands-on skilling activities that will shape learners into more capable “do-ers”.

To ensure that subject curricula are relevant to industry trends, industry organisations should take part in co-designing curricula with academic institutions, and the Government should offer financial incentives for collaborations on the curriculum design, delivery, and assessment processes.



## Case Study 8 The Corporate Tech Academy Network

Co-founded by six major corporations<sup>[1]</sup> and in collaboration with VTC, the Corporate Tech Academy Network (CTAN) provides accredited courses at various QF levels with industry contextualised curricula. It also offers internships and potential job placements after students' graduation (MTR Academy, 2019).

While the CTAN may be an exemplary pioneer in terms of public-private partnerships in Hong Kong's educational landscape, it remains limited to large corporations with sufficient resources.

Sources: Respective CTAN websites

Note: [1] Includes MTR Academy, Towngas Engineering Academy, HKPC Academy, Hong Kong Institute of Construction, CLP Power Academy, and Hong Kong International Aviation Academy

## Case Study 9 Australia's Gateway to Industry Schools Program

The Gateway to Industry Schools Program (GISP), led by the Queensland state government in Australia, exemplifies a state-led approach in school-industry partnerships. Spanning ten economic sectors, including advanced manufacturing, aerospace, information and communications technology, and screen and media, GISP is supported with AUD 2.7 million of government funding and involves 260 participating schools. The core principle of GISP is to integrate work-based learning within regular secondary school curricula and allow children to acquire first-hand knowledge and experience in different industries from an early age.

Curricula and training programmes are co-designed and co-delivered by schools and renowned industry partners. For example, the advanced manufacturing GISP is hosted by the Queensland Manufacturing Institute, which connects over 50,000 manufacturing businesses in Queensland, whereas the aerospace GISP is hosted by Aviation Australia, Australia's leading aviation training organisation, and supported by businesses such as Airbus, Boeing, and Qantas. GISP also covers a few **nascent** and **fragmented** industries. For example, the Australian Computer Society coordinates work for the ICT GISP, and Essential Screen Skills coordinates work for the Screen and Media GISP.

Sources: The State of Queensland Department of Employment, Small Business and Training; Queensland Manufacturing Institute; and Aerospace Gateway to Industry Schools



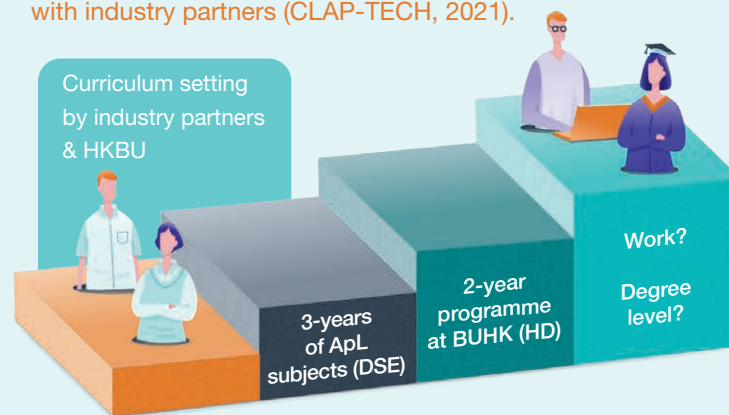
For both CTAN and GISP, a coordinated effort led either by industry trendsetters or business chambers is the key to success. CTAN represents a collaboration between the leaders of six monolithic industries, where practices, standards, and regulations are already **mature** and **consolidated**. Meanwhile, GISP includes a range of different industries and utilises intermediary organisations to facilitate development efforts in more **fragmented** industries. In Hong Kong, business chambers could play a similar role to facilitate school-industry collaboration and to develop industry standards as guides for school curricula.

To hasten the expansion of industry-contextualised learning programmes, the Government should make use of the proposed grant fund to foster collaborations between academic institutions and businesses. Chambers shall act as influential and credible intermediaries connecting businesses, government departments, and education providers. The grant fund shall support research and development costs for new study programmes as well as training costs for experienced teachers; it shall also be utilised to encourage businesses' participation, especially for Small and Medium Enterprises (SMEs). Ultimately, the grant fund would act as a lever to accelerate innovation and future-oriented talent development, especially in allowing learners with non-academic interests to thrive.

## Case Study 10

### Jockey Club Multiple Pathways Initiative—CLAP-TECH

As an integration of CLAP@JC (Career and Life Adventure Planning) and P-Tech by IBM, CLAP-TECH is a five-year learning pathway allowing young people to progress from a HKDSE Applied Learning course to a new Higher Diploma in Hong Kong Baptist University and beyond. Following the launch of the first pathway on ICT (focusing on AI, cybersecurity and data analytics) in 2019/20, the second pathway on creative technology and innovation was launched in 2021/22. The curricula are co-developed and co-taught by secondary schools, university, and industry partners, enabling academic success and career readiness. Graduates will be given priority for employment interviews with industry partners (CLAP-TECH, 2021).



Source: Jockey Club Multiple Pathways Initiative “CLAP-TECH Pathway”

Finally, to support a comprehensive ecosystem with clear and promising progression pathways, the Education Bureau should take the opportunity to establish Applied Learning (ApL) in the HKDSE as a viable pathway to further study, starting with raising the maximum attainable score. This should be followed up with aptitude-based admissions as suggested in **Recommendation 2.1**, and collaborations with trusted industry partners, such as business chambers or large corporations, to enhance work-integrated learning programmes. The Government could consider establishing

subvented Universities of Applied Sciences to balance its support of academic education and VPET, and to ensure that students with technical interests and talents have a progression pathway beyond sub-degrees. Applied Education pathways with well-recognised secondary- and post-secondary-level qualifications should not be limited to singular skills or even industries but instead should be developed with the objective of providing wide-ranging options for our society's diverse talents.

