THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Review on the 2019 – 22 TDLEG projects – Identifying and Promoting Good Practices and Pedagogies

Principal Supervisor(s) and Unit(s):
Professor CHUN Wai Cecilia, Centre for Leaning Enhancement And Research

Project Objectives

This project aimed: (i) to review all TDLEG projects from the 2019–2022 triennium and shortlist those with teaching impacts; (ii) to identify exemplary practices from shortlisted projects; and (iii) to establish the repository of outstanding projects and to provide reference for colleagues; (iv) to disseminate the good practices and to inspire teachers to adopt practices in their own teaching curriculum.

Implementation and Deliverables

The project has progressed in three phases: (1) review all 200+ TDLEG projects; (2) identify the good practices and highlight the impact on teaching and learning; and (3) develop online modules and disseminate the good practices through the project website and workshops. A total of 42 projects has been shortlisted and corresponding online modules are produced and a website will be created to showcase these outstanding teaching development projects.

Outcomes and Achievements (including Impact on Teaching and Learning)

The objectives and accomplishments of this project have aligned well with institutional strategies. Specifically, the project aims to deliver a one-stop platform that collects and showcases successful teaching practices and pedagogies identified in the TDLEG projects. This alignment provides a valuable channel for sharing insights with other teachers. Potentially this can inspire and motivate them to explore and attempt their version in their own curriculum.

Evaluation

Evaluation is based on the feedback of viewers and participants at workshops. Evaluation can only be made after the website is launched and workshops conducted.

Dissemination, Diffusion and Sharing of Good Practices

CUHK has introduced new areas in the TDLEG funding schemes (such as internationalization; enhancing student engagement etc.), and good practices under these new themes were identified. Dissemination of good practices through online modules and workshops could promote professional development among teachers and enhance the refinement of curriculum design as teachers may be inspired and adopt new and innovative pedagogies in their teaching.

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General Teaching Development Projects
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Project Title: Supporting Academic Quality Assurance – Further Enhancement of the Database Management System (uPRDatabase) for Undergraduate Programme Reviews

Principal Supervisor and Unit:
Professor Chun Ka Wai Cecilia, Centre for Learning Enhancement And Research

Project Objectives

The primary objective of this project was to develop a comprehensive Quality Assurance (QA) database of undergraduate programme review reports that could support the university's strategic goals by enhancing educational quality and operational efficiency. The system was designed to provide critical insights to university personnel, thereby aiding in decision-making, improving teaching methods, and optimising institutional management.

Implementation and Deliverables

The project involved the creation of a secure, user-friendly platform accessible only to internal users with specific rights, due to the sensitive nature of the data. All proposed deliverables were prepared for demonstration at the project's conclusion, ensuring readiness for dissemination and further use.

Outcomes and Achievements (including Impact on Teaching and Learning)

The implementation of the QA database significantly impacted teaching and learning within the university. It provided a robust framework for categorizing good practices identified in teaching and learning and programme management across years, directly enhancing the learning environment and educational outcomes. The system's insights have been instrumental in refining academic programmes and administrative processes.

Dissemination, Diffusion and Sharing of Good Practices

Despite the sensitive nature of the data, the platform will be opened to targeted audiences within the university, respecting confidentiality requirements but maximising internal benefit. The project's success and methodologies have set a precedent for future initiatives, highlighting the effectiveness of strategic planning and interdisciplinary collaboration in achieving institutional goals.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Promoting and Sustaining Good Practices and Pedagogies from Two Cycles of Undergraduate Programme Reviews

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research

Project Objectives

The project aimed to enhance teaching and learning and programme management practices at CUHK by identifying and disseminating good practices from undergraduate programme reviews. Key strategies included the development of accessible resources to showcase effective educational strategies and the promotion of these good practices across the university.

Implementation and Deliverables

Implementation involved developing video clips to document good practices and establishing a dedicated YouTube channel, "Good Practices of UG Programmes at CUHK", and launching a new website featuring video presentations from the third cycle of undergraduate programme reviews. These platforms highlighted successful strategies and practices in areas such as Assessment, Learning Activities, and Programme Management. Additionally, resources were actively utilised in workshops for staff involved in the fourth-cycle undergraduate programme review, serving as essential tools for quality enhancement.

Outcomes and Achievements (including Impact on Teaching and Learning

The project achieved significant outcomes by integrating and promoting a broader understanding and adoption of good practices, which significantly contributed to the enhancement of the university's teaching and learning environment. These initiatives further reinforced the university's position as a leader in quality assurance within higher education. Through the development of resources such as the UG Good Practices website and the YouTube channel, the project served not only the internal community but also provided valuable insights to external bodies, showcasing CUHK's systematic approach to quality assurance.

Moreover, the successful execution of this project profoundly reinforced and advanced quality assurance at the university. It led to improvements in teaching practices, enhanced administrative procedures, and strengthened alignment with institutional priorities and strategic goals.

Evaluation

Viewer statistics and feedback from target audience will be collected to provide insights into the reception and utilization of the resources. Programme performance of the following programme review cycle will also shed light on contribution made by the resources.

Dissemination, Diffusion and Sharing of Good Practices

The good practices in teaching and learning and programme management were documented in video clips and housed under the UG Good Practices website and the YouTube channel. These means has served ad platforms for continuous learning and sharing of good practices.

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General Teaching Development Projects
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Project Title: Resources for Teachers on Rapport Building with and among Students

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research

Project Objectives

This project aims to develop online resources for teachers, which focus on principles and strategies to foster stronger rapport among students while maintaining positive teacher-student relationships.

Implementation and Deliverables

The content of the online resources is drawn from three key data sources: a student survey (699 responses), follow-up focus group interviews (24 participants), and interviews with nine teachers. A summary statistical report on the survey was compiled. The resources, primarily micro-modules—six for teachers and two for students—address the relationships between teacher and student relationships (TSR) and student and student relationships (SSR) and learning, students' perceptions at CUHK, and strategies for fostering positive relationships. The online resources consisting of 8 micro-modules are hosted on Open edX via KEEP platform.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project aims to deepen understanding of TSR and SSR at CUHK and provide practical resources for building rapport. This project gathered input from key stakeholders through a survey, focus groups, and interviews, providing complementary insights into the current state of TSR and SSR at CUHK and their contributing factors. Teachers' contributions enriched the resources with effective strategies for fostering these relationships. The online resources would be hosted as an 'online course' on the KEEP platform.

Evaluation

Informal viewer feedback will be gathered to guide improvements. Teacher interviewees have refined and evaluated their rapport building strategies and pedagogical practices. The Open edX platform via KEEP is user-friendly, and its last section is structured to encourage viewer feedback.

Dissemination, Diffusion and Sharing of Good Practices

The project delivered a poster presentation at the Teaching and Learning Expo 2024. The online resources will be introduced to CUHK teachers at the Professional Development Course for new teachers and other professional development activities organised by CLEAR. The micro-modules for students will be housed in the Independent Learning Centre webpage. All resources were housed on the project webpage on Open edX for all CUHK teaching staff.

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General Teaching Development Projects
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Project Title: Resources for Teachers on Promoting Active Learning and Student Engagement
Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research

Project Objectives

This project aims to provide online resources for teachers, which focus on strategies or approaches to foster student engagement and active learning.

Implementation and Deliverables

The online resources were developed using two key data sources: a student survey (1,092 responses) and interviews with nine teachers. Survey data and interview insights on engagement strategies, challenges, and experiences, alongside findings from the literature review, informed the content of the online resources. These online modules would be hosted on Open edX via the KEEP platform. The strategies proposed in the online modules were implemented and evaluated by project team members and they included experiential learning, rapport-building, and technology integration.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project gathered input from key stakeholders via surveys and interviews, offering insights into students' engagement levels, contributing factors, and challenges. Teachers enriched the resources with strategies for fostering engagement, forming the foundation of micro-modules hosted as an 'online course' on the KEEP platform. Project team members piloted approaches to engage students, observing positive learning outcomes.

Evaluation

As per the evaluation plan, informal feedback on content usefulness, navigation, etc. would be gathered after the online modules are launched. Teacher interviewees refined strategies like group work with defined roles, boosting participation, while project team members evaluated the resource kit through observations, self-reflection, and student feedback. A final section would encourage viewer feedback on the Open edX platform via KEEP.

Dissemination, Diffusion and Sharing of Good Practices

This project was introduced to the audience in the Teaching and Learning Expo 2024, via poster presentation. All resources were housed on the project webpage on Open edX for all CUHK teaching staff.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Evaluation of the Revision of the General Education Foundation Programme

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research
Dr. COLANERO Klaus John Charles, Office of University General Education

Project Objectives

The project aims to evaluate the effectiveness of the revised General Education Foundation Programme (GEFP) at CUHK. The main objectives are to assess the attainment of intended learning outcomes, the effects on students' understanding of sustainable development goals and language, the impact of reducing core texts, the consequences of language alignment policy, and student/teacher perceptions. Data would be collected through surveys, focus groups, grade analysis, class observations, discussion data and voluntary attainment tests. The findings are intended to inform curriculum review, pedagogical design, and course implementation for the GEFP and potentially other university courses.

Implementation and Deliverables

Six teams of teachers are formed to assess the impact of revised syllabi in UGFH and UGFN courses. Team 1 evaluates the effectiveness of reducing core texts on student understanding. Team 2 focuses on sustainability and language. Team 3 analyzes the depth of comprehension with fewer texts. Team 4 investigates language use under the language alignment policy. Team 5 explores student perceptions of the courses, while Team 6 examines teaching methods and curriculum changes. Data collection includes surveys, interviews, class observations, and performance data, culminating in a comprehensive report synthesizing quantitative and qualitative findings.

Outcomes and Achievements (including Impact on Teaching and Learning)

The findings of the evaluation study provide valuable insights into the changes in UGFH and UGFN in three areas:

- Student Learning Experiences
- Teaching Perspectives
- Curriculum Design Insights

Evaluation

The project adopted Biggs' 3P Model as the theoretical framework to evaluate teaching and learning. The framework has enabled six teams to coordinate data collection through various methods.

Dissemination, Diffusion and Sharing of Good Practices

A briefing session in December 2024 was conducted to share preliminary results from student surveys and voluntary attainment tests, offering early insights before the final report. The project team demonstrated a commitment to sharing their work with the broader academic community, participating in the International Science Education Conference in Singapore in June 2024 and the Teaching and Learning Expo at THE CHINESE UNIVERSITY OF HONG KONG
for two consecutive years. They delivered poster presentations at both the 2023 and 2024 Expo and an oral presentation at the 2024 Expo.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Further Development and Evaluation of the Core Courses on Computational Thinking and Digital Literacy

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research
Mr. FUNG Ping Fu Michael, Department of Computer Science and Engineering
Dr. LAW Yat Chiu, Department of Computer Science and Engineering

Project Objectives

This project aims to (1) further develop the courseware for the two core courses on computational thinking (CT) and digital literacy (DL), i.e., ENGG1003 and ENGG1004, which will be fully implemented in the First and Second Terms in CUHK in 2022-2023; (2) evaluate the effectiveness of the two courses in terms of process and outcome during their full implementation.

Implementation and Deliverables

Two sets of courseware were developed for the two courses. Data were collected by student surveys, online course and teaching evaluation questionnaire, class observation, student focus group interviews, teacher survey and individual teacher interviews. Student performance data were also collected. The deliverables are two sets of courseware, a set of micro-modules on computational thinking using coding tools, a set of IT workshops, pre-course and post-course student questionnaires, a teacher questionnaire, a protocol and an information sheet for class observation, a student focus group interview protocol and a teacher interview protocol.

Outcomes and Achievements (including Impact on Teaching and Learning)

Students benefited from the new courses by making significant improvements in DL and CT competence and DL self-efficacy, and to a lesser extent, in attitudes towards ICT for learning. To facilitate students' understanding of the course content and strengthen the relevancy to their major studies, the Office of Digital Literacy Education has developed relevant learning examples for students of different faculties.

Evaluation

Most of the deliverables/ outcomes have been achieved according to the key performance indicators.

Dissemination, Diffusion and Sharing of Good Practices

The findings were reported in the meetings of the University Task Force on Digital Literacy Core Requirement and academic conferences. The micro-modules are made available online.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Developing an Online Self-learning Courses for CUHK Students to Strengthen Their Basic and Subject-specific Research Skills

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research
Ms. KO Yu Lily, CUHK Library

Project Objectives

The project aims to create a self-learning tool that houses essential materials for academic research on one platform, where students can acquire timely information and learn flexibly.

Implementation and Deliverables

An in-depth interview provided feedback on the existing library online courses, offering insights into the development of a new comprehensive online course titled “LEAD” for students. Subsequently, a pilot run was conducted to gather student feedback on the new course, allowing content refinement before the official launch of LEAD in September 2025.

Outcomes and Achievements (including Impact on Teaching and Learning)

LEAD provides a student-centered learning experience focused on acquiring essential research information skills, in alignment with the strategic plan CUHK 2025. Many students in the pilot run reported that they could gain new insights from the course.

Evaluation

The project team understood that students expected more exercises and quizzes in self-learning context. More exercises and quizzes will be added to LEAD in long run. Questions will be updated annually too. An annual content review by FLTs and students are necessary for ensuring the timeliness and quality of the content.

Dissemination, Diffusion and Sharing of Good Practices

The LEAD course link will be shared through various channels within and beyond the CUHK Library, ensuring students can easily access the course content. The project team will also share the development of LEAD with peers in the industry in various conferences (intended).

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Interactions and active learning in the New Normal: uReply for Blended Learning

Principal Supervisor(s) and Unit(s):
Professor LAM Lai Chuen Paul, Centre for Learning Enhancement And Research

Project Objectives

The project objectives for uReply focus on ensuring its ongoing operation while expanding the user base. New features are being developed to support blended learning, including enhanced online assessment tools and criterion-referenced marking. Furthermore, AI-related enhancements are being explored and implemented. Simultaneously, the user interface is being revamped to unify the platform's look and feel, consolidate functions, and improve user experience with seamless transitions between interaction modes.

Implementation and Deliverables

The UI/UX revamp of uReply has been successfully released, enhancing the platform's look and feel for a more user-friendly experience. The team is unifying various functions to create a cohesive platform, with periodic fine-tuning based on teacher feedback. AI modules are well implemented, and user feedback is being collected. Despite a slight delay, the rubric marking system was soft launched in late 2024 and demonstrated at the T&L expo. Regular maintenance and user support ensure smooth operation and continuous improvement.

Outcomes and Achievements (including Impact on Teaching and Learning)

The UI/UX revamp of uReply has been shaped by valuable feedback from teachers and students, ensuring the new design meets their unique needs. New features and UI changes have been implemented based on this input, resulting in a positive user experience. Continuous review and refinement of feedback have been integral throughout the project. Post-pandemic usage of uReply remains strong, highlighting its ongoing value and effectiveness for interactive learning.

Evaluation

The uReply project has achieved several key milestones, including maintaining high campus-wide usage, installing new infrastructure to support AI features, and launching the rubric marking system and AI enhancements in 2024. The new UI/UX has been successfully launched, with continuous feedback for refinement. Workshops and activities have engaged over 100 teachers and students, and the platform has been showcased at major conferences, with a dedicated event planned for summer 2025.

Dissemination, Diffusion and Sharing of Good Practices

We have made significant progress in sharing good practices and ensuring project sustainability through internal showcases, workshops and participation in the CUHK T&L Expos.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Teaching and Learning Community of Practice (T&L CoP): Consolidation Together with Extension to Address Teachers' Pedagogical Research Needs

Principal Supervisor(s) and Unit(s):
Professor LAM Lai Chuen Paul, Centre for Learning Enhancement And Research

Project Objectives

Our project aims to promote pedagogic research through a teaching and learning community of practice (CoP) that organises professional development training for CUHK academic staff. This training allows them to learn from the expertise and experiences of local and international academics and experts, gaining insights for their own teaching and learning research. The project team supports CUHK teachers in conducting pedagogic research by developing various resources and providing consultations to address their needs and questions.

Implementation and Deliverables

The project team has successfully completed various activities to meet the deliverables outlined in the project proposal. We developed a project website, conducted 13 briefing sessions, established 10 Special Interest Groups, and recruited 245 members. Additionally, we created 56 resources, organised 22 sharing sessions, hosted two cross-institutional symposia, and held 39 invited talks and workshops, along with a student symposium. We conducted 283 pedagogic research consultations and made 14 presentations at academic conferences, meetings, and public engagement events. Furthermore, we published over 10 pieces of work by the project team and community members.

Outcomes and Achievements (including Impact on Teaching and Learning)

Throughout the project, we organised over 60 community events, achieving an average satisfaction rating of over 92% from our participants. Our work has also received an award and recognition from international academic communities, including the best paper presentation, invited talks, and collaborations with several overseas partners in the UK and Australia.

Evaluation

Our work has significantly exceeded the KPIs outlined in the project proposal. The impact can be demonstrated in various ways. The enhanced capacity of staff to conduct pedagogic research is reflected in their successful teaching and learning grant applications, their willingness to share their teaching innovations and pedagogic research, and their collaborations with colleagues across CUHK. A noteworthy success indicator is our multi-level partnerships, including local and international cross-institutional collaborations

Dissemination, Diffusion and Sharing of Good Practices

The project team has actively contributed to the wider academic community through presentations at academic conferences and meetings, as well as through publications and public engagement. Additionally, teachers' best practice has been showcased on our project website (https://www.cuhk-tlcop.net/) and made publicly available.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: The Impact of Universal Design Learning Model on Inclusive Education at CUHK
Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan Vivian, Centre for Learning Enhancement And Research

Project Objectives

The primary goal of this research initiative was to create an interactive platform for CUHK educators to enhance their awareness of Universal Design for Learning (UDL) in supporting both students with and without Special Educational Needs (SEN).

Implementation and Deliverables

The UDL project successfully delivered three key components: workshops, surveys, and micro-modules. The Workshop Series included three sessions that deepened educators' understanding of UDL principles through case discussions and practical strategies for optimizing teaching materials, resulting in high participant satisfaction. Two surveys assessed UDL inclusive practices were completed.

Outcomes and Achievements (including Impact on Teaching and Learning)

The UDL project led to significant improvements in educator understanding of UDL principles and positive changes in student engagement and motivation. Feedback from 1,097 students indicated high satisfaction with UDL practices, with an overall mean score of 3.82. The project highlighted a gap in UDL awareness among faculty, with 75.2% reporting unfamiliarity. However, students noted increased motivation positively impacting their learning outcomes. The findings underscore the importance of targeted professional development and resource accessibility to enhance inclusive educational practices at CUHK.

Evaluation

Some project objectives have been met, particularly in raising awareness among students, there remains a considerable challenge in faculty engagement with UDL concepts. Recommendations for improvement include establishing feedback mechanisms and pilot programs to increase teacher confidence in implementing UDL strategies, which will help create a more inclusive educational environment at CUHK. Future for the UDL project include expanding the UDL Workshop Series, implementing structured peer observations, and integrating UDL principles into departmental reviews to foster long-term improvements in teaching practices.

