



Annual Report on Recurrent Funding for Knowledge Transfer 2016/17

Submitted to
University Grants Committee



Table of Contents

| | |
|--|-----------|
| 1. Executive Summary | Page 1 |
| 2. Highlights of the Year | 1–10 |
| 2.1 Strategies in Supporting KT | |
| 2.2 Strategies in Disseminating KT | |
| 2.3 KT Outputs through Research Infrastructure | |
| 2.4 KT Outputs through Training Professionals | |
| 2.5 KT Outputs through Student Engagement | |
| 3. Performance Measurement and Performance Indicators | 10 |
| 4. Looking Forward | 10 |

Annexes

- I. Impact Case Histories
 - A) A Study of Confucian Analects and the Modern Society
 - B) Provision of Services for Support Programme on Fostering Communities of Practice to Enhance Small Class Teaching
 - C) Sustainable Tourism Development for the Wolong National Nature Reserve, Sichuan, China
 - D) Safe and Quality Fish Production: Development of High-grade Pellets Using Food Wastes for Three Popular Marine Fish
 - E) The Jockey Club Chief Executive Community Project: SMILE Project
- II. Number of Beneficiaries
- III. Summary of Performance Indicators



1. Executive Summary

For reporting year 2016/17, The Education University of Hong Kong (EdUHK) has continued to engage with the public and demonstrate to the community the extensive influence of its excellent research initiatives. Accordingly, such endeavours have yielded encouraging results. In the 2016/17 Quacquarelli Symonds (QS) World University Rankings, EdUHK was ranked 13th in the world in the field of education, whilst its rank of 2nd in Asia remained unchanged. Nevertheless, we are pleased that the EdUHK's increasing teaching and research capabilities and sharing of research outputs through knowledge transfer (KT) are being recognised.

EdUHK has tapped its established niche in education and newly emerged strength in multidisciplinary subject areas to advance the boundaries of knowledge through research. The knowledge created was further applied and transferred to benefit education and wider communities.

EdUHK has witnessed an ever-changing horizon in the variety and intensity of the KT initiatives and activities in our campus and beyond. These KT activities include commissioned/contract projects, partnership projects for change, improvement and innovation and consultancies. Similar to previous years, EdUHK promoted student engagement in KT via placement and community services. Initiatives were introduced this year to shape the entrepreneurship culture of EdUHK.

EdUHK has embedded a strong KT culture of learning, research and services into its culture and the wider community by delivering continuing professional development (CPD) courses, organising local and international professional conferences, launching professional seminars and workshops and engaging in social, community and cultural events.

The KT initiatives, activities, CPD courses and projects undertaken in the reporting year contribute to the systematic development of a comprehensive KT-enabling environment within EdUHK.



2. Highlights of the Year

Our activities continue to surge and diversify owing to the earmarked grants of the University Grants Committee (UGC) for our KT activities and EdUHK's own funding. These financial resources have enabled EdUHK to continue supporting and promoting a wide range of KT activities at the University and academic unit levels within the reporting year.

2.1 Strategies in Supporting KT

EdUHK's enhanced capability has enabled the initiation of original, innovative and effective education projects. Consequently, these projects benefit the school sector and the wider community by generating and transferring knowledge and good practices. We continuously seek feedback from academics to improve our KT strategies and reinforce the practices that have been proven effective.

EdUHK has formulated various strategies to drive KT by encouraging new research and development (R&D) initiatives, cross-department collaboration and partnership with external parties. The following strategies were adopted in the reporting year to encourage and facilitate KT activities across the University.

2.1.1 Knowledge Transfer Sub-office: The KT Unit of the Research Development Office (RDO) has been upgraded to a KT Sub-office within the RDO in late 2016. The KT Sub-office is the central supporting unit to foster KT in EdUHK. This Sub-office is delegated to forge connections between the University and wider community to formulate collaborations. Internally, the Sub-office provides advices and supports to academics and research units in facilitating the development of intellectual properties and research with numerous applications. Externally, this Sub-office proactively reaches out to potential partners to initiate KT collaborations and commercialisation of R&D projects.

The executive supports of the KT Sub-office will enable the KT Director and the Committee on Research and Development (CRD) to continue monitoring the overall implementation of the KT activities in the University in the new triennium.

2.1.2 Building Up Strategic KT Network: The KT Sub-office has mapped out the strategies and models of KT in the EdUHK. Additionally, the Sub-office has started to establish a collaborative research network with external parties (e.g. business, R&D, social services and education sectors) to expand the University's research capabilities and expand the research spectrum, with particular focus on education technology, education innovation and social innovation. The Sub-office takes the role of initiating new ideas and allocates funds to develop market-driven research projects.

2.1.3 President's Award for Outstanding Performance in Knowledge Transfer 2016/17: This year, the President's Award for Outstanding Performance in KT has been established to recognise, encourage and reward academics who have demonstrated a successful transfer of university-owned knowledge to society or industry that leads to innovation and impact on education at the local, regional and/or international community level. Two staff members received individual awards and two teams received team awards during the presentation ceremony on 12 May 2017.



2.1.4 KT Funds Scheme: The University continued to provide a KT Funds Scheme in 2016/17 as an ongoing support for academic units to pursue applied R&D, implement innovations and develop KT initiatives and activities. This scheme will be continued because of its demonstrated effectiveness. A working task group, which comprises the CRD members and the KT Director, continues to coordinate the grant applications.

2.1.5 KT Sharing Sessions: The professional and staff member developments in the KT area have vastly improved through sharing sessions. The University continued to organise such sessions in 2016/17 to share success stories and practical experiences of KT amongst the staff members. Moreover, all staff members were welcome to attend the sharing sessions and follow-up activities were conducted to promote the KT projects. Nine sharing sessions were organised in the reporting period, and these events were well received by the participants. To increase our exposure to KT development, we invited our internal staff members and external speakers to share their KT experience during our KT sharing sessions.

2.2 Strategies in Disseminating KT

2.2.1 KT Partnership and Marketing

2.2.1.1 Collaboration within and outside the University: Education innovation, education technology and social innovation are the strategic foci of KT in EdUHK. Along these directions, the KT Sub-office has matched internal expertise with external resources to develop application-oriented collaborative research projects that can create social impact.

For example, EdUHK was a partner of the ‘Cradle to Classroom’ campaign of Social Ventures Hong Kong, which targeted underprivileged families. In the campaign, EdUHK’s expertise facilitated the development and delivery of courses to equip parents with skills in coping with young children’s emotions. Moreover, EdUHK academics formed a partnership with the Centre for Community Cultural Development to orchestrate performance art in a community project.

EdUHK has actively participated in various platforms to market its R&D achievements and capability, such as the University’s strategic partnership with the APAC Innovation Summit. The KT Sub-office has also marketed EdUHK’s R&D in various exhibitions and business activities.

The University also encouraged research centres and senior academics to lead research directions, formulate KT-related projects and initiate collaborative ventures, exchanges and publication opportunities through their respective networks.

2.2.1.2



Research and Knowledge Transfer (R&KT) Newsletter: The University emphasises on translating research results and findings in promoting educational change, social development and enhancement of human well-being. This newsletter features stories and recent events regarding our R&D and KT-related activities. Accordingly, this publication brought the development and achievements of the University's R&D and KT to the attention of the community.

The fifth issue of the R&KT Newsletter was published in December 2016. Hard copies were distributed to academics, researchers and stakeholders of the local education sector (e.g. kindergartens, primary schools, secondary schools, other universities, Education Bureau and UGC). Soft copies are available for the public on EdUHK's Knowledge Transfer webpage (<http://www.eduhk.hk/rdo/KnowledgeTransfer/>). The link is also published in the Alumni e-News.

2.2.1.3

Promotion of KT in InnoCarnival 2016:

This year was the second time that the University exhibited in the InnoCarnival, which was held from 29 October to 6 November 2016 and organized by Innovation and Technology Commission at Hong Kong Science Park.

The theme '香港教育大學塑膠資源教育 *Plastic Resources Education by EdUHK*' enabled EdUHK's booth to showcase the University's research and KT achievements in plastic recycling to the wider educational community.

Over 200,000 people visited the 9-day exhibit. The EdUHK booth used interactive activities to educate visitors on the concepts of 3Rs (i.e. reduce, reuse and recycle) and 3Cs (i.e. cleaning, classification and compression) to rectify the local plastic waste problem.



- 2.2.1.4 Publicity and Media Exposure of the KT Activities:** Good practices and advanced knowledge have been continuously disseminated amongst the staff members and the community through different channels, such as the University's websites and reports, press releases, intranet and newsletters.