### **Recommendation 3.5: Encouraging Small and Medium Enterprises (SMEs) to adopt industry skills frameworks, such as the Specification of Competency Standards (SCSs), in recruitment, training and promotions, by means of property rental, funding, and digital support**

SMEs constitute 98% of the business establishments in Hong Kong and employ 45% of the workforce in the private sector (Trade and Industry Department, 2021). SMEs are often leaders of innovation business angles and potential technological disruptors; if provided with effective incentives, they may also become trendsetters of a comprehensive set of industry skills frameworks that help promote lifelong learning.

As mentioned in **Chapter 4**, SCSs are not often involved in education and training programmes, and their lack of utilisation poses an obstacle towards developing a systematic ladder that encourages people to continuously reskill and upskill.



Digital human resources management support for expansion



Property rental with conditions attached for lifelong learning



Successful case studies with pay raises and promotions



Training cost subsidies

To support SMEs' adoption of industry skills frameworks, the Government may take reference from Singapore's experience. Incentives could include digital human resources management support for SMEs to expand their businesses, rental offers with conditions attached for lifelong learning, promotion of successful case studies where employees are rewarded with pay raises and promotions, and direct training cost subsidies. For SMEs, SCSs

and the QF could act as benchmarks to develop more robust and progressive human resources management strategies that support talent recruitment, internal entrepreneurial drive, and other business interests. Through wider adoption across SMEs, industry skills frameworks could then be popularised as a credible reference point with which employees can consult for their career development and learning journeys.

### **Recommendation 3.6: Providing financial incentives—such as tax deductibles and absentee subsidies—for firms to conduct more continuous professional development (CPD) and work-based training**

Unlike large corporations, SMEs have less extensive in-house skill development and evaluation systems. Employees at SMEs face greater difficulties in accessing opportunities to upskill and reskill.

Businesses, especially for smaller and less established ones with insufficient capacity to conduct CPD for existing employees, would need financial incentives to provide training opportunities to employees and students alike.

For example, the Pilot Programme to Promote Talent Training for the Asset and Wealth Management (WAM) Sector (2016–2023) consists of a conference subsidy scheme that provides HKD 150,000–250,000 for organisers of WAM training conferences. However, only non-profit organisations, higher education institutions, and a vague category of professional and training bodies are eligible for the scheme. Thus, the scheme provides no incentive for SMEs without their own academies, and has little effect in fostering systematic school-industry collaboration.

Singapore faced a similar problem: SMEs in Singapore employ around 70% of the workforce but only constitute 30% of employer-provided in-service training in 2018/19 (Ang, 2019). To address this gap, SkillsFuture Singapore (SSG) leads a series of regular and *ad hoc* schemes targeted specifically at helping SMEs design and deliver skill evaluation and training programmes. Within the Industry Transformation Maps, SSG's Skills Framework (much like Hong Kong's SCSs) provides a directory of skills and training programmes suitable for particular industries. To incentivise SMEs' utilisation of SkillsFuture, SSG funds up to 90% of course fees and up to 80% of absentee payroll when SMEs sponsor their employees to pursue its courses (SSG, 2020).

On the other hand, the UK National Apprenticeship Service operates on an apprenticeship levy system that helps fund traineeships and apprenticeships. SMEs are exempted from the levy. The Service provides GBP 1,500–27,000 of funding to businesses per apprentice depending on industry and duration. In 2021, the Scottish Flexible Workforce Development Fund provides GBP 15 million for UK employers subject to the levy as well as

Scottish SMEs to access training by local colleges, the Open University in Scotland, and independent providers. Australia's Industry Skills Fund also offers a subsidy of up to 75% training costs to SMEs (Australian Government Department of Industry, 2014).

