



Annual Report on Knowledge Transfer Activities 2013/14

Submitted to
University Grants Committee



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1. Executive Summary

Aspiring to become a leading research and development centre for education and policy research, the Hong Kong Institute of Education (HKIED) has adopted a Research and Development (R&D) philosophy that emphasizes excellence in scholarship, professionalism, and service to the education sector and the community at large through knowledge transfer (KT). To enhance research with impact, KT activities are central to the Institute's pursuit of effective research and innovative scholarships that not only extend knowledge frontiers but also promote education change, social development and enhancement of human well-being. The activities comprise commissioned/ contract projects, partnership projects for change, improvement and innovation, and consultancies. The Institute also takes initiatives to actively engage outside professionals in its programmes. Through delivering continuing professional development courses, organizing local and international professional conferences, launching professional seminars and workshops and engaging in social, community and cultural events, the Institute has embedded a strong KT culture in learning, research and services to the community and beyond (see Section 3 for details).

A remarkable development that witnessed in 2013/14 was to enhance integration of KT into the Institute's processes and systems at different levels. At the Institute level, two new KT performance indicators have been included in the KT annual report for annual review and evaluation, namely "*number of publicity or media exposure related to KT*" and "*student internships/placements*". Efforts have been made to increase publicity and visibility of our KT activities through mass media, such as presses, press conferences, TV media interviews and the Internet. As in past years, student engagement in KT was promoted and incorporated into the learning activities and extra-curricular activities. Highlights of KT strategies can be found in Section 2.

Five selected impact case histories in different disciplines, including environmental protection, arts, social and policy studies, learning assessment, and teaching students with special educational needs, are included in this annual report to illustrate the Institute's the wide range of KT activities and their impacts on the community.

Looking ahead, the Institute will develop more innovative ways to engage with the school sector and the community at large for promoting KT. We are confident that with concerted efforts and a wide range of KT activities undertaken by staff members at all levels, the KT culture will further be enhanced and developed and that the research, teaching and KT activities of our staff members will continue to benefit the school sector and the community at large.

2. Highlights of the Year

The University Grants Committee (UGC)'s earmarked allocation for KT activities and the Institute's own earmarked funding for KT have enabled the Institute to continue supporting and promoting a wide range of KT activities at both the Institute and the academic unit levels within the reporting year.

2.1 Strategies in Supporting KT

At the Institute level, the Institute has been adopting various strategies to create an environment conducive to KT and to encourage R&D centres and senior academics to lead research directives, formulate KT-related projects, and draw in collaborative ventures, exchanges, and publication opportunities through their own network. The following strategies were adopted in the reporting year to encourage and facilitate KT activities across the Institute:

2.1.1 KT Awards: The KT Awards scheme has been in place since 2009 to support the transfer of Institute-owned knowledge, technology and research findings that can influence a wider community, particularly the local community. These monetary prizes recognise, encourage and reward the best KT activities, practices, cases or projects. Nominated projects from different units are assessed by a selection panel comprising seven academic staff members and one external member (a local secondary school principal). All full-time staff members of the Institute in their capacity as Project Leaders are eligible to apply for this awards scheme. Two KT awards were given to two successful projects in 2013/14. The KT Awards scheme not only aims to enhance KT awareness across the Institute but also to promote integration of research in KT to maximise the synergy and the mutual benefits derived from scholarly and professional activities.

2.1.2 KT Matching Grant Scheme: The Institute continued to provide a KT Matching Grant Scheme for 2013/14 as an on-going initiative to promote ownership, creativity and innovation in academic units in terms of organizing KT activities and initiatives. Faculties were asked to submit proposals on two flagship KT areas to encourage them to develop focused, systematic and long-term KT strategies.

2.1.3 KT Sharing Sessions: A series of sharing sessions on KT continued to be organized at the Institute level in 2013/14 to share the success stories and practical experiences of KT among the staff. All staff members were welcome to attend the sharing sessions and follow-up work was done to promote KT projects. Four KT sharing sessions were held between October 2013 and May 2014, and they were well received by the participants.