In the reporting year, several articles written by EdUHK staff members were submitted to the Beijing–Hong Kong Academic Exchange Centre for publication in their quarterly journal titled *Beijing–Hong Kong Academic Exchange* (京港學術交流) (<http://www.bhkaec.org.hk/>) to spread the EdUHK news to a considerably wide audience. Two articles were selected in Issues 110 (August 2016) and 112 (February 2017) of the publication.



- 2.2.1.5 EdUHK Research and Scholarship Portal:** The website (http://www.eduhk.hk/research_and_scholarship/) offers free and convenient services to local education practitioners as a one-stop online portal for research information and resources. Primary and secondary schools, child care centres, kindergartens and different educational organisations were invited to subscribe to the portal. The website has attracted 4,118 unique visits and 5,678 page views from 1 July 2016 to 30 June 2017.

This portal has considerably benefited local and international students, teachers and scholars by making the research outputs of the University readily available on the Internet. The website directly transferred the knowledge, effort and academic research outputs of the EdUHK staff members to potential users over the Internet, thereby acting as a knowledge communication channel between the University and the public. We promoted this website by posting a direct link on the website of the Hong Kong Professional Teachers' Union (<http://www.hkptu.org/links>).

- 2.2.1.6 KT Website:**

The KT website (<http://www.eduhk.hk/rdo/KnowledgeTransfer/>) continued to function as a channel for promoting the KT activities. The website demonstrated the breadth of the University's KT activities, publicised our KT policies and guidelines and highlighted our excellence and shared good practices. In addition, this website was a channel to establish networks with various internal and external stakeholders (e.g. researchers, experts, special interest groups, government, funding bodies and education and business sectors) and to open the way for interaction and exchange of new ideas on KT.

- 2.2.2 KT Dissemination Plan and Survey on the Nexus between Research and Teaching:** Similar to previous years, all academic staff members were required to submit a KT Dissemination Plan so they could plan their dissemination activities for research findings in the proposal preparation stage. An encouraging increase in the dissemination of research was recorded in the reporting year. A survey was conducted to collect data on individual academic staff members who applied research in their teaching or used teaching activities in their research. The results (see Table 1) indicate that the University staff members have incorporated their research into their teaching and vice versa, thereby facilitating the development of KT in the education sector.

Table 1: Survey Findings on the Nexus between Research and Teaching

| | 2015/16 | 2016/17 |
|---|---------|---------|
| Academic staff members who use research in teaching/course activities | 94.6% | 93.7% |
| Academic staff members who use teaching in research | 52.4% | 60.4% |

- 2.2.3 Research Publications:** Amongst the 720 refereed research outputs in 2016/17, 55% (399) were related to the various sectors of school education. These research outputs included early childhood, primary, secondary, technical and special education and were disseminated across different sectors that cover teacher education and education disciplines. A total of 45% (321) of the outputs were related to complementary discipline areas, such as the social sciences, humanities and languages and other professional and vocational subjects. These refereed outputs and those produced in the past years provided a substantial new knowledge base for KT to provide insights into the practical improvement, professional innovation and education development in Hong Kong and beyond.
- 2.2.4 EdUHK Research Repository:** Apart from being used for extensive KT activities, the EdUHK Research Repository (<http://repository.lib.eduhk.hk>), an initiative coordinated and promoted by our University Library, has been part of a strategy to transform education and the teaching profession through research. The repository allowed knowledge, effort and results of academic research conducted by the University staff members to be transferred directly to potential users over the Internet. Moreover, the repository acted as a communication channel between the University and the public for sharing of knowledge and ideas. As of 30 June 2017, the EdUHK Research Repository has collected 21,347 citation records dating back to 1994. Links to full texts were provided in 6,449 records, 2,813 of which can be accessed by the public. The deposited materials in the database included scholarly books, book chapters, journal articles and conference papers. A total of 116,754 visits were recorded from 1 July 2016 to 30 June 2017. The number of users was recorded at 88,315.

2.3 KT Outputs through Research Infrastructure

EdUHK supports and encourages its staff members in academic departments, faculties and research and resource centres to organise and conduct KT activities and/or projects based on their own capabilities and strengths in a creative manner. The ownership, creativity and integration of the KT activities into the corresponding R&D agenda of academic units and research centres are crucial to the sustainable development of KT.

2.3.1 Key Academic Units for Implementing KT: Four university-level research centres and three Faculties together with their constituent departments, research centres and resource centres continued to be key academic units in 2016/17, thereby providing the community with comprehensive KT activities. Their projects covered the education and non-education fields. In 2016/17, 26,348 schools, 75,722 teachers, 1,472,243 students and 254,436 other stakeholders benefited from these activities.

2.3.2 Numerous KT projects have been organised by academic departments or research centres from the education sector over the past years. A few of these projects generated long-term effects on professional innovation, practical improvement of school education and even demonstrated their relevance to social improvements and policy change. The following examples are among the KT projects.

Advancing Learning and Teaching: The Centre for Excellence in Learning and Teaching (CELT) of EdUHK is mandated to provide high-level KT activities based on its frontier research. Its programme titled *Provision of Services for Support Programme on Fostering Communities of Practice to Enhance Small Class Teaching* facilitated the establishment of communities of practice within or across schools to enhance learning and teaching, improved the sustainability of small-class teaching and enhanced the teachers' pedagogical content knowledge, theoretical understanding and application of effective teaching strategies. A total 119 schools participated in the programme, 277 teachers benefited from it and at least 119 classes of students were involved. (Annex I-B)

Raising Industry Standard: *Sustainable Tourism Development for the Wolong National Nature Reserve, Sichuan, China* was a project undertaken by the Department of Social Sciences (SSC). This project offered tremendous benefits to the ecotourism development of the Wolong National Nature Reserve. The recommendations and suggestions in the resulting Ecotourism Development Guideline were completely recognised and adopted by the Administration of the Nature Reserve to redevelop the tourism industry in the area. Two certification systems developed by the project have been completely implemented in the Nature Reserve. As at May 2017, 10 farmhouses and hotels in the Nature Reserve were certified to receive the Bronze Panda and Silver Panda awards. This certification is the first regional ecotourism certification in the protected areas of Mainland China that provides a positive influence. (Annex I-C)

2.4 KT Outputs through Training Professionals

The immense improvements in the research capabilities and outputs of EdUHK over the years have enabled the University to disseminate and transfer new knowledge to professionals. This result has enabled training educators and practitioners to become a new generation of professionals with novel research-based knowledge.

2.4.1 Continuing Professional Development (CPD): The academic departments and centres of the University continued to provide a wide range of self-funded development courses and training programmes, occasionally in collaboration with external parties. The objective is to transfer the research findings and knowledge of the staff members to support the continuous development of the education profession in early childhood, primary, secondary, technical and special education. These CPD courses have enabled the University to establish close relationships and networks with schools. Such relationships subsequently led to significant professional improvements and innovations in the school sector and contributed to the development of high-quality education practitioners in Hong Kong and the region. For example:

- The Centre for Special Educational Needs and Inclusive Education, in collaboration with the Macau Education and Youth Affairs, organised the following programs:
 - CPD Courses for Macau Teachers: Courses on Catering for Diverse Learning Needs (Chinese Course) 2016–17
 - CPD Courses for Macau Teachers (2016): Resource Courses

A total of 57 principals and 1,965 teachers benefited from the aforementioned 49 courses.

2.4.2 The STEM Education Conference-cum-Carnival 2016: This conference was jointly organised by the Department of Science and Environmental Studies and Department of Mathematics and Information Technology on 16–17 December 2016. Approximately 800 students and teachers from 300 local secondary and primary schools gathered at EdUHK to participate in the event. School leaders, curriculum developers, teachers, teacher educators and other stakeholders held workshops and seminars to share their experiences in STEM education and covered such topics as 3D printing and virtual reality, among others.

2.4.3 Conference for Research in Early Childhood Education, 2017–Social, Emotional and Moral Development of Young Children: The Department of Early Childhood Education hosted this conference on 11 May 2017. This conference attracted over 500 school principals, teachers, parents, practitioners and government officials. The participating organisations included the Education Bureau, preschools of the Church of Christ in China, Yan Oi Tong, Caritas, Tung Wah Group of Hospitals, Po Leung Kuk, Christian Alliance, Hong Kong Kindergarten Association and Christian and Missionary Alliance.

2.4.4 Excellent Leadership of Learning and Teaching Programme: This KT programme was organised by the Joseph Lau Luen Hung Charitable Trust Asia Pacific Centre for Leadership and Change (APCLC) from 18 February to 6 May 2017. Approximately 500 principals, teacher leaders and scholar-practitioners from over 160 Hong Kong primary and secondary schools joined the programme. The programme was headed by Professor Chiu Chi Shing. The participants gained a profound understanding of how to better facilitate effective student learning, evaluate school development through the use of quantitative data and evidence and come up to the new era's expectations on teaching and learning.