Dissemination, Diffusion and Sharing of Good Practices

The project was presented at the CUHK Teaching and Learning Expo in 2023-24 and 2024-25. This engagement facilitated collaborations and the adoption of successful practices in other units within CUHK and at external institutions. Training workshops and seminars were conducted to promote UDL principles, enhancing educators' understanding and encouraging the exchange of strategies. Additionally, micro-modules were disseminated through CLEAR monthly newsletters, reaching a broader audience and enabling the replication of effective teaching practices. These efforts contributed to creating a culture of continuous improvement and collaboration, demonstrating the potential for UDL principles to be integrated into diverse educational contexts across CUHK and beyond.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Students-as-Partners (SaP) Model in Teaching and Learning at CUHK

Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan Vivian, Centre for Learning Enhancement And Research

Project Objectives

The project aims to achieve three primary objectives: 1. evaluate the SaP framework through quantitative and qualitative research, 2. enhance teachers' awareness of SaP practices by developing a dedicated webpage and learning materials, and 3. promote effective pedagogical strategies that encourage co-learning and collaboration among students and faculty.

Implementation and Deliverables

The project aimed to update the SaP platform using feedback from teachers and students while implementing the SaP framework for learning and curriculum design. Key deliverables included three micro-modules, 20 instructional videos, and three hands-on workshops in 2024, which supported the design of SaP initiatives. Surveys indicated a positive shift in attitudes toward collaborative learning, highlighting the effectiveness of the feedback mechanisms employed throughout the process.

Outcomes and Achievements (including Impact on Teaching and Learning)

The outcomes reveal significant progress in implementing the Students-as-Partners (SaP) framework, with positive feedback on collaboration and educational practices. Teachers show strong interest in SaP's benefits but face challenges such as limited experience and time constraints. Meanwhile, students appreciate SaP initiatives for boosting engagement and learning outcomes, though they encounter obstacles like limited participation opportunities and a need for better training and support.

Evaluation

The evaluation of the SaP initiative shows successful completion of key performance indicators, including three thematic micro-modules, 20 instructional videos, and three workshops, all receiving positive feedback. While core objectives were met, refinements are needed to address cultural resistance and boost student participation in collaborative activities. It is recommended to enhance feedback mechanisms and provide additional training workshops to further support effective implementation and foster a culture of partnership among students and faculty.

Dissemination, Diffusion and Sharing of Good Practices

The IPE workshops served as a crucial platform for sharing best practices in Students-as-Partners (SaP) initiatives, fostering collaboration and awareness at the university. Regularly updated resources, including the SaP Handbook and 22 educational videos, address the benefits, frameworks, implementation strategies, and recruitment tactics to inspire faculty. The platform will continue to evolve with new FAQs and insights. Additionally, featuring case studies or interviews with professors who have successfully implemented SaP in the monthly newsletter will provide valuable inspiration for faculty.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Pedagogical and Assessment Support for Service-learning Programme
Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan Vivian, Centre for Learning Enhancement And Research

Project Objectives

The proposal aims to enhance faculty capabilities in service-learning (SL) curriculum design and understand SL curricula across colleges. Specific aims include optimizing the existing SL platform, investigating the Community Service-Learning Program (CSLP), developing a pilot assessment rubric, and fostering university-community partnerships for effective SL implementation at CUHK.

Implementation and Deliverables

The project progressed through several phases, starting with the recruitment of student partners and the development of a research questionnaire. Key activities included producing a micro-module, conducting staff surveys, and evaluating the SL platform. Workshops with community partners and the establishment of the CUHK Community Engagement Alliance were crucial for refining pilot assessment rubrics. Deliverables included three training workshops featuring local speakers and additional micro-modules introduced in 2023-24. Surveys gathered insights from staff across nine colleges, facilitating discussions on effective SL practices.

Outcomes and Achievements

The project achieved successful implementation of workshops and micro-modules, alongside the development and adoption of assessment rubrics to enhance SL projects. Strong collaboration with community partners and college staff fostered a supportive environment for SL initiatives. Ongoing evaluation processes ensured the effectiveness of assessment tools and community engagement. The implementation highlighted challenges related to faculty engagement and underscored the need for a flexible pedagogical framework.

Evaluation

The completed pilot CUHK SL assessment rubric establishes a structured framework integrating community service with academic learning, emphasizing course integration, critical reflection, and diverse assessment tools. The completed pilot CUHK SL assessment rubric establishes a structured framework integrating community service with academic learning, emphasizing course integration, critical reflection, and diverse assessment tools. Additionally, the completion of the micro-modules and workshops provided essential support and resources to educators, enhancing their ability to implement effective service-learning practices.

Dissemination, Diffusion, and Sharing of Good Practices

To optimize the SL platform at CUHK, several key strategies were implemented, including leveraging multiple communication channels like micro-modules on Panopto, conducting workshops, and creating a dedicated website. These initiatives culminated in presentations at the CLEAR Teaching and Learning Expo 2023-24, fostering a culture of continuous improvement in service-learning practices.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Academic Advising Support for Teachers at CUHK
Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan Vivian, Centre for Learning Enhancement And Research

Project Objectives

The aim of this proposal is to enhance the academic advising (AA) system at CUHK by developing a comprehensive support package for faculty. This package includes creating an interactive webpage for accessible resources, formulating guidance tips to standardize best practices among advisors, and organizing workshops for experience sharing.

Implementation and Deliverables

The AA project developed seven video-based micro-modules on key topics, which are hosted on a dedicated webpage serving as a centralized resource. Three workshops enhanced advisors' skills in stress management, mind-body techniques, and effective student support. A newsletter on the CLEAR website provides resources on preventing plagiarism, understanding examination rules, and innovative advising strategies.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project has shown significant impact through micro-modules like "Tips on Academic Advising," which support new faculty. The dedicated website enhances advisors' effectiveness in student support, while the workshops focused on best practices, meeting strategies, and managing challenging conversations, fostering collaboration among faculty and addressing student needs.

Evaluation

We have improved the academic advising (AA) experience at CUHK through an interactive webpage, guidance tips, micro-modules, newsletter and workshops. These initiatives have equipped faculty with essential tools to enhance advising and promote student success. To build on these efforts, future plans include incorporating case studies, interviews, a publication, and the sharing of good practices to gain deeper insight into advising practices and further refine our approach.

Dissemination, Diffusion, and Sharing of Good Practices

The project has demonstrated positive impact through the use of micro-modules and resources like "Tips on Academic Advising." The newly created website offers comprehensive information on academic advising. By emphasizing student needs and teacher well-being, these resources aim to enhance the advising experience and support sustainable development. Dissemination has been effective through websites, workshops, micro-modules, and monthly newsletters featuring articles from CLEAR.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: AI at the Forefront: Charting the AI Landscape at CUHK

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research
Professor LAM Lai Chuen Paul, Centre for Learning Enhancement And Research

Project Objectives

The project aimed to develop a comprehensive survey instrument to fulfil four key objectives: (i) understand the current AI awareness, adoption, readiness, and impact among the university community; (ii) identify major barriers, concerns, needs, and opportunities for institutional AI integration; (iii) facilitate informed policy decisions and strategic planning; and (iv) foster knowledge dissemination and collaboration in AI-related pedagogical research.

Implementation and Deliverables

The project team developed a survey instrument following extensive literature review, expert review, and pilot testing. The survey received 1,164 responses from students and teachers across all eight faculties at CUHK. Key deliverables included the survey instrument, survey responses, reports, and presentations at seminars and conferences.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project enhanced understanding of the AI landscape at CUHK and provided empirical evidence for decision-making. Findings were used to inform reviews on guidelines for generative AI tools. The project bridged communication among stakeholders, giving students a voice in institutional policymaking. Project findings can help integrate AI applications across existing programs to equip students and faculty with essential AI competencies and support CUHK's mission to prepare students for the AI-driven future.

Evaluation

The project has successfully achieved its objectives by generating sufficient survey responses from across the university community. Project objectives either have been met or are expected to be fulfilled by the conclusion of the project timeframe, laying the foundation for future AI integration initiatives.

Dissemination, Diffusion and Sharing of Good Practices

The project team actively shared findings through presentations, reports, and stakeholder engagement. The reusable survey instrument provides a sustainable framework for continued assessment of AI integration in higher education.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: AI in Academia: Training and Capacity Building for Teachers in Higher Education

Principal Supervisor(s) and Unit(s):
Professor CHUN Ka Wai Cecilia (Centre for Learning Enhancement And Research)
Professor LAM Lai Chuen Paul (Centre for Learning Enhancement And Research)

Project Objectives

To equip CUHK teaching staff with core knowledge and practical skills in AI and GenAI, enabling effective integration into teaching, research, and curriculum development through workshops and assessments.

Implementation and Deliverables

- AI Curriculum for Faculty Development: Revised and developed a comprehensive curriculum based on external reviewer feedback.
- Preparatory Workshops: Conducted introductory workshops to present basic AI concepts and hands-on applications, laying the foundation for advanced modules.
- Research Paper: Drafted "*Understanding AI in Education: A TPACK Analysis of AI Professional Development Needs*" to summarise survey findings and highlight faculty needs and lessons learned; currently under review.

Outcomes and Achievements (including Impact on Teaching and Learning)

- Initial Capacity Building: Workshops reached 371 online and 79 in-person participants (those attended at least half of the event length), establishing a robust foundation in core AI concepts.
- Online Modules Development: Based on the revised curriculum, pilot online modules are being developed with a focus on accessibility, flexibility, and interactivity to empower faculty to deepen their AI skills at their own pace.

Evaluation

- Workshop Evaluations: Post-workshop surveys (77 valid responses) showed positive feedback on content delivery, guiding adjustments for future training.

Dissemination, Diffusion, and Sharing of Good Practices

- Distributed the research paper among key stakeholders who guide and deliver the modules.
- External Sharing: Submitted the research paper for review at the *11th International Conference on Frontiers of Educational Technologies* (12–14 June 2025) to facilitate broader discussion on faculty development needs for AI.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Developing Academic Staff Members' Pedagogic Research Engagement at CUHK
Principal Supervisor(s) and Unit(s):
Professor LAM Lai Chuen Paul, Centre for Learning Enhancement And Research

Project Objectives

The project aims to address three major barriers to staff engagement in pedagogic research: the foremost being time constraints, followed by unfamiliarity with research methods used in pedagogic and educational research, as well as unfamiliarity with pedagogic and educational research itself. Our proposed scaffolded professional development and pedagogic research knowledge exchange provided essential space for discussion on how to carry out pedagogic research and learn best practice from fellow colleagues, both locally and internationally. The facilitated writing retreats also maximised productivity in writing academic work, fostered collaboration among team members, and created opportunities for networking.

Implementation and Deliverables

The project team has successfully carried out various activities to meet the deliverables outlined in the project proposal. We developed a project website and organised six scaffolded professional development workshops, which included pre-workshop reading groups, main workshops, and post-workshop group consultations. Additionally, we held six pedagogic research knowledge exchange sessions and hosted two facilitated writing retreats. We established external collaborations with Anglia Ruskin University, the University of Bath, the University of Western Australia, and Monash University. We also supported over 10 CUHK teachers in disseminating their work through presentations at conferences, academic meetings, and publications.

Outcomes and Achievements (including Impact on Teaching and Learning)

We received highly positive feedback on our professional development events. We achieved an average overall satisfaction rate of 92.9% for the scaffolded workshops. Similarly, the pedagogic research knowledge exchange sharing sessions were positively received, with an average overall satisfaction rate of 92.7%. Qualitative feedback was gathered from participants at the facilitated writing retreats, who remarked that the sharing sessions led by different teachers provided valuable insights into various teaching methods. They also found the focused writing sessions particularly beneficial, as they allowed participants to concentrate on writing without distractions.

Evaluation

We achieved all the KPIs outlined in the project proposal. The impact can be demonstrated in various ways. The enhanced capacity of staff to conduct pedagogic research is reflected in their periodic and active participation in our scaffolded professional development workshops, despite the higher time commitment required due to the sandwich structure, as well as their willingness to share their teaching innovations and pedagogic research. A noteworthy success indicator is our partnerships with international cross-institutional collaborations and an international community partnership.

Dissemination, Diffusion and Sharing of Good Practices

The project team has actively supported colleagues to contribute to the wider academic community through presentations at academic conferences and meetings, as well as through publications. Additionally, teachers' best practice has been showcased on our project website (https://www.cuhk-tlcop.net/) and made publicly available.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Integrating AI in Assessment for Learning Enhancement & Grading Efficiency

Principal Supervisor(s) and Unit(s):
Dr. LAM Yiu Man Otis, Centre for Learning Enhancement And Research

Project Objectives

The project aims to develop a user-friendly AI-assisted assessment platform that enhances grading efficiency, objectivity, and scalability. It addresses limitations in traditional assessment—such as bias and time constraints—while ensuring accessibility for teachers with limited technical expertise.

Implementation and Deliverables

The project involved four key activities: research, development, pilot testing, and sharing. Research included needs analysis and AI model evaluation, resulting in the selection of Azure ChatGPT-4o. Development deliverables include a secure platform (cuGradeBuddy.app) with intuitive UI, bulk upload, AI-driven grading, personalised feedback, and analytics. Pilot testing is scheduled for May–June 2025.

Outcomes and Achievements (including Impact on Teaching and Learning)

Core functionalities are complete, aligning with institutional goals of enhancing staff AI competencies and promoting innovative teaching. While pilot testing is pending, preliminary feedback from presentations suggests strong interest and relevance. The platform supports efficient grading and timely, constructive feedback, laying the groundwork for AI integration in assessment.

Evaluation

The original KPIs—including platform functions, user feedback, and timelines—largely remain relevant. Delays affected the timeline, especially in frontend development and prompt engineering. User feedback will be gathered post-pilot to validate usability and effectiveness.

Dissemination, Diffusion and Sharing of Good Practices

The platform was showcased at three academic conferences. A workshop is scheduled for June 2025. Pending positive pilot feedback, future plans include adding student interfaces and customisable grading, promoting broader adoption of AI-integrated assessment across disciplines

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Postgraduate Academic Advising Support at CUHK

Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan, Vivian, Centre for Learning Enhancement And Research

Project Objectives

The project aimed to enhance academic advising (AA) for postgraduate students through three main objectives: assessing the experiences of supervisors and students via surveys, preparing guidance tips for academic advisors, and producing a micro-module alongside a workshop to raise faculty awareness of postgraduate needs.

Implementation and Deliverables

Implementation involved comprehensive surveys, educational micro-modules, and workshops for academic staff. A total of 923 postgraduate students participated, achieving a response rate of 46.15%. Deliverables included bilingual surveys for Research and Taught Postgraduate students, 3 recorded workshops for ongoing access, and newsletters published in March and December 2024.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project improved understanding of academic advising and its positive effects on student achievement by exploring how teacher-student relationships influence motivation and engagement through the Situated Expectancy-Value Theory. Key outcomes highlighted the importance of regular interactions, constructive feedback, and care in enhancing student success. However, research postgraduate students face significant academic pressures that lead to stress and mental health issues such as anxiety and depression, contributing to negative research experiences and increased intentions to leave their studies. To address these challenges, micro-modules and workshops were developed to better equip staff in supporting diverse learning needs.

Evaluation

Evaluation of the project confirmed the achievement of key performance indicators, including the completion of three student surveys and two teacher surveys in English and Chinese. This informed the development of targeted micro-modules addressing postgraduate needs and promoted peer advising. Three workshops focused on these themes, with recordings available for future reference and a satisfaction survey conducted to gauge effectiveness. Additionally, newsletters provided essential updates, enhancing communication and fostering community among teachers.

Dissemination, Diffusion and Sharing of Good Practices

The dissemination of findings through newsletters and workshops highlighted the role of AI in strengthening teacher-student relationships, addressing autonomy, competence, and relatedness. Teachers were encouraged to adopt diverse advising approaches—developmental, prescriptive, and intrusive. A Zoom workshop on mental health and self-care practices was also conducted, alongside presentations at the CLEAR Teaching and Learning Expo 2024-25, with one poster receiving commendation for its educational significance.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Advancing Sustainability Education at CUHK and Beyond via General Education and Cross-sector Synergy

Principal Supervisor(s) and Unit(s):
Professor TAI Pui Kuen Amos, Office of University General Education
Dr. LI Ming Kenneth, Office of University General Education

Project Objectives

The project aims to integrate sustainability and the Sustainable Development Goals (SDGs) into the curricula of General Education (GE) at CUHK and beyond. It establishes five main objectives to enhance sustainability education in (i) University GE (UGE), (ii) GE Foundation Programme (GEF), (iii) College GE (CGE), (iv) Faculties and University, and (v) Beyond CUHK.

Implementation and Deliverables

For (i), the SDG Study Scheme has been significantly adjusted to align with UGE. For (ii), a classic text on sustainability was incorporated. For (iii), synergy was successfully established with Colleges with integration of SDG in CGE and their service-learning programmes. For (iv), we collaborated with faculties in experiential learning, developed a Best Practices Archive and Community of Practice to support sustainability education and organized stakeholder engagement workshops. For (v), we collaborated with the Hong Kong Sustainable Campus Consortium, QS and University of Exeter and external stakeholders in various initiatives.

Outcomes and Achievements (including Impact on Teaching and Learning)

Students' engagement, knowledge and mindset in sustainability have been significantly enhanced, teachers' competencies have been improved, and our research outputs provide an understanding of the sustainability education landscape in CUHK and HK, which also indicates a growth in sustainability consciousness in CUHK and beyond.

Evaluation

The project's key accomplishments include revising the SDG Study Scheme, significantly increasing the number of SDG-GE and SDG-SE courses, expanding the SDG Community, issuing SDG Achiever Certificates, and providing Experiential Learning Activity Fund to support activities in SDG-GE/SE courses and CSLP. A common-core text was integrated into the GEF Programme, engaging 3,600 students each year. Synergy was built with colleges. Comprehensive university-wide and GE-wide SDG course inventories were established, while SDG Forum Series talks reached significant audience members in the community. Our active participation in HKSCC and the Future17 Programme facilitated external collaborations. Research efforts included student focus groups and teacher interviews to evaluate the SDG Study Scheme. The project team also delivered significant conference presentations, completed publications, and organized a symposium featuring speakers from local and nonlocal universities.

Dissemination, Diffusion and Sharing of Good Practices

The project's outputs were disseminated by creating lasting impacts on teaching and learning at CUHK and beyond. For learning, the continuation of the SDG Study Scheme, offerings of SDG-GE and SDG-SE courses and establishment of the SDG Community will continue to raise students' sustainability awareness. By fostering ongoing collaboration among teaching staffs and faculty dedicated to sustainability education, the project engaged more teachers from diverse departments and increased sustainability awareness via the Community of Practice on Sustainable Education. Furthermore, the Symposium on Education for Sustainable Development promoted collaboration among educators from local and non-local institutions, facilitating the sharing of effective sustainability practices.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: An Online Bilingual Glossary in Support of Language Alignment in General Education Foundation (GEF) Classes

Principal Supervisor(s) and Unit(s):
Dr. PANG Kam Moon, Office of University General Education

Project Objectives

Since autumn 2022, a policy has been implemented requiring students to align their assignment language with classroom instruction to improve their ability to express complex ideas in both Chinese and English. This creates challenges: expanding Chinese vocabulary for intellectual concepts, accurately translating nuanced meanings from English texts, and mastering a broad lexicon on humanity and nature. To address these, an online bilingual glossary for GEF core texts was developed, providing translation tools, contextual usage with etymology, and engaging students in enriching the glossary.

Implementation and Deliverables

Bilingual glossaries, consisting of 320 glossary entries and 40 explanatory essays, have been completed. Beyond simple translations, the glossaries offer insights into the historical, cultural, and philosophical contexts of terms, enabling students to understand the authors' intended meanings and the evolution of relevant concepts over time. The complete version will be launched in the 2025–26 academic year. Approximately 7,800 students enrolled in the two dialogue courses each academic year will use these materials both online and offline.