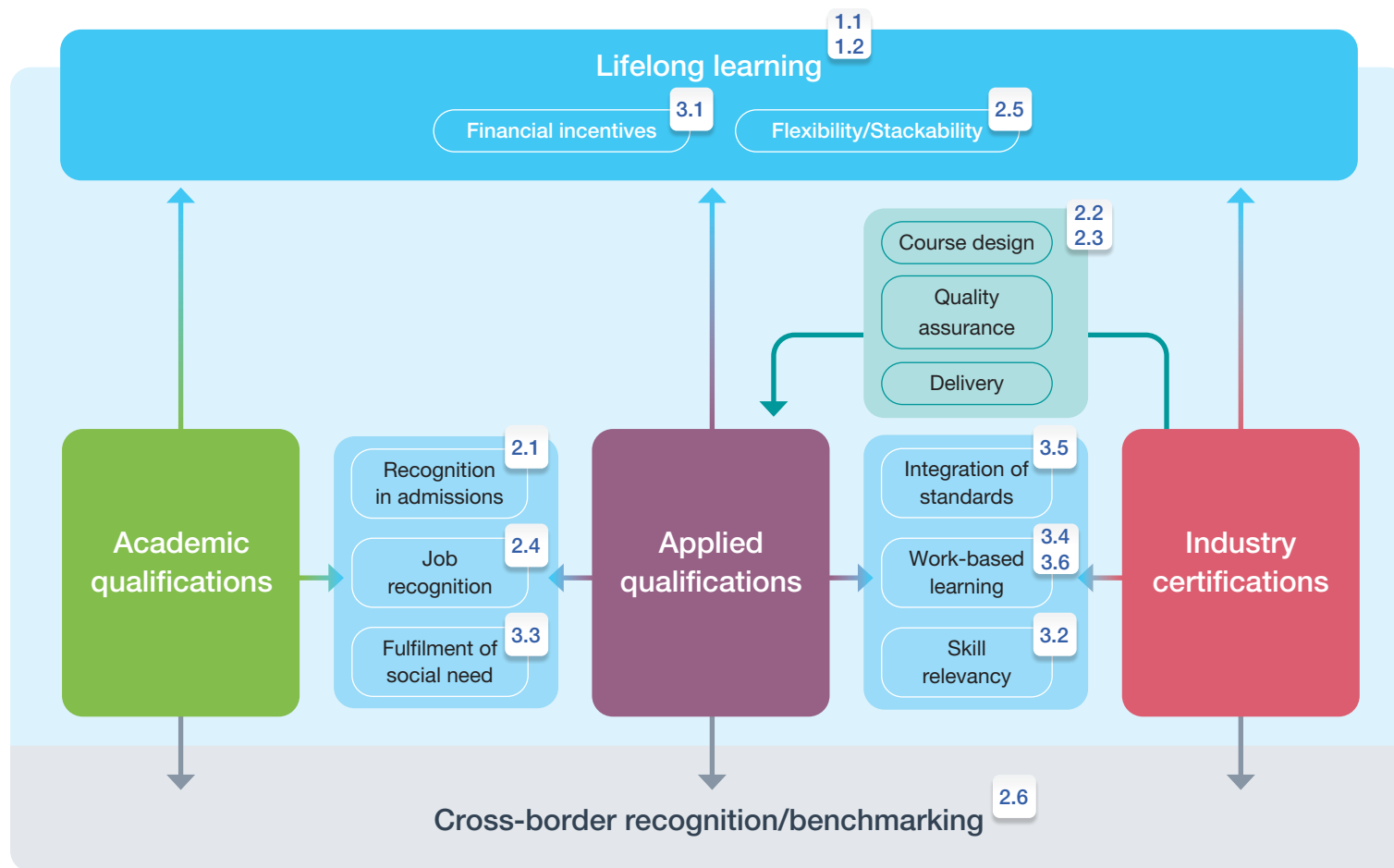
The Hong Kong Government should attempt similar initiatives such that SMEs are incentivised to promote lifelong learning opportunities for in-service workers, especially for emerging and strategic industries. Tax deductibles should be introduced to support employers' expenditure for in-house training and other upskilling and reskilling costs. Targeted subsidies should be introduced to encourage in-service workers to undertake learning programmes. The Government should consider subsidising employers for absentee payroll while their employees undertake external CPD activities.

## Conclusion

Hong Kong is in dire need of a paradigm shift in how we regard education. Learning can no longer be confined to an individual's formal years of schooling; instead, it should diffuse throughout all stages of life. Taking the theoretical framework proposed in Chapter 3 and applying it to Hong Kong's talent landscape, this report designs various policy suggestions to enhance Hong Kong's future development, establish a roadmap for diverse learners, and foster a culture of lifelong learning that will build a learning society.

This report puts forward 14 policy recommendations for enhancing talent competitiveness under the three main areas of **governance, accreditation, and funding** for the Government's consideration. We believe that it is only by going forward with the integration of schools, industries, and all of society that Hong Kong can equip citizens from all walks of life with socially-relevant knowledge and skills, and create a learning society ready to embrace the perpetual metamorphosis in the 21st century.





## Annex 1

**Excerpts from the UK's *Skills for Jobs: Lifelong Learning for Opportunity and Growth***

This White Paper aims to strengthen links between employers and further education providers. We will place employers at the heart of defining local skills needs and explore a new role for Chambers of Commerce and other business representative organisations working with local colleges and employers... As the rate of technological change increases, further education will be crucial to building an agile and adaptable workforce. Provision will be flexible—whether full-time or part-time; on-the-job or off-the-job; a first ever job, or a change of career. Everyone will have the chance to retrain, update their skills and move into growth sectors, when they need to.

This White Paper sets out how we will reform further education so it supports people to get the skills our economy needs throughout their lives, wherever they live in the country. Focusing post-16 skills on this core mission will increase productivity, support growth industries, and give individuals opportunities to progress in their careers.