2.5 KT Outputs through Student Engagement

2.5.1 Social, Community and Cultural Engagement:

EdUHK students actively transferred new and advanced research results to wider community. For example, the Department of Science and Environmental Studies conducted the *Ecosystem Encounters 生態全接觸* in 2016. The project provided teachers with teaching resources and technical supports in environmental studies. The extensive involvement of our undergraduate students enabled us to provide four



A EdUHK student docent guide introducing different types of plants and the ecosystem facilities in the eco-garden to participants

workshops to over 100 teachers from April to May 2017. Our students also coached the teachers in ecological and scientific concepts during the field visit to the Ecogarden, a newly established garden from upcycling an idle piece of land in the EdUHK campus.



The closing ceremony of Inter-Primary Schools Mobile Apps Design Competition 2017 held on 6 May 2017

In addition, the Department of Mathematics and Information Technology organised the *Inter-Primary Schools Mobile Apps Design Competition 2017 小學校際流動應用程式編程比賽 2017* whose aim was to use its advanced research knowledge to foster the teaching of logical thinking and

computer programming skills in primary schools. In the seven-month long campaign, the EdUHK undergraduate students with programming knowledge provided training workshops to primary students from the participating schools with hands-on experience in coding to develop mobile apps that solve real-life problems. The competition was primarily designed for primary school students and aroused their interest in coding and increased public awareness of computational thinking.

2.5.2 Student Internships and Placements: Student internship programmes were organised by the Student Affairs Office and Faculties to encourage students to engage in and serve the community. The students have gained experimental learning for their holistic personal development. The University also arranged placements with local schools for all full-time students of education-related programmes. The list of performance indicators (PIs) (Annex III) shows that the number of student internship/placements increased by 28.2% over the past five years (i.e. from 2,216 in 2011/12 to 2,842 in 2016/17).



Student Chan Hiu Ting (right), interned at 中華電視公司-教學事業處 in Taiwan, was preparing for a child TV programme in 2016



Students Tsang Wing Yin Natalie and Zhang Haishan Sandy (in the middle) interned at University Brunei Darussalam in 2016

- 2.5.3 Entrepreneurship and Social Innovation Culture:** EdUHK has started to develop its own entrepreneurship culture with implications in education and social services. Entrepreneurship-related activities were organised to introduce the start-up concept in the University and provide the related training and support to students. For example, the Startup Weekend STEM Education was hosted in the EdUHK campus in February 2017.

3. Performance Measurement and PIs

The outcomes of the KT activities conducted by the different units of the University were closely monitored using PIs. Faculties, university-level research centres and relevant academic support units were required to submit annual reports on the implementation of their KT activities, including data on the list of PIs that are specific to their key KT activities.

The University has been actively engaged in a wide range of KT activities and initiatives. Therefore, the number of key stakeholders who benefited from the University's KT activities has steadily increased. Such progress can be seen in the PIs listed in [Annexes II and III](#).

4. Looking Forward

With our renaming from The Hong Kong Institute of Education to The Education University of Hong Kong in 2016, we began a new chapter in our overall development. We are now actively working on Strategic Plan 2016–2025, which will guide our development into the next decade. The University, as did its predecessor, will continue to encourage ownership, creativity and innovation of academic units in planning and implementing KT initiatives based on their respective strengths and medium- and long-term development needs.

The newly established KT Sub-office will enable the University to strengthen its network and collaboration with industries to facilitate the transfer of our applied research into novel education technologies, services and materials. This process will facilitate the improvement of the learning experience and effectiveness of the targeted group. Moreover, resources will be provided to support the development of education entrepreneurship in the University. EdUHK is mandated to contribute to the development of new education ventures and upgrading the education services that will introduce innovations, benefits and impact to the community.

Impact Case History

(i) Project Title

A Study of Confucian Analects and the Modern Society

(ii) Name of Principal Investigator

Professor Si Chung Mou, Head,
Department of Chinese Language
Studies

(iii) Summary

In 2015, the research team received funding from the Quality Education Fund (QEF) to launch the KT project titled ‘A Study of Confucian Analects and the Modern Society’. The team investigated the relationship between the Confucian Analects



The project team: (Left) Dr Ho Chi Hang, (Middle) Professor Si Chung Mou & (Right) Dr Tse Ka Ho

and 21st century societies via experimental teaching and diversified cultural activities. The KT project was applied to 17 local schools for promoting Chinese culture and traditional culture in Hong Kong, benefiting tens of thousands of teachers and students.

(iv) Underpinning research

The lack of teaching materials and references on the Confucian Analects for junior secondary school students led the research team to design a syllabus and a set of experimental teaching materials of the literature. The workshops provided for teachers on the application of teaching materials and conducting experimental teaching in schools have enabled the students to interpret the connotation and contemporary significance of the classics. The teaching materials are also important references and resources in humanities for all secondary schools. Furthermore, to enhance students’ critical thinking skills and ability to appreciate Chinese culture in the junior secondary school stage, the research team used a wide range of multimedia learning and teaching resources (e.g. pictures, photographs, video and text), thereby guiding students to acquire knowledge and develop skills, attitudes and values. Such an approach improved their ideological quality and commitment to family, community and state.

The process of compiling a set of teaching materials with ‘applicability’ and ‘typicality’ was not solely the effort of the researchers. Instead, the participation of principals, teachers and students of 17 secondary schools in the experimental teaching was indispensable in ensuring that the levels of teaching materials match the interests and abilities of the students. Training workshops were held to assist teachers to grasp the teaching and assessment methods of the experimental materials, conduct formative evaluation progressively and provide feedback on their experience and opinions to improve the textbook. These processes enabled the provision of a model for the compilation of school-based textbooks for schools in Hong Kong.

The pursuit of knowledge should not be restricted by textbooks but should also be acquired and reflected in real life. To attain the goal of holistic learning and knowledge transfer, the research team extended the students’ learning process from the classroom to a considerably wide social environment by encouraging them to actively participate in different cultural activities. Apart from these key tasks, the research project contained many cultural activities, such as visits to cultural relic sites, talks, discussion forums, competitions and workshops.

(v) Selected References to Support This KT Project

施仲謀 (2016): 賴太史與香港早期的中文教育, 施仲謀, 漢語教學與研究新探, (77-86), 香港, 中華書局。

施仲謀 (2016): 漢語教學與研究新探, 香港, 中華書局。

施仲謀 (2015): 《易經起予二集》序, 黎世寬, 易經起予二集, (11-12), 香港, 香港儒學會。

Si Chung Mou (2013). 永明禪教一致論述要 (On Yongming's Comment of the Agreement between Zen and Buddhism). Si, C.M., *Myriad Steams Maketh the Ocean: New Currents in Chinese Studies* (78-90). Hong Kong: Chung Hwa Book Company.

Si Chung Mou (2013). 詹伯慧先生與香港語文教學 (Zhan Bohui and Language Education in Hong Kong). Li, Z., *Zoujin Zhan Bohui* (46-47). Guangzhou: Jinan University Press.

Si Chung Mou (2013). *語言與文化 (Language and Culture)*. Hong Kong: Chung Hwa Book Company.

(vi) Details of Local/Regional and International Impact or Benefit

The research activities of EdUHK are closely linked with the productive cultural activities held by the project, including the Confucian Analects Three-Day Camp, Classical Poetry Recitation Contest, Carnival, Microfilm Contest and numerous talks and workshops on the Chinese language and culture. The university-owned intellectual capital was successfully transferred to secondary schools and the general community.

The following section provides brief introductions of several major cultural events.

1. 'Learning Confucian Analects, be a gentleman' Three-Day Camp

In the three-day camp, students were able to experience traditional Chinese culture and explore positive values and attitudes by participating in different cultural activities. In the process, the students attained sound physical and mental development via an effective and meaningful learning process.

a. Chinese Pingshuai Gong Demonstration (平甩功演示)

Ms. Yim from the Meimen Qigong Culture Center was invited to lead students to practice Pingshuai Gong, which strengthened their body and improved bodily circulation, balance, detoxification and replenishment.

b. Handcrafted Book-binding Workshop (手工線裝書工作坊)

In this workshop, the students were taught sewing to bind books. They cooperated with one another to complete the handcrafted books. Such an activity completely embodied the spirit of teamwork.



'Handcrafted Book-binding Workshop' held on 30 March 2016

c. Talk on Chinese Clothing and Etiquette (華服行儀講座)

A professional image consultant instructed students to practice the correct position when sitting, standing, walking and wearing formal Chinese clothes. They were also taught to act as real gentlemen and ladies.

