



Integrating Design Thinking into Vocational Trainer Development A 5-Level Competency Framework for the AI and ESG ERA

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Abstract

This paper presents a comprehensive framework for developing vocational trainers by integrating design thinking with the Hong Kong Qualifications Framework (QF). It aims to bridge the gap between academic qualifications and practical vocational skills, explicitly addressing the emerging demands of artificial intelligence (AI) and environmental, social, and governance (ESG) competencies in the global training sector. The study employs a practice-informed research approach, synthesizing insights from the extensive professional expertise of the co-authors from the World Trainer Organization and applying the five-stage design thinking process. This methodology is used to develop and articulate a structured 5-Level Trainer Course Framework (5LT), which is then mapped onto QF Levels 3–7 to ensure academic rigor and vocational relevance. The research identifies that a world-class trainer requires a synergistic combination of three core elements: 1) specific personal attributes, including adaptability and ethical mindset, 2) advanced curriculum design and delivery capabilities, and 3) external professional recognition through accredited certification. The 5LT framework provides a clear developmental pathway that systematically progresses from foundational training assistance to master-level strategic innovation. Vocational training institutions, corporate learning departments, and accreditation bodies can implement this framework to standardize trainer development, enhance training quality, and ensure alignment with industry needs and the Sustainable Development Goals. The framework offers a scalable model for cultivating trainers who can effectively respond to technological and social transformations. This paper offers a novel, integrated model that combines human-centered design thinking with a structured competency framework for vocational trainers. It provides both a theoretical contribution to the literature on professional education and a practical toolkit for organizations seeking to develop future-ready training talent.

Keywords: Artificial intelligence, Design thinking, Professional accreditation, Qualifications framework (QF), Sustainable development, Trainer competency, Vocational training.

1. Introduction

The contemporary landscape of vocational education and training is undergoing unprecedented transformation. Driven by rapid technological advancements, particularly in artificial intelligence (AI), and a global imperative toward

sustainability and social equity, the role of the vocational trainer has evolved from a knowledge transmitter to a learning architect and an innovation catalyst (Brown, 2022). The COVID-19 pandemic further accelerated this shift, highlighting the critical need for training systems that are flexible, resilient, and capable of fostering higher-order thinking skills through digital and experiential means.

Despite these evolving demands, a significant gap persists between traditional academic qualifications and the practical, adaptive skill sets required by modern vocational trainers. The Hong Kong Qualifications Framework (QF) provides a

robust structure for mapping academic and vocational competencies across seven levels (HKCAVQ, 2018). However, its application in systematically developing *trainer-specific* competencies—particularly those needed to navigate AI integration and ESG principles—remains underexplored.

This paper addresses this gap by investigating the following research question: How can design thinking be applied to develop a competency framework for vocational trainers that aligns with the QF and addresses the challenges of AI and ESG?

To answer this, we propose and detail the 5-Level Trainer Course Framework (5LT), a model developed and refined through the collective professional

practice and expertise of the authors. This framework integrates the iterative, human-centered principles of design thinking to create a clear progression pathway for trainers, from entry-level assistants to master-

level innovators. The insights embedded within the framework are drawn from decades of applied experience in global trainer development, corporate facilitation, and curriculum design.

2. Literature Review

2.1. The Hong Kong Qualifications Framework (QF) and Vocational Competency

The Hong Kong QF is a seven-level hierarchy designed to clarify the academic and vocational standing of qualifications. It encompasses four domains:

Knowledge and Intellectual Skills; Processes; Autonomy and Accountability; and Communication, ICT and Numeracy (HKQF, 2018). Traditionally, Levels 1-3 correspond to foundational education, Levels 4-5 to higher diplomas and

associate degrees, and Levels 6-7 to bachelor's, master's, and doctoral

qualifications. This framework, however, has primarily been applied to learner competencies rather than the specific developmental pathway for the trainers themselves.

Table 1. Intellectual Skills in 7 QF Levels.

• Intellectual Skills refer to how a learner acquires, uses, and extends knowledge.
(a) A contextual statement has been added to clarify the range of intellectual skills and the scope of their application at each level:
QF Level 1 Use basic intellectual skills in familiar, personal and/or everyday contexts.
QF Level 2 Use a range of intellectual skills in familiar, personal and/or everyday contexts.
QF Level 3 Use a broad range of intellectual skills in familiar but sometimes unfamiliar contexts.
QF Level 4 Use a wide range of largely routine and some specialised intellectual skills related to a subject, discipline, or sector.
QF Level 5 Use a wide range of specialised intellectual skills in support of established practices in a subject, discipline, or sector.
QF Level 6 Utilise highly specialised technical, research, or scholastic skills across an area of study.
QF Level 7 Make a significant and original contribution to a specialised field of inquiry, or to broader interdisciplinary relationships.

