**PROFESSIONAL QUALIFICATIONS PATHWAYS FOR SKILLS PRACTITIONERS**

**IN HONG KONG**

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**Abstract**

**In the review report published by the HKSAR Government’s Task Force on Promotion of Vocational and Professional Education and Training (VPET) (the “Task Force”) in 2020, the Task Force recommended that VPET should establish itself as a more prominent value-added pathway with the prestigious qualification it deserves, to match the perceived excellence enshrined in its academic counterpart. Professional Qualifications Pathways, like the Vocational Qualifications Pathways, should be developed for practitioners with a focus on recognised skill-based qualifications that are not underpinned by associated learning programmes. These pathways will emerge as professional routes for practitioners of the relevant industries.**

**In response to the recommendation made by the Task Force, the Vocational Training Council (VTC) started to undertake an initiative – *Professional Qualifications Pathway for Skills Practitioners* in 2020. This initiative aims to establish a value-borne progression pathway for in-service practitioners through a Qualifications Framework (QF) recognised skill-based qualification. In respect of this, the German Meister system offers a valuable reference for developing a Mesiter learning programme for skilled workers in Hong Kong as this system aims to equip Meister candidates with the occupational, pedagogical, and managerial competencies necessary for the chosen professions. It would also help further professionalise industry practitioners and strengthen the local VPET articulation pathway. As a start, lift and escalator engineering (LEE) was selected as the first industry where seasoned registered lift and escalator workers are provided with an opportunity to strive for the title of Meister, in the name of Skills Master or Industry Master through the Professional Diploma Meister in Lift and Escalator Engineering (PDM-LEE) programme, the first of its kind skill-based qualification at QF level 5 in Hong Kong.**

**This paper will focus on the tripartite collaboration between the VTC, the HKSAR Government's Electrical and Mechanical Services Department (EMSD), and The Lift and Escalator Contractors Association (LECA) in developing the PDM-LEE programme. A VPET consultancy was invited to participate in the programme development process, where an Industry Consulting Group and several Subject Matter Expert Groups were formed to identify the key roles and competencies of a Meister in the LEE industry. These findings act as valuable inputs to the curriculum design of the programme. The active involvement of industry stakeholders in the programme development apparently demonstrated strong industry-academia collaboration which could serve as a good reference for developing work-oriented PDM programmes for other trades in the future.**

**Keywords:** *Professional Qualifications Pathway, Meister, Skills Practitioners, Industry Collaboration, VPET*

**Introduction**

The HKSAR Government’s tracking surveys conducted in recent years reflected that a sizeable proportion of respondents still did not have adequate knowledge of the articulation opportunities available through vocational and professional education and training (VPET). Building on its work in 2015, the Task Force on Promotion on VPET (the “Task Force”) was tasked to review and consider enhancements to the promotion of VPET in Hong Kong with a more targeted approach. In its review report ((VPET), January 2020) published in 2020, the Task Force’s recommendation states,

*“to explore the development of a vocational route whereby professional skill-based vocational qualifications can be acquired flexibly through an appropriate combination of vocational training at schools, workplace assessment, or in-service training, and duly recognised under the QF in close partnership with the industries”*.

In this connection, the Vocational Training Council (VTC) started to undertake an initiative – *Professional Qualifications Pathway for Skills Practitioners* in 2020. This initiative aims to establish a value-borne progression pathway for in-service practitioners through a Qualifications Framework (QF) recognised skill-based qualification.

Moreover, comprehensive studies and research have revealed a general lack of collaboration and interaction on traditional vocational education and training (VET) between institutes and industrial stakeholders (Gessler, 2017). Insufficient collaboration results in a weak relationship between school-based learning and workplace learning (Billett, 2008). The issue arises from a long-standing history of separating school-based study and employment, as well as theoretical knowledge and practical abilities. This is also reflected in the structure of VET programme as well as the curriculum of programme (Hiim, 2017).

This paper elaborates on the collaboration between the VTC, the HKSAR Government, industry stakeholders and a VPET consultancy on the development of a Professional Diploma Meister (PDM) programme, and how important the role of industry stakeholders is in curriculum design during the programme development stage so as to ensure that the VTC is grooming talent that is required by the industry.

**The First Professional Diploma Meister Programme in Hong Kong**

The attempt to develop unambiguous value-borne positions of VPET awards is crucial to the success of VPET. The German Meister system serves as an appropriate reference for establishing a prestigious goal for seasoned skills practitioners in Hong Kong. To achieve the title of Meister, a skilled worker must possess occupational, pedagogical, and management competencies in addition to the vocational training in his chosen trade (see Figure 1.1 below) (Philips, 1995).