2.2 Strategies in Dissemination of KT

2.2.1 KT Promotion

2.2.1.1 KT Website: The KT website (<http://www.ied.edu.hk/rdo/KnowledgeTransfer/eng/>) continues to function as a channel for the visibility of KT within the Institute. The website demonstrates the breadth of the Institute's KT activities; publicises our KT policies, guidelines and activities; highlights showcases; shares good practices, establishes networks with various internal and external stakeholders (e.g., researchers, experts, research teams, special interest groups, the school sector, the Education Bureau (EDB), funding bodies, and the business sector); and promotes interaction and exchange of new ideas on KT.

2.2.1.2 Publicity and Media Exposure of KT Activities: Good practices and advanced knowledge have been continuously disseminated among staff members and the community through different channels, such as the Institute's website and Annual Report, the KT website, the Research and Scholarship website, press releases, the

intranet, and email. Since 2012, the electronic newsletter - “HKIED News” (<http://www.hkiednews.edu.hk/en/main/index.do/>) has been issued quarterly in the Institute’s website to disseminate the Institute’s news and development in a timely manner. A section on “Research & Development” has been included with an introduction of selected R&D/KT projects. As of June 2014, nine issues of the newsletter have been issued. This newsletter helps to publicize on KT activities to the public and provides a means for easy access to the intellectual resources nurtured by the Institute.



香港教育學院「可持續發展教育中心」開幕

◆ 香港教育學院

(左起)：教院博文及社會科學學院院長葉家豪教授、教院副院長(研究與發展)鄭燕祥教授、教院副院長(行政)葉傑先生及博文及社會科學學院院長吳家豪教授，聯同「中心」總監蘇詠梅教授共同主持開幕儀式。

香港教育學院(教院)「可持續發展教育中心」(「中心」)於2月28日在大埔校園舉行開幕典禮，並隨即為新成立的健康環境及教研聯盟(「聯盟」)舉行啟動儀式。「中心」與澳洲國立綜合醫學研究所訂合作備忘錄，標誌該院在環境教育的工作邁向新里程。

教院院長張仁良教授、副校長(研究與發展)鄭燕祥教授、副校長(學術)兼「中心」總監李宇建教授、副校長(行政)葉傑先生及博文及社會科學學院院長吳家豪教授，聯同「中心」總監蘇詠梅教授共同主持開幕儀式。

張院教授致辭時表示，環境污染問題日益嚴重，過度開採環境資源挑戰著全球的可持續發展。為配合國際多元學科發展，博文及社會科學學院成立了「可持續發展教育中心」，希望能夠整合現有的研究及發展的研究機會。他強調：「我們要改變心態，才能兼顧經濟及社會發展與環境保護之間的平衡。」

蘇院教授表示，「中心」以積極推行公眾教育為使命，並透過最新的科學研究，為公眾探討修復環境的方法，期望改善環境污染。她說：「長遠而言，本中心希望提升教育界及公眾對環境可持續發展的關注，並以發展成一個國際性可持續發展教育研究中心為目標。」

各主席嘉賓禮後聯同兩位總監，蘇詠梅教授和李宇建教授一同手持印有「Care for our Environment and Educate our Students」(愛護我們的環境，教育我們的學生)標語的中心牌匾合照，標誌著「中心」的正式成立。

開幕典禮後，「中心」新成立的健康環境教研聯盟亦正式啟動。「聯盟」統籌該院環境科學研究講座教授黃詠梅教授、博文及社會科學學院成立了「可持續發展教育中心」，希望能夠整合現有的研究及發展的研究機會。他強調：「我們要改變心態，才能兼顧經濟及社會發展與環境保護之間的平衡。」

◆ 香港站

其後，張仁良教授與澳洲國立綜合醫學研究所臨床護理學中心總監James Siow博士訂合作備忘錄，正式開展教院與澳洲國立綜合醫學研究所的合作計劃，初步計劃進行嬰兒臍帶血內的污染物水平的基線調查。