Source: https://hkqf.gov.hk/files/record/qf-lvl-resources/6/The%20revised%20GLD%20and%20the%20Explanatory%20Notes_Eng_April_2018-1703059799.pdf

2.2. Design Thinking in Educational Development

Design thinking, characterized by its five-stage process—Empathize, Define, Ideate, Prototype, and Test—offers a robust methodology for problem-solving in complex, human-centric systems (Brown, 2022). In education, it has been used to redesign curricula and learning experiences. Its application in structuring the professional development of *educators* and *trainers*, however, represents a

newer frontier. This approach emphasizes empathy with learners, iterative development of training solutions, and continuous testing against real-world outcomes.

2.3. Emerging Skill Demands: AI and ESG

The service industry's transformation through AI necessitates new vocational skills beyond technical literacy, including data ethics, collaborative human-AI workflow management, and bias mitigation (Huang et al., 2022). Concurrently, the integration of ESG principles requires trainers to cultivate sustainability mindsets, social inclusion strategies, and an understanding of green circular economies (Yeung & Wong, 2022). A modern trainer must be equipped to embed these cross-cutting themes into vocational training.

3. Methodology: A Practice-Informed Design Thinking Approach

This research adopts a pragmatic, practice-informed methodology to develop the 5LT framework. The process is not based on external interviews with the co-authors, but rather on synthesizing and formalizing their extensive, grounded professional expertise into a structured academic model. The methodology follows the design thinking cycle itself:

3.1. Phase 1: Synthesis of Professional Practice (Empathize & Define)

The foundation of the framework is built upon the authors' combined 40+ years of frontline experience in:

- Designing and delivering "train-the-trainer" programs for multinational corporations, NGOs, and government agencies.
- Facilitating complex organizational transformations using methodologies like LEGO® SERIOUS PLAY® and design thinking.
- Developing competency standards and accreditation pathways for training professionals.

This deep, practice-based understanding of the needs of trainers, trainees, and organizations enabled empathy for the core challenges and the precise competency gaps across a trainer's career lifecycle.

3.2. Phase 2: Framework Ideation and Prototyping (Ideate & Prototype)

Drawing on synthesized practice insights, the initial structure of the 5LT framework was conceived. This involved defining the logical progression of five distinct levels, each with a unique purpose, focus, and outcome. The framework

was then *prototyped* by developing detailed specifications for each level: training hours, core content modules, learning outcomes, and demonstrable trainer competencies. This prototype was continuously refined through internal review and discussion among the co-authors, ensuring internal consistency and practical viability.

3.3. Phase 3: Alignment and Validation (Test)

The prototype framework was *tested* through a process of systematic alignment:

1. QF Alignment: Each level of the 5LT was mapped against the descriptors of the Hong Kong QF (Levels 3-7) to ensure academic coherence and a clear progression in intellectual skills, autonomy, and responsibility.
2. Principles Validation: The framework was evaluated against the core principles of design thinking to ensure each stage of the design process was embodied within the trainer's developmental journey (e.g., Empathize at Level 1, Test and System Integration at Level 5).
3. Future-Skills Integration: The framework's capacity to incorporate AI and ESG competencies was explicitly designed and verified, ensuring its relevance to contemporary and future challenges.

This methodology ensures that the 5LT framework is both theoretically grounded in established educational structures (the QF) and robustly informed by proven, real-world professional practice.

4. The 5-Level Trainer Course Framework (5LT): Structure and Alignment with QF

Source: <https://www.worldtrainer.org/certification>

The 5LT provides a structured career pathway for vocational trainers, with each level designed to develop competencies that correspond to increasing responsibility, autonomy, and strategic influence. The framework is summarized in Table 2 and detailed thereafter.

Table 2. Overview of the 5-Level Trainer Course Framework (5LT).