Figure 1: The Competencies of a Meister

A skilled worker in the German Meister system typically receives a systematic Meister education that includes theoretical and practical trade training, business and legal training, and a Meister certificate that allows him to teach and train other apprentices. After completing the training programme, the worker may choose to take an examination leading to the title of Meister (Clément Imbert; Reynold John, 2020).

In response to the Task Force's proposal, it is recommended that the essence of this Meister system be transferred to VPET in Hong Kong to further professionalise industry practitioners and enhance the VPET articulation pathway. The Meister title, in the form of Skills Master (or Industry Master), might be used for skilled workers in Hong Kong who have achieved excellence in areas required by the associations/professional organisations of their chosen skills. The nurture of a Meister is based on a comprehensive high-level education plus years of practical experience accumulated. In terms of education, it is suggested that a more complete and currency-based VPET pathway be established by introducing the award of Professional Diploma Meister (PDM) at QF Level 5 to competent skilled workers who aspire to achieve the title of Meister. The PDM will equip candidates with the necessary skills and knowledge, in addition to the practical experience gained over their professional career development.

In Hong Kong, lift and escalator apprentices who successfully completed the recognised training (at QF Level 2) and accumulated four years of relevant work experience could acquire the status of Registered Lift Worker / Registered Escalator Worker (RLW/REW). However, after reaching this career milestone, this group of professionals will face a glass ceiling in their pursuit of professional development because there has been no further value-borne progression pathway for decades in the wake of the RLW/REW award. This phenomenon may reduce the industry's attractiveness to young people, thereby affecting the sustainable development of the industry. In other words, this profession, given its significant impact on our everyday life, deserves a more structured recognition scheme for its skilled workforce.

Thus, the VTC collaborated with the HKSAR Government's Electrical and Mechanical Services Department (EMSD) to promote the concept of establishing a Professional Qualifications Pathway for the practitioners of the lift and escalator industry. This idea is also well-received by The Lift and Escalator Contractors Association (LECA) which is the most representative lift and escalator association in Hong Kong. Such a pathway encompasses institutional education, workplace learning, and professional assessment, culminating in the accomplishment of a Professional Diploma Meister in Lift and Escalator Engineering (PDM-LEE) qualification at QF Level 5. The PDM-LEE curriculum includes industry-specific contents as well as core contents common to all conceivable professions, such as management and training know-how. The lift and escalator industry's technical terrain comprises installation, maintenance, repairing, modernisation, and dismantling, and it is supported by two pillars of professionals: Registered Engineers (RE) and RLW/REW. In Hong Kong, there are around 6,000 RLWs/REWs and 300 REs.

**Demand for the PDM-LEE Programme**

The PDM-LEE programme at QF Level 5 aims to offer experienced lift and escalator workers a progression pathway for developing managerial and mentoring skills, as well as comprehensive competence in the complete spectrum of lift and escalator specialisms. A survey of registered lift and escalator workers (n = 299) was undertaken in 2021 by the VTC during the pre-programme development stage to measure the industry’s demand for the programme. The survey revealed that 95% of the respondents agreed that the lift and escalator industry was important in Hong Kong (Strongly agree = 184, Agree = 100); 92% agreed that acquiring trade-specific and managerial skills in lift and escalator engineering would enhance the development of relevant industry workers (Strongly agree = 162, Agree = 113); 86% agreed that participating in this programme would advance their career (Strongly agree = 149, Agree = 109); and 82% agreed that they would participate in the programme if time allowed (Strongly agree = 131, Agree = 115).

The above results indicated that the population of current registered lift and escalator workers appreciated the potential values and benefits brought by the PDM-LEE programme. To further assess the demand for the PDM-LEE programme from prospective students, another survey of current VTC’s lift and escalator students was also conducted in 2021 (n=229). The survey indicated that 90% of the respondents agreed that acquiring trade-specific and managerial skills in lift and escalator engineering would enhance the development of relevant industry workers (Strongly agree = 109, Agree = 97); 80% agreed that participating in this programme would advance their career (Strongly agree = 90, Agree = 94); and 76% agreed that they would participate in the programme if time allowed (Strongly agree = 106, Agree = 89).

According to the overall findings presented above, the registered lift and escalator workers and current lift and escalator students have demonstrated considerable support and demand for the PDM-LEE programme, which has verified the need for establishing the professional qualification pathway for them.