Promoting “advanced technical and higher technical” education	Employer-led standards	Support lifelong learning
<ul style="list-style-type: none"> <li>• Use the new GBP 2.5 billion National Skills Fund to enhance the funding to support adults to upskill and reskill. This will include an offer, backed by GBP 95 million in 2021–22, for all adults to achieve their first full advanced (level 3) qualification</li> <li>• Expand our flagship Institutes of Technology programme to every part of the country by the end of this Parliament, to spearhead the increase in higher-level technical skills in Science, Technology, Engineering and Maths</li> <li>• Continue to roll out T Levels, to prepare students for entry into skilled employment or higher levels of technical study, including apprenticeships</li> <li>• Reform higher technical education (levels 4 and 5) with a new approval system based on employer-led standards</li> </ul>	<ul style="list-style-type: none"> <li>• Give employers a central role working with further education colleges, other providers and local stakeholders to develop new Local Skills Improvement Plans which shape technical skills provision so that it meets local labour market skills needs</li> <li>• Pilot Local Skills Improvement Plans in Trailblazer local areas, exploring an approach where they are led by accredited Chambers of Commerce and other business representative organisations in collaboration with local providers</li> <li>• Make Strategic Development Funding available in 2021/22 in a number of pilot areas to support... local priorities that have been agreed with local employers</li> <li>• Ensure government has up-to-date and expert advice on the labour market and national skills gaps from the Skills and Productivity Board</li> <li>• Align post-16 technical and higher technical education and training to employer-led standards set by the Institute for Apprenticeships and Technical Education, so skills provision meets skills need</li> <li>• Invite proposals through the Strategic Development Fund to establish College Business Centres within further education colleges to work with employers in a designated sector on business development and innovation</li> </ul>	<ul style="list-style-type: none"> <li>• Implement the flexible Lifelong Loan Entitlement to the equivalent of four years of post-18 education from 2025</li> <li>• Stimulate the provision of high-quality higher technical education (levels 4 and 5)</li> <li>• Introduce pilots to stimulate higher technical education and incentivise more flexible and modular provision</li> <li>• Determine how we can best stimulate credit transfer between institutions and courses</li> <li>• Improve how teaching is delivered so that it is more accessible, with the use of digital and blended learning</li> <li>• Provide clear information about career outcomes through occupational maps, wage returns data and ensuring providers give pupils information about all options</li> </ul>

Source: Department of Education (UK)

## Annex 2 Excerpts from China's Education Modernisation 2035 Plan (《中國教育現代化2035》)<sup>[1]</sup>

《中國教育現代化2035》分為五個部分：一、戰略背景；二、總體思路；三、戰略任務；四、實施路徑；五、保障措施。

《中國教育現代化2035》提出，推進教育現代化的總體目標是：到2020年，全面實現「十三五」發展目標，教育總體實力和國際影響力顯著增強，勞動年齡人口平均受教育年限明顯增加，教育現代化取得重要進展，為全面建成小康社會作出重要貢獻。

2035年主要發展目標是：建成服務全民終身學習的現代教育體系、普及有質量的學前教育、實現優質均衡的義務教育、全面普及高中階段教育、職業教育服務能力顯著提升、高等教育競爭力明顯提升、殘疾兒童少年享有適合的教育、形成全社會共同參與的教育治理新格局。

構建服務全民的終身學習體系。構建更加開放暢通的人才成長通道，完善招生入學、彈性學習及繼續教育制度，暢通轉換管道。建立全民終身學習的制度環境，建立國家資歷框架，建立跨部門跨行業的工作機制和專業化支持體系。建立健全國家學分銀行制度和學習成果認證制度。強化職業學校和高等學校的繼續教育與社會培訓服務功能，開展多類型多形式的職工繼續教育。








提升一流人才培養與創新能力。分類建設一批世界一流高等學校，建立完善的高等學校分類發展政策體系，引導高等學校科學定位、特色發展。持續推動地方本科高等學校轉型發展。加快發展現代職業教育，不斷優化職業教育結構與佈局。推動職業教育與產業發展有機銜接、深度融合，集中力量建成一批中國特色高水準職業院校和專業。優化人才培養結構，綜合運用招生計劃、就業回饋、撥款、標準、評估等方式，引導高等學校和職業學校及時調整學科專業結構。加強創新人才特別是拔尖創新人才的培養，加大應用型、複合型，及技術技能型人才培養比重。

開創教育對外開放新格局。全面提升國際交流合作水準，推動我國同其他國家學歷學位互認、標準互通及經驗互鑒。

Source: The State Council of the People's Republic of China

Note: [1] The original document is available in Chinese only

Annex 3 School-industry partnership policies in Australia, the United Kingdom, and Hong Kong

	 <p>Work experience</p>	 <p>Industry training</p>	 <p>Teacher professional development</p>	 <p>Industry contextualised curriculum</p>
	<ul style="list-style-type: none"> <li>Grants for internships (AUD 1,000 for work-integrated learning internships), wage subsidies (AUD 10,000 for workers aged 15–25, 50% wage support for apprentices and trainees)</li> </ul>	<ul style="list-style-type: none"> <li>Industry skills councils provide industry-specific training packages in sectors identified for skill shortages</li> </ul>	<ul style="list-style-type: none"> <li>Academic staff in universities participate in work-integrated training activities through incentive structures</li> </ul>	<ul style="list-style-type: none"> <li>Universities identify best practices with employers and industry bodies to incorporate into work-integrated learning curriculum</li> </ul>
	<ul style="list-style-type: none"> <li>National Apprenticeship Service has facilitated over 2.3 million placements since 2015, with funding from GBP 1,500–27,000</li> </ul>	<ul style="list-style-type: none"> <li>School-based industry training is provided by employers both on and off the job in line with National Occupational Standards</li> </ul>	<ul style="list-style-type: none"> <li>Training of Trainer courses ensure TVET teachers possess up to date competencies</li> </ul>	<ul style="list-style-type: none"> <li>Industrial Skills Strategy connects employers and Sector Skills Councils to develop curricula with training providers</li> </ul>
	<ul style="list-style-type: none"> <li>Earn and Learn apprenticeships are only available to VTC students, with a subsidy of HKD 2,000–3,000/month. ~6,000 trainees have participated since 2014</li> </ul>	<ul style="list-style-type: none"> <li>Industrial Attachment opportunities are provided to VTC and post-secondary students, with a minimum of 90 hours</li> </ul>	<ul style="list-style-type: none"> <li>Continuous Professional Development (CPD) programmes are offered to VPET instructors at institutions' discretion</li> <li>8 CPD seminars were organised for HKDSE Applied Learning teachers in 2020/21</li> </ul>	<ul style="list-style-type: none"> <li>Industry Training Advisory Committees have drafted 45 Specification of Competency Standards (SCS)</li> <li>Out of 561 QF level 4 sub-degree programmes<sup>[1]</sup>, 6 have based their curricula on relevant SCSs</li> </ul>