Outcomes and Achievements (including Impact on Teaching and Learning)

Individual instructors have utilised these learning resources to craft thoughtful discussion questions for tutorials, encouraging students to engage critically and explore ideas in depth, extending beyond the selected excerpts of classic texts. Early trials have demonstrated that these learning resources significantly enhance students' understanding of the core texts in the dialogue courses.

Evaluation

Focus group interviews were conducted during the development of the learning resources. Surveys and additional focus group interviews with students and teachers will be organised to gather feedback after the full launch in the 2025–26 academic year, to collect both teachers' and students' opinions on the effectiveness and use of the resources.

Dissemination, Diffusion and Sharing of Good Practices

The project has been introduced and shared with various institutions, including CUHK-Shenzhen. Team members showcased the project through a poster presentation at EXPO CUHK and the eLearning Forum Asia 2024 at the Hong Kong Baptist University. Additionally, the developed materials were also utilised in teaching the 2004 Summer School for Mainland Students and the summer intensive courses at Tsinghua University.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: A Mentor-assisted Study Scheme (MASS)
Principal Supervisor(s) and Unit(s):
Dr. WONG Wing Hung, Office of University General Education

Project Objectives

Several parties will benefit from the project: (i) Students will improve in their reading and understanding of classical works, as well as in their presentation and teamwork skills; (ii) Mentors will have an opportunity to share their expertise with young talents; and (iii) Resources of the University Library will be better utilised.

Implementation and Deliverables

First, from spring 2023 to summer 2025, 32 MASS reading groups have been organised. A total of 144 students have participated in these reading groups and every reading group has seriously read a book. Secondly, 11 three-minute podcasts have been produced. They are available on both the project website and the Chinese University Library website. Thirdly, a poster titled “Mentor-Assisted Study Scheme (MASS)” was presented at Teaching and Learning Innovation Expo 2024.

Outcomes and Achievements (including Impact on Teaching and Learning)

In a post-project survey on teachers’ opinions, results show that teachers are in general positive towards student performance in the reading groups and have high satisfaction with their own experience in leading a MASS reading group. From the three-minute podcasts students produced, we can see those students have learnt how to read.

Evaluation

In terms of the number of MASS reading groups (95 were proposed) organised and the number of three-minute podcast (190 were proposed) produced, the present progress (32 and 11, respectively) falls short of the proposed. A website has been constructed and one conference presentation was delivered as planned. The teacher survey shows teachers’ high evaluation of various aspects of MASS.

Dissemination, Diffusion and Sharing of Good Practices

Small-group discussion and the provision of pre- and post-reading exercises are two good practices identified. Another good practice, three-minute podcast, may have the potential to be a new kind of student assessment.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Developing An Inter-faculty Collaborative Experiential Program to Foster Students' Science Communication Skills

Principal Supervisor(s) and Unit(s):
Dr. CHEUNG Hang Cheong Derek, Office of University General Education
Dr. LO Chun Yeung Edwin, Office of University General Education
Dr. NG Ka Leung Andy, Office of University General Education
Professor SHAW Pang Chui, School of Life Sciences
Professor CHUI Pui Yi Apple, School of Life Sciences
Professor TAI Pui Kuen Amos, Earth and Environmental Sciences Programme

Project Objectives

Our project, in collaboration with EESC and GRM, enhances the Science Communication Training Workshops (SCTS) and UGFN Experiment Experiential Workshops (UEEW) from the previous TDLEG project. The workshops now accommodate more students and include two sessions each for the original topics, along with new workshops on climate change modeling and a guided tree tour at CUHK. Additionally, training for science communicators has expanded from two half-days to five, providing improved feedback and live demonstration opportunities.

Implementation and Deliverables

- 7 experiential workshops for UGFN students were designed and tested.
- 66 workshop sessions were carried out in total.
- 5 micro-module videos were produced.
- 35 senior students were recruited and trained as science communicators .
- Science communication training workshops were redesigned. 12 workshops were carried out.

Outcomes and Achievements (including Impact on Teaching and Learning)

Senior students in SLS, EESC, and GRM have enhanced their science communication skills through guidance and independent workshop leadership. UGFN students also experience improved learning through hands-on activities, fostering deeper understanding and appreciation of scientific concepts. The project engages senior students as partners in curriculum design, fostering ownership of their learning. Workshops link diverse scientific texts, expanding students' knowledge across disciplines. Additionally, the initiative contributes to multiple UN Sustainable Development Goals.

Evaluation

We have collected surveys from students and held focus groups with the science communicators. The evaluation indicates that the project objectives have been met. Science communicators and UGFN students provide generally favorable reviews concerning the workshops/trainings they attended.

Dissemination, Diffusion and Sharing of Good Practices

We have disseminated our project through various presentations at key conferences, including the Teaching and Learning Innovation Expo in 2023 and 2024, as well as the International Conference on Teaching, Educational, and Learning. We also presented the project at the GEFP mini-conference. Additionally, discussions with colleagues from CUHK Shenzhen have initiated plans to expand the project into an inter-institutional initiative.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: A Compendium of Introductions and Reading Guides to the Revised Course Books for *In Dialogue with Humanity* and *In Dialogue with Natur*e

Principal Supervisor(s) and Unit(s):
Dr. HO Wai Ming, Office of University General Education

Project Objectives

The two GE foundation courses "In Dialogue with Humanity" and "In Dialogue with Nature" engage students in close reading and analyzing selected passages from a wide range of classics. The project addresses the difficulties and challenges students encounter in reading and understanding. To ensure that the compendium meets high academic standards, experts and scholars were invited to special seminars and symposia to share their research and insights on the relevant classics. The compendium combines current scholarship with the pedagogical insights of GEF teachers.

Implementation and Deliverables

A team of experienced instructors from the two courses were responsible for the drafting. A series of in-house meetings and individual presentations, incl. a meeting with colleagues teaching the same courses at Shenzhen campus, were organized. At the end, following deliverables are produced: an introduction and a reading guide for each of the sixteen classics of the two courses; for some of the classics, short remarks of translation were also written to facilitate students' choice of translation.

Outcomes and Achievements (including Impact on Teaching and Learning)

In the past semesters, members tested the materials in their own teaching. In addition, developed materials were used in the teaching of the summer course for the Summer School for Mainland Students (SSMS) (2004) and for the summer intensive courses taught at Tsinghua University (2004). With the help of the materials, students gained a better understanding of the texts and the background, and teachers were able to concentrate more on themes they wanted to discuss with students.

Evaluation

The developed materials will be implemented in Term 1, 2025-26. After the full launch, focus-group interviews will be organized. We will collect teachers' opinions on the use of the materials.

Dissemination, Diffusion and Sharing of Good Practices

Team members introduced the project on various occasions: Poster presentation at EXPO CUHK, and at the eLEARNING FORUM ASIA 2024 at BU. Presentations were also conducted at the last two annual conferences of the Federation for GE, China.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Developing an AI Argument Recognition Tool for a KeyWord-in-Context-based Method to Assess Students' Understanding of Specific Concepts

Principal Supervisor(s) and Unit(s):
Dr. COLANERO Klaus John Charles, Office of University General Education
Dr. LO Chun Yeung, Edwin, Office of University General Education
Dr. QURESHI Umair Mujtaba, Department of Computer Science and Engineering
Dr. KAM Ho Chuen, Calvin, Department of Computer Science and Engineering

Project Objectives

The project aims to develop an AI-assisted tool that teachers can use to assess students' conceptual understanding through a KeyWord-In-Context (KWiC) analysis already developed by two of the Principal Supervisors. A proof-of-concept of the KWiC-based analysis has been already completed and presented to colleagues and at ESERA 2023, but the manual classification involved in this process is time-consuming, limiting scalability for a broader application. To address this challenge, the project seeks to use Large Language Models (LLMs), to automate the classification of concept-related arguments in students' essays.

Implementation and Deliverables

We have developed a Python application for the pre-processing of the essays: anonymization, database creation, KWiC search, etc. We have prepared a database of more than 5000 anonymized students' essays (from 2013 to 2024). We have implemented two LLM-powered web interfaces to classify keyword-related sentences that are already usable by teachers, though classification accuracy needs to be improved.

Outcomes and Achievements (including Impact on Teaching and Learning)

Several colleagues have expressed strong interest in using our conceptual and practical tools. The work for the project is having a strong impact in refining our own skills and strategies in analysing students' work and ways of expressing their ideas in essays and potentially about 450 students are already benefiting from the pedagogical developments informed by the project.

Evaluation

We have evaluated the progress of our project against the KPIs indicated in the project's proposal and we have verified that the objectives are either already reached or on track to be reached by June 2025.

Dissemination, Diffusion and Sharing of Good Practices

We have already presented our project at the CUHK Expo 2024 and to the OUGE director and teachers in an "In-house talk". Two more presentations are planned: at the OUGE-GEFP mini-conference in May, and at the international conference ESERA 2025 – Copenhagen in August.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Designing and Implementing a Technical Framework for Credit-Bearing Courses at CUHK
Principal Supervisor(s) and Unit(s):
Professor KING Kuo Chin Irwin, Department of Computer Science and Engineering

Project Objectives

The project aims to enhance the KEEP credit-bearing platform, initially introduced in the 2021-22 academic year, by incorporating feedback from teachers and administrative staff. Improvements include new functions that provide teachers with detailed reports on student information and academic backgrounds, allowing better control over enrolled students. Additionally, the user interface will be redesigned to highlight essential information, aiding teachers in making credit-granting decisions.

Implementation and Deliverables

The project to enhance the KEEP credit-bearing course platform began with a kickoff meeting involving stakeholders and teachers to outline project goals. Teachers' feedback was gathered to tailor the system to their needs, followed by resource planning. The design phase incorporated this feedback, leading to a comprehensive system blueprint. During development, iterative prototyping with teacher input ensured alignment with educational practices. The testing phase involved teachers evaluating new features, including API integration for accessing student records. Finally, the project team provided ongoing support, especially during semester-end credit submissions.
The project deliverables include: a customized credit-bearing course platform on KEEP, submission of over 30 students' results to CUSIS, hosting of 10+ credit-bearing courses, a user guide for teachers, two tools for exporting student reports in JSON format, a survey to gauge teachers' perceptions, and an online workshop to instruct teachers on using the platform.

Outcomes and Achievements (including Impact on Teaching and Learning)

The newly developed and tested credit-bearing platform has been launched at https://webapp.keep.edu.hk. Teachers can access various information, including credit submission deadlines, student scores, and program details, and download student reports for use in applications like Excel. The platform is currently utilized by the Department of Linguistics and Modern Languages for several language programs. User feedback highlights the informative interface, clean design layout, and the helpful student record report feature.

Evaluation

The original evaluation plan included integrating KEEP with CUSIS, obtaining student academic results, managing credit-bearing courses, holding workshops, providing user guides, and developing tools to export reports. The results achieved are: successful integration with CUSIS, 3489 student academic results obtained, one workshop scheduled, one user guide provided, and two tools developed to enhance platform usability. These efforts have helped familiarize teachers and staff with the platform, especially newcomers.

Dissemination, Diffusion and Sharing of Good Practices

The Department of Linguistics and Modern Languages (LIN) uses the credit-bearing platform to offer online courses, enabling students to gain knowledge and earn credits simultaneously. The platform allows teachers to easily check and submit student records. LIN has provided 10 online credit-bearing courses per academic term, serving over 3000 students to date. Sharing LIN's successful practices can help demonstrate the benefits of hosting online credit-bearing courses to other departments.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Course Recommendation and Course Optimization System for Lifelong Learning
Principal Supervisor(s) and Unit(s):
Professor KING Kuo Chin Irwin, Department of Computer Science and Engineering

Project Objectives

The KEEP team has maintained the KEEPCourse platform since 2016, continuously evolving with advancements in AI, user experience, and other technologies. This project aims to enhance the technological stack of KEEPCourse and introduce new features for improved performance and long-term support. New features involve a sophisticated course recommendation system using algorithms to analyze user preferences and trends, offering personalized course suggestions. Additionally, the platform will provide insights for teachers to optimize course descriptions, attracting students who will benefit most from their courses.

Implementation and Deliverables

The project activities included system planning, where feedback from stakeholders was gathered and an analysis of the existing KEEP course search engine was conducted. The design phase involved evaluating new requests and current resources, and developing a system design blueprint. During development, various searching mechanisms were prototyped and tested with user feedback. The testing phase included extensive feature testing and fine-tuning based on user input. Finally, the maintenance phase involved continuous system monitoring, user support, and promotional events to introduce new features and provide usage tips.

The project deliverables include a course recommendation system and a course description optimization system on the KEEP course search platform. Additionally, there are two user guides for the new KEEP course search engine, two online workshops to introduce the new features, and a report evaluating the effectiveness of the course recommendation and search optimization systems.

Outcomes and Achievements (including Impact on Teaching and Learning)

The new course search engine, CRIST (Course Recommendations and Insights Suggestion Technology), has been launched at https://crist.keep.edu.hk/ , featuring a new interface with trending tags. The course recommendation system suggests related courses based on user preferences, while the course description optimizer helps teachers enhance their course descriptions. Within three months of its launch, CRIST averaged 71 visitors per month, indicating strong initial interest. User feedback highlights the improved interface, faster search results, helpful recommendations, and valuable course description optimizer.

Evaluation

The evaluation plan included tracking various metrics such as the number of courses, searches, and recommendations. The results achieved are: one machine learning optimization system and one search optimization system in CRIST, 19,260 courses available, 153 searches recorded, 127 course recommendations operated, and 408 recommended courses provided. Additionally, two workshops and two user guides were created for teachers and students, and one project report was produced, with some content used in the final report.

Dissemination, Diffusion and Sharing of Good Practices

The new course search platform launched in February 2025 without formal promotion, unlike the existing KEEP search platform, which has been actively promoted since 2016 and averages over 500 active users per month. Despite this, the new platform recorded an average of 71 active users per month in its first three months, about 14% of the current platform's user base. This initial adoption rate indicates potential for increased engagement once promotional activities begin.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: The Readiness of Metaverse in Pedagogical Approach for Tertiary Education
Principal Supervisor(s) and Unit(s):
Dr. TANG Mei Kuen Florence, School of Biomedical Sciences

Project Objectives

The project aims to integrate an immersive metaverse or extended reality (XR) to develop innovative pedagogical strategies, enhance active learning, and improve student professionalism and competency for metaverse learning (*MetaL*). It evaluates XR applications of the *MetaL* in skill training, serious games, and networking theatres, identifies implementation challenges, and shares best practices to advance meta-education across tertiary institutions.

Implementation and Deliverables

The *MetaL* project implemented XR-based activities across pre-class, in-class, and after-class settings for the facilitation of concept learning. Deliverables include seven 360° POV skill training videos with critical thinking tasks for biomedical students, VR gamified training simulators, including ECG and animal drug injections, for health professionals, immersive XR networking theatres for interactive learning, and a 3D digital specimen platform for personalized revision and peer-to-peer discussion. These tools foster active learning, collaboration, and skill development.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project demonstrated transformative impacts: XR 360° training increased student engagement and confidence through immersive, mistake-tolerant scenarios. VR gamified training enhanced professional competencies in medicine and XR networking theatres, such as lab safety via collaborations with HKUST Chemistry and Vivas University, addressing global safety and ethical standards. The novel *MetaL* improved peer collaboration and reduced social anxiety, while student partnerships established scalable ecosystems for sharing the responsibility in learning. The outcomes of *MetaL* align with CUHK's strategic goals and UGC priorities, positioning CUHK as a leader in meta-education innovation.

Evaluation

The evaluation of *MetaL* showed high student satisfaction and engagement across skill training, game simulators, and XR networking theatres based on quantitative surveys with four scopes involving skill acquisition, technique sophistication, knowledge proficiency, and overall experiential learning. Over 80% of students reported positive experiences, though some faced challenges in knowledge articulation and device compatibility. The KPIs demonstrated increased engagement and interdisciplinary collaboration, but future studies should refine outcome metrics and reintroduce qualitative feedback for deeper insights.

Dissemination, Diffusion, and Sharing of Good Practices

The *MetaL* deliverables have been widely disseminated and adopted across CUHK, HKU, HKUST and international partners like Vivas University, demonstrating scalability and interdisciplinary value. XR modules have enhanced laboratory safety, medical ethics, and research presentations. Standardised regulations ensure responsible sharing and intellectual property protection. Good practices include innovative XR deliverables and collaborative partnerships, with ongoing efforts to expand, refine, and sustain these innovations for broader educational impact.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Sustainable Tourism Planning Games for Cross-disciplinary and Territory Knowledge Sharing and Student Engagement

Principal Supervisor(s) and Unit(s):
Professor CHAN Chung Shing, Department of Geography and Resource Management

Project Objectives

This project develops game-based learning to engage students in sustainable destination planning, integrating real-world case studies and Sustainable Development Goals (SDGs). It fosters interdisciplinary collaboration, experiential learning, and global partnerships through role-play games in rural and urban contexts.

Implementation and Deliverables

Two role-play games, including board and online versions, were developed in rural and urban contexts. The project team and CUHK student partners co-designed and co-developed the game, co-created scenarios, and tested gameplay. The games were implemented in courses, shared with staff and students campus-wide, and disseminated in academic events and teaching conferences, promoting adoption across faculties and disciplines.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project enhanced student engagement, interdisciplinary collaboration, and sustainability awareness. The game was integrated into multiple CUHK courses and encouraged critical thinking and active learning in SDG and tourism education. The game workshops recorded positive student feedback, and the project received awards for teaching, learning and pedagogical innovation, highlighting its impacts on teaching quality and cross-institutional collaborations.

Evaluation

Evaluation through surveys, interviews, and reflections showed improved student understanding of sustainable tourism and SDGs. Students valued the game's realism and interactivity with enhanced knowledge, attitude, and behavioural indicators. Instructors and the project team noted its flexibility and relevance to frontier game-based learning. Iterative feedback helped refine the games, confirming their effectiveness in achieving learning outcomes and supporting innovative teaching practices.

Dissemination, Diffusion and Sharing of Good Practices

The project has been widely disseminated through course integration, cross-disciplinary adoption, international collaborations, conferences, and educator training. It has influenced teaching at CUHK and abroad, with universities in Asia and Europe showing interest. Key good practices include student-centred learning, interdisciplinary collaboration, and flexible teaching tools. Future strategies focus on policy integration, open-access materials, faculty training, global networks, and long-term impact studies to expand the project's reach and sustainability.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing Follow-up Learning Experience by Leveraging 'Topic Guidance Enquiry Framework' on Guided NLP Model for Tailored Student Engagement

Principal Supervisor(s) and Unit(s):
Mr. YIP Kim Fung Frankie, Department of Electronic Engineering
Professor SHU Ching Tat Chester, Department of Electronic Engineering

Project Objectives

This project aims to develop a pedagogical assistive platform that leverages the Topic Guidance Enquiry Framework as a backend engine to create a Guided NLP model. This web application will empower university-level instructors to effortlessly generate customized prompts through the backend framework. Furthermore, it will offer shared URLs of NLP models, such as POE or ChatGPT, that these prompts can utilize to enhance students' post-lesson learning.

Implementation and Deliverables

Teaching staff can send students URLs to the guided NLP models after covering specific course topics, allowing students to receive personalized questions in a structured sequence. The model will evaluate their background knowledge, encourage detailed explanations, prompt step-by-step processes, and ask them to provide examples from their experiences. Based on student responses, it will assign a knowledge level score and suggest additional resources in various formats, including links to websites, downloadable PDFs, and publicly accessible videos.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project resulted in increased student participation and engagement, with positive feedback from instructors on the relevance and effectiveness of the prompts. Students reported a deeper understanding of course material, contributing to improved academic performance.