Level	Title	Training Hours	Key Focus	Learning Outcomes Summary	Trainer Abilities
1	One-Star – Training Assistant	6 hrs	Foundation	Understand culture and assist in workshops	Assist trainers, manage logistics, and observe learning flow
2	Two-Star – Associate Trainer	12 hrs	Facilitation Basics	Apply adult learning C basic facilitation skills	Facilitate short group sessions confidently
3	Three–Star – Senior Associate Trainer	24 hrs	Facilitation + Design	Design and deliver engaging training sessions	Conduct independent workshops, manage energy, and feedback
4	Four–Star – Lead Trainer	24 hrs	Design + Evaluation + Leadership	Lead teams and evaluate training outcomes	Design full programs, lead facilitation teams
5	Five–Star – Master Trainer	36 hrs	Innovation + Mentorship + System Thinking	Integrate learning theories and lead innovation	Mentor trainers, certify programs, shape learning culture

4.1. Level 1 – One-Star Trainer (Training Assistant) Purpose:

To build foundational awareness, attitude, and entry-level skills for assisting in training environments.

Category	Description
Training Hours	6 hours
Training Content	Training Philosophy C Culture Role of a Trainer Assistant Communication C Observation Skills Basic Facilitation Support C Logistics Reflective Practice and Learning Journal
Learning Outcomes	Understand the training standards, ethics, and culture. Recognize the roles and boundaries of a training assistant. Demonstrate appropriate professional attitude and presence. Observe facilitation flow and group dynamics. Support trainers with enthusiasm and teamwork.
Trainer Abilities Completion after	<ul style="list-style-type: none"> ■ Can effectively assist certified trainers in workshops (≤ 12 pax). ■ Can manage basic training logistics and group coordination. ■ Can observe and report group behavior to lead facilitators. ■ Demonstrates strong passion, reliability, and a learning attitude.
Next Step	Join the Train-the-Training-Assistant (TTA) course to progress to Level 2.

4.2. Level 2 – Two-Star Trainer (Associate Trainer) Purpose

To develop facilitation techniques, group communication, and basic session delivery skills.

Category	Description
Training Hours	12 hours (Train-the-Training-Assistant – TTA)
Training Content	Adult Learning Principles Small Group Facilitation Techniques Listening, Questioning, and Feedback Skills Managing Emotions and Difficult Participants Practical Facilitation Exercises with Coaching
Learning Outcomes	Apply basic adult learning theory in group activities. Facilitate group sharing and short activities under supervision. Maintain psychological safety and engagement. Give and receive constructive feedback. Understand personal facilitation strengths and growth areas.
Trainer Abilities after Completion	<ul style="list-style-type: none"> ■ Can independently facilitate group discussions or short segments (≤ 15 mins). ■ Can manage small group activities (< 15 participants). ■ Can maintain participant energy and focus. ■ Communicates clearly and confidently. ■ Ready to support Lead Trainer in co-facilitation.
Next Step	Participate in 10 training workshops and apply for Level 3 (TTF).

4.3. Level 3 – Three-Star Trainer (Senior Associate Trainer) Purpose

To strengthen complete facilitation competence and develop instructional design capabilities.

Category	Description
Training Hours	24 hours (Train-the-Facilitator – TTF)
Training Content	Advanced Facilitation Mastery (energy, rhythm, stage management) Instructional Design & Activity Creation Atmosphere Building & Crisis Handling Feedback Coaching for Participants Presentation Flow & Closing Techniques
Learning Outcomes	Design engaging training activities aligned with outcomes. Deliver whole segments or short workshops independently. Manage group flow and energy confidently. Handle unexpected emotional or behavioral situations. Integrate storytelling, feedback, and reflection techniques.
Trainer Abilities after Completion	<ul style="list-style-type: none"> ■ Can design and deliver structured 1–2 hour training sessions. ■ Can facilitate independently for small to medium groups (≤ 30 pax). ■ Can provide coaching and feedback to participants or junior trainers. ■ Can handle fundamental conflict or group tension effectively. ■ Demonstrates stable performance and consistent quality.
Next Step	Complete 30 training workshops as Senior Associate Trainer, reviewed by a Master Trainer.

4.4. Level 4 – Four-Star Trainer (Lead Trainer)

Purpose:

To develop leadership in training design, evaluation, and team management — preparing trainers to lead entire workshops.

Category	Description
Training Hours	24 hours (Advanced Train-the-Trainer – ATTT)
Training Content	Training Outcome Evaluation & Learning Impact Curriculum Design & Workshop Structuring Co-Trainer Management & Mentoring Group Energy & Crisis Simulation Handling Training Team Leadership and Ethics
Learning Outcomes	Design complete training workshops from objectives to outcomes. Apply evaluation frameworks (reaction, learning, behavior). Mentor junior trainers and maintain team performance. Manage large groups and dynamic situations effectively. Represent professionally in client-facing contexts.
Trainer Abilities after Completion	<ul style="list-style-type: none"> ■ Can design and deliver full-day workshops independently. ■ Can lead a facilitation team and delegate effectively. ■ Can evaluate participant outcomes and gather data for improvement. ■ Can mentor and assess Associate Trainers.