賽和醫院前體外受學中心總監梁啟文醫生以聯席榮譽顧問身份出席致辭，他在簽訂儀式後發表了開幕詞，並提及有關人類生理及健康的不良影響。

身兼臨床毒理學國際委員會總幹事的醫學、科學、教育及研究委員會(MSERC)主席 James Siow 博士亦隨後發表以「環境污染及對人類健康的影響」為題的演講。他說：「現有的持久性污染物對全球人類健康已構成影響，這亦意味著接近所有人類生理上及生化上亦被污染。」他更指出，新研究將在有效時間內取得正面的醫療成果為目標，透過代表觀感以遏制上升的醫療成本。

香港兒童健康促進協會及香港毒藥醫學學會主席高橋裕醫生亦應邀發表以「香港及內地自閉症概況」為題的演講。她表示，香港和內地都面臨世界各地一樣出現自閉症個案上升的趨勢。她說：「我們

▲ 教院院長張仁良教授與澳洲國立綜合醫學研究所臨床護理學中心總監James Siow博士簽訂合作備忘錄。

▲ 已知重金屬對兒童腦部發育有生理上的影響，多個研究亦指出它對自閉症及其他不正常發展症狀有關連。她表示，生物醫學療法及重金屬去毒化治療患有自閉症兒童有重要的突破。

典禮後由「中心」教育和社區參與統籌鄭燕祥博士及環境創新技術統籌周卓輝博士兩位相關部門的發展策劃師作伴。鄭燕祥博士表示，「中心」會繼續與吳氏基金進行「教育起動，迎擊再用！」的教育計劃，加強教院學生及小學生對環境教育的認知。周卓輝博士則表示，「中心」會進行有關環境影響的調查及影響，亦會研究如何降低和能源消耗的可能性。

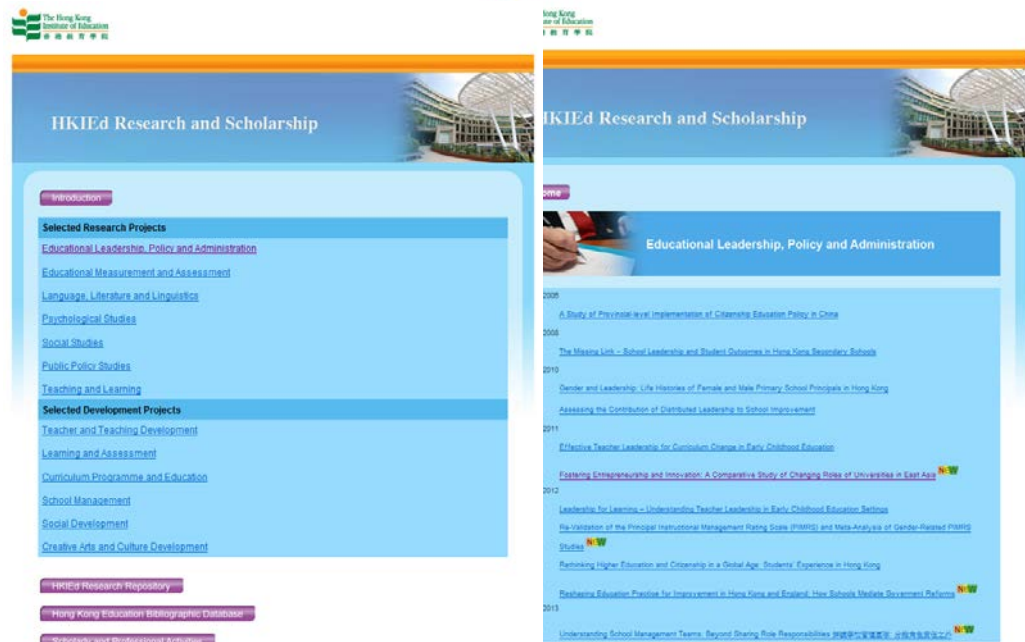
有關教院「可持續發展教育中心」的更多資料，請參閱「中心」網址：www.iied.edu.hk/hkcecs

▲ 教院可持續發展教育中心今日在大埔校園舉行開幕典禮，並隨即為新成立的健康環境及教研聯盟舉行啟動儀式。(左2)香港兒童健康促進協會及香港毒藥醫學學會主席高橋裕醫生、(左5)澳洲國立綜合醫學研究所臨床護理學中心總監James Siow 博士、及(右5)賽和醫院前體外受學中心總監梁啟文醫生。

In the reporting year, articles were submitted to the “Beijing-Hong Kong Academic Exchange Centre” for dissemination of the Institute’s R&D/KT news through their quarterly journal publication – “Beijing - Hong Kong Academic Exchange” (京港學術交流) (<http://www.bhkaec.org.hk/>).