Evaluation

Evaluation metrics indicated that project objectives were met, with a significant increase in student engagement levels and enhanced teaching practices. Continuous feedback mechanisms were established to ensure ongoing improvement and relevance of the generated prompts.

Dissemination, Diffusion and Sharing of Good Practices

The project outcomes were shared through presentations at educational conferences, leading to interest from other institutions. Collaborative partnerships were formed, allowing for broader adoption of our framework, and best practices were documented for future implementation across the sector.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Communicating Capstone: Hosting the CUHK Capstone Project Presentation Contest and Creating An Online Space for Capstone Presentation Showcases

Principal Supervisor(s) and Unit(s):
Dr. LAI Chan Sau Hing Jose, English Language Teaching Unit
Dr. CHEUNG Yuet Ying Olive, English Language Teaching Unit

Project Objectives:

Our project aims to:

1) provide a university-wide platform that offers students an opportunity to showcase their capstone projects to a wide audience;
2) enable students to present research work in their academic disciplines effectively to non-specialists in a concise and engaging manner;
3) equip students with communicative and language skills necessary for goals #1 and #2 through providing training and coaching;
4) build an online showcase space to host a collection of student capstone presentation videos from various academic disciplines/faculties; and
5) give capstone supervisors and academic advisers of major programmes access to exemplary student presentation samples of various forms of capstone projects as a teaching resource.

Implementation and Deliverables

The first CUHK Capstone Project Presentation Competition (CPPC2024) was successfully organized from Dec 2023 to May 2024, with 60 nominations received from 25 academic departments/programmes, 18 students entering the Qualifying Round, and 10 contestants competing in the Grand Final on 10 May 2024.

With the valuable experience gained, the project team ventured to organize CPPC2025 from Dec 2024 to Apr 2025, with 53 nominations received from 18 academic departments/programmes, 34 students entering the Qualifying Round, and 10 contestants competing in the Grand Final on 23 Apr 2025. Two training sessions were held before the competitions to provide interested students with learning input and support to strengthen their presentation and communication skills.

Outcomes and Achievements (including Impact on Teaching and Learning)

Participants rated the training session highly (satisfaction rating = 5.4/6.0) and students found the workshops to be comprehensive and helpful in equipping them with a range of presentation skills covering visual, verbal and vocal elements. They also found the instructors to be engaging, informative and supportive. Contestants' reflective statements indicate that students found participating in the competition to be challenging yet rewarding as the experience sharpened their disciplinary knowledge while helping them bridge theoretical concepts with real-world examples to communicate their capstone work in a more accessible manner, enabling a wider audience to comprehend research in their respective fields.

Evaluation

It is believed that the University's strategic development goals of "students taking ownership of their learning and stepping out of their comfort zone" and "development of students' professional and generic skills" were achieved by the project. Reflecting on the project, we have learned that seeking support from and collaboration with each faculty and academic department/programmes is crucial to the success of promoting this kind of activity across campus.

Dissemination, Diffusion and Sharing of Good Practices

The project team approached ~90 departments/programmes to promote the initiative. Feature articles on the contest and subsequent interviews with winning students were published in the CUHK Newsletter/by departments and faculties concerned. Reflective statements from contestants and video recordings of all presentation performances were edited and uploaded to the project website for public access.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing Learning through Diversity at CUHK: Reaching Multidisciplinary Tech Partnerships Program (RMTPP)

Principal Supervisor(s) and Unit(s):
Professor TONG Kai Yu Raymond, Department of Biomedical Engineering

Project Objectives

RMTPP links local and international undergraduates from all departments to create community-driven biomedical solutions. Using Performance-based assessment in Open-ended Problem-based learning (POP), the initiative cultivates cross-cultural collaboration, hands-on innovation and social responsibility.

Implementation and Deliverables

Forty students formed ten multicultural teams spanning BME, MAE, AIST, CSE and EE. Each team received HK $3,000 to prototype ideas, such as an e-nose for diabetes, and a smart walking stick for the elderly; five finalists will receive HK $6,000 for refinement and external competition entry. Activities included a kick-off ceremony, regular mentor meetings with three BME faculty, two pitch sessions, four skills workshops and the launch of a 10-page project website hosting videos and resources.

Outcomes and Achievements (including Impact on Teaching and Learning)

Students report higher confidence in interdisciplinary problem-solving, stronger cultural competence and clearer career vision. Faculty members observe increased engagement and have adopted micro-pitch tasks modelled on RMTPP. The program aligns with CUHK's strategic themes of internationalization, interdisciplinarity and community impact.

Evaluation

All KPI targets, websites, multicultural teams, workshops, industry partnerships and publications in preparation, are on track.

Dissemination, Diffusion and Sharing of Good Practices

There is some difficulty with the initial promotion. Personalized one-to-one outreach revived engagement, enabling formation of ten balanced multicultural teams and sustaining participation through ongoing mentor-student interaction. Progress is shared via the project website, a departmental retreat talk and the ICBME 2026. Key transferable practices include personalized student outreach, mentor-driven POP scaffolding and transparent digital showcases, offering a replicable blueprint for interdisciplinary, culturally enriched learning.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Building an Inter-institutional and Inter-disciplinary Community-engaged Learning Hub: Baccalaureate Education for Social Good (BESGO)

Principal Supervisor(s) and Unit(s):

Dr. KU Kei Tat Fred, Department of Decisions, Operations and Technology

Project Objectives

The project aimed to raise awareness and deepen understanding of social innovation, ESG, and social good among students across disciplines; promote CSV/CSR concepts; and connect students with local and international partners for impact-driven learning.

Implementation and Deliverables

The project delivered structured and experiential learning through 5 integrated undergraduate courses, 4 teaching cases, and 8 micro-modules. Students participated in 8 workshops, 10 seminars, 11 conference panels, 6 local firm visits, and 3 international study tours (Seoul, Prague, Kyoto). More than 10 partnerships were established across sectors and regions. A digital platform and social media outreach supported ongoing engagement. An e-book will document student and educator insights.

Outcomes and Achievements (including Impact on Teaching and Learning)

Over 1,500 students participated. 85% reported improved ESG understanding. Faculty adopted interdisciplinary, experiential methods. CUHK's leadership was recognized globally when the project was shortlisted in the top 25% of over 1,300 submissions at the QS Reimagine Education Conference 2024.

Evaluation

Both quantitative and qualitative metrics confirmed project objectives were met. Student and staff feedback highlighted strong engagement and relevance.

Dissemination, Diffusion and Sharing of Good Practices

Outcomes were shared via ReThink HK, QS Reimagine Education, CLEAR's T&L Innovation Expo, and partnerships with SVhk, HKPC, NUCB, KAIST, and others. Good practices in ESG education and cross-sector collaboration offer replicable models for wider adoption.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Empowering Global Student Teachers for Transformative Teaching and Learning in a Globalized World

Principal Supervisor(s) and Unit(s):
Dr. WAN Wai Yan Sally, Department of Curriculum and Instruction

Project Objectives

The aim of the project "Empowering Global Student Teachers for Transformative Teaching and Learning in a Globalized World" is to provide student teachers with the necessary skills and knowledge to excel in diverse educational contexts. Through this cutting-edge initiative, student teachers are equipped with the tools and expertise required to thrive in a rapidly changing globalized world.

Implementation and Deliverables

The project featured six immersive thematic workshops, three virtual pedagogy workshops, and 14 global teaching sessions, fostering interdisciplinary learning and collaboration. A Community of Practice (CoP) platform was developed, supporting resource sharing and reflection.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project enhanced student teachers' skills in virtual pedagogy, interdisciplinary curriculum design, and SDG-focused education, fostering global readiness and cross-cultural collaboration.

Evaluation

Qualitative feedback indicated deep engagement and improved teaching practices. Reflective sessions and CoP participation highlighted transformative learning experiences.

Dissemination, Diffusion and Sharing of Good Practices

Deliverables were shared through conferences, workshops, and the CoP platform. This inspired similar initiatives at other institutions.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing the Teaching and Learning of Engineering Research Writing with a Specialised Corpus and Corpus-informed Resources

Principal Supervisor(s) and Unit(s):
Dr. YEUNG Ping Hei Steven, English Language Teaching Unit

Project Objectives

This project aims to (1) develop a contemporary large-scale specialised Corpus of Academic Writing for Engineering Studies (CAWES), (2) creating pedagogical word and collocation lists and lists of common expressions, and (3) constructing an online concordancer to support materials (re)development and self-access learning.

Implementation and Deliverables

Based on the corpus, pedagogical lists of words and multi-word expressions were developed. A concordancer has also been developed to allow students and teachers to generate findings from the corpus. This has led to changes in approaches to teaching and learning, as teachers and students can engage with authentic language data, which are not systematically and readily available.

Outcomes and Achievements (including Impact on Teaching and Learning)

The pilot study showed that students experienced enhanced writing accuracy, increased confidence and self-direction in their academic work, and the development of transferable searching skills, indicating the effectiveness of the corpus tool.

Evaluation

The findings of the pilot study were encouraging. A survey was conducted to understand students' experiences, which were found to be positive overall. Key findings include autonomy development (3.9/5), exposure to authentic language use (3.6/5), ease of use as demonstrated by quick reference checks (4.3/5), and overall utility, evidenced by a high rating for future use (4.0/5).

Dissemination, Diffusion and Sharing of Good Practices

Project outcomes will be presented at an international in May 2025. The team will also seek other opportunities to promote the project (e.g. CUHK Teaching and Learning Innovation Expo).

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: An AI-enhanced Adaptive and Individualized eLearning System for Mathematics Foundation Courses in the Faculty of Engineering

Principal Supervisor(s) and Unit(s):
Dr. HAN Dongkun, Department of Mechanical and Automation Engineering
Professor LEE Tan, Department of Electronic Engineering

Project Objectives

The project aims to develop an AI-enhanced eLearning system for engineering students, providing personalized teaching materials for math foundation courses. Objectives include creating iTest and iLearn components to evaluate students' levels, offer tailored exercises and learning materials, and enhance understanding of math concepts through an adaptable and effective system.

Implementation and Deliverables

Key implemented activities include 2 workshops, 2 international conference presentations, and 1 local seminar. Deliverables consist of an eLearning website and APP, a cognitive optimization algorithm, iLearn and iTest subsystems, 17 micro-modules, and 2 workshop booklets. Processes include personalized learning paths, AI-driven content delivery, self-directed learning, collaborative and adaptive teaching strategies.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project outcomes were evaluated through positive feedback from students and staff: 1) Positive feedback ratios exceeding 70-80% in surveys on e-learning experience, iTest, iLearn, and micro-modules. 2) Enhanced student capabilities in understanding math concepts and theories. 3) Improved satisfaction and learning experiences for students. 4) Positive impact on teaching practices and staff competencies in utilizing technology for personalized learning.

Evaluation

The evaluation plan includes surveys on eLearning experience and micro-modules, focus group interviews, and feedback from the course website and small group forums. Results show positive feedback ratios exceeding 70-85% in surveys and interviews. Key Performance Indicators (KPIs) effectively measure student engagement, academic performance impact, innovative teaching methods adoption, and micro-modules development. Refinements may include incorporating qualitative feedback for a more comprehensive assessment.

Dissemination, Diffusion and Sharing of Good Practices

The project disseminated its outcomes through integrating the AI-enhanced eLearning system and micro-modules in Faculty of Engineering and beyond. It sparked interdisciplinary collaborations and showcased good practices at 2 international conferences and 2 workshops. The sustainable impact includes potential adoption in various programs and courses, replicability in engineering and science disciplines, and customization for diverse fields beyond engineering.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Hands-on Robotics Course Modules for Interactive Self-Learning

Principal Supervisor(s) and Unit(s):
Professor LAU Tat Ming Darwin, MAE Department
Professor CHUN Ka Wai Cecilia, CLEAR
Professor LEE Ho Man Jimmy, CSE Department
Professor REN Hongliang, EE Dept.

Project Objectives

In this project, we aim to develop a set of micro-modules that are interactive and hands-on in nature. Rather than text-based or video-based reading material, it is proposed to allow the robot arm to be the "teacher" within these modules. Within the modules, the robot arm will visually and verbally describe how the theoretical topics will enable the robot to perform different motions and practical applications. For example, the generation of trajectory motion can be easily understood by the robot physically moving while describing to the student what calculations/computations it is performing.

Implementation and Deliverables

A set of self-learning robotics modules were developed and tested by students. The project can be described in the following components: modules design, software framework elements, augmented reality self-learning modules and obtaining feedback from the developed self-learning modules. Through the project, in addition to developing a set of augmented reality modules, a software framework was developed to allow robot teaching modules to be conveniently built upon.

Outcomes and Achievements (including Impact on Teaching and Learning)

From the feedback, despite a small sample, it was clear that the students believed in the potential of the developed modules. All responses agreed that the motivation and the use of AR for the self-learning modules would be helpful to learning the course content. Moreover, a majority of the students preferred using the augmented reality learning than lectures for the introductory content (the remaining replied neutral). The feedback obtained was that the visual augmentation increased intuitiveness and that they could learn at their own pace with the system.

Evaluation

The overall aims, motivation and direction, and the nature of process and activities, remained aligned with the initial plan. The primary deviation was in the evaluation plan, as we adopted to ask students who had completed the course to provide feedback on the developed modules. Survey results were collected from the students after their experience with the modules. From their feedback, we believe that the project objectives have been met in that the modules would be able to help students to better achieve the learning outcomes of the course.

Dissemination, Diffusion and Sharing of Good Practices

Currently, the project has been shared with colleagues within our department and visitors from other universities, as to share good practices and encourage collaboration in using the developed course material. In this year, our team plans to share the project within the CUHK Teaching and Learning Expo 2025, and is preparing a publication for submission to Robotics and Automation Magazine, which is a highly regarded within the robotics research and learning domain.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Teaching Avatars: AI-powered Video Summaries for Lecture-based Courses
Principal Supervisor(s) and Unit(s):
Professor HARGREAVES Stuart Andrew, Faculty of Law

Project Objectives
Creation of AI powered micromodules (1 per week for the duration of the course), each approximately 5-10 minutes in length

Implementation and Deliverables
Project expanded after proposal to include not only video avatar micromodules but also AI powered audio podcasts for student revision. 16 video micromodules and 16 podcasts were created.

Outcomes and Achievements (including Impact on Teaching and Learning)
Successful creation of both video and audio revision materials using commercially available AI tools. Interim student surveys very positive (final surveys not available until after due date for this Report).

Evaluation
Pleased with outcome, though suspect that students will demonstrate preference for traditional text-based revision materials given nature of studying law. However, AI tools can also be leveraged to make that process significantly easier for staff as well.

Dissemination, Diffusion and Sharing of Good Practices
Have shared outcomes and workflow of project in multiple venues, both in and out of CUHK. Once final survey results are available, then a journal article detailing the project will be written and submitted to a suitable peer-reviewed outlet (eg The Law Teacher).

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Blended Learning UGE course on United Nations Sustainable Development Goals and Health
Principal Supervisor(s) and Unit(s):
Professor HUNG Kei Ching Kevin, Accident and Emergency Medicine Academic Unit

Project Objectives

The primary objective was to create a comprehensive blended learning course that covers various SDG goals and promotes sustainable development education among students. The project also aimed to enhance students' understanding of global health issues and their impact on sustainable development.

Implementation and Deliverables

The UGE course has been endorsed and the eLearning content has also been endorsed by the Faculty of Medicine. The course was first launched in the second semesterSummer Term of 2024-25, with 18 students successfully completing the course. In addition, 43 students were enrolled in the online learning on the KEEP platform.

Outcomes and Achievements (including Impact on Teaching and Learning)

The blended course was well received by students as reflected from the positive course evaluations. Group discussions and presentations required students to participate throughout the course. The students were free to choose their advocacy topic for midterm essay and for final presentation to increase engagement. The marking criteria required the students to have a clear argument, illustrate original thoughts, use materials and tutorial discussions provided in the course and be succinctly written/ presented. Individual presentation and feedback (from 2 instructors and peer comments) ensured that students learned the required content.

Evaluation

This project successfully created a blended learning course to enhance students' engagement and understanding of various SDG Goals.

Dissemination, Diffusion and Sharing of Good Practices

The course will continue to be offered, and good practices will be shared via various platforms.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Impact of interprofessional education on teachers' mindsets and students' competency and graduate attributes

Principal Supervisor(s) and Unit(s):
Professor LEE Wing Yan Vivian, Centre for Learning Enhancement And Research

Project Objectives:

The IPE initiative aims to: (1) enhance awareness and understanding of IPE practices by gathering insights from educators and students; (2) develop comprehensive teaching resources, including IPE curriculum design and micro-modules, to empower educators for effective implementation; and (3) evaluate the impact of the IPE framework through assessments of experiential learning and student feedback on pedagogical partnerships.

Implementation and Deliverables:

The project implementation involved three main stages. In Stage 1, the IPE website was designed and launched, along with the preparation of surveys. Stage 2 focused on conducting training workshops for teachers, creating micro-modules, and facilitating summer outreach activities, which included pre- and post-tests to evaluate changes in participant attitudes and skills. In Stage 3, additional workshops and micro-modules were conducted, followed by a pre-post intervention survey to measure the overall impact of the IPE initiatives. Key deliverables included the IPE website as a central resource hub, finalized educational materials, monitored utilization rates, and training workshops conducted over three academic years. The project also resulted in uploaded micro-modules, administered surveys to assess changes in mindsets and skills, data analysis, a final report with findings and recommendations, presentations at conferences, and the preparation of a manuscript for academic journal submission.

Outcomes and Achievements (including Impact on Teaching and Learning)

The IPE project developed two micro-modules presented as 3-minute videos, which were uploaded to the IPE website to support training. A large-scale conference and a workshop on IPE practices engaged over 20 teachers each. Presentations were given at two international conferences. These initiatives improved teaching and learning by incorporating engaging materials and experiential learning, enhancing educators' communication and cultural competence, and fostering dynamic, student-centered environments that promote teamwork.

Evaluation

The IPE project aims to enhance interprofessional education by integrating collaborative practices into the curriculum. It includes comprehensive surveys conducted from 2022 to 2025, gathering insights from approximately 400 medical students and over 100 participants from CUChampion, an IPE healthcare-related voluntary group at CUHK. While the surveys capture valuable student perspectives, they primarily reflect the views of the Medical Faculty, limiting input from other educators. However, the diverse backgrounds of the co-Principal Investigators, who include members from both the Faculty of Medicine and the Centre for Interprofessional Education at the University of Toronto, ensure a broad range of insights is represented.

Dissemination, Diffusion and Sharing of Good Practices

The IPE project employed multiple channels for dissemination, including a dedicated website and social media outreach through the CUChampion team. Workshops led by renowned faculty further facilitated knowledge sharing. The project was highlighted at the CLEAR Teaching and Learning Expo in both 2022-23 and 2023-24 and featured in the CLEAR monthly newsletter. Additionally, a large-scale conference was held at the Hong Kong Convention and Exhibition Centre. Moving forward, we will continue to assess IPE initiatives, expand partnerships with educational institutions, and publish findings in academic journals to enhance the discourse on interprofessional education and share best practices.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of Professional Putonghua for Medical & Healthcare Settings

Principal Supervisor(s) and Unit(s):
Professor WONG Ka Man Carmen, Faculty of Medicine
Ms. LIU Zhenxia, Yale-China Chinese Language Academy

Project Objectives

This project aimed to address the growing need for enhanced professional medical Putonghua proficiency. The primary objectives are to develop and implement a comprehensive medical Putonghua training program that enhances students' professional communication skills. The project aims to bridge the current gap in professional medical Putonghua resources while promoting cross-border healthcare collaboration and professional development opportunities in the Greater Bay Area.

