The Hong Kong University of Science and Technology

Executive Summary

During the 2022–25 triennium, The Hong Kong University of Science and Technology (HKUST) has strategically utilised the Teaching Development and Language Enhancement Grant (TDLEG) to advance its commitment to innovation, cross-disciplinarity, and educational excellence. Key objectives included:

- Fostering pedagogical innovations through faculty-driven projects.
- Enhancing immersive, technology-enhanced learning experiences, including AR/VR, gamification, and Generative AI.
- Developing multidisciplinary Common Core courses with a competency-based approach.
- Establishing robust communities of practice and strengthening the scholarship of teaching and learning.
- Revamping English and Chinese language curricula to meet evolving educational needs and enhance students' language proficiency.
- Promoting diversity, inclusivity, and global collaboration through strategic partnerships and targeted initiatives.

Key Achievements

The period witnessed notable advancements across several strategic areas:

1. **Pedagogical Innovation and Faculty Development:**
   a. The Academy of Education Excellence, launched officially in 2025 after a successful pilot, awarded fellowships to 21 faculty members.
   b. Faculty actively engaged in structured professional development, benefiting from targeted training modules, specially designed in response to the rapid rise of Generative AI, exemplified by specialised courses such as "Prompt Engineering for Generative AI in Education."
2. **Students as Partners and Experiential Learning:**
   a. Four student-faculty co-creation projects resulted in innovative course offerings, including a student-designed public policy debate course. Evaluations indicated significant improvement in student engagement, teamwork, and applied problem-solving abilities.
   b. Entrepreneurship and sustainability education were strengthened through initiatives like the "Mini Hackathon Model for Bioindustry Learning," providing real-world, industry-linked experiences enhancing career readiness.

3. **Common Core and Competency-Based Education:**
   a. The Common Core curriculum was successfully revamped, introducing two new multidisciplinary capstone courses focusing on critical thinking and student well-being, both receiving positive evaluations for enhancing transversal competencies and self-awareness among students.

4. **Virtual Teaching and Innovative Technologies:**
   a. A systematic investment in Virtual Teaching and Learning significantly expanded course redesigns employing blended methodologies, enhancing student engagement and learning flexibility across disciplines.
   b. Notable innovative technology projects included the VR Rat Dissection Laboratory, AR-enhanced Physics demonstrations, and the award-winning "CTDL1902 AI and Society" course, recognized by the Global MOOC and Online Education Alliance Award in 2024.

5. **Language Enhancement and Curricular Development:**
   a. Significant restructuring of English and Chinese language curricula resulted in clearer pathways and more context-specific courses. Discipline-specific and advanced communication English courses were successfully implemented, benefiting all undergraduate cohorts.
   b. Technology-driven language enhancement initiatives such as Microlearning were successfully piloted, addressing targeted learning needs through modular, accessible content, and receiving strong positive student feedback.

6. **Diversity, Inclusivity, and Global Collaboration:**
   a. Special Educational Needs online modules integrated into Canvas enhanced faculty support for diverse student populations.
   b. International collaboration and alliances expanded HKUST's global educational impact, notably through active participation in the Digital Education Council, Cyber-Physical Learning Alliance, and international panel for AI and Education.

The TDLEG funding significantly advanced HKUST's teaching and learning landscape, embedding systematic innovation, enhancing pedagogical effectiveness, and expanding faculty and student capacities to adapt to a rapidly evolving educational environment.

Robust evaluation and monitoring systems provide continuous feedback loops, guiding iterative improvements and strategic agility. Challenges encountered, particularly relating to the rapid emergence of Generative AI and resource-intensive technology implementations, were proactively managed, demonstrating institutional adaptability and resilience.

HKUST's strategic investments under TDLEG have strongly positioned the University as a leader in innovative teaching practices, technology integration, and global pedagogical collaboration, leaving a sustainable legacy of educational excellence and ongoing innovation for future cohorts.