'Talk on Chinese Clothing and Etiquette' on 31 March 2016

2. Classical Poetry Recitation Contest and ‘Recitation and Communication’ Talks
Over 150 participants in groups of student, staff, alumni and foreigners joined the contest and recited in Cantonese or Putonghua.
3. ‘Six Arts Five Constant Virtues Carnival’ and ‘The Analects and Modern Society - Short Film Contest’
 - a. The Carnival attracted over 4,000 students and members of the public to the campus to enjoy a variety of activities.
 - b. The Microfilm Contest aimed to encourage students to explore Confucian knowledge, combine the ‘Six Arts’ and ‘Five Constant Virtues’ with modern movies. Teams from 13 secondary schools joined the contest. The outstanding works were displayed in the Carnival and attracted over 500 visitors to watch and vote for their favourite microfilm. The champions were sponsored to a cultural trip to Shandong, the homeland of Confucius, in December 2016.



‘The Analects and Modern Society - Microfilm Contest’ in 2016

4. Talks, workshops and conferences
 - a. A cultural talk titled ‘Exploring Zhuangzi’s A Happy Excursion’ (探索莊子《逍遙遊》) was held on 30 September 2016. Over 300 students and public members were impressed by the essence of classical Chinese works and further improved their Chinese literacy via public lecture, recitation, dance performance and the release of the book titled *A Happy Excursion*.
 - b. ‘The 1st International Conference on Chinese Language Education’ was held on 16–17 December 2016 and attracted over 150 scholars and experts from Mainland China, Hong Kong, Singapore, Taiwan and Canada. Local secondary school teachers participated and exchanged opinions on language teaching and the promotion of the sustainable development of language education.
 - c. In April 2017, the team held a Parent–Teacher Sharing Session. To conclude the two-year research project, principals, teachers, students and parents were invited to share their experiences during the experimental teaching program.
 - d. The book titled *Confucian Analects and Modern Society* was published in April 2017 and disseminated to all local schools and public libraries.
 - e. Over 9,000 students from 17 secondary schools participated in the Experimental Teaching Workshop.



Participants in the 'The Experimental Teaching Workshop' on 19 September 2015

5. International collaboration/network

In order to work together from a global perspective to fully explore the significance of Confucian Analects in modern society, both local and overseas experts from education sectors, cultural and publishing industries were invited to serve as advisors for the project.

List of Project Advisors

- Lee Chack Fan, Chairman, Hong Kong Institute for the Promotion of Chinese Culture
- Xu Jialu, President, International Society for Chinese Language Teaching
- Jao Tsung-I, Honorary Professor, School of Chinese, The University of Hong Kong

Advisory Committee

Hong Kong

- Tu Chen Cui, Senior Editor, Hong Kong Educational Publishing Company, The Commercial Press
- Chiu Cheung Ki, Principal, Pui Kiu Middle School
- Woo Kwok Yin, Secretary-General, The Confucian Academy
- Wun Kam Hoi, Chairman, International Classics Cultures Association

Mainland China

- Li Xueqin, Professor, Institute of International Sinology, Tsinghua University
- Yuan Xingpei Dean, Institute of Traditional Chinese Culture, Peking University
- Zheng Guomin, Associate Dean, School of Chinese Language and Literature, Beijing Normal University

Other Countries or Regions

- Li Ying-che, Professor, Department of East Asian Languages and Literature, University of Hawaii at Manoa, US
- Chew Cheng Hai, Director, Confucius Institute, Nanyang Technological University, Singapore
- Vu Pui Chau, President, Associacao de Literatura Chinesa de Macau
- Hsin Shih-Chang, Professor, Department of Chinese as a Second Language, National Taiwan Normal University, Taiwan
- Emilio Gan, Chairman, Chinese Education Research Center, the Philippines

(vii) References to the Corroboration of Impact or Benefit

Award

Professor Si Chung-mou, Professor (Practice); Dr Tse Ka-ho, Associate Professor and Dr Ho Chi-hang, Assistant Professor from the Chinese Language Department won the Team Award of the President's Award for Outstanding Performance in Knowledge Transfer for 2016/17.

<http://www.eduhk.hk/main/media/press-release/786>

Conference and Seminar

A cultural talk titled ‘Exploring Zhuangzi’s A Happy Excursion’ (探索莊子《逍遙遊》) was held on 30 September 2016.

‘The 1st International Conference on Chinese Language Education’ was held on 16–17 December 2016.

Publications and Project Website

A book titled *Confucian Analects and Modern Society* was published in April 2017 and donated to all schools and public libraries. The website *The Analects and Modern Society* (www.eduhk.hk/analects) was constructed in September 2015 and is regularly updated. The periodical *Chinese Culture Newsletter* was published twice a year since September 2015 and delivered to 17 experiment schools, cultural associations and educational organisations.



Report in the media

Sing Tao Education has reported about the project titled ‘A Study of Confucian Analects and Modern Society’ on several occasions, including in an interview with Professor Si. The journalist reported the process of designing teaching materials and the implementation details of the experimental teaching program in schools.

Impact Case History



(i) Project Title

Provision of Services for the Support Programme on Fostering Communities of Practice to Enhance Small Class Teaching

(ii) Name of Principal Investigator

Dr Ko Po Yuk, Director, Centre for Excellence in Learning and Teaching (CELT)

(iii) Summary

The programme aims to facilitate the establishment of communities of practice within or across schools to enhance learning and teaching, facilitate the sustainability of small class teaching (SCT) and enhance teachers' pedagogical content knowledge, theoretical understanding and application of effective teaching strategies.

(iv) Underpinning research

The application of effective classroom strategies and tailoring curriculum was necessary to realise the potential benefits of SCT (Education Bureau, 2008). In the Hong Kong context, Galton (2006) suggested six guiding principles to enhance the effectiveness of student learning in SCT: learning objectives, questioning techniques, student participation, cooperation, feedback and assessment for learning.

Lai and Ip (2007) observed that the implementation of SCT benefited from the adoption of collaborative learning and establishment of networked learning communities. In addition, Chan (2008) contended that an integrated school-based model would be substantially effective because it increases teacher participation and ownership in SCT. Communities of practice are groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly (Wenger, 1998). Inter-school sharing across subjects and intra-school sharing around pedagogic issues should be encouraged using the 'learning circles' approach, which embodies the idea of communities of practice (Louis & Marks, 1998; Stoll & Louis, 2007; Watkins, 2005).



Lesson Observation Conducted by the Programme Instructor



Lesson Evaluation Conducted by Dr Lai Meng Choo

(v) Selected Research References to Support This KT Project

Lamb, P., & Ko, P.Y. (2016). Case studies of Lesson and Learning Study in initial Teacher Education programmes. *International Journal for Lesson and Learning Studies*, 5(2), pp. 1-8.

Ko, P.Y., & Lai, M.C. (2015). Fostering communities of practice in special education using the Learning Study approach (in Chinese). *Hong Kong Journal of Special Education*, 17, pp.93-102.

Ko, P.Y., & Tsang, C.H.J. (2015). A multi-tiered mentoring and coaching approach to professional development of in-service school leaders and teachers in Hong Kong. *Pedagogical Dialogue*, 3(13), pp.58-73.

Ko, P.Y. (2014). Learning Study – the dual process of developing theory and practice. *International Journal for Lesson and Learning Studies*, 3(3), pp. 272-289.

高寶玉、賴明珠、區美蘭（2014）。在特殊學校應用課堂學習研究：中文及常科個案報告。香港：香港教育學院課堂學習研究中心。

(vi) Details of the Impact or Benefit

The programme has been delivered with the substantiation of sound educational theories, school-based curriculum, practicable teaching strategies and skills and ample examples of good practices. The participating teachers were provided with an opportunity to reflect on teaching strategies, acquire an improved understanding of student learning, understand the reasons and approaches for curriculum reform, enhance their professional capabilities, develop collaborative teaching and establish communities of practice. In the last two years, 119 schools have participated in the programme, 277 teachers benefited from it, and at least 119 classes of students were involved.

(vii) References to the Corroboration of Impact or Benefit

Award

Dr Ko Po Yuk, Professor John Lee Chi Kin, Professor Chiu Chi Shing, Dr Sammy Hui King Fai, Dr Yan Zi and Dr Xu Hui Xuan from the Centre for Excellence in Learning and Teaching (CELT) received the Team Award of the President's Award for Outstanding Performance in Knowledge Transfer for 2016/17 (<http://www.eduhk.hk/main/media/press-release/786>).