**Engagement of Stakeholders**

Employers are the key stakeholders in a skill-based and work-oriented PDM programme. Without their support and advice, it is impossible to understand the needs for manpower development in the industry. Various meetings and discussions with different industry stakeholders including LECA and EMSD were conducted to identify the needs for upskilling the current registered lift and escalator workers, and the approaches to sustain skills continuity for the industry. Besides, the VTC had appointed the Skills Consulting Group (SCG) as a consultant to assist in the development of this programme. SCG is an international work-based learning consultancy headquartered in Auckland, New Zealand. Its services comprise the entire scope of work-based learning system operations, from policy development to programme delivery. SCG creates frameworks, tools, and solutions that improve the working lives of people all around the world. SCG's main role in this programme was to facilitate the successful incorporation of work-based learning in this programme by leveraging its expertise to develop the frameworks and functional analyses of the Meister graduate; the workplace learning and assessment (WLA) strategies to achieve competence; and the competence-based standards and assessment materials to be applied in the programme.

As part of the development of the PDM-LEE programme, the VTC conducted in-depth interviews with industry partners to ascertain the need for a skilled workforce in the lift and escalator sector, determine the programme objectives, programme structure, assessment strategies and the industry's skill needs. An Industry Consulting Group (ICG) was set up to provide strategic guidance for the development of the programme. Table 1 and Table 2 spell out the terms of reference and composition of the ICG respectively.

Table 1: Terms of Reference of ICG

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| Terms of Reference |
| To advise THEi and Engineering Discipline on  |
| 1. the purpose, key roles, and functions of the Meister occupation, to inform the skills, knowledge and attributes a Meister is required to possess
2. the programme and curriculum development and quality assurance of the Professional Diploma Meister in Lift and Escalator Engineering programme
3. the learning and assessment methodologies adopted by the programme, and the distribution and prevalence of workplace learning and assessment in the programme
4. the relevance, usefulness, and currency of the programme for the Lift and Escalator Engineering Sector
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Table 2: Composition of ICG

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| Composition  |
| **Chairman / Convenor*** Senior Assistant Executive Director, VTC

**Members*** Dean, Faculty of Science and Technology, THEi (Tsing Yi), VTC
* Assistant Professor, Faculty of Science and Technology, THEi (Tsing Yi), VTC
* 2 representatives from Pro-Act Training and Development Centre (Electrical), VTC
* A representative from Workplace Learning and Assessment Project Team (Engineering Programmes), VTC
* 1 representative from Chevalier (HK) Limited
* 1 representative from Anlev Elex Elevator Limited
* 1 representative from Associated Engineers Limited
* 2 representatives from EMSD, HKSAR Government

**Co-opted Members*** 2 representatives from Quality Enhancement and Accreditation Office, VTC

**Consultants*** 4 representatives from Skills Consulting Group
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While ICG is tasked with the strategic direction and workforce modelling of the programme, various specialised groups of lift and escalator Subject Matter Experts (SMEs) were formed for consultation upon specific industry skill requirements for the programme. Members of ICG and SMEs represent a significant proportion of the lift and escalator industry in Hong Kong. To ensure the technical accuracy and effectiveness of learning and assessment resources, SME consultation groups were utilised in the development of this programme so as to identify and determine specific curricular requirements. The SME consultation groups for this programme must be broad and include experts from installation, maintenance, testing & commissioning, modernisation, project and staff management since the Meister graduate is expected to be skilled and competent across multiple specialised areas in the lift and escalator trades. The profile of SMEs is shown in Table 3 below.

Table 3: Profile of SMEs

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| No | Current Position Held | Professional Qualifications | Years of Relevant Experience |
| 1 | Senior Manager | Member of HKIE and IMechE, CEng | 29 |
| 2 | Technical Manager | Registered Lift and Escalator Worker | 18 |
| 3 | Maintenance Manager | Registered Lift and Escalator Worker | 23 |
| 4 | Senior District Manager | Member of IPlantE,CEng | 24 |
| 5 | Field Manager | Member of HKIE, Fellow member of IMechE, CEng, RPE, REA | 20 |
| 6 | Supervising Engineer | RPE, CEng | 40 |
| 7 | Senior Project Manager | Registered Lift & Escalator Engineer | 38 |
| 8 | Manager | Registered Lift & Escalator Engineer | 10 |
| 9 | Senior Compliance Manager | Registered Lift & Escalator Engineer | 34 |
| 10 | Manager (Overhaul) | Registered Lift Engineer | 7 |
| 11 | Senior Manager, Technical Dept. | Member of IMechE, CEng, Registered Lift & Escalator Engineer | 28 |

**Structuring the Programme Curriculum in Collaboration with the Industry**

A functional map of the Meister role was developed in collaboration with the ICG in the course of researching the requirements of this role. This analysis was used to justify the design of the programme, its curriculum, and the workplace learning and assessment requirements. The programme offers the conceptual frameworks and tools that these skilled workers need to engage meaningfully in the Meister position as outlined in the functional map, in which the key purpose of the Meister role and its four key roles (KRs) are described in Table 4 below. After defining the KRs, the ICG also identified various levels of functions for each key role separately and map it with the relevant unit standards, which were used to define the scope and level of assessment required in the programme. These unit standards were further elaborated through consultations with respective SME groups who were experts in their specialist fields as mentioned above so as to specify the knowledge, skills and attributes (the outcomes), and the minimum standard a candidate must meet to demonstrate the achievement of the outcomes. They contribute to ensure that learning, teaching and assessment are relevant to the role of a Meister.