Two articles written by the HKIED staff were selected for publication in the April and July 2014 issues, respectively.

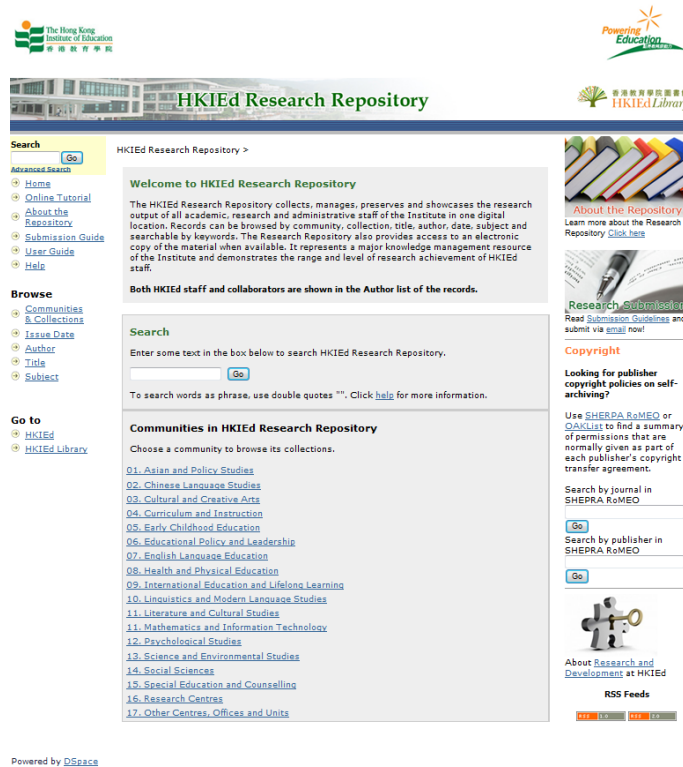
2.2.1.3 HKIED Research and Scholarship Website: The website offers free and convenient services to local education practitioners as a one-stop online portal for research information and resources. Primary and secondary schools have been invited to subscribe to the website. As of 30 June 2014, a total of 463 schools have subscribed the site, including 241 primary and 222 secondary schools. The website has considerably benefited local and international students, teachers and scholars by making more visible research outputs of the Institute readily available on the Internet. The website allows knowledge, efforts, and results of academic research conducted by Institute staff members to be transferred directly to potential users on the Internet, thereby becoming a community channel between the Institute and the public in sharing knowledge and ideas. To enhance the visibility of the website, we have created a link to the HKIED Research and Scholarship website from that of the Hong Kong Teachers' Centre. (<http://www.edb.org.hk/hkct/index.aspx?id=20060614162407&lang=e>)



(http://www.ied.edu.hk/research_and_scholarship/)

2.2.2 Research Publications: The Institute regularly collects from the academic staff statistics on research outputs for analysis, review and planning of KT. Of the 516 refereed research outputs in 2013/14, over 68.6% (354) were related to the various sectors of school education. These research outputs included early childhood, primary, secondary, technical and special education. They were also disseminated across sectors, covering teacher education and education disciplines. 31.4% (162) of the outputs were related to complementary discipline areas such as Social Sciences, Humanities and Languages, and other professional and vocational subjects. These refereed outputs and those produced in the past years can provide a substantial new knowledge base for KT to inform practical improvement, professional innovation and education development in Hong Kong and beyond.