Sources: Universities Australia; Department of Education (UK); Department of Business, Energy, and Industrial Strategy (UK); Vocational Training Council; Committee on Self-financing Post-secondary Education; and Hong Kong Council for Accreditation of Academic and Vocational Qualifications  
 Note: [1] Defined as Associate and Higher Diploma programmes from self-financing post-secondary institutions

## Annex 4

## Institutions in Singapore offering aptitude-based admission

Universities (30% of intake)	Polytechnics (30–50% of intake <sup>[1]</sup> )
National University of Singapore	Republic Polytechnic
Singapore Management University	Temasek Polytechnic
Nanyang Technological University	Singapore Polytechnic
	Nanyang Polytechnic
	Ngee Ann Polytechnic

Sources: *Straits Times*, Joint Portal of the Polytechnics of Singapore

Note: [1] Polytechnics can admit up to 50% of students through aptitude-based admissions on a course-level basis

## Annex 5

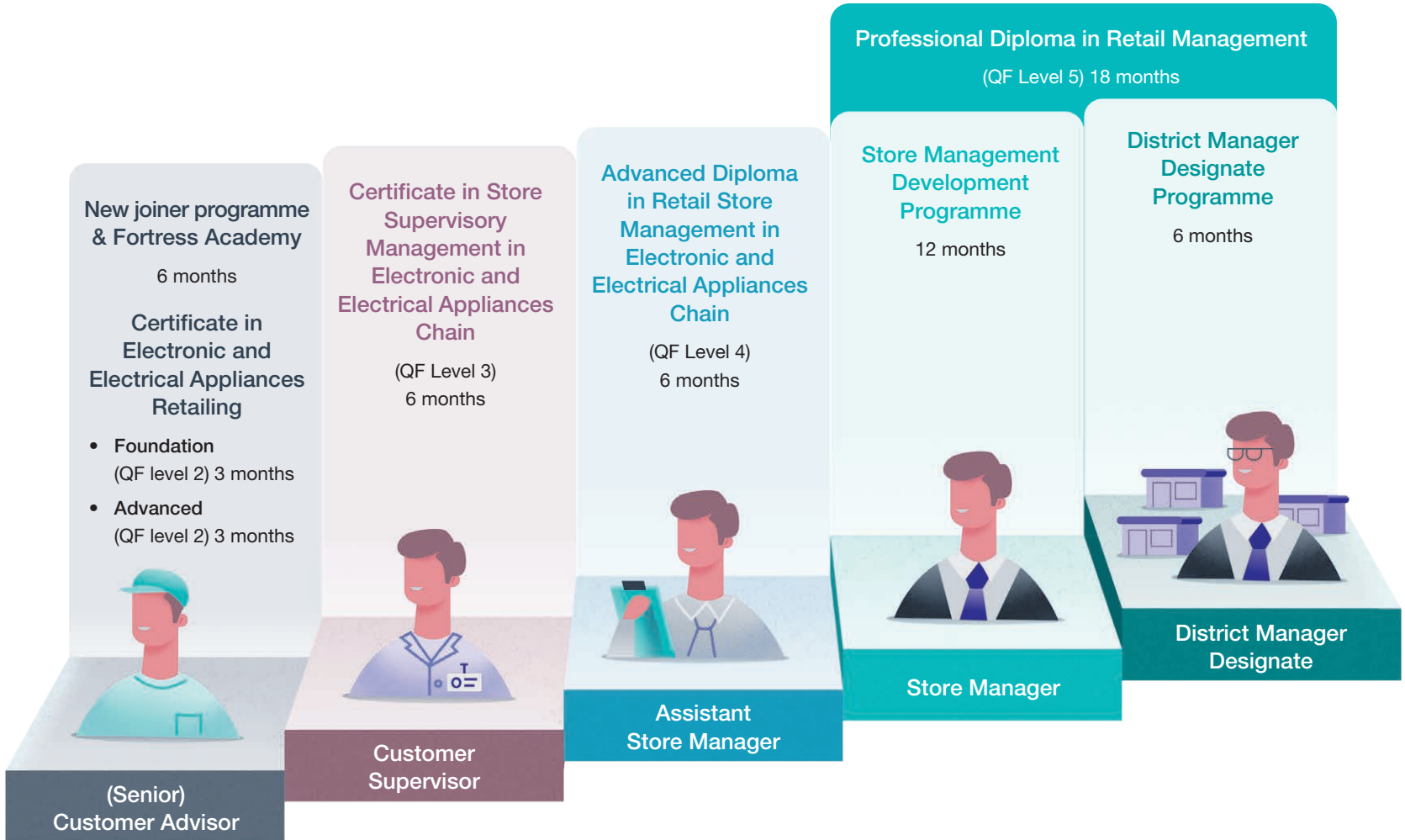
## Hong Kong Council for Accreditation of Academic and Vocational Qualifications' Four-Stage Quality Assurance Process