Implementation and Deliverables

The program emphasizes practical application of Medical Putonghua through scenario-based learning and direct interaction with native Putonghua speakers in medical settings. Components of course include micro-modules (highlighting contextual differences in health system and culture) and e-lectures, simulation workshops, interactive lectures and language exchange. Content was structured on established frameworks such as MCT, ACTFL's OPI, and HSK standards.

Outcomes and Achievements (including Impact on Teaching and Learning)

Focus groups were conducted to understand needs, learning and use of medical Putonghua. Four main themes: Importance of language use, Challenges, Responsibilities and Training needs were noted in which patient-centredness, language prioritisation, cognitive load, language nuances and immersion were notable subthemes. The findings helped with course development and focus of micromodule content.

Evaluation

Two rounds of pilot courses were conducted in August and November 2024, achieving a 75% student satisfaction rate with positive feedback

Dissemination, Diffusion and Sharing of Good Practices

This project was shared at academic seminar at Guangxi Normal University and at the CUHK teaching learning Expo 2024. The project was award commendation for Educational Impact.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing Teaching and Learning of Medical Professionalism

Principal Supervisor(s) and Unit(s):
Professor WONG Wai Tat, Department of Anaesthesia and Intensive Care
Professor LING Lo Well Lowell, Department of Anaesthesia and Intensive Care

Project Objectives

Develop e-learning modules for clinical teachers to address professionalism at the individual and organizational levels, using case vignettes for practical learning. For students, analyze reflective writings to track their evolving understanding of professionalism.

Implementation and Deliverables

- Collected 217 local and international misconduct cases for teaching materials.
- Year 1 students (282) reflected on digital ethics; Year 5 students (280) explored conflicts of interest.
- Enriched pre-clinical and clinical professionalism teaching and produced three teacher-focused modules.

Outcomes and Achievements (including Impact on Teaching and Learning)

- Students demonstrated enhanced digital awareness and ethical reasoning. Faculty improved their competencies in guiding reflections.
- Aligned with CUHK's strategic goals in holistic education and ethical leadership.

Evaluation

- Qualitative analysis validated student growth in their understanding of professionalism.
- KPIs were partially met due to delays in the e-learning platform. Presented findings at the Asia Pacific Medical Education Conference 2025 (Merit Award).

Dissemination, Diffusion and Sharing of Good Practices

Award-winning conference presentation; manuscripts for journals in progress.
E-learning materials designed for scalability across healthcare institutions.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Interdisciplinary Blockchain Education: Development and Deployment in the Faculties of Law, Medicine and the Business School

Principal Supervisor(s) and Unit(s):
Dr. SEE Christopher, School of Biomedical Sciences
Dr. BRELÉN Mårten Erik, Department of Ophthalmology and Visual Sciences

Project Objectives

This project aimed to develop an AI-supported interdisciplinary teaching platform focused on blockchain education across the Faculties of Medicine, Law, and Business. Key objectives included creating 40 interactive e-learning modules delivered by a virtual AI avatar capable of real-time instruction, adaptive assessment, and personalized student support. The platform serves as a scalable prototype for future cross-disciplinary and AI-enhanced learning initiatives.

Implementation and Deliverables

An experienced UI/UX designer was engaged to develop a visually engaging and user-friendly platform. Forty AI-driven modules were created, each featuring a lifelike avatar trained on course content. To reduce long-term costs and increase sustainability, the platform is transitioning from cloud infrastructure to locally hosted servers.

Outcomes and Achievements (including Impact on Teaching and Learning)

The platform supports self-paced, autonomous learning and fosters student confidence through a private, AI-mediated learning environment. Adaptive assessments ensure tailored evaluation, and privacy-preserving architecture enhances trust. The system aligns with CUHK's strategic priorities on AI integration and educational innovation.

Evaluation

A pilot evaluation using surveys, analytics, and staff feedback is scheduled for the final phase, pending extension approval. These insights will guide refinement and future expansion.

Dissemination, Diffusion and Sharing of Good Practices

Initial content was piloted in an interdisciplinary workshop. Full dissemination is planned following pilot evaluation, with interest already generated across CUHK for future collaboration and adoption.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: "CHIM3DERA"- An interactive student-lead dissection workshop and a 3D scanned specimen model platform to enhance interdisciplinary peer-learning of Anatomy and Acupuncture

Principal Supervisor(s) and Unit(s):
Dr. WONG Wai Kai, School of Biomedical Sciences
Dr. POON Hong Kit Sam, School of Biomedical Sciences
Professor WANG Qian, School of Chinese Medicine
Miss HUNG Hing Yu, School of Chinese Medicine

Project Objectives

This project aims to deepen students' understanding of acupuncture points and anatomical correlations while fostering interdisciplinary collaboration between Medicine and Chinese Medicine students.

Implementation and Deliverables

From 2023 to 2025, six theme-based workshops engaged 60 students, who worked in peer-learning groups supported by the "Silent Teachers Body Donation Programme." Each group produced at least 2–3 prosected specimens, showcasing specific acupoints and anatomical structures, complemented by 46 three-dimensional scanned models, 163 photos, and 75 videos launched on CHIM3DERA. The platform now serves as a resource for both in-class and after-class learning.

Outcomes and Achievements (including Impact on Teaching and Learning)

Student feedback from 2023 and 2024 shows that significant improvements in confidence and familiarity with anatomy and acupuncture, alongside strengthened collaboration between disciplines. Ratings of workshop satisfaction rose notably, demonstrating the project's positive impact.

Evaluation

The project exceeded its key performance indicators (KPIs) with 6 theme-based workshops, recruiting 60 participants and demonstrating 46 3D scanned models, 163 photos and 75 videos as teaching materials. The total number of student beneficiaries has reached over 1000. The platform now serves as a resource for both in-class and after-class learning.

Dissemination, Diffusion and Sharing of Good Practices

CHIM3DERA has been applied to 4 courses. It has also launched to Medicine and Chinese Medicine students for after-class learning platform. Regarding to publication and promotions, our team gave 2 presentations in the WFAS 2024 International Symposium on Acupuncture-Moxibustion in the United Kingdom and published an abstract and a paper regarding this project. In the CUHK Innovation EXPO 2024, our team is certificated poster award in Pedagogical Innovation Commendation.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing Empathic Ability and Moral Awareness in Bioethics Learning: A Case-based Approach

Principal Supervisor(s) and Unit(s):
Dr. SUN Sihan Chelsea, CUHK Centre for Bioethics
Professor WONG Yeung Shan Samuel, The Jockey Club School of Public Health and Primary Care
Dr HWANG Shui Shan Isabel, School of Biomedical Sciences
Professor WONG Wai Tat, Department of Anaesthesia and Intensive Care

Project Objectives

This project integrates culturally-relevant case studies and scenario-based videos into CUHK's bioethics curriculum to enhance medical students' professional attitudes and moral competencies. It aims to bridge theoretical education with practical application and ensure future doctors can provide empathetic and culturally competent care.

Implementation and Deliverables

This project enhances the bioethics curriculum at CUHK by incorporating about 25 media-reported cases and nine three-minute scenario-based videos tailored to the Hong Kong healthcare environment, shifting from traditional lectures to interactive, case-based learning.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project enhanced pre-clinical bioethics curriculum by incorporating media-reported cases and scenario-based videos, moving away from traditional lectures to interactive learning. This shift improved student engagement and analytical skills, evidenced by tutors' observations and positive feedback during discussions. The curriculum changes also led to increased student interest in bioethics, exemplified by initiatives like a student-organized bioethics debate competition and active participation in Bioethics Student Delegates. Additional time is needed to finalize new cases and modules, and evaluate the outcomes of this project.

Evaluation

Qualitative insights and feedback from student focus groups and instructors demonstrate the effectiveness of the project. More quantitative feedback will be collected in the coming months.

Dissemination, Diffusion and Sharing of Good Practices:

Some cases have been integrated into the pre-clinical bioethics curriculum, particularly for tutorial activities and discussions. This project was presented at an international bioethics education conference, where we discussed the innovative approaches and highlighted how these methods enhance the empathic abilities and moral awareness of medical students.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of an Innovative eLearning Package to Facilitate Learning of Radiographic Assessment of Lines and Tubes and Their Potential Complications - Implementing Artificial Intelligence (AI) and Game-based Learning

Principal Supervisor(s) and Unit(s):
Professor SO Tiffany Yuen-Tung, Department of Imaging and Interventional Radiology

Project Objectives

We aimed to develop an integrated eLearning package to facilitate student learning of radiographic assessment of lines and tubes and their potential complications.

Implementation and Deliverables

We have developed an eLearning package consisting of walk-through videos, a 2D maze game, a mobile chatbot tutor and case simulation modules, and trained artificial intelligence (AI) models on lines and tubes position classification.

Outcomes and Achievements (including Impact on Teaching and Learning)

Results of our evaluation assessments show that the eLearning provided improvements in student relative domain knowledge skills and improvements in relative learning confidence of 127% and 107% respectively. Students were highly satisfied with the eLearning package, with a mean satisfaction of 92%.

Evaluation

We developed indicators that include assessing students' domain knowledge after using the eLearning package, improvement of the learning experience, and dissemination of the developed teaching package. The project successfully met all our initial goals.

Dissemination, Diffusion and Sharing of Good Practices

The findings from the project have been disseminated on multiple levels. The eLearning package is shared across the undergraduate curriculum in courses from different disciplines and has been presented at 4 international/local conferences with abstracts published in 3 conference proceedings, as well as presented at a department sharing session with medical professors in CUHK.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Implementation of Interprofessional Education with Team-based Simulation Training and Online Interactive Discussion

Principal Supervisor(s) and Unit(s):
Professor CHOW Ka Ming, The Nethersole School of Nursing

Project Objectives

To conduct interprofessional education (IPE) in the modality of simulation training and online interactive discussion for medical, nursing and pharmacy students, and evaluate its effects on attitudes towards interprofessional collaboration, perceived self-efficacy and readiness for IPE.

Implementation and Deliverables

Twenty scenarios involving common acute medical and surgical, emergent and paediatric problems as well as clinical skills encountered in clinical practice were co-developed with students. Two rounds of IPE activities were conducted.

Outcomes and Achievements (including Impact on Teaching and Learning)

A total of 52 and 49 students were recruited to receive IPE simulation training and online interactive discussions, respectively. At post-test, both groups demonstrated significant improvement in attitudes towards interprofessional collaboration, perceived self-efficacy and readiness for IPE (all $p<0.05$). Students' satisfaction level with simulation-based IPE was high. Focus group interviews with 38 simulation participants highlighted positive effects of the simulation-based IPE and provided suggestions for improvement. The project objectives were achieved and aligned with the University's strategic development themes.

Evaluation

The response rate was lower than expected due to the packed timetable of medical, nursing and pharmacy students, and the non-compulsory nature of the activities. Given the significant development of student capabilities and high satisfaction level, IPE learning activities should be integrated into the curriculum for mandatory participation.

Dissemination, Diffusion and Sharing of Good Practices

The project findings were disseminated at different international educational and nursing conferences held in Hong Kong, Mainland China, the United States and Finland, as an invited presentation, oral and poster presentations.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Integrating Ophthalmology Education in Multiple Specialties with e-learning Materials, Interdisciplinary Collaboration, and Service-Learning Opportunities for Medical Students

Principal Supervisor(s) and Unit(s):
Dr. CHAN Pui Man Poemen, Department of Ophthalmology and Visual Sciences

Project Objectives

To provide early exposure to ophthalmology e-learning materials for junior medical students aiming to bridge the knowledge gap between different medical specialties and create a synergistic learning effect. The Anonymous Likert Scale Questionnaire (ALSQ) and end-of-rotation assessment results of students who were exposed to the materials in their early years will be compared with those who underwent the traditional course.

Implementation and Deliverables

We collected the ALSQ and end-of-rotation assessment scores of medical students in Class 2024 and 2025 (>200 students in each class). E-learning materials were modified based on Class 2025 students' comments. The renewed materials were given to Class 2026 in their early year before their official 1-week ophthalmology rotation in the coming academic year.

New learning materials created included 8 new teaching videos, 2 sets of teaching PowerPoints, 9 new gamified case scenarios, and 10 sets of PowerPoints on glaucoma surgery (counselling materials).

Outcomes and Achievements (including Impact on Teaching and Learning)

- Collection of ALSQ and end-of-rotation assessment scores of 2 Classes (>400 students) + 1 Classes to be collected. Formal analysis will lead to impactful publication. Students' comments were considered for learning materials modification. These materials are useful for future medication students, implicating the teaching of multiple departments in the Faculty of Medicine.
- >40 undergraduate/postgraduate students involved in community work.

Evaluation

Despite the change of plan, we have fulfilled the study objectives and KPIS. We also exceeded some of the objectives. The materials and instruments could be used in future teachings.

Dissemination, Diffusion and Sharing of Good Practices

- 4 presentation (3 invited)
- 2 posters (obtained ePoster 2nd Prize in AMEE 2024)
- 3 workshops
- 1 publication in Medical Education

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of AI-powered Virtual Patients for Healthcare Education

Principal Supervisor(s) and Unit(s):
Professor WONG Cho Lee Jojo, The Nethersole School of Nursing

Project Objectives

This project aimed to develop voice-based, AI-powered virtual patients with scenarios from different clinical specialties. The objective is to provide students with opportunities to comprehensively assess and identify the problems of AI-powered virtual patients and thereby implement appropriate interventions, allowing them to practice a broader range of real-life scenarios virtually before managing patients in the real world.

Implementation and Deliverables

The project was launched in July 2024. Five patient scenarios across various clinical specialties were developed, including intestinal obstruction, acute ischemic stroke, drug overdose, myocardial infarction and colon cancer. Besides, a webpage is being developed to introduce the project.

Outcomes and Achievements (including Impact on Teaching and Learning)

The AI-powered virtual patients have been (or will be) applied in Nursing, Chinese Medicine and Pharmacy courses at various institutions (CUHK, PolyU, HKU, and BU). The total number of students who benefited is at least 1,100.

Evaluation

We conducted an evaluation, including quantitative surveys and qualitative interviews, to assess project outcomes. The findings indicated that the project objectives had been achieved, particularly in terms of improving educational outcomes. In addition, the project supported the University themes, including deepening virtual teaching and learning and encouraging inter-institutional collaboration.

Dissemination, Diffusion and Sharing of Good Practices

The AI-powered virtual patients are being effectively utilised in various courses at various institutions to enhance student learning. To promote the replication of our findings and practices, we plan to present the development and application of AI-powered virtual patients at local and international conferences.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of Virtual Interactive Micro-Modules on Public Health Crisis Management and Risk Communication

Principal Supervisor(s) and Unit(s):
Professor POON Kwok Ming Paul, JC School of Public Health and Primary Care, Faculty of Medicine

Project Objectives

This project aimed to develop interactive virtual micro-modules to enhance crisis management and risk communication skills among health students; equip learners with practical skills in ethical decision-making and combating misinformation; and align with CUHK's strategic priorities in virtual teaching, global readiness, and societal contribution.

Implementation and Deliverables

Three 1-hour micro-modules were created using the H5P platform, covering outbreak investigation, rapid containment, misinformation, vaccine hesitancy, and ethical dilemmas. Each module included virtual simulations and interactive scenarios (e.g., simulated press conferences, AI-assisted case study). Despite challenges in securing technical staff, self-training on H5P enabled cost-effective development. Deliverables included adoption in two CUHK courses (*PHPC3015* and *MEDU4010*), potentially reaching 300+ students per academic year, collaborations with a government health specialist and medical journalist, and a faculty sharing session.

Outcomes and Achievements (including Impact on Teaching and Learning)

- Student impact: Over 75% found the micro-modules to be much more interesting and easier to learn than traditional role-play tutorials.
- Alignment with SDGs: Advanced virtual pedagogy (SDG 4) and health resilience (SDG 3).
- Staff Development: 16 faculty inspired in the sharing session and external partnerships enriched curriculum relevance.

Evaluation

All pre-defined KPIs were met: 3 modules developed, 2 courses adopted, 2 external collaborations established. Student surveys and feedback confirmed engagement and skill enhancement.

Dissemination, Diffusion and Sharing of Good Practices

Modules were embedded in CUHK's curriculum and shared at the APACPH Conference in Busan, attracting interest from Southeast Asian institutions. Good practices include:

- Low-cost scalability via H5P.
- Interdisciplinary design integrating epidemiology, ethics, and communication.
- Student co-creation for peer relevance.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Virtual Teaching Series: Faculty Development in Managing Complexities in Health Professional Education

Principal Supervisor(s) and Unit(s):
Dr. LEE Sau Wa Joyce, Kai Chong Tong Clinical Skills Learning Centre
Professor WONG Carmen, The Jockey Club School of Public Health and Primary Care

Project Objectives

To enhance educators' teaching skills; organize virtual seminars with evidence-based pedagogical sharing from expert speakers; establish a sustainable Community of Practice (CoP); and create accessible online resources for educators. Focusing on faculty development in Health Professional Education and system-level teaching enhancement.

Implementation and Deliverables

Monthly online seminars with local and international expert speakers; launched faculty development website (https://www.cuhkmeded.com) offering online resources for educators as well as establishing a Community of Practice; development of micro-modules.

Outcomes and Achievements (including Impact on Teaching and Learning)

Over 80% of participants rated content relevance and practicality highly (4-5/5), with 70-85% reporting increased confidence in applying new teaching strategies. Participants reported our seminars sparked ideas for pedagogical innovation; enhancing staff competencies and student engagement. The project aligned with CUHK's strategic goals of virtual learning adoption and faculty development.

Evaluation

Post-seminar surveys glowed with positivity, averaging 4.2-4.8/5 for satisfaction and 3.7-4.7/5 for intent to apply new ideas. Educators lauded the actionable and high-quality content, sparking enthusiasm for further resources.

Dissemination, Diffusion and Sharing of Good Practices

The project's success demonstrated the effectiveness of virtual learning adoption for faculty development interventions. Local and international experts' sharing ascertained high quality content resulting in positive participant feedback. CoP established will encourage educator collaborations.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Interactive Geographic Information System (GIS) Web App of Campus Plant Learning in CUHK

Principal Supervisor(s) and Unit(s):
Dr. LAU Tai Wai David, School of Life Sciences

Project Objectives

- To create a Web-App database for campus plant learning in CUHK
- To document 100 plant species with their names, photographs, description and 360°habitat photographs
- To apply the database in the undergraduate teaching as e-learning and teaching materials

Implementation and Deliverables

- A GIS mapping system was adapted to document the 100 plant species with a series of information
- All kinds of information on every target species have been collected since 2022.
- The first-stage trial run was conducted in 2023, and the subsequent application usage in various undergraduate courses continued in 2024 and 2025.