Next Step	Conduct two internal training workshops as Lead Trainer and prepare to join the Master Trainer Development.
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4.5. Level 5 – Five-Star Trainer (Master Trainer)

Purpose:

To cultivate mastery in innovation, strategic influence, and leadership in the trainer community.

Category	Description
Training Hours	36 hours (Master Trainer Development Program – MTDP)
Training Content	Learning Theory Integration & Advanced Pedagogy Research and Development in Training Tools Digital Facilitation & Hybrid Learning Innovation Measuring ROI and Organizational Impact Community Leadership & Mentorship Excellence
Learning Outcomes	Integrate multiple learning theories into training systems. Design original methodologies, models, or training tools. Evaluate and demonstrate training ROI and learning transfer. Mentor and certify upcoming trainers. Contribute to shaping learning strategy and brand impact.
Trainer Abilities after Completion	<ul style="list-style-type: none"> Can lead the training community regionally or globally. Can innovate and publish new training models. Can certify and mentor other trainers. Can design large-scale or cross-sector training systems. Demonstrates mastery, influence, and thought leadership.
Next Step	Join the Global Trainer Council or lead cross-border training initiatives.

5. Integrating AI and ESG through Experiential & Digital Learning

The 5LT framework is designed to embed future-critical skills through modern pedagogical approaches.

- **AI Literacy & Ethics:** From Level 2 onwards, trainers learn to integrate AI tools for data analysis, personalized learning, and service design, always coupled with modules on data privacy, ethical AI use, and bias mitigation.
- **ESG and Social Impact:** Experiential learning, such as green supply chain project visits (e.g., Hised's Green SCM) and community-based projects, is integrated into the curriculum. Trainers are taught to design lessons that foster sustainability mindsets, social inclusion, and women's empowerment.
- **Digital Fluency:** The framework mandates the creation and use of digital content (e.g., reflective videos post-industry visits) as both assessment and teaching tools, promoting multimedia communication and digital literacy.

6. Discussion: Closing the Loop Between QF and Vocational Skills

The primary contribution of the 5LT framework is its explicit bridging of the QF's academic descriptors with tangible, progressive vocational competencies for trainers. This "closing of the loop" addresses a critical gap in the professionalization of the training sector.

6.1. A Design Thinking Cycle for Continuous Improvement

The framework embeds design thinking not just as a curriculum topic but as a meta-methodology for its own evolution. The cycle of Empathize (with industry needs) → Define (skill gaps) → Ideate (new training models) → Prototype (pilot programs) → Test (evaluate effectiveness) creates a feedback loop that ensures the framework remains responsive to changes in technology (AI) and societal goals (ESG).

6.2. Strategic Implications for Stakeholders

- For Governments & Accreditation Bodies (e.g., HKCAAVQ): The framework provides a clear template for accrediting trainer certification programs, linking them directly to QF levels.
- For Vocational Training Institutes: It offers a structured talent development strategy to enhance training quality and institutional reputation.
- For Corporations: It outlines a pathway for developing in-house trainers who can drive innovation and sustainability agendas.
- For Individual Trainers: It provides a transparent career ladder with recognized milestones and credentials.

7. Conclusion and Recommendations

The future viability of the vocational training sector depends on its ability to develop trainers who are both pedagogically expert and innovatively adaptive.

This paper has presented the 5-Level Trainer Course Framework (5LT) as a model for achieving this. By integrating the human-centered, iterative design thinking process with the QF's structured academic benchmarks, the framework provides a comprehensive pathway for cultivating "world trainers."

8. Recommendations for Implementation:

1. Policy Advocacy: Encourage education authorities to formally recognize the 5LT framework as a benchmark for trainer qualification, integrating it into the QF ecosystem.
2. Pilot Programs: Vocational institutes should implement pilot trainer development programs based on the 5LT, particularly focusing on integrating AI and ESG modules.
3. Industry-Academia Partnerships: Forge stronger links between training organizations (like WTO), universities, and corporations to co-deliver the advanced levels (4 C 5) of the framework, ensuring real-world relevance.
4. Digital Infrastructure: Invest in hybrid learning platforms to deliver the framework's content scalably, supporting lifelong learning and upskilling for practicing trainers.

In conclusion, professionalizing vocational trainer development is not merely an educational concern but a strategic economic and social imperative. The 5LT framework, grounded in design thinking and aligned with global standards, offers a viable roadmap for building a resilient, innovative, and impactful training workforce for the 21st century.

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