Stage	Purposes
Initial Evaluation (IE)	<ul style="list-style-type: none"> <li>Evaluates whether an operator has the capacity to effectively conduct the development, delivery, assessment and quality assurance of its learning programmes and services</li> <li>For new operators the standard route is a combined IE and LPA exercise</li> <li>Must specify the QF level of their intended programmes</li> </ul>
Learning Programme Accreditation (LPA)/ Re-accreditation	<ul style="list-style-type: none"> <li>Accredits and/or re-accredits a learning programme to determine whether its planning and management, syllabuses, delivery, and assessment are able to achieve the stated objectives and learning outcomes</li> <li>Operators are required to have IE/IR status to have its learning programmes accredited at the approved QF level</li> <li>LPA status is valid for <math>n + 1</math> years, where "n" is the programme duration</li> </ul>
Programme Area Accreditation (PAA)	<ul style="list-style-type: none"> <li>Operators with a good track record in quality assurance and programme delivery may apply for PAA within specific Areas of Study and Training of its learning programmes after seven years of operation after successful LPA/re-LPA by HKCAAVQ</li> <li>Upon obtaining PAA status, operators may develop and operate learning programmes within their Area at the approved QF level or lower without further accreditation</li> </ul>
Periodic Institutional Review (PIR)	<ul style="list-style-type: none"> <li>Operators must undertake PIR every five years to maintain their PAA status</li> </ul>

Source: Hong Kong Council for Accreditation of Academic and Vocational Qualifications

Service points	Respective industry fields
University College for Agrarian and Environmental Pedagogy	Agriculture and Environment
aufZAQ	Children and Youth Work
ibw	Economic Research
Quality Austria	System, Product, and Training Certification
Austrian Institute for Research on Vocational Training	Vocational and Professional Training
AQ Austria (Agency for Quality Assurance and Accreditation Austria)	Higher Education

Sources: OeAD, Agency for Education and Internationalisation; National Coordination Point for the NQF in Austria; and Austrian Federal Ministry of Education, Science and Research



Source: AS Watson Retail Academy



The Hong Kong University of Science and Technology	<ul style="list-style-type: none"> <li>• Business English for Non-Native Speakers</li> <li>• Full-Stack Web Development with React Specialization</li> <li>• Full Stack Web &amp; Multiplatform Mobile App Development</li> <li>• FinTech: Finance Industry Transformation and Regulation</li> </ul>
The Chinese University of Hong Kong	<ul style="list-style-type: none"> <li>• Doing Business in China</li> </ul>
The University of Hong Kong	<ul style="list-style-type: none"> <li>• FinTech</li> <li>• Epidemics – Origins, Spread, Control and Communication</li> </ul>
The Hong Kong Polytechnic University	<ul style="list-style-type: none"> <li>• Fashion Design and Creation</li> <li>• International Hospitality Management</li> <li>• Introduction to Stroke Care</li> <li>• Business Excellence in a knowledge-driven Industry 4.0 world</li> </ul>

Source: Class Central



## Microcredential Marketplace



### Versatile online marketplace

Part of National Credentials Platform: allows students to compile, display, and share their micro-credentials



### Funding support

20,000 subsidised micro-credentials available from universities and higher education providers



### Integration with VET

Operational framework for accrediting micro-credentials in the national vocational education and training (VET) system



## Common Microcredential Framework (CMF)

### Criteria for inclusion of micro-credentials

- Total workload (or study time) of 100–150 hours for a summative assessment
- Develop industry-recognised skills endorsed by employers
- Designed to fit alongside work and other commitments
- European Qualifications Framework level 6 and 7 (bachelor or master)
- Recognised for credit directly OR as prior learning (4 to 6 credits in European Credit Transfer and Accumulation System)

## Annex 10 European Qualifications Framework (EQF)

EQF Level	Examples of TVET qualifications in different countries
1	<b>Malta:</b> VET Level 1 <b>Germany:</b> Vocational Training Preparation
2	<b>Malta:</b> VET Level 2 <b>United Kingdom:</b> National Vocational Qualifications Level 1
3	<b>Ireland:</b> Level 3 Cert <b>Luxembourg:</b> Vocational Aptitude Diploma
4	<b>Malta:</b> VET Diploma
5	<b>Malta:</b> VET Higher Diploma <b>United Kingdom:</b> Higher National Certificate and Diploma
6	<b>Germany:</b> Master Craftsman (Certified), Operative IT Professional (Certified)
7	<b>Czech Republic:</b> Senior Detective (Czech Republic), Chemical Engineer Product Manager <b>Germany:</b> Strategic IT Professional (Certified)
8	<b>Estonia:</b> Chartered Engineer, Chartered Architect

