

Research & Innovation

Informing Pedagogy with Integrated Learning Analytics

The Educational Development Centre has created the Learning Analytics Platform (LAP), an advanced educational system that consolidates data from multiple sources to provide a holistic view of student learning. Designed to integrate seamlessly with the University's infrastructure, LAP simplifies the process of data collection and analysis while offering meaningful visualisations and insights. The platform empowers diverse stakeholders, including faculty management, programme leaders, and academic staff, in order to gain actionable understanding of learning progress and outcomes.

Beyond serving as a data repository, LAP is designed to guide stakeholders in applying the information systematically for quality assurance, fostering an evidence-based approach to pedagogy. By enabling continuous monitoring and informed decision making, the platform supports the ongoing enhancement of teaching strategies and learning experiences. Honoured with the **Learning Experience Award in the Adult Learning Track of EdTech Heroes Award**, organised by Esperanza, LAP is an example of innovative application of learning analytics that is believed to ultimately promote academic excellence.



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Transforming Classroom Experiences with Immersive Technology

PolyU has been pioneering innovative approaches to education through immersive technologies and student-staff collaboration. The Hybrid Immersive Virtual Environment (HiVE), developed with support from the PolyU Large Equipment Fund, integrates blended learning and flipped classroom strategies to create dynamic and interactive learning experiences. By empowering students to take ownership of their learning and strengthening peer support and staff-student partnerships, the initiative has benefitted both teaching and learning communities across the University.

Led by the team comprising members from the Department of Applied Social Sciences and the Educational Development Centre, the project has

received international and local recognition for its transformative impact. This cross-departmental team won the **Silver Award in the Asia Region of the QS Reimagine Education Awards 2023** for their immersive learning project, embedding immersive environments such as the Cave-cum-Studio Device and HiVE into General University Requirements courses like "From Gloom to Bloom: Global New Urbanism", enabling students and teachers to co-create content on topics including intangible cultural heritage and sustainable urbanism. The initiative was also awarded the **Grand Award (Higher Education) at the EdTech Heroes Award** presented by Esperanza.

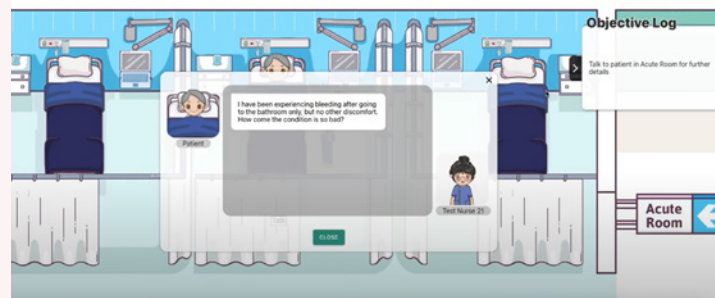
Teaching & Learning

Delivering Future-Ready Learning to Empower Students

The University is integrating cutting-edge technologies, including generative artificial intelligence (GenAI), virtual and augmented realities (VR/AR), and robotics, into its teaching, learning, and research practices. Spearheading this movement is the Institute for Higher Education Research and Development, which was established to drive innovation in higher education with a strong emphasis on AI-enhanced learning. Moreover, PolyU positions itself at the forefront of global educational technology development as it introduced the Hybrid Immersive Virtual Environment, the world's first large-scale fully immersive VR classroom, to redefine educational experiences.

Across departments, technology is already making a tangible impact: the Department of Building Environment and Energy Engineering, supported by the UGC's Fund for Innovative Technology-in-Education, uses VR and robotics to simulate large-scale fire tests, offering students a realistic and interactive learning experience; the School of Nursing's v-Care, a metaverse game serves as a clinical education activity in primary healthcare for physiotherapy students, enhancing knowledge retention, collaboration, and communication; the Department of Electrical and Electronic Engineering has launched two GenAI-powered platforms – AIReAS and NinjOrAltor – to deliver instant, actionable feedback on writing and presentation skills.

With early access to advanced technologies, students can effectively be equipped with future-ready skills while benefitting from collaborative, engaging, and effective learning tailored to meet the demands of a rapidly evolving, increasingly interconnected society.



Service-Learning programme

Championing Global Citizenship at Home and Beyond

PolyU is committed to cultivating culturally sensitive graduates with an international vision through innovative and inclusive educational approaches. Recognised with the **2023 University Grants Committee Teaching Award (Collaborative Teams)**, the School of Nursing's "Internationalisation at Home" (IaH) initiative has reshaped nursing education by embedding global competence and cultural awareness into the curriculum. Through worldwide collaborations, student-led simulations, and discussions on cross-cultural healthcare ethics, this education model equips both PolyU and overseas students with the skills to navigate evolving clinical environments. The team is working on amplifying the impact of IaH across disciplines by integrating virtual reality technology to provide an immersive learning experience.