Outcomes and Achievements (including Impact on Teaching and Learning)

- The Web-App database of 100 plant species was well established and had been tested to be stable for multiple users
- Good positive feedback was received, showing users' enhancement in plant knowledge and learning skills
- Course teachers began using the database as a flipped classroom and e-learning platform

Evaluation

The questionnaire response was well received, showing the users' good satisfaction in learning experience and knowledge. Continuous evaluation by questionnaire will be conducted for quality monitoring

Dissemination, Diffusion and Sharing of Good Practices

The GIS web app was promoted through various platforms, and it had been integrated into courses in the school of life Science. Training videos were provided, enabling lecturers to introduce the app to students. QR codes were placed on tree signs for access, and continuous maintenance will ensure sustainability. The app will be maintained and open to students and the public for the next five years. Similar methods can be applied in other biology and environmental science courses for learning species distribution and plant conservation.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Dr. Ray's Wonderland of Virtual Reality ~the Olympic Games for Science, Biolab Safety and Animal Ethics Education

Principal Supervisor(s) and Unit(s):
Dr. LO Fai Hang, School of Life Sciences
Dr. NGAI Hung Kui, School of Life Sciences

Project Objectives

The primary objective was to enhance the teaching of biosafety concepts and animal ethics through the use of virtual reality (VR) technology, thereby increasing student engagement and learning effectiveness. The project aimed to address the limitations of traditional lecture-based methods by providing a more interactive and experiential learning environment.

Implementation and Deliverables

The project involved the development of an immersive game-based learning console using VR technology. Key activities included content development, design of VR software, testing and revision, and conducting four rounds of trial sessions with student users. Deliverables included the creation of a set of VR-based micro-modules on biolab safety and animal ethics education, presentation at international conferences, development of a project website, implementation of VR learning tools in six courses, and design of onsite multi-user VR competition games.

Outcomes and Achievements (including Impact on Teaching and Learning)

The integration of VR technology into the curriculum allowed for a more interactive and engaging learning experience. Students were able to immerse themselves in virtual laboratory environments, enhancing their understanding of complex biochemical processes and safety protocols. The use of VR technology also facilitated experiential learning, enabling students to practice high-risk biochemical tests in a safe and controlled virtual environment. This approach improved their practical skills and situational awareness.

Evaluation

The project successfully met its objectives, with key performance indicators (KPIs) such as interactive elements, multi-players mode, multi-levels of difficulties, software-hardware compatibility, and user-friendliness proving effective. Some refinements, such as pre-training sessions for novice VR users, were identified to further enhance the learning experience.

Dissemination, Diffusion and Sharing of Good Practices

The project's findings and methodologies were shared at international education conferences. A project website was developed to disseminate information and resources. Good practices and outcomes were shared at the CUHK T&L Expo and among teaching-support colleagues. A full paper and supplementary poster were also drafted for further dissemination.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Free Generative AI for All: Investigating the Impact of AI in STEM Education

Principal Supervisor(s) and Unit(s):
Professor YAN Yangqian, Department of Physics
Dr. LIU Kin Yat, Department of Statistics

Project Objectives

- Provide generative AI chatbot service via a web page to students.
- Develop reverse proxy to connect to backends, including cloud APIs and local deployment of AI
- Keep the service robust by having multiple backends.
- Develop cache/fast replay and recording ability.

Implementation and Deliverables

1. Website implemented all the above features. Additonal deliverables include 2. multiple AI service providers are benchmarked. 3. survey results, 4. local and cloud deployment of chat service, and 5. contribution to open source software development.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project enables personalized learning experiences by providing generative AI services, enhancing student engagement. It facilitates active learning through interactive AI tools, improving comprehension and problem-solving skills. It also promotes accessibility, ensuring equal AI access.

Evaluation

In terms of KPIs, we far exceeded the planned numbers. E.g. collected over 100 feedback (50 planned) collected over 280,000 api usage (10,000 planned), recorded 100 daily active student users, 300 weekly active users and 370 total student users, far exceed the 100 active user estimation

Dissemination, Diffusion and Sharing of Good Practices

The project are disseminated through 1. a dedicated project website with tutorials, best practices, and case studies, 2. workshop presentation with recording, 3. conference presentation via poster and talks 4. promotion during annual staff meeting.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Data-Driven Urban Studies – Advanced Techniques for Analysing Complex Urban Data and Processes

Principal Supervisor(s) and Unit(s):
Professor VAN AMEIJDE Jeroen, School of Architecture

Project Objectives

1. Develop additional e-learning resources around data-driven urban analytics, to support students across the Faculty of Social Science.
2. Present these e-learning resources in the form of online micro-modules; and support students through two seminars/workshops open to all CUHK students and staff.

Implementation and Deliverables

- The project has produced 4 micro-modules, each containing a 60-minute presentation video, PDF instruction manual, links to software tools and online datasets; available via our online 'toolkit', https://urbandesign.arch.cuhk.edu.hk/learning-resources/
- The learning resources were integrated within several courses in and have been adopted by Master and PhD students.
- Two whole-day workshops have been held in late October and early November 2023, attracting students from different faculties across CUHK and receiving positive feedback.

Outcomes and Achievements (including Impact on Teaching and Learning)

Workshop participants were from the disciplines of Architecture, Geography and Resource Management, Anthropology, Urban governance, Urban Studies, Communication, and Electrical Engineering. Feedback has indicated that students found that the tutorials on advanced methodology in urban analytics help foster their abilities of critical interpretation of data-driven research outcomes in relation to their research questions and research design. The course materials connect to the University strategic theme of 'Environment and Sustainability', and UN SDG #11 – 'Sustainable cities and communities', and promotes virtual teaching and learning (VTL) adoption.

Evaluation

The courses were integrated within the MSc in Urban Design (School of Architecture) and the BSS in Urban Studies (Department of Geography and Resource Management), resulting in high CTE scores and positive written comments. The methods were adopted in a range of studio, thesis and capstone projects investigating mainly Hong Kong based social urban issues, including ageing, walkability, social media and gentrification, women's safety in public spaces, etc.

Dissemination, Diffusion and Sharing of Good Practices

Several projects, which incorporated our new data-driven research methods, received awards and were presented and published via international conferences, including The 20th Biennial International Planning History Society (IPHS) Conference (2-4 July 2024), The fifth "Past Present and Future of Public Space" conference, Bologna (25-27 June 2024), and the 29th CAADRIA Conference, Singapore (20-26 April 2024). Teaching experiences and outcomes were shared by the PI in keynote lectures in Singapore and Sydney, leading to new academic collaborations.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Art Technology Design and Culture – Robotics and Cinematography for Architecture, Journalism and Communications Students

Principal Supervisor(s) and Unit(s):
Professor FINGRUT Adam, School of Architecture

Project Objectives

Exploring Interdisciplinary Connections: Investigate how journalism, communication, and architecture education can mutually enhance each other through cinematography and storytelling techniques.
Developing Technical Proficiency: Equip students with skills in robotic control systems, digitization, navigation between physical and virtual spaces, camera and lighting technologies, editing, formatting, and compositing.

Implementation and Deliverables

The project enriches traditional learning by merging journalism, communication, and architecture with cinematography and storytelling techniques. It introduces robotically driven cameras, a shared 3D environment, and digital workflows that enhance students' spatial awareness and narrative visualization.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project was a success because it fostered interdisciplinary collaboration, integrating journalism, communication, and architecture with cutting-edge cinematography techniques. It provided students with hands-on experience using robotic cameras, immersive storytelling methods, and digital visualization tools, significantly enhancing their technical and creative skills.

Evaluation

This project demonstrated a strong commitment to interdisciplinary education, technological innovation, and student engagement.

Dissemination, Diffusion and Sharing of Good Practices

Lectures have taken place at the 2024 IEEE International Conference on Engineering Education (w/paper), Wentworth Institute of Technology Architecture Faculty (via zoom to 800+ participants) at a schoolwide lecture, and in direct workshops provided to representatives from RMIT, Tel Aviv University, National University Singapore, University of Southern California, and others. Material of the project has also been disseminated to industry in HK (Hong Kong Institute of Architects, Construction Industry Council, and Development Bureau during visits to SOA).

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Preparing for An Inclusive Future: An Age-Responsive Learning Framework for Adapting to Rapid Population Ageing

Principal Supervisor(s) and Unit(s):
Dr. MO Kar Him, School of Architecture

Project Objectives

This project aims to develop an interdisciplinary and age-responsive teaching and learning (T&L) framework that prepares students to address the challenges of population ageing. By incorporating the Participatory Action Research (PAR) approach, the project seeks to enhance students' critical thinking, empathy, and ability to co-create community-based solutions for inclusive, age-friendly environments.

Implementation and Deliverables

This project adopts an action-based approach to develop interdisciplinary teaching and learning (T&L) materials that respond to the societal challenges of rapid population ageing. The deliverables are structured into four key components to support experiential learning and promote age-inclusive education.

(A) Virtual Seminars: Theoretical Context and Backgrounds of Ageing as an Emerging Challenge - offer foundational knowledge on ageing, covering demographic trends, cross-sectoral implications, and key theoretical frameworks such as the life course approach and universal design.

(B) Interactive Activities: Towards an Age-Inclusive Future - include a Social Simulation Board Game (B1) and empathy-building modules (B2), providing immersive experiences that encourage students to engage with real-life ageing issues and co-create inclusive solutions.

(C) Action-Based Toolkits: Co-creating Age-friendly Communities - guide students in assessing age-friendliness and initiating community-scale actions through evaluation frameworks, toolkits for implementation, and individual checklists.

(D) Start-up Resources: Development of Actions for Age-friendly Communities - support students in developing actionable projects, including resources for proposal writing, project pitching, and a case study booklet aligned with the WHO Age-Friendly Cities Framework.

Despite a delayed start, the majority of the materials are nearing completion, with B1 and B3 ready for production. These deliverables will be disseminated through CUHK's digital platforms and made available to relevant academic units and community partners, encouraging replication and broader impact across disciplines and institutions.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project has initiated curriculum enhancements in Urban Studies, Architecture, and General Education programmes. Through immersive, interdisciplinary content, it promotes action-based and reflective learning aligned with CUHK's educational priorities and the UN's Sustainable Development Goals (SDGs).

Evaluation

Monitoring data has been collected through internal reviews and user feedback. Full evaluation will follow course integration, measuring interdisciplinary engagement, student reflection, and teaching impact.

Dissemination, Diffusion and Sharing of Good Practices

Early sharing sessions have taken place within CUHK, and cross-institutional collaboration with EdUHK is underway. Plans include hosting workshops, showcasing at the Learning and Teaching Expo 2025, and pursuing further funding to develop a digital version of the board game and replicate the experience in future T&L projects.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Programming for Humanists Course Design
Principal Supervisor(s) and Unit(s):
Professor MCMANUS Stuart Michael, Department of History

Project Objectives

To design and test a 13-week, 3-credit course that equips humanities undergraduates and others with Python, data-management, NLP, and streamlit webpage building skills directly applicable to historical and literary research.

Implementation and Deliverables

With support from a full-time RA and student helpers, the project has generated key teaching materials such as lecture slides, hands-on coding exercises in Google Colab, and a GitHub repository delivering the teaching material of data management, natural language processing pipeline setup, and web content creation. After initial development, pilot sessions were run with a small group of students, whose feedback guided iterative improvements.

Outcomes and Achievements (including Impact on Teaching and Learning)

The materials were introduced preliminarily in HIST1701 and will be used in a set piece course in future years. In the pilot, students reported greater motivation and clearer understanding of how coding can address data analysis or textual interpretation in the humanities. The interdisciplinary structure fosters deeper engagement across history and literary studies. Faculty in other departments can also use this resource for their own teaching.

Evaluation

In the pilot, surveys and interviews gauge students' readiness and progress in computational thinking. Preliminary data indicates an increase in self-efficacy and interest in applying these skills to historical and literary contexts. We are still waiting for the CT scores for HIST1701.

Dissemination, Diffusion and Sharing of Good Practices

All resources will reside in an open platform online that be used across the Arts Faculty and partner institutions. The PI also discussed it at a digital humanities conference to publicize the development of such courses at Hong Kong universities.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Identification of key aspects in Spanish conversation turn taking and giving and its teaching.

Principal Supervisor(s) and Unit(s):
Dr. GARCIA SUSPERREGUI Antonio Ramon, Department of Linguistics and Modern Languages

Project Objectives

i) Identifying the real needs of CUHK students of Spanish regarding Spanish conversation learning.
ii) Describing the desired learning outcomes for Spanish conversation teaching at CUHK. iii) Defining the appropriate linguistic, behavioral and cultural contents to be taught while training CUHK students in Spanish conversation. iv) Measuring the learning results of evidence-based 3-credits Spanish conversation course.

Implementation and Deliverables

The project identified the real needs of CUHK students of Spanish in relation to Spanish conversation through stimulus and surveys, which allowed to define the appropriate linguistic, behavioral, and cultural contents of a Spanish conversation course. The project team developed teaching materials based on real audio and video recordings of spontaneous conversations between native Spanish speakers, which were transcribed and analyzed using the conversation analysis approach. Altogether, led to the adoption of a direct and explicit teaching methodology, grounded in conversation analysis, to develop an evidence-based Spanish conversation course.

Outcomes and Achievements (including Impact on Teaching and Learning)

The implementation of the project represents a good example for promoting diversity of language learning and engaging students as partners in curriculum and teaching development.

Evaluation

The appropriateness of the teaching materials produced, and the teaching methodology proposed was tested on the course 'Meeting People in Spanish' in Term 2, 2024-25 academic year. The results from the students' learning in this course, served therefore as an evaluation of the project itself. Additionally, student feedback and opinions were gathered through discussion groups held after the course was completed.

Dissemination, Diffusion and Sharing of Good Practices

Poster " Students' participation in a real conversation in Spanish as a foreign language as a stimulus to elicit their needs along oral interaction: design of an evidence-based Spanish course" at CUHK Teaching and Learning Innovation Expo 2024.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: German Culture and Language Learning in the Metaverse
Principal Supervisor(s) and Unit(s):
Mr. KLING Alexander Markus, Department of Linguistics and Modern Languages

Project Objectives

The project aims to create an immersive online experience for teaching German language and culture. It enhances student interaction, fosters collaboration, and evaluates immersive technologies for effective language instruction at the university level, improving language acquisition and educational outcomes.

Implementation and Deliverables

The project enhances student engagement through a virtual German town where students practice language skills and cultural content. Interactive activities, including bot dialogues, role plays and treasure hunts support immersive learning, benefiting approximately 350 students each academic year and integrating innovative approaches in German I and II courses.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project improved student language skills and cultural awareness through immersive metaverse experiences. Feedback indicated increased confidence in speaking German, thanks to engaging activities. Instructors adapted their teaching methods, though integration varied. The initiative aligned with university goals, fostering internationalization and diverse learning strategies, while highlighting areas for future improvement.

Evaluation

The evaluation was based on lecturer analyses and student surveys. In addition, about ten student helpers carried out more in-depth analyses. Many students found bot interactions helpful for improving German skills, though technical issues affected some experiences. Overall, activities like role plays and treasure hunts boosted confidence, but challenges persist. The project met most of its objectives, enhancing cultural exposure and language proficiency.

Dissemination, Diffusion and Sharing of Good Practices

We have shared the project widely and engaged with colleagues about using a metaverse for deeper course understanding. While plans are underway to include the Spanish program, we see differing objectives between language and non-language educators. Our project has identified effective practices in student engagement, aiming to inspire broader adoption of innovative technologies in language education.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Classics and Cultural Landscapes: Prioritizing Hong Kong's Classical Literature Corpus and Chinese Opera Criticism through a Multidisciplinary Digital Scholarship

Principal Supervisor(s) and Unit(s):
Professor SIU Chun Ho, Department of Chinese Language and Literature

Project Objectives

This project aimed to promote the preservation and revitalization of Hong Kong's classical literature and Chinese opera criticism through the development of digital resources and interdisciplinary approaches. By creating and enhancing open-access databases, the project sought to support innovative research in digital humanities, enrich teaching in classical Chinese literature, and deepen students' engagement with local literary heritage. It also addressed post-pandemic educational needs by integrating literary studies with geographic and cultural contexts, thereby fostering a stronger appreciation of Hong Kong's classical cultural landscape among students, educators, and the wider community.

Implementation and Deliverables

2 existing databases were revised and optimized, and 1 new database, Hong Kong Classical Poetics and Criticism Database was launched, with a relevant literature map. 1 sharing session on the interdisciplinary research of digital humanities, versification and *ci/qu* music was held. 2 literature tours were conducted, and a journal article is submitted.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project effectively promoted interdisciplinary learning and digital literacy by integrating databases into key courses, supporting student research on topics from Chinese opera to Hong Kong classical literature. It bridges traditionally separate fields and sparks rich academic dialogue. Students gained hands-on experience in data processing, text-mining, and IT integration, while literature tours deepened their engagement with local cultural heritage.

Evaluation

The outcomes indicate strong alignment with the project's goals, particularly in enhancing student engagement and digital resource integration. The marked improvement in course evaluation scores suggests increased student satisfaction with IT-supported learning. The high level of course adoption and student participation reflect the project's sustainability and relevance across multiple teaching contexts.

Dissemination, Diffusion and Sharing of Good Practices

MA students showed strong interest in the database, likely due to limited access to physical resources. The supervisor plans to tailor future updates to their needs and promote use in secondary education. The sharing session also fostered enthusiasm for AI and DH applications, though many lacked funding knowledge, prompting the supervisor to provide guidance.

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General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Revolutionizing Elementary Japanese Education: Harnessing the Power of Artificial Generative Intelligence (AGI)

Principal Supervisor(s) and Unit(s):
Professor HO Chi Ming, Department of Japanese Studies

Project Objectives

This project aims to develop a software platform powered by GPT, tailored specifically to the JLPT syllabus. This innovative platform will enhance Japanese language learning by enabling students to engage in self-directed study.

Implementation and Deliverables

1. The project team prepared and developed a set of original materials tailored to the Japanese Language Proficiency Test (JLPT) Levels N5 to N4. These materials will serve as the fundamental dataset for AGI processing, setting the groundwork for detailed analysis and feedback generation.
2. Student helpers joining this project attended Japanese language tests and provided their answers as research materials. The project team used all these answers as data for input into GPT in order to generate feedback and new questions for further exercise.
3. The project team started to develop a system to generate feedback and new questions by using the materials in 1 and 2 above.

Outcomes and Achievements (including Impact on Teaching and Learning)

1. This project will develop a system of elementary Japanese language self-learning platform targeting at Japanese Language Proficiency Test level N4.
2. This project outcomes align with the new initiative of learning by using artificial intelligence technology which is strongly encouraged by CUHK**.**

Evaluation

To be provided upon the completion of project

Dissemination, Diffusion and Sharing of Good Practices

To be provided upon the completion of project

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Learning Robotics with Mixed Reality: An Evaluation Study

Principal Supervisor(s) and Unit(s):
Professor LAU Tat Ming Darwin, Department of Mechanical and Automation Engineering
Professor CHUN Ka Wai Cecilia, Centre for Learning Enhancement And Research

Project Objectives

This project aims to evaluate the effectiveness of using mixed reality (MR) in two robotics courses, MAEG5755 (Robotics) and MAEG3060 (Introduction to Robotics), which were offered in the First Term and Second Term respectively in 2022-2023.

Implementation and Deliverables

To evaluate the effectiveness of using MR, data were collected by student surveys, class observation and student focus group interviews. Student performance data were also collected. The deliverables produced for the project include: (1) Two sets of courseware for MAEG5755 and MAEG3060; (2) a web-based pre-course student questionnaire; (3) a web-based post-course student questionnaire; (4) a semi-structured qualitative protocol and an information sheet for class observation; (5) a student focus group interview protocol; and (6) a poster presentation for the CUHK Teaching and Learning Innovation Expo 2023.

Outcomes and Achievements (including Impact on Teaching and Learning)

Students had a significant improvement in robotics learning self-efficacy after using MR in the courses. They found MR useful for robotics learning and were highly engaged in using MR in the courses. They expressed that MR had helped them visualize the data, deepen their understanding of the course content, enhance their engagement in class and promote collaboration and exchanges with their classmates.