2.2.3 HKIED Research Repository: Aside from being used for extensive KT activities, the HKIED Research Repository is a key strategy for transforming education and the teaching profession through research. The Repository collects, manages, preserves and showcases the research output of the Institute’s staff in one digital location. As of 30 June 2014, the HKIED Research Repository has more than 13,581 citation records dating



back to 1994, and more than 3,996 records are linked to full-text copies. Materials deposited in the database include scholarly books, book chapters, journal articles and conference papers. The availability of the Repository is of great benefit to students, teachers and scholars both locally and worldwide, as it enhances the visibility of the Institute’s research output on the Internet. The number of visits to the website increased by about 92.8% from 54,964 in

2009/10 to 105,989 in 2013/14. (<http://repository.ied.edu.hk/>)

2.2.4 KT Dissemination Plan and Survey on the Nexus between Research and Teaching:

To further promote the culture of KT, the Institute has recently reviewed its KT strategies over the past years. All academic staff members are required to submit a KT Dissemination Plan so they can plan ahead their dissemination activities of research findings in the stage of proposal preparation. In the reporting year, a survey was conducted to collect data on individual academic staff members applying research in teaching and/or using teaching activities in their research. The percentage of academic staff using research in teaching activities increased from 72% in 2011/12 to 83% in 2013/14, while that of using teaching as research increased from 36% in 2011/12 to 50% in 2013/14 (Table 1). This finding proves that the Institute staff members have incorporated their research into teaching, and vice versa, facilitating the development of KT in the school sector.

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

	2011/12	2013/14
Academic staff using research in teaching/ course activities	72%	83%
Academic staff using teaching as research	36%	50%

2.3 KT Outputs through Research Infrastructure

The Institute supports and encourages its staff members in academic departments, faculties, Research Centres and Professional Development Centres to organize and conduct KT activities or projects according to their own capacity and strengths in a creative way. We believe that the ownership, creativity and integration of 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 to Implement KT: Three Institute-level research centres and three Faculties along with their constituent departments, research centres, and professional development centres at the Faculty-level continued to be key academic units in 2013/14 in providing the community with comprehensive KT activities. The projects covered education and non-education fields. In 2013/14, a total of 9,996 schools, 29,308 teachers, 462,267 students, and 38,604 other stakeholders benefited from these activities (Table 2).

Table 2: Total Number of KT Beneficiaries in 2013/14

Schools	Teachers	Students	Other Stakeholders
9,996	29,308	462,267	38,604

2.3.2 KT Project by Assessment Research Centre: With external Governmental or non-Governmental support such as QEF, Language Fund, EDB, and Jockey Club Charities Trust, numerous KT projects have been organized by academic departments or research centres for the education sector in the past years. Some projects have generated long-lasting impacts on professional innovation and practical improvement of school education. For example, the Institute-level Assessment Research Centre (ARC) is one of the main foci for providing high-level KT activities based on their frontier research. Its project of ‘Reforming School Assessment Culture under New Academic Structure: Assessment for, as and of Learning’ was a good example that showed how research-based KT can create significantly effect changes in attitudes, skills, knowledge and technology among teachers and schools in Hong Kong, Macau and beyond in using E-assessment of, for and as learning. A total of 18 workshops and 3 seminars were conducted, which benefitted approximately 2,000 school leaders and teachers from over 500 local secondary schools. (Annex I – A)

2.3.3 KT Project by Department of Cultural and Creative Arts: Another example is the ‘Transmission of Cantonese Opera as a Cultural Heritage in Schools, Community, Higher Education and Professional Sectors’, undertaken by the Department of Cultural and Creative Arts (CCA). It involves 48 schools, 13 participating artists, 101 music teachers and approximately 4,800 participating students in using new models to teach or learn Cantonese opera with great results. (Annex I – B)

2.4 KT Outputs through Training Professionals

Given the largely enhanced research capacity and outputs of the Institute in these years, the dissemination and transfer of new knowledge advanced from the Institute's research to the profession has also been conducted by training educators or practitioners to be a new generation of professionals with new knowledge based on research.