Sharing Sessions

On 4 July 2016, the Featured Case Sharing Sessions of the Inter-school Communities of Practice were held to share experiences and outcomes of the programme for academic year 2015/2016. Approximately 300 participants from the Education Bureau, higher education institutions and local secondary and primary schools attended the event. The representatives from the participating schools shared their experiences and good practices in the key learning areas of Chinese language, English language, mathematics, general studies, integrated science, liberal studies and humanities with themes that covered self-directed learning, e-learning and learning studies.

Symposium

A symposium on the Improvement of Teaching and Learning via Self-Directed Learning and E-Learning and the Featured Case Sharing Session of the Community of Practice Project will be held on 24 June 2017 to share the experiences and outcomes of the programme for academic year 2016/2017. Primary and secondary teachers from 33 schools will share relevant experiences and outcomes to over 300 local and Macau educators.



*Thematic Workshop on Self-directed Learning conducted by
Professor Chiu Chi Shing on 10 September 2016*

Impact Case History

(i) Project Title

Sustainable Tourism Development for the Wolong National Nature Reserve, Sichuan, China

(ii) Name of Principal Investigator

Dr Cheung Ting On Lewis, Assistant Professor
Department of Social Sciences

(iii) Summary

Dr Lewis Cheung, in his role as principal investigator, has been commissioned by the Development Bureau of the Hong Kong Special Administrative Region (HKSAR) government with a total of 1.6 million funding support from the ‘Trust Fund in Support of Reconstruction in the Sichuan Earthquake Stricken Areas’ for a 20-month research project on the sustainable tourism development

for the Wolong National Nature Reserve in Sichuan, China. The aims of the project are as follows: (1) investigate the ecotourism resources of the Wolong National Nature Reserve, (2) formulate an ecotourism development guideline for the nature reserve, (3) provide a series of trainings and public forums for local residents and government officials

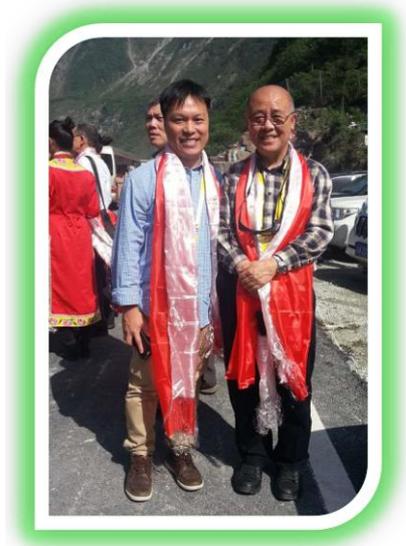
and (4) design two ecotourism accreditation systems for tourism businesses and ecotour guides. The project was completed in June 2016. Accordingly, we have completed a household questionnaire survey to generate quantitative data to assess the post-quake situation of the local residents. We have also organised two public forums to introduce the plan of ecotourism development in the nature reserve and the two certification systems to enhance the local residents’ understanding of the development, and glean their views for the formulation of the ecotourism development guideline. Two-week training workshops regarding the development guideline and the two accreditation systems have been organised for the local residents and government officials.

(iv) Underpinning research

To balance tourism development and environmental conservation in an ecologically sensitive site, a comprehensive evaluation of the potential impacts has been conducted and considered. This project has taken various visitor management, protected areas planning and management, ecotourism and sustainable tourism theoretical frameworks as the research backbone for the tourism development of a renowned United Nations Educational Scientific and Cultural Organization (UNESCO) world natural heritage. The ecotourism development guideline was developed with reference to the protected areas management and visitor management frameworks to plan and design the tourism development of the nature reserve. For the development of certification systems, a sustainable tourism development framework has been adopted to tailor to the two certification systems. The Global Sustainable Tourism Criteria, which are arranged in four pillars, namely Sustainable Management, Socioeconomic Impacts, Cultural Impacts, and Environmental Impacts, have been adopted and further developed to be the Ecotourism Accreditation and Certification System for the Wolong National Nature Reserve.

(v) Selected Research References to Support This KT Project

Cheung, L. T. O., & Jim, C. Y.* (2014). Expectations and willingness-to-pay for ecotourism services in Hong Kong’s conservation areas (SCIE). *International Journal of Sustainable Development & World Ecology*, 21(2), 149-159.



(Left) Dr Cheung Ting On Lewis – Sichuan Post-Earthquake Re-construction Visit in May 2015 (Opening of the Panda Centre in the Wolong National Nature Reserve)

- Cheung, L. T.O.*, & Fok, L. (2014). The motivations and environmental attitudes of nature-based visitors to protected areas in Hong Kong (SCIE). *International Journal of Sustainable Development & World Ecology*, 21(1), 28-38.
- Cheung, L.T. O.*, Fok, L. & Fang, W. (2014). Understanding geopark visitors' preference and willingness to pay for global geopark management and conservation. *Journal of Ecotourism*, 13(1), 35-51.
- Cheung, L. T. O.* & Fok, L. (2014). Assessing the Role of Ecotourism Training in Changing Participants' Pro-Environmental Knowledge, Attitude and Behaviour (SSCI). *Asia Pacific Journal of Tourism Research*, 19(6), 645-661.
- Cheung, L. T. O.* (2013). Improving visitor management approaches for the changing preferences and behaviours of country park visitors in Hong Kong (SCIE). *Natural Resources Forum*, 37(4), 231-241.
- Cheung, L. T. O. & Jim, C. Y.* (2013). Ecotourism service preference and management in Hong Kong (SCIE). *International Journal of Sustainable Development & World Ecology*, 20(2), 182-194.

(vi) Details of the Impact or Benefit

This project offered tremendous impacts to the ecotourism development of the Wolong National Nature Reserve. The recommendations and suggestions of the Ecotourism Development Guideline have been completely recognised and adopted by the administration of the nature reserve to redevelop the tourism industry in this area. Two certification systems developed through our project have been completely implemented in the nature reserve. As at May 2017, 10 farmhouses and hotels have been certified to receive the Bronze Panda and Silver Panda awards as testament to their effort in operating a sustainable farmhouse and hotel in the nature reserve. This certification is the first regional ecotourism certification in the protected areas of Mainland China that provides a positive influence on the ecotourism development of the protected areas in the country.



Performing onsite audit for the Ecotourism Accreditation and Certification System in a farm house in Wolong, Sichuan



Ecotourism Training Workshop for the governmental officers of the Administration of Wolong National Nature Reserve

(vii) References to the Corroboration of Impact or Benefit

The success of this project has paved the way for Dr Cheung to develop into a renowned researcher in ecotourism and the environmental aspects of tourism activities. He received the President's Award for Outstanding Performance in Knowledge Transfer (Individual Award) in 2016/17 and has been appointed by various organisations as advisor in the fields of ecotourism and sustainable tourism. He has been appointed by the Development Bureau of HKSAR and the Wolong Special Administrative Region for the Wolong Ecotourism Development Expert Group and the Assessment Panel of Ecotourism Accreditation and Certification System of the Wolong National Nature Reserve. He has also been invited as a sustainable tourism trainer and chairman of the Assessment Committee for EcoGuide Certification of the greater China region by the Global Sustainable Tourism Council (GSTC) and Ecotourism Australia (EA), respectively.

Dr Cheung has been invited by the HKSAR government and other universities to participate in relevant scholarly activities for the past two years. He has been invited by the HKSAR government to join the Sichuan Post-Earthquake Re-Construction Visits in May 2016 and was a keynote speaker in the Workshop on Conservational Research Collaboration at Sichuan Wolong National Nature Reserve in October 2016.

In addition, the information and data collected from this project were used in the publication of academic journals. Several articles in relation to relevant studies have been published in leading international refereed journals.