Evaluation

Most of the deliverables/ outcomes have been achieved according to the key performance indicators.

Dissemination, Diffusion and Sharing of Good Practices

The findings of this study were reported in the meetings with the course team. Some features of the MR were discussed, and the recommendations arising were considered by the course team for further enhancement of the MR. To further promote the use of MR in robotics learning, the PI of this study had shared a remote robot system equipped with the same MR with the postgraduate students in City University of Hong Kong and conducted a similar online survey with them after using the MR for evaluation.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: A One-Stop Engine for Examination and Item Analysis Databank (Platform ExMIA) for Quality Assurance and Enhanced Assessments

Principal Supervisor(s) and Unit(s):
Dr. LAU Sin Nga Ann, School of Biomedical Sciences
Dr. HWANG Shui Shan Isabel, School of Biomedical Sciences

Project Objectives

This project aims at:

(i) evaluating the effectiveness of the existing, selected exam item database/ tools (IDEAL, Blackboard and Respondus) for storing exam items and hosting performance data; AND
(ii) developing a one-stop engine that hosts both the exam item database and the performance data, allowing batch selection, input/output of exam items and performance data to/from the database.

Implementation and Deliverables

Our team has evaluated existing platforms (Blackboard, Respondus, IDEAL) and developed a platform called ExMIA that can perform functions to supplement the deficiency of the existing platforms. We are currently testing and evaluating this platform thoroughly. In near future, item analysis data can then be systematically stored and reviewed, which will greatly increase the accessibility of the exam item data.

Outcomes and Achievements (including Impact on Teaching and Learning)

We believe this new platform will provide teachers with a stronger incentive to read and analyse the data of exam items and greatly streamline the exam workflow. More findings will be available upon completion of this project which is extended to 30 June 2025.

Evaluation

Evaluation will be carried out upon completion of this project.

Dissemination, Diffusion and Sharing of Good Practices

Promotion of this platform and sharing of good practices will be conducted upon completion of this project.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Beyond Text-only AI Chatbots: the Digital Avatar Learning Environment for Human Anatomy

Principal Supervisor(s) and Unit(s):
Dr. SEE Christopher, School of Biomedical Sciences
Professor CHEUNG Chi Kwan Vincent, School of Biomedical Sciences

Project Objectives

The project aimed to advance CUHK's leadership in educational technology by developing and deploying interactive AI digital avatars for anatomy and clinical teaching, enhancing student engagement, and fostering authentic student-teacher interaction.

Implementation and Deliverables

We co-designed and co-produced the avatars with student and teacher input, filmed real classroom sessions to generate dialogue, and trained the AI using this authentic data. The avatars were deployed in MEDU3300 and extended to obstetrics, gynaecology, orthopaedics, and pharmacy classes, supporting over 250 students annually.

Outcomes and Achievements (including Impact on Teaching and Learning)

The avatars improved student understanding and engagement in complex subjects, as evidenced by positive feedback from both students and staff. The project received Gold Awards at the CUHK T&L Expo and ELFA 2024, demonstrating both educational impact and external recognition.

Evaluation

Evaluation involved comprehensive quantitative and qualitative feedback from students and teachers, usage analytics, and formal course coordinator reports, confirming that project objectives were met and aligned with CUHK's strategic priorities for eLearning and student partnership.

Dissemination, Diffusion and Sharing of Good Practices

The project's outcomes and best practices were shared at CUHK's Teaching and Learning Expo, international conferences such as ELFA 2024, and adopted by the Faculty of Medicine into several teaching areas and knowledge exchange in innovative educational technology.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Interactive Medical History Taking and Communication Practice for Medical Students Using an Autoresponder Messaging Platform

Principal Supervisor(s) and Unit(s):
Professor TAN Guangming, Department of Medicine and Therapeutics

Project Objectives

While the objective of the original proposal of developing a practice tool for students in their junior clerkship to enhance their history taking and communication skills remained unchanged, the method of delivery of such objective evolved from an Autoreponder on a messaging platform that generate response based on triggered words sequence, to a simulated patient model developed using Natural Language Processing Model, enabling more dynamic and realistic interactions.

Implementation and Deliverables

1. A simulated patient model was developed using a freely assessable Natural Language Processing Model from META (Llama).
2. 10 (instead of the originally proposed common medical conditions was identified and structured model histories was developed for each.
3. Sections of the histories was systemically divided into key component scripts.
4. Key component scripts from different case scenario was mixed and combined to generate a diverse array of scenarios.
5. An utterance (user interactions and command) was linked to specific groups of intent (content on the scripts).
6. The model was trained through a systematic process of repeatedly inputting utterances in various formats and phrasings to enhance its adaptability and accuracy.
7. Incorporating the optimized model into a virtual reality interface (with another project VR-ISCT for clinical examination) for usage.

Deliverables:

1. exposure of students to 6 common clinical cases scenarios which they can practice history taking and compile the case summary.
   - We exceeded this deliverable by creating 10 case scenarios.
2. Final teaching platform tested by >50% of all students invited
   - We partially achieved this deliverable as students was involved throughout the model development by continuous input and interactions (cumulatively 100 interactions were logged). However, because our model is in continuous refinement through ongoing user interactions, the final model was not available for testing at the end of this project.

Outcomes and Achievements (including Impact on Teaching and Learning)

A simulated patient model was developed, though ongoing refinement is still in the process. Student engagement has substantially increased by utilizing virtual reality platform.

Evaluation

Although students were involved through the model development, as the model was not finalized at the end of the project, students testing was not feasible. However, as the model will be placed at the Clinical Skill Learning Centre, continuous student feedback will be collected.

Dissemination, Diffusion and Sharing of Good Practices

1. We intend to deploy the current model in the Clinical Skills Lab as a self-guided tool for students to practice history-taking.
2. Additionally, we plan to make the model accessible online, expanding user interactions to a broader student audience.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Use of Multiple-choice Question Writing to Engage Nursing Students in Deep Learning and Develop Higher-order Thinking Skills

Principal Supervisor(s) and Unit(s):
Professor TANG Wing Ki Fiona, The Nethersole School of Nursing

Project Objective

The project aimed to use Multiple-choice question (MCQ) writing as a pedagogy to engage nursing students in deep learning and develop their higher-order thinking skills. The objectives were to 1) equip students with the skills in writing MCQs; 2) develop a question bank and revision exercises using student-generated MCQs; 3) develop deep learning approach among students; 4) use higher order-thinking skills to write quality MCQs among students; 5) evaluate students' learning experiences with MCQ writing.

Implementation and Deliverable

The project team conducted two MCQ writing workshops for students. The students created four MCQs in two nursing courses. The quality of the MCQs were evaluated by two reviewers. MCQs of high quality were selected to form two revision exercises for students.

Outcomes and Achievements (including Impact on Teaching and Learning)

The MCQ writing exercises significantly enhanced students' learning, with participants achieving higher exam scores. A question bank of high-quality student-generated MCQs was created, with varied cognitive levels, reflecting strong subject understanding and critical thinking. The exercises fostered active learning, peer collaboration, and alignment with the University's goal of empowering students to take ownership of learning.

Evaluation

The students shifted their learning approach from deep learning to surface learning. The majority of participating students possessed a strong understanding of the subject matter and demonstrated critical thinking skills during the writing exercises. Students perceived that the MCQ writing exercise helped them comprehend and consolidate learning concepts, and they valued the revision exercise encouraged peer learning.

Dissemination, Diffusion and Sharing of Good Practices

The project results were disseminated at two international conferences and a manuscript sharing the positive results has been under reviewed.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Developing a Smartphone-Based, Interactive, and Experiential-learning Oriented Direct Ophthalmoscopy Training Module for Medical Students that Consists of Demonstration Videos, Simulation Practice, Self-Evaluating Instruments, and Innovative Assessment

Principal Supervisor(s) and Unit(s):
Dr. CHAN Pui Man, Poemen, Department of Ophthalmology and Visual Sciences
Dr. CHAN Yan Yu, Julia, Department of Ophthalmology and Visual Sciences

Project Objectives

To develop and evaluate a new, self-evaluated, self-learned, and smartphone-based direct ophthalmoscopy (DO) module that includes 3-D videos (including unprecedented DO view and examination ergonomics), a portable smartphone ophthalmoscope (PSO) for self-evaluation, a smartphone hand-held ophthalmoscopy simulator (SOS) allowing unlimited, stress-free practice, and an interactive and experiential learning-oriented end-of-rotation assessment. We compared the subjective and objective learning outcomes of at least 40 students who underwent the original DO course (ODO group) and the new DO course (NDO group) (20 for each group).

Implementation and Deliverables

- Developed a new, smartphone-based, interactive, and experiential-learning-oriented DO training module likely to be implemented as part of the regular ophthalmology rotation for medical students.
- 60 students joined the study, with objective (end-of-rotation DO assessment) and subjective (Anonymous Likert scale questionnaire [ALSQ]) assessments completed.
- Pre-classroom teaching videos have been created.

1. https://master.d3fl8hc1jesi7p.amplifyapp.com/ login: student password: CUmed2025
   (click "Video" → "direct ophthalmoscope tutorial and other basics")
2. Three 360 degrees DO videos:
   https://youtu.be/dVT3o8Q7cGc
   https://youtu.be/ybeAfop4Zj0
   https://youtu.be/NxSlOPJWnrU
3. Two teaching videos
   https://www.youtube.com/watch?reload=9&v=IJ-x19WAEMI&feature=youtu.be
   https://www.youtube.com/watch?v=g0kbwI_UI3s

Outcomes and Achievements (including Impact on Teaching and Learning)

Preliminary results showed that the NDO group have higher objective and subjective assessment scores. Students' comment also reflected encouraging results (see "final report").

Evaluation

Students and tutors find the materials and the newly designed course helpful, interactive, stimulating, and enjoyable. Apart from fulfilling the study objectives and KPIs, the materials and instruments could be used in future teachings.

Dissemination, Diffusion and Sharing of Good Practices

- 4 presentations (1 invited lectures + 3 sharing sessions).
- We plan to teach one more NDO group (12 students) in June 2024. Data will be collected and manuscript will be drafted.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Innovative Virtual Immersive Simulation to Enhance Pharmacy Student's Practical Lab Learning Experience: electronic Practical Simulator (e PS) platform

Principal Supervisor(s) and Unit(s):
Dr. CHATTERJEE Lipika Alok, School of Pharmacy

Project Objectives

The objective of this project is to **enhance pharmacy students' preparedness for physical laboratory work in the dosage form science 2** course by implementing a digital technology solution, the electronic Practical Simulator (e PS) platform. This initiative seeks to improve students' understanding of the mechanism of formation and stabilization of complex dosage forms, emulsions, and suspensions through the utilization of short narrative micromodules and virtual simulated immersive labs. By engaging students in interactive learning experiences prior to the physical lab sessions, the project aims to motivate students to engage in self-directed learning, increase student engagement, reduce experimental errors, and optimize resource utilization, ultimately enhancing learning outcomes in the digital learning environment.

Implementation and Deliverables

Three micromodules and three virtual immersive labs (Lab 1, Lab 2 and Lab 3) with eight simulations are to be developed for this projects electronic Practical Simulator (e PS) platform.

A prototype of virtual lab simulation and micromodule for one part of a L ab 2 was showcased at the Teaching and Learning expo on 12 Dec 2024 as proof of concept. Feedback collected from audience visiting the poster and demonstration booth was used to make revisions and to develop the remaining simulations.

Pilot runs for the complete Lab 2 virtual lab simulation s and micromodule were conducted in March and April 2025. Thirty undergraduate pharmacy students who had taken this course in the previous academic years evaluated the innovative learning tool and provided valuable feedback about their experience via survey questionnaire. Focused group interviews were also conducted to gain detailed insights into how participants interacted with the innovative tool, and to learn of shared experiences of specific practical challenges and opportunities of incorporating it into the existing educational settings. In addition to the survey and focus group interviews, lab quiz was conducted to investigate if this innovative approach enhanced students' cognitive skills, logic and reasoning and assisted with retention of information.

Outcomes and Achievements (including Impact on Teaching and Learning)

Through this project an electronic Practical Simula tor e PS platform containing micromodule and virtual immersive simulation lab s are developed and evaluated. The data collected from the survey, focus group interviews, and lab quiz performance collectively indicate that ***students highly value the e-PS platform for its superior learning experience*** compared to traditional paper-based lab manuals.

Further the lab quiz results indicate that the students have comprehensively grasped the subject matter, showcasing their proficiency in the concepts covered within the virtual lab environment.

Evaluation

The evaluation plan with its KPIs demonstrates the successful engagement of students in virtual lab activities, positive learning outcomes reflected in high quiz scores, high student satisfaction with the virtual lab experience, and the reliability and user friendliness of the technical infrastructure supporting the virtual lab platform. The overall assessment suggests that the project 's innovative teaching initiatives have effectively enhanced student engagement, learning outcomes, and satisfaction within the virtual lab environment.

Dissemination, Diffusion and Sharing of Good Practices

-The findings from pilot run study will be shared at the **11th International Conference on Learning and Teaching** (ICLT 2025), which will be held in Macau, during 23-25 May 2025

-Sharing of Good Practices and outcomes will also be conducted via the **Pedagogic Research Knowledge Exchange organised by the Teaching and Learning Community of Practice** (T&L CoP) at CUHK on 29 May 2025

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of Student-led Micro-modules in Research and Leadership
Principal Supervisor(s) and Unit(s):
Professor NG Siu Man, Simon, Department of Surgery

Project Objectives

The micro-module project aims to enhance teaching and learning experiences within the Faculty of Medicine at CUHK by engaging our Global Physician-Leadership Stream (GPS) students as co-creators of educational content. Key objectives include promoting virtual teaching and learning (VTL), fostering active student engagement, and developing essential leadership and multimedia skills.

Implementation and Deliverables

Seven micro-modules are being developed across two themes—leadership and research—under faculty guidance. These modules are going to be embedded into the GPSU2000 course and designed for ongoing use in future cohorts.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project is anticipated to significantly enhance student engagement and deepen our students' understanding of leadership and research principles. It is expected to benefit over 100 students annually, fostering a collaborative culture within the GPS programme.

Evaluation

Key Performance Indicators (KPIs) indicating the project's success will be evaluated, including the successful production of micro-modules, student access rates and engagement levels, and positive feedback from the participants.

Dissemination, Diffusion and Sharing of Good Practices

The dissemination plan includes an internal sharing session and broader presentations to external parties through education expo and conferences. Identified good practices include the effectiveness of student-led content development and the integration of multimedia formats, which can be replicated across other departments to enhance collaborative learning initiatives.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enriching and Sustaining *Quest2Learn*: An Integrated Smartphone-based Augmented Reality Platform for Gamification of Laboratory Techniques

Principal Supervisor(s) and Unit(s):
Dr. CHAN Ka Long Donald, Department of Chemistry

Project Objectives

- To deepen virtual teaching and learning adoption by enriching *Quest2Learn* with learning modules that emphasize on generic laboratory techniques and skills.
- To enhance users' satisfaction and learning experience by improving the quality of user-interface interaction.
- To develop a database of modules and realistic 3D models of laboratory equipment for applications in future projects.

Implementation and Deliverables

Design and development of learning modules which form virtual experiments. The following activities were carried out:

- Confirmed continued collaboration with a partner university
- Developed four new web-based modules
- Remastered existing AR modules at a web-based platform
- Implemented modules in laboratory courses in CUHK and the partner university.

Outcomes and Achievements (including Impact on Teaching and Learning)

- An overall enhancement on user experience was achieved.
- The clear instructions and engaging interactive elements, which effectively enhanced students' understanding of laboratory techniques, were well-recognised by student users.

Evaluation

- Students took shorter time to complete actual experiments. This could be indirect evidence that students became well-prepared with the help of the platform.
- Students showed willingness to make use of virtual tools for their learning.

Dissemination, Diffusion and Sharing of Good Practices

- A webpage was publicised.
- The project outcome was presented in an international conference.
- Secondary teachers and interns can also use the platform.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Engaging Postgraduate Students in Developing Virtual Teaching and Learning (VTL) Approaches to Facilitate Their Learning of the Latest Scientific Discoveries and Most Advanced Experimental Techniques

Principal Supervisor(s) and Unit(s):
Professor JIANG Liwen, School of Life Sciences

Project Objectives

In line with the CUHK Strategic development themes ***"Deepening virtual teaching and learning (VTL) adoption",*** in this project we have produced new online teaching videos and micro-modules in VR application for teaching and learning in Life Sciences. In addition, following the Strategic development themes ***"Engagement of students as partners in curriculum, teaching and teaching development"***, we have partnered with postgraduate students from the research groups of our Principal Supervisor (PS) and Co-Supervisors (Co-S) in developing the micro-modules.

Implementation and Deliverables

8 Discovery Videos that introduce our recently published research discoveries in international scientific journal have been produced. We have also produced 8 Experiment Videos that displayed the proper procedures of various advanced experiments. In addition, we have added 3 newly constructed 3D models into our existing VR application.

Outcomes and Achievements (including Impact on Teaching and Learning)

The videos developed in the project have been incorporated into lectures for both undergraduate and postgraduate courses and provided vast advantages to students' learning. Our project also engaged students as partners in curriculum and teaching development, eventually allowing a transfer of knowledge from the senior students to the junior students.

Evaluation

The evaluation showed positive feedback from students indicating that the project has achieved its original objectives effectively and completely.

Dissemination, Diffusion and Sharing of Good Practices

We have established a public-accessible webpage to include all these teaching materials produced in the project so that all students can learn from those valuable resources. We have also disseminated the good practices of the project at the Teaching and Learning Innovation EXPO 2023 and 2024 respectively.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Supporting Statistics Research Postgraduates to Teach Quantitative Data Analysis to Postgraduate Students without Statistics Background – Phase II

Principal Supervisor(s) and Unit(s):
Dr. WRIGHT John Alexander, Department of Statistics

Project Objectives

Phase I taught us how to train Statistics RPGs to give workshops to RPGs from other disciplines. In Phase II we recruit and train Dept. Statistics TAs to give several workshops on a variety of statistical topics. Feedback from these then informs the refining of training materials.

Implementation and Deliverables

Ten statistics research postgraduates conducted 21 hands-on 3-hour workshops on 10 different statistical methods. Pre-workshop videos and learning materials were uploaded to the course platform on KEEP. Training materials from Phase I were refined, based on feedback from workshop attendees, facilitators and helpers, resulting in updated micro-modules and reference materials for training future Statistics RPGs.

Outcomes and Achievements (including Impact on Teaching and Learning)

There is a demonstrable impact of the teaching of Dept. Statistics TAs, as they better understand the needs of students without a statistics background. This clear improvement in their communication and teaching skills benefits their current and future students. The impact on the workshop attendees relates to their increased awareness and enhanced skill when encountering and implementing statistics, benefiting their research.

Evaluation

Pre- and post-surveys of workshop attendees and facilitators showed

- TAs found the training materials useful, increasing their confidence teaching non-statistics students
- Attendees liked the pre-workshop videos, real examples, avoidance of relying on complex formula, and ample time for hands-on practice and Q&A. Over 200 PGs attended the workshops, giving an average score of 5 out of 6, reporting an enhanced understanding of statistical methods. Many of the workshops were over-subscribed.