2.4.1 Continuing Professional Development (CPD): Academic departments of the Institute continues to provide a wide range of self-funded development courses and training programmes to transfer the new research findings and knowledge of its staff members to support the continual development of the education profession in early childhood, primary, secondary, technical, and special education. Through these courses, the Institute and its departments will establish closer relationships, network with schools, and significantly affect professional improvement and innovation in the school sector, as well as contribute to the development of better human resources for Hong Kong and the Region.

CPD courses were organized by HKIED's departments and centres, and, on certain occasions, in collaboration with external parties:

- Department of Education Policy and Leadership organized:
 - Coordinating and Developing Teachers' Continuing Professional Development Programme; and
 - Structured Support Programme for Newly Appointed Principals of Secondary and Special Schools.
- Centre for Small Class Teaching, in collaboration with the Education Bureau, organized:
 - a series of "In-service Teacher Professional Development Courses on Learning and Teaching in a Small Class Environment" with different focused subjects such as Chinese, Mathematics, General Studies, English; and
 - Support Programme on Fostering Communities of Practice to Enhance Learning and Teaching in a Small Class Environment.
- Centre for Lifelong Learning Research and Development cooperated with the Shatin Multi-service Centre for the Elderly of the Evangelical Lutheran Church of Hong Kong and together organized the "Professional Certificate Programme in Lifelong and Elderly 2013-14".

A total of 59 principals and 405 teachers were benefited from the 12 courses mentioned above.

2.4.2 The Hong Kong Jockey Club SMILE Project: With support from the Education Bureau for the Chief Executive's Community Project in 2012/13, the Hong Kong Jockey Club Charities Trust funded a three year project (2013-2016) to HKIED. The project is led by the Department of Special Education and Counselling (SEC) and the Centre for Special Educational Needs and Inclusive Education (CSENIE) at HKIED. The project, 'The Hong Kong Jockey Club SMILE Project' (Supporting & Maximizing Individual Learning Efficacy) aims to offer innovative front-line support in mainstreaming schools in Hong Kong through the provision of different modes of school-based support. One of the objectives is to enhance the professional capacity of teachers in catering for students' diversity. A total of 24 schools will receive intensive school-based support and 120 schools will avail consultancy services from the team for three years. (Annex I – C)

2.5 KT Outputs through Student Engagement

2.5.1 Social, Community and Cultural Engagement: Students are strongly encouraged to participate in social, community and cultural engagement, such as performances and exhibitions of creative works by staff members and students. For example, the Department of Cultural and Creative Arts (CCA) in collaboration with New World First Bus (NWFB) and Citybus, had organized the Arts Bus: On the Move! project over the past three years. With the Hong Kong Museum of Education joining as a new partner, the Arts Bus: On the Move 2013-14! campaign this year comprises 22 arts buses on the road for a period of six months. The HKIED Visual Arts students designed two of the arts buses exteriors and hosted arts and design workshops. Performances of interactive arts bus drama were also delivered by HKIED students together with local actor, bringing a new theatre experience to audiences. In June and July 2014, our students in the project joined school tours with other parties, bringing innovative arts activities to the community.

In addition, CCA held the ARTiViva Festival to bring a series of joyful community-based educational activities to the public. At the Grand Finale to ARTiViva 2013, CCA presented the Grand Gala Concert, which featured the musical accomplishments of students and staff and offer the audience and the community a taste of their musical and creative diversity. our students from different departments performed in the Concert, including HKIED Symphonic Band, HKIED Chinese Orchestra, HKIED Chorus and HKIED Vocal Jazz Ensemble.

To promote teaching as a profession, manifest the importance of education in social development and show appreciation for teachers who nurture the next generation, HKIED organized the “To Teachers with Love – Dr T Design Competition” cum Fundraising Campaign, with the theme of “100% Support for Education”, in August to November 2013.



Art Bus: On the Move! – an art campaign in collaboration with Citybus & NWFB to promote community arts and education.



“To Teachers with Love - Dr T Design Competition cum Fundraising Campaign”



ARTiViva Community Arts Festival Gala Concert presented by the Department of Cultural and Creative Arts on 21 November 2013 at the Hong Kong Cultural Centre.