Source: European Qualifications Framework

## Annex 11 Excerpts from the Key Points issued by the Education Bureau of Shenzhen Municipality in 2021

## Key targets issued by Education Bureau of Shenzhen Municipality (2021)

Shenzhen-Hong Kong education exchange	School-industry collaboration	Lifelong learning
<p>Develop a <b>“Four Mutual” cooperation</b> between universities and vocational institutions (<b>joint hiring of professors, shared courses and curricula, transfer of school credits, and collective diplomas</b>);</p> <p>Jointly build a vocational education and training centre in the GBA, supporting Shenzhen’s vocational colleges to expand <b>recruiting of students in Hong Kong and Macao</b>.</p>	<p>Accelerate the development of <b>industry-integrated training</b> and the construction of an <b>exemplary industrial institute</b>. Promote the construction of <b>specialised vocational education parks</b> in the GBA, and accelerate the construction of the Shen-Shan Vocational Education Park.</p>	<p>Synthesize <b>academic education, continuing education and vocational training</b> to support the establishment of 20 <b>community colleges</b> and 20 <b>industry training institutes</b>.</p>
<p>Continue to run the <b>Shenzhen-Hong Kong Principals' Forum</b>, and further promote the <b>Guangdong-Hong Kong-Macao Sister School Scheme</b>. Regularise exchanges between Shenzhen and Hong Kong principals, teachers and students. Ensure <b>enrolment of eligible Hong Kong and Macao students in Shenzhen schools</b>.</p>	<p>Support higher education institutions and enterprises in the <b>co-establishment of industrial institutes, teaching sites, laboratories, and innovation bases</b>. Encourage higher education institutions, corporations, scientific research institutions, and industry organisations to collaborate and establish <b>partnerships for integrating production and education</b>.</p>	<p>Build a <b>lifelong learning platform</b>, promote the co-construction and division of lifelong learning teaching resources, and explore the establishment of personal learning profiles and <b>cumulative credit transfer systems</b>.</p>

Source: Education Bureau of Shenzhen Municipality

## Annex 12 Current financial assistance schemes at post-secondary and tertiary level in Hong Kong

	Tertiary Student Finance Scheme – Publicly-funded Programmes (TSFS)	Non-means-tested Loan Scheme for Full-time Tertiary Students (NLSFT)	Financial Assistance Scheme for Post-secondary Students (FASP) <sup>[1]</sup>	Non-means-tested Loan Scheme for Post-secondary Students (NLSPS)	Extended Non-Means-Tested Loan Scheme (ENLS)
<b>Eligible programmes</b>	<p>Exclusively UGC-funded or publicly-funded sub-degrees, undergraduate degrees, and postgraduate degrees</p> <p>Institutions covered by TSFS in 2020/21 include:</p> <ul style="list-style-type: none"> <li>• UGC-funded universities</li> <li>• Vocational Training Council's Institute of Vocational Education, Hong Kong Design Institute, Maritime Services Training Institute</li> <li>• The Prince Philip Dental Hospital</li> <li>• The Hong Kong Academy for Performing Arts</li> </ul>	Same as TSFS	Self-financing full-time locally-accredited programmes at sub-degree (ADs and HDs) or degree level	Same as FASP	Specific post-secondary / continuing and professional education courses
<b>Means-tested?</b>	Yes	No	Yes	No	No
<b>Grant/Loan</b>	<p><b>Grant:</b> to cover tuition fees, academic expenses and compulsory union fees</p> <p><b>Loan:</b> for living expenses</p>	<b>Loan:</b> to cover tuition fees	<p><b>Grant:</b> to cover tuition fees and academic expenses</p> <p><b>Loan:</b> for living expenses</p>	<b>Loan:</b> to cover tuition fees	<b>Loan:</b> to cover tuition fees

	Tertiary Student Finance Scheme – Publicly-funded Programmes (TSFS)	Non-means-tested Loan Scheme for Full-time Tertiary Students (NLSFT)	Financial Assistance Scheme for Post-secondary Students (FASP) <sup>[1]</sup>	Non-means-tested Loan Scheme for Post-secondary Students (NLSPS)	Extended Non-Means-Tested Loan Scheme (ENLS)
<b>Level of financial assistance</b>	<p><b>Maximum grant:</b> total tuition fees, academic expenses, and compulsory fees payable</p> <p><b>Maximum loan:</b> HKD 53,070 for 2020/21 academic year; interest-bearing at 1% per annum chargeable from the commencement of the repayment period (last updated Dec 2019)</p>	<p><b>Maximum loan:</b> annual tuition fees payable in the academic year; interest-bearing at 1.27% per annum chargeable upon loan drawdown (last updated Jun 2021)</p>	<p><b>Tuition fee grant:</b> annual tuition fees payable subject to a ceiling of HKD 87,010 for the 2020/21 academic year</p> <p><b>Academic expenses grant:</b> maximum amount of HKD 6,000 for the 2020/21 academic year</p> <p><b>Living expenses loan:</b> maximum amount of HKD 53,070 for the 2020/21 academic year; interest-bearing at 1% per annum chargeable from the commencement of the repayment period</p>	<p><b>Maximum loan:</b> annual tuition fees payable in the academic year; interest-bearing at 1.27% per annum chargeable upon loan drawdown (last updated Jun 2021)</p>	<p><b>Maximum loan:</b> total tuition fee(s) payable in the academic year provided that the amount should not exceed an aggregate of 12 months' tuition fee(s) payable and the life-time loan limit or its remaining balance stipulated below; Interest-bearing at 1.27% per annum chargeable upon loan drawdown (last updated Jun 2021)</p>
<b>Life-time loan limit (2020/21)</b>	Not applicable	HKD 383,500 (Combined life-time loan limit for NLSFT and NLSPS) <sup>[2]</sup>	Not applicable	HKD 383,500 (Combined life-time loan limit for NLSFT and NLSPS) <sup>[2]</sup>	HKD 383,500