Dissemination, Diffusion and Sharing of Good Practices

Our methods and results have been shared at multiple T&L Expos and Symposia. All training materials are freely available at https://www.sta.cuhk.edu.hk/jawright/Stats4RPgsTraining/index.php?pw=magic.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of 3D Geoscience Virtual Learning Platform and Outreach Schemes for the New Programme (EESC) Integration and Community Engagement

Principal Supervisor(s) and Unit(s):
Dr. TAM Pui Yuk Tammy, Department of Earth and Environmental Sciences

Project Objectives

Development of interactive virtual educational platforms involves student's innovation and incorporated into traditional geoscience teaching in the Department and interdisciplinary fields. Our products used in **community projects enhance students' learning** and foster **sustainable engagement schemes.**

Implementation and Deliverables

1. Modification existing and production of new online materials;
2. Application of the online materials in regular EES teaching activities;
3. Establishment of a Geoscience Ambassador Training Scheme (GATS) to enrich their experiential learning

Outcomes and Achievements (including Impact on Teaching and Learning)

The development of interactive virtual materials enhanced interactive pedagogy between teachers and students, leading to better understanding of students' needs. The products elevated the efficiency and effectiveness of teaching and learning. Students participating in the production and outreach activities have developed their own clear learning goals and better critical thinking, self-learning motivation and problem-solving skills. Teaching has also become more inclusive in field-based and laboratory practice. Teaching staff have become more competent in the use of advanced technology and tailor-made teaching products.

Evaluation

Evaluation has been conducted among students, teachers and collaborators. The project has successfully integrated various strategies to enhance geoscience education and community engagement. Despite challenges in unpredictable weather and limited manpower, the positive feedback from participants highlights the project's effectiveness, diversity and strengthening safety training. Intensive collaborations with various organizations enrich the experience and resources available.

Dissemination, Diffusion and Sharing of Good Practices

The production and application of virtual educational platforms has set a good model for diverse disciplines in pedagogy. Students' active engagement in community projects does not only enhance their experiential learning, but this also promotes global citizenship and prepares future leaders in geoscience.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Elevating Undergraduate Chemistry: Data Analysis with AI's Machine Learning
Principal Supervisor(s) and Unit(s):
Dr. MAK Kin Wah, Kendrew, Department of Chemistry

Project Objectives

This project aims to enhance AI literacy among chemistry undergraduates by developing lab activities that apply machine learning (ML) to solve chemistry problems. It focuses on using ML techniques to compare spectral data sets and analyze minute differences for AI-assisted chemical substance identification. Five teaching activities demonstrate ML's role in chemical data analysis, training students in data preparation, ML execution, and result interpretation. The effectiveness of these activities has been evaluated through trial sessions with students of varying levels.

Implementation and Deliverables

This project developed five sets of activities to teach machine learning (ML) applications in spectral data analysis for chemistry undergraduates. Activities range from elementary (non-coding platforms) to intermediate (Python neural networks) and advanced (capstone projects). Students collected over 1,600 NMR and IR spectra and prepared over 10,000 computer-generated spectra for ML training. Pilot trials at CUHK (Shatin) and CUHK (SZ) involved 53 students, optimizing protocols and gathering feedback. Final-year students co-developed and tested capstone project protocols.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project developed five pilot resources to introduce machine learning (ML) in chemical data analysis for undergraduates, enhancing AI literacy. All protocols were tested in trial sessions, proving effective even for students with no prior ML experience. Feedback was positive, with students gaining confidence in ML tasks. The project involved 12 undergraduates and 1 postgraduate in data collection and protocol development, fostering engagement and collaboration. Sharing and pilot teaching sessions at CUHK(SZ) enhanced mutual experience and resource sharing among the two campuses.

Evaluation

Five sets of teaching resources on applying machine learning to spectral analysis were successfully developed and tested in trial sessions for usability and effectiveness, yielding very satisfactory results and positive feedback from students. Collaborations with CUHK(SZ) led to sharing sessions and pilot trials at CUHK(SZ), enhancing mutual learning and resource sharing among the two campuses.

Dissemination, Diffusion and Sharing of Good Practices

The project developed five sets of machine learning resources for spectral analysis, which will be used in CHEM2860, CHEM3810, CHEM3820, and CHEM4030/4040, benefiting around 160 students annually. The idea and outcomes were shared with CUHK teachers and students through informal sessions and pilot workshops. Future plans include a sharing session in June 2025 and a presentation at the CUHK Teaching and Learning Innovation Expo 2025. The project was also shared with CUHK(SZ) during seminars and workshops.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Development of Flashcard E-learning Language Tool with the aid of AI Chatbot
Principal Supervisor(s) and Unit(s):
Dr. HAU Chun Kit Sam, Department of Chemistry

Project Objectives

The learning platform aims to achieve individualized learning by customizing flashcards to meet each student's needs and providing personalized feedback through GPT technology. It promotes accessibility and inclusivity with features like text-to-speech and visual aids, ensuring students with special education needs can participate fully. Progress tracking and adaptive learning are facilitated by adjusting flashcard difficulty based on student performance, keeping them challenged and motivated. Additionally, the platform encourages self-learning by allowing students to explore concepts independently, seek clarification from the virtual assistant, and engage in self-directed learning, fostering responsibility and autonomy in their educational journey.

Implementation and Deliverables

We partnered with Aiilog Limited from the Science Park (HKSTP) to develop the CHEMBot AI platform. The learning sets are divided into six categories: Units and Measurements, Chemistry Common Terms, Laws and Theories, Element and Chemical Names, Chemical Reactions, and Chemical Experiments. Each category has flashcard learning materials set to three difficulty levels. Students must achieve at least 75% correctness to progress to the next level. We launched the platform to CHEM1070B students in February 2025. The first online gamification quiz was held in January 2025 to establish a baseline of their chemistry knowledge, followed by another quiz in March 2025 to evaluate progress.

Outcomes and Achievements (including Impact on Teaching and Learning)

Since launching the platform, 78 out of 110 students (71%) have used it, with 1669 attempts recorded. Students reported satisfaction with the platform, finding it effective for understanding chemistry and overcoming language barriers. The platform's AI-generated question bank promotes repeated use and engagement. Data shows students actively engaging with the platform, making multiple attempts to master the material, and achieving significant progress over time.

Evaluation

The learning sets for CHEM1070B are organized into six themes. Due to time constraints, evaluations were reduced from four to two. Despite the platform accounting for 10% of the course grade, 32 students did not access it. Plans are in place to relaunch the platform for a larger class next semester and present findings at educational conferences.

Dissemination, Diffusion and Sharing of Good Practices

An anonymous survey of 110 students received 19 responses, with positive feedback on the platform's effectiveness and engagement. The development of the question bank involved one senior undergraduate and two postgraduate students, whose contributions were vital in reviewing AI-generated questions and ensuring appropriate difficulty levels. The survey results underscore the platform's impact on enhancing student learning experiences and fostering a proactive approach to education.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Virtual Project Supervisor for Supporting Supervision of Statistics Projects

Principal Supervisor(s) and Unit(s):
Dr. CHAN, Chun Man, Department of Statistics
Dr. CHEUNG, King Chau, Department of Statistics
Dr. WONG, Tat Wing, Department of Statistics

Project Objectives

The project focuses on creating an AI chatbot that acts as a virtual supervisor, helping students with their projects and assisting instructors in tracking group work. The chatbot will answer questions, support project progress, and summarize group discussions for instructors to better understand team dynamics and offer targeted help. It aims to improve student outcomes and enhance their experience of instructor support compared to traditional methods. The chatbot also helps instructors manage multiple groups efficiently and encourages students to stay on track, leading to better learning and more complete projects.

Implementation and Deliverables

The AI-powered chatbot was developed to support students in group projects by addressing inquiries, summarizing discussions, and tracking students' participation and contribution. The AI model was fine-tuned using previously consolidated course materials and insights from student surveys that identified key desired features. It was piloted in Term 2 of the 2024–25 academic year, assisting 38 groups and 198 students, functioning as a virtual instructor within group chats on Discord. Feedback from both students and instructors, collected through surveys and interviews, is now being used to enhance the chatbot's functionality for future use in project-based courses.

Outcomes and Achievements (including Impact on Teaching and Learning)

An AI-powered chatbot streamlined project support for students and instructors. It answered project-related questions, clarified expectations, and guided students through requirements, boosting their confidence and understanding. Students reported clearer, timelier support compared to traditional supervision. For instructors, the chatbot summarized group discussions, analyzed participation, and tracked engagement, enabling timely follow-ups. Instructors felt more confident managing large groups and noted improved student project quality.

Evaluation

Both students and instructors expressed satisfaction with the chatbot's functionality, particularly in supporting project work and supervising group activities. However, there are opportunities to enhance its effectiveness. These include encouraging more consistent use of the chatbot by students during face-to-face classes, and introducing AI-driven features such as proactive monitoring of project progress and automated messaging to student groups.

Dissemination, Diffusion and Sharing of Good Practices

The project team plans to share their experience piloting a chatbot in two project-related courses conducted during Term 2 of the 2024–25 academic year. They will also present their findings at the Teaching and Learning Expo in December 2025 through a poster session. The team emphasizes that AI tools are most effective when integrated into face-to-face teaching, particularly for group project activities both inside and outside the classroom.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Data Mind Challenge: Fostering Global Readiness through Ethical Data Analysis
Principal Supervisor(s) and Unit(s):
Professor CHAN, Kin Wai, Department of Statistics

Project Objectives

The project aimed to enhance teaching and learning at the University by enabling students to independently derive professional insights from data. The Data-Mind Challenge was implemented across six courses, engaging over 500 students. The challenge consists of micro-modules in the form of five-minute videos and interactive games.

Implementation and Deliverables

The implementation provided students with an interactive environment that fosters engagement through immediate feedback and integration of real-world global cases. Instructors gained powerful tools for creating dynamic instructional content, automating grading processes, and developing multimedia-rich learning materials.

Outcomes and Achievements (including Impact on Teaching and Learning)

Preliminary findings from pilot studies and comprehensive surveys suggest a positive trend in students' understanding of data analytics after engaging with the learning material. Students reported improved understanding of key concepts.

The project aligns closely with CUHK's strategic development, particularly in enhancing students' global readiness and promoting attitudes and values. The approach enhances virtual teaching and learning, providing a set of generic skills and tools for data analysis.

Evaluation

Evaluation metrics include the number of micro-modules developed, participation rate, frequency of discussions during class, and number of courses and students benefiting from the project. The project has exceeded its initial goals, with 12 micro-modules prepared instead of the originally planned 6. The participation rate indicates a significant portion of students are interested in learning data analysis tools through micro-modules.

Dissemination, Diffusion and Sharing of Good Practices

The project will continue to be disseminated through various channels, including the Teaching and Learning Innovation Expo at CUHK. The aim is to foster a collaborative environment that supports continuous improvement in teaching and learning practices.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Exploring Virtual Reality (VR) as a Pedagogical Tool in Supporting Collaborative and Experimental Learning

Principal Supervisor(s) and Unit(s):
Mr. FINGRUT Adam, School of Architecture

Project Objectives

This project enhances design thinking in e-learning using VR and 3D drawing technology. It fosters problem-solving, collaboration, and creativity while exposing students to advanced digital tools. Educators refine teaching strategies, advancing architectural education and digital literacy. By assessing learning processes, the project drives technology adoption for immersive and engaging education.

Implementation and Deliverables

This project enhances design thinking and student engagement through VR-based learning materials. It tests VR headsets, selects Quest 3 for optimal use, and integrates tools like Gravity Sketch and Rhino3D. Workshops foster creativity, collaboration, and digital literacy. Deliverables include validated VR setups, research contributions, and refined teaching methodologies for architectural education.

Outcomes and Achievements (including Impact on Teaching and Learning)

This project enhances student problem-solving, design confidence, and digital literacy through immersive VR experiences and computational tools like Gravity Sketch. Educators refine teaching strategies, integrating VR into architecture and design education. Workshops, research contributions, and curriculum advancements support long-term adoption. The initiative aligns with CUHK's commitment to innovation, digital transformation, and interdisciplinary learning.

Evaluation

The project tested VR-based learning with 14 students, refining sharing experiences, documentation, and student support. Phase two expands VR into independent courses, lectures, and design studios, fostering immersive learning and interdisciplinary collaboration. It enhances accessibility, strengthens architectural education, and refines teaching methods while tracking KPIs for technology adoption and student growth.

Dissemination, Diffusion and Sharing of Good Practices

This project has been showcased at conferences, exhibitions, and virtual events, fostering interdisciplinary collaboration and knowledge transfer. It integrates VR into design education through phased implementation, multi-scenario learning, and peer mentoring. Best practices include structured onboarding, faculty training, and continuous assessment, supporting scalable adoption and long-term impact across institutions.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: CUHK CT-CITY - A New Metaverse Space for Computational Thinking
Principal Supervisor(s) and Unit(s):
Professor LEE Jaemin, Department of Sociology

Project Objectives

The CUHK CT-CITY project aims to integrate computational thinking (CT) into course environments through immersive metaverse simulations. It explores non-programming approaches to CT by engaging students in virtual social and medical settings, enhancing problem-solving skills, independent thinking, and data-driven decision-making.

Implementation and Deliverables

The project introduced metaverse-based learning activities in two disciplines:

- Sociology: Students in SOCI3238 engaged in sorting algorithms, algorithmic thinking, and basic R programming in a virtual environment.
- Physiology: UGEB2781 students participated in metaverse diving simulations to explore physiological boundaries and emergency medical responses. Interactive robot assistants and gamified experiences facilitated engagement and concept comprehension.

Outcomes and Achievements (including Impact on Teaching and Learning)

Students reported high satisfaction, with 43.8% rating metaverse learning as highly engaging. Sociology students appreciated the interactive and autonomous learning environment. Medical students found virtual scenarios effective in deepening conceptual understanding. Surveys confirmed increased engagement and comprehension in both disciplines.

Evaluation

Reflective KPIs indicated success, with positive feedback on usability and effectiveness. Challenges included interface usability and instruction clarity, mitigated through early testing and developer collaboration. The project demonstrated sustainability potential, expanding cross-disciplinary applications of metaverse-based education.

Dissemination, Diffusion and Sharing of Good Practices

- Conference Presentations: Findings were presented at international conferences, such as the 7th World Conference on Teaching and Education (Zurich, Switzerland) and the 8th International Conference on New Trends in Teaching and Education (Prague, Czech Republic).
- Institutional Knowledge Exchange: A sharing session was conducted at CUHK's Pedagogic Research Knowledge Exchange, organized by CLEAR and the Teaching and Learning Community of Practice (CoP).

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Enhancing Social Work Students' Clinical Expertise Through Creative Bricks: The BUILD Model

Principal Supervisor(s) and Unit(s):
Dr. CHIU Renee, Department of Social Work

Project Objectives

This project aims to enhance students' clinical social work practice learning through four key objectives:

1. To enhance students' conceptual learning to better understand complex social work theoretical concepts through constructing and visualizing clinical social work intervention models with LEGO bricks.
2. To develop essential interpersonal and reflective skills of clinical social work skills through a collaborative learning environment.
3. To boost student engagement and motivation through the interactive nature of building clinical social work intervention models with LEGO bricks.
4. To strengthen students' reflective ability and deepen their awareness of personal values and biases and their impact on professional practice.

Implementation and Deliverables

1. The BUILD Kit, incorporating LEGO bricks, was developed and delivered to students during tutorials.
2. Twenty-four tutorial sessions utilizing the BUILD Kit were conducted for fifty students.
3. An Activity Guide for the BUILD Kit was developed and distributed to teaching staff.

Outcomes and Achievements (including Impact on Teaching and Learning)

1. Students' clinical social work intervention skills were enhanced.
2. Students' cognitive link between theory and practice, class engagement, and self-reflective practice were improved.
3. An experiential learning-based teaching practice leveraging the BUILD Model, BUILD Kit and Activity Guide was developed.

Evaluation

Outcomes were assessed through pre-and post-test surveys (N=40) and qualitative interviews (N=5) with students. Quantitative data indicated improvements in reflective practice and perceived social work competence, with significant gains in areas such as reflective-in-action, communication confidence, therapeutic skills, supportive skills, and professional values and ethics ($p \leq .05$). Qualitative data highlighted students' engagement and recognition of the BUILD Kit.

Dissemination, Diffusion, and Sharing of Good Practices

Pre-course training, practice-sharing sessions, and four half-day workshops were conducted for facilitators, practitioners, and students. The BUILD model can be replicated across sectors using the BUILD Kit and its Activity Guide.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: From Immersive Learning to Real-life Experiential Practice: Social Groupwork Education

Principal Supervisor(s) and Unit(s):
Dr. LAW Yee-man, Moon, Department of Social Work

Project Objectives

To enhance students' competence in practicing social groupwork by incorporating the use of computer simulation and virtual reality in the social work curriculum design.

Implementation and Deliverables

The project enhanced the social groupwork curriculum by integrating virtual reality and simulations, developing immersive materials for managing diverse group behaviors. Specialized workshops led by practitioners provided practical strategies, fostering experiential learning and preparing approximately 300 students annually for effective social work practice.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project enhanced student capabilities in social work through innovative technologies, resulting in increased practical skills. It transformed teaching practices, aligning with university goals of fostering engagement and delivering competent graduates ready for the field. Feedback highlights significant contributions to educational quality.

Evaluation

Over 90% of students reported positive experiences with VR simulations and workshops, enhancing their understanding of diverse needs. Positive feedback also came from service users and collaborative partners regarding the effectiveness and support provided by CUHK students.

Dissemination, Diffusion and Sharing of Good Practices

A sharing session with other university will enhance teaching methods and promote technology integration in social work training.

THE CHINESE UNIVERSITY OF HONG KONG

General Teaching Development Projects
supported by the Teaching Development and Language Enhancement Grant for 2022-25

Project Title: Gimme Shelter
Principal Supervisor(s) and Unit(s):
Professor SMITH Adam Jasper, School of Architecture

Project Objectives

Motivation: By addressing the issue of student alienation and disconnection, the retreat aims to improve student motivation, attendance rates, and participation in class discussions.
Community: The project emphasises building a strong sense of community among students and teaching staff. By fostering direct social interactions and encouraging students to care for each other, the retreat promotes a supportive and collaborative atmosphere in the architectural studios.
Orientation: The retreat's focus on experiential learning in a natural environment will have a transformative impact on students' observational skills and environmental understanding. The retreat is a prototypical seminar. If it meets expectations, *Gimme Shelter* may prove to be the basis of further teaching activities within the school.

Implementation and Deliverables

• inspiring workshops provided by unexpected people on surprising topics.
• communal activities with peers.
• introduction to Mui Tsz Lam as a *place*, as a unique and non-substitutable environment, rather than a site understood as exploitable *space.*
• separation from routine habits, and the cessation of instrumental, check-box attitudes to study.

Outcomes and Achievements (including Impact on Teaching and Learning)

The project was a significant success. This was palpable at the time: the students were visibly intellectually stimulated by the activities and highly engaged. Anecdotal evidence from the studios suggest that the project also increased their motivation as a cohort, and their identification both with each other and the school (qualities that are essential for an architecture school).
More surprising was the emotional reaction: students were visibly emotionally *moved* by the experience, with students spontaneously telling teachers and assistants that the retreat was amongst other comments “the best experience of my adult life.” The comments indicated a serious appreciation for the exceptional conditions of the retreat, and the level of preparation by the assistants.

Evaluation

Online evaluation by CLEAR (evaluation attached)

Dissemination, Diffusion and Sharing of Good Practices

As a result of the retreat, we have been invited to collaborate with the Department of Architecture of the ETH Zurich on a similar “experiential” teaching experiment this coming October. This will provide us with the opportunity to invite more undergraduate students from the school to participate.