Appointed by the Wolong Special Administrative Region as the Expert Advisor for the Assessment Panel of the Ecotourism Accreditation and Certification System



Sichuan Post-Earthquake Re-construction Visit in May 2015 with Ex-Chief Secretary for Administration / Chief Executive of Hong Kong

- Lo, A.Y.* & Cheung L.T.O. (2015). Seismic risk perception in the aftermath of Wenchuan earthquakes in southwestern China (SCIE). *Natural Hazards*, 78(3): 1979-1996.
- Lo, A.Y.* & Cheung, L.T.O. (2016). Geographies of social capital: Catastrophe experience, risk perception, and the transformation of social space in post-earthquake re-settlements in Sichuan, China (SSCI). *Annals of the Association of American Geographers*, 106 (4), 874-890.
- Lo, A.Y.*, Cheung, L.T.O., Lee, A.K.Y. & Xu, B. (2016). Confidence and trust in public institution natural hazards management: Case studies in urban and rural China (SSCI). *Professional Geographer*, 68(3), 475-484.
- Liu, K.S.W., Gou, G.R. & Cheung, L.T.O.* (2016). Understanding participants' motivation and willingness to pay for joining ecotourism training courses in Hong Kong. *Asian Geographer*, 33(1), 23-34.
- Liu, S. & Cheung, L.T.O. (2016). Sense of place and tourism business development (SSCI). *Tourism Geographies*, 18(2), 174-193.
- Cheung, L.T.O.* (2016). The effect of geopark visitors' travel motivation on their willingness to pay for accredited geo-guided tours (SCIE). *Geoheritage*, 8(3), 201-209
- Cheung, L.T.O.*, Lo, A.Y. H. & Fok, L. (2017). Recreational specialization and ecologically responsible behaviour of Chinese birdwatchers in Hong Kong (SSCI). *Journal of Sustainable Tourism*, 25(6), 817-831.
- Liu, S., Cheng, N.Y.I. & Cheung, L.T.O. (2017). The roles of formal and informal institutions in small tourism business development in rural areas of South China (SCIE/SSCI). *Sustainability*, 9(7), 1194 - 1207
- Cheung, L.T.O.* (2017). A segmentation analysis of participant in the selection of an ecotourism-training course. *Journal of Ecotourism*, online. (Accepted and published online)
- Cheung, L.T.O.*, Liu, S., Lo, A.Y. & Fang, W. (2017). Residents' expectations of and support for post-earthquake nature-based tourism development in the Wolong National Nature Reserve, Sichuan, China. *Journal of Rural Studies*. (Submitted in May 2017 and under review)

*Remark: * means 'corresponding author'.*

Impact Case History



(i) Project Title

Safe and Quality Fish Production: Development of High-grade Pellets Using Food Wastes for Three Popular Marine Fish

(ii) Name of Principal Investigator

Professor Wong Ming Hung, Research Chair Professor of Environmental Science, Department of Science and Environmental Studies

(iii) Summary

The main objectives of this project are to (1) develop suitable feed formulations for three different popular marine fish species, namely, Sabah grouper, Pompano and Star snapper, using primarily local ingredients (e.g. food wastes and food processing wastes); (2) conduct laboratory-scale feeding trials on the growth performance of the three species; (3) conduct field-scale feeding trials to validate the results obtained by laboratory-scale feeding trials and (4) assess potential the health risks of cultured products in terms of the concentrations of the major undesirable chemicals contained in fish flesh.

(iv) Underpinning research

This project is based on the knowledge and information gathered from the following two previous projects related to the use of food waste as fish feed:

1. Integrated Pond Fish Farming Using Food Wastes: For Quality Fish Production and Habitat Conservation (funded by Environment and Conservation Fund) and
2. Upgrading Food Wastes as Feeds for Inland Fish Culture in South China (funded by Innovative Technology Fund).

The key issues and problems to be addressed are as follows:

1. Recycling of resources: Approximately 3,600 tonnes/day of food wastes are generated locally. The existing three landfills are expected to be successively exhausted by 2020. Moreover, dumping food waste into landfill sites will definitely shorten the lifespan of existing landfill sites. Accordingly, recycling food waste as a source of protein for producing fish feed could partially ease the disposal pressure and provide a good alternative example for utilising resources.
2. Culturing safe and quality fish: Traditionally, trash fish is used as fishmeal (i.e. source of protein) in manufacturing commercial fish pellets. However, fishmeal derived from trash fish is also a source of e.g. mercury and DDT. Therefore, using food waste to replace part of fishmeal in fish feed production can reduce the amount of pollutants in fish products.
3. Reactivating the local aquaculture industry: Local fish farmers face intense competition from imported products, thereby resulting in limited business profitability. The price of fish pellets for marine fish is \$12,000 to \$15,000 per tonne. Hence, the use of food waste to replace part of the ingredients could reduce the price of fish pellets.

The process of adding supplements, such as enzymes, baker's yeast and Chinese medicinal herbs, into food waste-based pellets, fish growth and immunity were also enhanced.





Professor Wong and his research team members

(v) Selected Research References to Support This KT Project

- Wong MH (2017). Chemical pollution and seafood safety, with a focus on mercury: The case of Pearl River Delta, *South China. Environmental Technology & Innovation* 7:63-76.
- Chen RZ, Wong MH (2016). Integrated wetlands for food production. *Environmental Research* 148: 429-442.
- Liang P, Wu SC, Zhang J, Cao Y, Yu S, Wong MH (2016). The effects of mariculture on heavy metal distribution in sediments and cultured fish around the Pearl River Delta region, south China. *Chemosphere* 148: 171-7.
- Tao HC, Zhao KY, Ding WY, Li JB, Liang P, Wu SC, Wong MH (2016). The level of mercury contamination in mariculture sites at the estuary of Pearl River and the potential health risk. *Environmental Pollution* 219: 829-36.
- Mo WY, Lau RSS, Kwok ACK, Wong MH (2016). Use of soybean meal and papain to partially replace animal protein for culturing three marine fish species: Fish growth and water quality. *Environmental Pollution* 219: 815-820.
- Wong MH, Mo WY, Choi WM, Cheng Z, Man YB (2016). Recycle food wastes into high quality fish feeds for safe and quality fish production. *Environmental Pollution* 219: 631-638.
- Mo WY, Lun CHI, Choi WM, Man YB, Wong MH (2016). Enhancing growth and non-specific immunity of grass carp and Nile tilapia by incorporating Chinese herbs (*Astragalus membranaceus* and *Lycium barbarum*) into food waste based pellets. *Environmental Pollution* 219: 475-482.
- Cheng Z, Lam CL, Mo WY, Nie XP, Choi WM, Man YB, Wong MH (2016). Food wastes as fish feeds for polyculture of low-trophic-level fish: bioaccumulation and health risk assessments of heavy metals in the cultured fish. *Environmental Science and Pollution Research* 23: 7195-7203.
- Choi WM, Lam CL, Mo WY, Wong MH (2016). Upgrading food wastes by means of bromelain and papain to enhance growth and immunity of grass carp (*Ctenopharyngodon idella*). *Environmental Science and Pollution Research* 23: 7186-7194.
- Cheng Z, Mo WY, Nie XP, Li KB, Choi WM, Man YB, Wong MH (2015). The use of food waste-based diets and Napier grass to culture grass carp: growth performance and contaminants contained in cultured fish. *Environmental Science and Pollution Research* 23: 7204-7210
- Choi WM, Lam CL, Mo WY, Wong MH (2015). The use of food wastes as feed ingredients for culturing grass carp (*Ctenopharyngodon idellus*) in Hong Kong. *Environmental Science and Pollution Research* 23: 7178-7185.

- Mo WY, Cheng Z, Choi WM, Lun CHI, Man YB, Wong JTF, Chen XY, Lau SCK, Wong MH (2015). Use of food waste as fish feeds: effects of prebiotic fibers (inulin and mannanoligosaccharide) on growth and non-specific immunity of grass carp (*Ctenopharyngodon idella*). *Environmental Science and Pollution Research* 22: 17663–17671.
- Cheng Z, Mo WY, Lam CL, Choi WM, Wong MH (2015). Replacing fish meal by food waste to produce lower trophic level fish containing acceptable levels of polycyclic aromatic hydrocarbons: Health risk assessments. *Science of the Total Environment* 523: 253-261.
- Cheng Z, Mo WY, Man YB, Lam CL, Choi WM, Nie XP, Liu YH, Wong MH (2015). Environmental mercury concentrations in cultured low-trophic-level fish using food waste-based diets. *Environmental Science and Pollution Research* 22: 495-507.
- Cheng Z, Mo WY, Man YB, Nie XP, Li KB, Wong MH (2014). Replacing fish meal by food waste in feed pellets to culture lower trophic level fish containing acceptable levels of organochlorine pesticides: Health risk assessments. *Environment International* 73: 22-27.
- Choi WM, Lam CL, Mo WY, Cheng Z, Mak NK, Bian ZX, Wong MH (2014). Effects of the modified Huanglian Jiedu decoction on the disease resistance in grey mullet (*Mugil cephalus*) to *Lactococcus garvieae*. *Marine Pollution Bulletin* 85: 816-823.
- Mo WY, Cheng Z, Choi WM, Man YB, Liu Y, Wong MH (2014). Application of food waste based diets in polyculture of low trophic level fish: Effects on fish growth, water quality and plankton density. *Marine Pollution Bulletin* 85: 803-809.



Professor Wong meets with project partners

(vi) Details of the Impact or Benefit

The local mariculture industry relies on the use of trash fish and supply of commercial diets, which are substantially expensive, thereby resulting in the lack of competitiveness in the local industry. The high cost of fishmeal deters the willingness of fish farmers to use commercial feed pellets for marine fish culture. This project served as a model by using selected local ingredients and food wastes to produce fish feeds that could immensely reduce the cost of feeds. This practice promoted the recycling of natural resources and partially eased the disposal pressure of food wastes.