Table 4: Key Roles of Meister

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| Key Purpose:  |
| Plan, organise and manage the installation, modernisation, examination, and maintenance of safe, reliable and high quality lift and escalator services; through the development of capability and professionalism, and the leadership, of personnel and operations. |
| Key Roles of Meister: |
| 1. Optimise performance of equipment and operations through innovative use of technology.
2. Manage staff to carry out complex installation, modernisation, examination and maintenance activities for lifts and escalators.
3. Plan and manage installation, modernisation, examination, and maintenance projects and tasks.
4. Develop the capability of self and staff.
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The POs (Table 5) are derived from the KRs listed in Table 4 and they state what is expected of graduates after completing the programme. To ensure graduates are competent across all POs and KRs, the PLOs (Table 6) were developed to specify the competences graduates will be able to acquire upon completion of the programme. The PLOs are a summary of the knowledge and skills that students will learn. All PLOs are developed to meet the POs and to facilitate assessment of the programme contents and activities by the teachers. These PLOs specifically define the competencies, skills / know-how, and knowledge required by the graduates to fulfil the KRs or functions of the Function Map. In fact, the skills / abilities demonstrated by students in measurable ways at the exit point of the programme reflect the degree to which the POs have been fulfilled. With the well-defined POs and PLOs, the curriculum is structured and translated into a number of modules which represent the core elements in the curriculum, providing the necessary professional knowledge, skills and abilities required by the expanding lift and escalator industry, and nurturing students as technical heads / technical managers / superintendents, sitting at the apex of the technical leadership hierarchy below the role of lead project or design engineer.

Table 5: The Programme Objectives (POs) of PDM-LEE

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| Programme Objectives (POs) |
| 1. To develop practitioners into a Meister of the industry who possesses and renders professional, managerial, and mentoring competencies in their work.
2. To expand and develop practitioners’ technical expertise in masterminding the conduct of a range of types and scales of lift and escalator engineering projects from a technical perspective.
3. To equip practitioners with the tools and methodologies to critically evaluate and improve the quality, efficiency, and cost effectiveness of lift and escalator engineering projects, ensuring their financial viability and statutory compliance.
4. To equip practitioners with solid knowledge of mentoring and coaching so as to prepare them for taking up a training role to facilitate the continuity of skills excellence in the industry.
5. To develop practitioners’ awareness of technological and operational innovations and their impact on the development of the trade.
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Table 6: The Programme Learning Outcomes (PLOs) of PDM-LEE

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| Programme Objectives (POs) |
| 1. Critically evaluate and deploy the technical competencies required in lift and escalator engineering projects.
2. Manage staff and projects to execute lift and escalator works and operations of various types and scales with consideration of costing and legal compliance.
3. Plan, design, and conduct the training and development activities of lift and escalator engineering supervisors and technicians.
4. Keep abreast of new technology related to the lift and escalator industry, and examine the feasibility of its applications to the industry.
5. Demonstrate the possession of a comprehensive set of excellence and commit with professional ethics as required in fulfilment of the title of Lift and Escalator Meister.
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**Conclusions and the Way Forward**

This paper introduces the development of a professional qualification pathway for the skills practitioners in the lift and escalator industry through the newly launched PDM-LEE programme at QF Level 5, which features the tripartite collaboration between the VTC, the HKSAR Government and the industry in the development of the programme, including the key purpose and key roles of a Meister, programme objectives, and programme learning outcomes of the programme. In particular, the incorporation of the current industry practice and assessment of competences in this value-borne programme largely attributes to the contribution of the ICG and SMEs.

The PDM-LEE programme, being the first of its kind skill-based qualification at QF Level 5 in Hong Kong seeks to develop Lift and Escalator Meister by providing high-quality advanced education and training in lift and escalator engineering. It is undoubtedly a significant milestone in the development of VPET in the territory. As a long-term endeavour of establishing a complete VPET progression pathway, the articulation opportunity beyond QF level 5 is yet to be explored.

Grounded in the successful launch of the PDM-LEE programme and the valuable experience gained, the VTC will be rolling out the second PDM programme for the power electrical engineering industry in the latter half of 2023 to meet the manpower development needs of the industry. Meanwhile, the demand for a PDM programme in the sectors of gas engineering, air-conditioning and refrigeration engineering and automotive engineering is being measured so as to nurture more skills masters, benefit more industries and ultimately contribute to the economic growth and prosperity of the Hong Kong in the long run.

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