Source: Working Family and Student Financial Assistance Agency

Notes: [1] FASP is available for registered students aged 30 or below only, and it is the only existing financial assistance scheme with an age limit

[2] Eligible students who have exhausted their combined life-time loan limit for studying courses for attaining their first degree-level study may apply to use up to HKD 100,000 of their life-time loan limit under the ENLS

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### Lead Advisor:

**Prof Wong Yuk Shan, SBS, BBS, JP**  
Chairman, Research Grants Council

### Stakeholders:

**Ms Sophia Ip**  
Head of Education, British Consulate-General

**Dr Maggie Palmer**  
Associate Director (Healthcare and Education),  
British Consulate-General

**Dr Mak Kin Wah, BBS, JP**  
President, Caritas Institute of Higher Education

**Dr Louis Ma**  
Former Director, School of Continuing and Professional Education,  
City University of Hong Kong

**Mr Byron Ng Kwok-keung, BBS**  
Executive Director, Employees Retraining Board

**Mr Patrick Pang**  
Deputy Executive Director, Employees Retraining Board  
(Training Services)

**Prof Ronald Chung**  
Chairman, Federation for Self-financing Tertiary Education



**Dr Dorothy Hon**

Secretary-General, Federation for Self-financing Tertiary Education

**Mr Patrick Wong**

Executive General Manager (Operations Support), Hong Kong Aircraft Engineering Company Limited

**Mr Andrew Ho**

Project Director, School of Continuing Education, Hong Kong Baptist University

**Mr Kevin O'Brien**

Chief Executive, Jardine Engineering Corporation

**Mr Steve Lai**

General Manager, Qualifications Framework Secretariat

**Mr Frankie Tang**

Manager, Qualifications Framework Secretariat

**Dr Michael Fung Jin Lung**

Deputy Chief Executive (Industry), SkillsFuture Singapore

**Dr Roy Chung, GBS, BBS, JP**

Founder & Chairman, Bright Future Charitable Foundation

**Prof Christina Hong**

President, Technological and Higher Education Institute of Hong Kong

**Prof Pun Kwok Leung**

Dean, Faculty of Science and Technology, Technological and Higher Education Institute of Hong Kong

**Mr Rock Chen Chung-nin, SBS, JP**

Vice Chairman, The Chinese General Chamber of Commerce; Vice-Chairman, The Hong Kong Council for Accreditation of Academic and Vocational Qualifications

**Prof Anthony Cheung Bing-leung, GBS, JP**

Research Chair Professor of Public Administration, The Education University of Hong Kong

**Dr Daniel Yip**

Honorary President, The Federation of Hong Kong Industries

**Ms Carrie Leung, MH**

Chief Executive Officer, The Hong Kong Institute of Bankers

**Prof Wei Shyy, JP**

President, The Hong Kong University of Science and Technology

**Prof Pong Ting Chuen**

Vice-President for Administration and Business, The Hong Kong University of Science and Technology

**Prof Chow King-Lau**

Acting Dean of Students, The Hong Kong University of Science and Technology

**Mr Kenneth Wong**

Chairman, The Professional Validation Council of Hong Kong Industries

**Prof Xiang Zhang, JP**

President, The University of Hong Kong

**Professor Max Shen**

Vice-President and Pro-Vice-Chancellor (Research),  
The University of Hong Kong

**Prof Arthur K C Li, GBS, JP**

Council Chairman, The University of Hong Kong

**Prof Cheng Kai Ming, SBS, JP**

Emeritus Professor, The Faculty of Education,  
The University of Hong Kong

**Dr Yiwu He**

Chief Innovation Officer and Senior Advisor to the President,  
The University of Hong Kong

**Dr Vincent Wong**

Senior Lecturer, The University of Hong Kong; Visiting Scholar,  
The University of Oxford

**Mr Jonathan Ledger**

Technical and Vocational Education and Training (TVET) Specialist,  
Department for International Trade

**Mr Robert King**

Former Assistant Secretary for Postsecondary Education,  
US Department of Education

**Ms Casey Sacks**

Former Deputy Assistant Secretary for Postsecondary Education,  
US Department of Education

**Mrs Carrie Yau, GBS, JP**

Executive Director, Vocational Training Council

**Mr Leung Yam Shing**

Deputy Executive Director, Vocational Training Council

**Ir Dr Eric Liu Sai-Lok**

Deputy Executive Director, Vocational Training Council

**Dr Michael Wang Jianguo**

Deputy Executive Director, Vocational Training Council

**Mr Edmond Yu Kwok-chu**

Deputy Executive Director, Vocational Training Council

**Prof Allan Yuen**

President, Yew Chung College of Early Childhood Education



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## Authors

### Stephen Wong

OHKF Senior Vice President and Executive Director of Public Policy Institute

### Victor Kwok

Head of Education and Youth Research, Our Hong Kong Foundation

### Richard Lau

Assistant Researcher, Our Hong Kong Foundation

### Tiffany Kwong

Assistant Researcher, Our Hong Kong Foundation

### Jennifer Tang

Assistant Researcher, Our Hong Kong Foundation

### Nicole Lau

Assistant Researcher, Our Hong Kong Foundation

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(OHKF)



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(PPI)

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## OUR Hong Kong FOUNDATION LIMITED

19/F Nan Fung Tower, 88 Connaught Road Central, Hong Kong

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