Besides, the University's Service-Learning (SL) programme offers students transformative opportunities to apply academic knowledge in real-world contexts. From local communities to overseas destinations such as Chinese Mainland,

Southeast Asia, and Africa, SL projects promote cultural immersion, social awareness, and transnational collaboration. Students have contributed over 1.6 million service hours and engaged in initiatives such as rural electrification and community textile training in Rwanda, which faithfully reflect the University's commitment to addressing global issues through applied knowledge and technology.

These immersive, interdisciplinary educational experiences with a focus on reflective practice and collaboration encourage students to embrace diverse perspectives, develop leadership and communication skills, and contribute to an inclusive society.

4,500+  **students**

enrolled in

 **60+** **service-learning subjects**

External Engagement

Engaging Young Innovation and Technology Talents

PolyU places great emphasis on providing young people with enriching and diverse learning opportunities. The University's Junior Research Mentoring Programme aims to cultivate young talent capable of driving future innovation. Since its launch in 2021, the Programme has attracted **520 students from nearly 110 local and international secondary schools**, who completed over 140 research projects, covering topics from fields such as design, language, rehabilitation sciences and various engineering specialisations. Through hands-on experience in research design, data collection, analysis, and reporting, students developed practical skills and a deeper understanding of scientific inquiry. Guided by PolyU academics, some students even presented their findings at international conferences, gaining exposure to the global academic community.

Importantly, these student-led projects reflected current local and global trends. For example, one team explored "Activewear Design in the Digital Age", using advanced tools like 4D body scanners and motion capture systems. Another group examined how elderly patrons interact with self-service technologies in restaurants, highlighting opportunities for social inclusion in hospitality design. Meanwhile, one team focused on automation and robotics technologies and considered the development of indoor self-driving robots, learning about programming, sensors, lidar systems, and AI. By engaging in these projects, students acquired valuable skills to create innovative, technology-driven solutions to real-world problems, igniting their passion for research and preparing them for future academic and professional pursuits.



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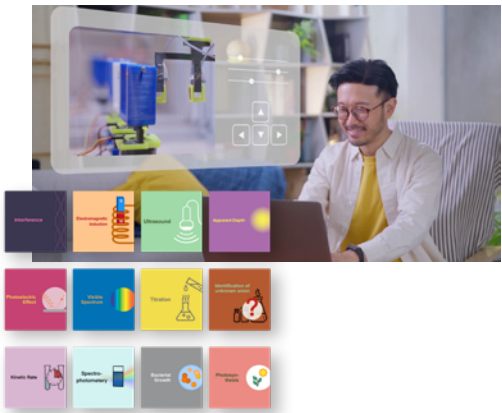
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Propelling Remote STEAM Learning through a Web-Based Laboratory Platform

To address the shortage of laboratory resources that limits STEAM education in local Hong Kong schools, the Department of Applied Physics developed Borderless Lab 365, a web-based remote laboratory platform, with funding support of **HK\$14 million from the Education Bureau Quality Education Fund under e-Learning Ancillary Facilities Programme**. Currently adopted by **about 20 secondary schools**, it has enabled **over 2,000 students** to conduct experiments independently anytime and anywhere. The next phase will extend free access to nearly 50 additional primary and secondary schools. Through the platform, students can remotely operate laboratory instruments like microcontrollers and sensors using their smartphones, download real-time experimental data,

and reduce errors through computerised control of experimental parameters.

These custom-designed, scientific experiments are centrally maintained by PolyU academics and shared across participating schools, broadening the range of experiments available and lowering development costs. In the set-up, teachers first design experimental procedures on the system, after which students schedule sessions to use laboratory equipment to explore topics in physics, chemistry, and biology or to complete online assignments in real-time. Looking ahead, PolyU plans to enhance the Borderless Lab 365 by integrating virtual and augmented reality technologies, further enriching the experimental experience and supporting more engaging, flexible STEAM learning opportunities for students across Hong Kong.

Governance & Operations

Elevating Learning through Strategic Reforms across Academic Levels

PolyU continues to enhance educational pathways for students across all levels. At the undergraduate level, the University has transitioned from programme-based to department-based admissions and is implementing faculty-based admissions. This system enables first-year students to follow a Common Year One curriculum before confirming their programme choice, allowing them to explore options and develop a broader academic foundation, which effectively

supports flexible study pathways and equips students with the agility to navigate a fast-changing world.

Meanwhile, to enhance the quality and global relevance of research postgraduate education, the Graduate School has launched the Unified Collaborative PhD Framework. This structured framework streamlines collaborative PhD programmes at all levels, namely university, faculty, and department, standardising criteria, partner engagement, and financial arrangements, opening new opportunities for impactful partnerships and attracting high-calibre candidates from around the world.

To further strengthen this effort, the Graduate School also established the Advisory Committee, comprising esteemed scholars and industry leaders. Serving as a bridge between academia and industry, the committee provides strategic advice on programme development and fosters meaningful opportunities and resources that enhance the professional competencies and all-round development of postgraduate students.

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