The deliverables of this project are as follows.

1. Safe and quality fish products using the high-grade pellets developed to replace trash fish and fish meal commonly used in commercial pellets;
2. Food waste-based pellets that are suitable for cultivating three important marine fish species, namely, Sabah grouper, Pompano and Star snapper and
3. High economic incentives to local fish farmers by producing safe and quality products at a low cost but could be sold at a competitive price.



Photos of Mariculture rafts for field scale feeding trial



Aquaculture water filtering system used in laboratory scale feeding trial

(vii) References to the Corroboration of Impact or Benefit

Video

Integrated Pond Fish Farming Using Food Wastes 利用廚餘於綜合塘魚養殖

<https://www.youtube.com/watch?v=XbBGLrgbOTA>

International conferences and Symposium

The International Conference on Biological Waste as Resource (BWAR) with a Focus on Food Waste held in 1-3 December 2014

Experts and scholars from Australia, the UK, India, Italy, South Korea, Malaysia, Pakistan, Singapore, Thailand, Mainland China, Macau and Hong Kong gathered at The Hong Kong Institute of Education (HKIED) to attend the three-day conference.

Symposium on Food Waste as Fish Feed on 3 December 2014

A half-day symposium titled ‘Local disseminated findings of this project to the local fish farmers and other stakeholders (in Cantonese)’ focused on the ideology, techniques and processes and sharing of experiences by using food wastes as fish feeds for pond fish culture.

2nd International Conference on Biological Waste as Resource held in 25–27 May 2017

After the success of the 1st BWAR, the 2nd International Conference on Biological Waste as Resource was held in PolyU. EdUHK was the co-organiser of the conference and Professor Wong delivered a keynote presentation titled ‘Food Waste as Food, Feed, Fertilizer and Fuel - with a Focus on Fish Feed’.

Impact Case History

(i) Project Title

The Jockey Club Chief Executive Community Project: SMILE Project

(ii) Name of Principal Investigator

Professor Sin Kuen Fung, Professor, Department of Special Education and Counselling; Director, Centre for Special Educational Needs and Inclusive Education

(iii) Summary

With support from Education Bureau (EDB) and fund from The Hong Kong Jockey Club Charities Trust for the Chief Executive's Community Project, the team completed the 'The Jockey Club SMILE Project' - Supporting and Maximizing Individual Learning Efficacy. (https://oraas0.ied.edu.hk/rich/web/project_details.jsp?pid=2513504&r=&k=).



This three-year project (2013–2016) provided school-based support and consultancy services in mainstreaming primary and secondary schools in Hong Kong. With the provision of intensive school-based support, consultancy, and guidance services, case studies or seminars, this project aimed to meet school practice in inclusion to achieve the following objectives:

- To enhance the learning and school adjustment among students with attention deficit/hyperactive disorder (AD/HD) or intellectual disability (ID);
- To assist teachers in developing teaching strategies and resources for classroom practice and evaluation to meet the learners' diverse needs;
- To optimise the supporting system of the entire school approach in supporting these students through the involvement of school staff members and parents;
- To establish communities of practices among schools and enhance teacher competency in catering for students' diversity through professional dialogues, resource sharing and knowledge transfer and
- To continue to explore effective measures and strategies to cater for learners' diversity.

In this period, 24 schools with large SEN student populations received intensive school-based support (i.e. 180 hours each), including site visits, team meetings, classroom observation, try-outs of differentiated instruction for SEN students, staff development, consultation of SEN students, curricular evaluation and assessment support. The project provided consultancy services to 120 schools (i.e. 18 hours each) that benefitted approximately 4,500 SEN students, with plans to extend the service to parents. The outcome of the consultations and resource kits were desirable. A few effective pedagogical practices and curriculum differentiations were disseminated in forums, seminars and workshops. Please refer to the details of the project in the folder of SMILE.

(iv) Underpinning research

The project included a wide range of activities and know-how skills.

Firstly, in the intensive school-based support, schools with numerous SEN students (e.g. $N > 30$, mostly with AD/HD and ID students) were invited to join the project. The team supported the schools in terms of site visits, team meetings, classroom observation, try-outs, staff development, consultancy to SEN students, curricular evaluation, and assessment support. We were optimistic that schools were further strengthened in addressing diverse learning needs with the external professional support, particularly in the try-outs of the differentiated instruction to AD/HD and ID students.

Secondly, consultancy services to schools that need immediate assistance were arranged. The team offered consultancy services to schools with many AD/HD and ID students in terms of staff development program, resource support and advice to address the diverse learning needs. These schools maintained partnership with CSENIE/SEC, which deployed its expertise for offering the necessary assistance. The service also included individual parents who need advice for their children with AD/HD and ID.

Thirdly, annual seminars for primary and secondary school teachers were organised to share the successful practices and knowledge transfer on the teaching and learning for different categories of special needs. The updates and innovative strategies were the foci of the seminars.

Fourthly, the topics ‘Learning of AD/HD & ID students’ and ‘Whole school approach support’ were analysed in the participating schools. The comparative study of the different school profiles of teachers with or without training enhanced our understanding of the current policy-driven development, teacher training and resource support. The data informed schools and the government of the effectiveness and future change.

Fifthly, the successful practice and resource/deliverables were developed in the form of CD and handbook. The topics on strategies in supporting students with AD/HD and ID, teacher empowerment and curricular support to these students were essential to school support and teacher education.

Lastly, in the school-based support, the team addressed the concerns and support of SEN students in schools. The knowledge and skills related to problem solving and strategies in supporting students with AD/HD and ID on the entire school approach basis were transferred. Evidence-based practices also informed the further improvement and follow-ups. Contents included activities on mentorship, program planning and student support as follows:

- Needs analysis, team meetings and briefing, classroom observation and modes of collaboration
- Evaluation of support system
- Management of resources and manpower
- Strategies in student support
- Case study
- Try-outs
- Collaborative approaches in case intervention
- Staff member empowerment
- Review of the school policy in diversity
- Differentiated instruction in classroom teaching
- Teaching and learning
- Curricular and assessment
- Successful practice, evaluation and planning ahead among school clusters

The preceding contents were consistent with the current policy and practice of inclusive education in Hong Kong, particularly with regard to the three-tier support level. The curriculum also echoed with the recommendations from the EOC report in 2012.

(v) Selected Research References to Support This KT Project

- Cheng, S. Y., Hu, X. Z., & Sin, K. F. (2016). Thinking styles of university deaf or hard of hearing students and hearing students. *Research in Developmental Disabilities, 55*, 377-387.
- Yang, L., Arens, K., Xu, M., & Sin, K.F. (2016). Testing the Internal/External Frame of Reference for Academic Self-Concept in Chinese Vocational Students. In R. B. King & A. B. I. Bernardo (Eds.), *The Psychology of Asian Learners: A Festschrift in Honor of David Watkins* (101-123). Singapore: Springer.

- Yang, L., Sin, K. F., Cheng, S. Y., & Gao, F. Z. (2015). Developing a short form of Career Development Self-Efficacy Inventory (SF-CD-SEI) for students with special educational needs. *Hong Kong Journal of Special Education*, 17, 28-39.
- 冼權鋒、楊蘭、盧成皆、李萍英、高鳳展、栞昕暢、程三銀（2015）：「融合學生離校後轉銜的困境」，《香港特殊教育期刊》，17，124-133。
- 王林小玲、謝宗義、冼權鋒、王明燦、戚碧玉及許盧萬珍等（2014）：《愛得其法、閉門自開》自閉症人士家長手冊，香港，扶康會。
- Chen S. H., Sin, K. F. & Zhang, Y. J. (2013). *Adapted physical education sample lesson plan for teaching students with disabilities*. Hong Kong, China: Centre of Special Education and Inclusion, HKIEd.
- 冼權鋒、高鳳展（2013）：「華南地區自閉症人士服務現狀調查及訪談報告」，刊於深圳市自閉症研究會主編，《中國自閉症人士服務現狀調查：華南地區》，（1-95），中國，華夏出版社（Huaxia Publishing House）。
- 冼權鋒（2013）：「在共融概念下，教師特教知能的迷思與反思」，刊於冼權鋒主編，《共融文集暨傷健共融活動教材》，（18-21），香港，香港教育學院、香港傷健協會、傷健學院。
- 區美蘭、冼權鋒合編（2012）：《「適異教學」在特殊學校的實踐與啟示 通識科示例——「環境保護」》，香港，香港教育學院特殊學習需要與融合教育中心。
- Sin, K. F., & Law, S. Y. (2012). The construction of an Institute-School-Community partnership of teacher education for inclusion. In C. Forlin (Ed.), *Future directions for inclusive teacher education: An international perspective* (pp.203-211). New York: Routledge.

(vi) Details of the Impact or Benefit

The outcome is far-reaching on school reform and professional development. Many pre-service teachers, particularly those studying inclusive education, gained insights into and experience in the exposure. Moreover, the impact is further strengthened with the following deliverables.

1. Reports of evidence-based practices for informing changes

Three reports of evidence-based practices on the topics of multiple-intelligence, learning support of ID students and school-based support on integrators were published. Teachers were well informed of the successful strategies in the learning support.

（「融合學校：教學與支援的探索」：「多元智能教學計劃提升」研究、「支援智障學生在普通學校學習」研究、「校本支援融合生的措施和策略」研究）

2. Chapter in Teacher Education for academic sharing

A chapter summarised our innovative approach on school-based support conducted by our university was selected in the *Oxford Research Encyclopedia of Education*. Our successful practice became renowned internationally.

Forlin, C., & Sin, K. F. (2017). In-service teacher training for inclusion: Best practice models for professional learning. In George Noblit (Ed.), *Oxford Research Encyclopedia of Education*. New York: Oxford University Press.

(<http://education.oxfordre.com/view/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-161>)

3. Publications in refereed international and local journals

Regarding our work on AD/HD, the team reviewed a few interventions to support AD/HD. Our effort and insights were published in refereed international journals for extensive dissemination in the sector.

Tsang, V., Sam, K. L., Wong, W. K., Cheng, W. K. L., Sin, K. F. & Ho, F. C. (2016). A paradigm shift in intervention approaches for children with attention-deficits/ hyperactivity disorders: A systematic review of psycho-behavioral interventions, *Journal of Acta Psychopathol*, Vol. 2 No. 2: 44, <http://dx.doi.org/10.4172/2469-6676.100044>

In addition, our knowledge transfer work was published in a local special education journal. Our success was possibly shared among local practitioners.

冼權鋒、曾君蘭、何福全、蘇建群 (2015)：「知識轉移：到校支援的新嘗試」，《香港特殊教育期刊》，17，頁 141-144。 (Sin, K. F., Tsang, V., Ho, F. C., & So, K. K. (2015). Knowledge transfer: A try-out of school based support. *Hong Kong Journal of Special Education*, 17, 141-144).

4. Resource handbooks for school reform and professional development

Schools and NGOs distributed a resource kit with five books on school-based support, ID student support, AD/HD student support and curriculum tailoring, learning and teaching. Teachers were informed of the know-how skills, evidence-based practices, supporting strategies, curriculum accommodation and learning differentiation. The skills and knowledge were beneficial to school reform and the professional development of teachers.

- 《「賽馬會悅學計劃」：支援融合生資源套》：
- 「融合教育校本支援的多面體」
- 「智障學生：融合教室內的支援與反思」
- 「注意力不足/過度活躍症學生：融合教室內的支援與反思」
- 「融合教室內的課程調適與適異教學：中國語文初中教學的實踐與反思」
- 「融合學校：教學與支援的探索」

5. Video and CD production for teaching and learning

Videos that demonstrate effective support strategies for teaching students with ID and AD/HD were produced. We used the framework of multiple intelligences (MI) to develop a ready-made tool for teachers on using MI for assessing the learning needs and class participation of students with AD/HD. Students in our BEd programs found the video beneficial for understanding and managing students with ID and AD/HD.

- 《「賽馬會悅學計劃」：支援融合生資源光碟》
- 「多元智能教學計劃：提升有注意力不足/過度活躍症的學生之課堂參與」光碟
- 「智障學生：融合教室內的教學支援策略」光碟
- 「注意力不足/過度活躍症學生：融合教室內的行為支援策略」光碟





(vii) References to the Corroboration of Impact or Benefit

In this period, 24 schools with large SEN student populations received intensive school-based support (i.e. 180 hours each), including site visits, team meetings, classroom observation, try-outs of differentiated instruction for SEN students, staff development, consultation of SEN students, curricular evaluation and assessment support. The project provided consultancy services to 120 schools (i.e. 18 hours each) that benefitted approximately 4,500 SEN students, with plans to extend the service to parents. The outcome of the consultations and resource kits were desirable. A few effective pedagogical practices and curriculum differentiations were disseminated in forums, seminars and workshops.

Annex II

Number of Beneficiaries ^{Note 1}

| Key Beneficiary Item | Nature of KT Activities involved ^{Note 2} | 2015/16 | 2016/17 |
|---|---|----------------|----------------|
| Number of schools benefited | Categories (4), (5) & (6) | 15,873 | 26,348 |
| Number of principals benefited | Categories (1), (3), (4),(5) & (6) | 15,580 | 26,359 |
| Number of teachers benefited | Categories (1), (3), (4),(5) & (6) | 66,241 | 75,722 |
| Number of students benefited | Categories (4) & (5) | 713,440 | 1,472,243 |
| Number of conference participants benefited | Category (2) | 6,754 | 6,813 |
| Number of organizations/ advisory bodies benefited | Category (6) | 66 | 1,085 |

Notes:

1. The number of beneficiaries is calculated according to the number of activities involved.
Some beneficiaries and schools may have been involved in more than one activity.

2. Categories of KT Activities include:

- (1) Continuing Professional Development (CPD) Courses
- (2) Local/International Professional Conferences
- (3) Professional Seminars/Workshops
- (4) Commissioned/Contract Projects
- (5) Partnership Projects for Change, Improvement and Innovation
- (6) Consultancies

Annex III

Summary of Performance Indicators

| Performance Indicators for Knowledge Transfer Activities | | 2015/16 (1/7 - 30/6) | 2016/17 (1/7 - 30/6) | |
|--|---|---|-------------------------|--------------|
| 1 | Continuing Professional Development (CPD) Courses | Number of CPD courses | 32 | 49 |
| | | Income from CPD courses | \$8,107,936 | \$10,279,277 |
| | | Number of key partners | 21 | 23 |
| | | Number of student contact hours | 1,629 | 3,737 |
| 2 | Local/International Professional Conferences | Number of local/international conferences | 39 | 52 |
| | | Income from conferences | \$1,429,008 | \$933,469 |
| | | Number of key partners | 53 | 241 |
| | | Number of presentations | 1,285 | 1,436 |
| 3 | Professional Seminars/Workshops | Number of professional workshops/ seminars | 419 | 426 |
| | | Income from seminars/workshops | \$490,015 | \$546,977 |
| | | Number of key partners | 412 | 413 |
| 4 | Commissioned/Contract Projects | Number of commissioned/ contract projects | 88 | 97 |
| | | Income from projects | \$39,727,790 | \$48,132,401 |
| | | Number of key partners | 324 | 238 |
| 5 | Partnership Projects | Number of partnership projects | 104 | 112 |
| | | Income from partnership projects | \$26,269,857 | \$7,687,091 |
| | | Number of key partners | 626 | 1,967 |
| 6 | Consultancies | Number of consultancies | 13 | 27 |
| | | Income from consultancies | \$2,308,920 | \$2,111,890 |
| 7 | Professionals Engaged in Academic/ Professional Programmes | Number of programmes involved | 65 | 65 |
| | | Number of teachers engaged | 30 | 11 |
| | | Number of principals engaged | 22 | 24 |
| | | Number of other professionals engaged | 119 | 89 |
| 8 | Commercialized R&D Products and Intellectual Properties (IPs) | Number of commercialized R&D products/ IPs | 10 | 15 |
| | | Income from the R&D products/ IPs | \$320 | \$160 |
| 9 | Social, Community and Cultural Engagement | Number of public lectures/ symposiums/ exhibitions And speeches to a community audience | 410 | 417 |
| | | Number of performances and exhibitions of creative works by staff or students | 44 | 47 |
| 10 | Staff Engaged as Professional Consultants or Members of External Advisory Bodies | Number of staff engaged | 109 | 122 |
| 11 | Student Engagement | Number of student internships/ placements | 2,787 | 2,842 |
| 12 | Publicity or Media Exposure | Number of publicity or media exposure related to KT, including print, on-line and electronic media | 1,242 | 729 |
| 13 | Nexus between Research and Teaching | Number of academic staff using research in teaching/course activities | 298 | 296 |
| | | Percentage of academic staff using research in teaching/course activities | 94.6% | 93.7% |
| | | Number of academic staff using teaching as research | 165 | 191 |
| | | Percentage of academic staff using teaching as research | 52.4% | 60.4% |
| 14 | Publications with Local and Regional Impacts <small>Note 1</small> | Number of publications directly relevant to improvement, innovation and development of professional/educational practices/ policy development | 833 | 836 |

Notes:

1. All the incomes generated are in HK\$.