“CCA Tape Go Go” – 2 famous “Tape Art” artists from the United States invited by C&G Artpartment (藝術到家) and HKIED Visual Arts Students created art pieces with unconventional materials.

2.5.2 Student Internships and Placements: Student internships have been organized by the Student Affairs Office and Faculties to encourage student engagement and services to the community. Students in return have gained experimental learning in their whole-person development. Placements to local schools have also been arranged for all full-time students of education-related programmes. As shown in the list of PIs (Section 3), the number of student internship/placements has increased by 15% over the past three years, from 2,216 in 2011/12 to 2,554 in 2013/14.



Student Su Mei, Bachelor of Education (Honours) (English Language) interned at the British Chamber of Commerce in Hong Kong in 2013.



Student Ting Chui Yee, Bachelor of Education (Honours) (Primary) interned at the 高雄廣播電臺 in 2013.



Student Chan Wing Yan Sophia, Bachelor of Education (Honours) (English Language) interned at the Humboldt-University Berlin (Humboldt) in Germany in 2013.



Student Kwong Ka Yi Kelly, Bachelor of Arts (Honours) in Language Studies interned at the China-Britain Business Council in UK in 2013.

3. Performance Measurement and Performance Indicators (PIs)

The outcomes of KT activities conducted by different units in the Institute are closely monitored using PIs. Faculties, Institute-level research centres, and relevant academic support units are required to submit annual reports on the implementation of their KT activities, including data on a list of PIs that are specific to their key KT activities. KT activities that are evaluated in 2013/14 are categorised as follows:

Continuing Professional Development courses

A total of 15 CPD courses (with 1,684 student contact hours) were delivered in coordination with 4 key partners. Among the beneficiaries of these courses were 590 teachers, and 59 principals.

Professional conferences

A total of 6,431 local/international participants benefited from 23 local/international professional conferences that were organized in cooperation with 84 key partners. A total of 809 presentations were shown.

Professional seminars/workshops

A total of 265 professional seminars/workshops were organized in association with 385 key partners. These were attended by 7,690 teachers, 1,151 principals, and 5,909 other stakeholders.

Commissioned/contract projects

A total of 69 commissioned/contract projects involving 145 key partners were carried out, generating approximately HK\$34 million in income. Beneficiaries included 8,934 teachers, 1,601 principals, 23,370 other stakeholders, 5,733 schools, and 87,484 students.

Partnership projects for change, improvement, and innovation

A total of 82 partnership projects were carried out in association with 317 key partners, generating an income of approximately HK\$11 million. A total of 11,529 teachers, 747 principals, 5,851 other stakeholders, 2,080 schools and 374,783 students benefited from the projects.

Consultancies

A total of 9 consultancy works were conducted by HKIED staff in relating to specific projects, in which 730 teachers, 982 principals, 3,474 other stakeholders, 2,183 schools, 24 organisations and advisory bodies benefited.

Professionals engaged in academic/professional programmes

In 30 academic/professional programmes, 64 teachers, 42 principals and 46 other professionals were engaged. A total of 6,618 participants benefited from these programmes.

Commercialized R&D products

Two commercialised R&D products, which generated a total income of approximately HK\$60,000, were produced.

Social, community and cultural engagement

A total of 248 events were organized, involving public lectures/ symposiums/ seminars/ conferences/ exhibitions and speeches to a community audience. In addition, 19 performances and exhibitions of creative works by staff members and students were also organized.

Staff engaged as members of external advisory bodies

A total of 67 staff members were engaged as members of external advisory bodies in various posts, such as chairpersons, members, consulting editors, associate editors, chief editors, subject experts, and external assessors.

Student engagement

A total of 2,554 student internships/ placements were held by the Institute.

Publicity or media exposure

A total of 1,131 publicity or media exposure initiatives were generated related to KT, including print, online and electronic media.

The Institute has been actively engaged in a wide range of KT activities and initiatives. Hence, the number of key stakeholders who benefited from the Institute's KT activities has steadily increased. Such progress can be seen in the PIs detailed in Annexes II and III.

Numerous schools, classes, principals, teachers, students and other beneficiaries have benefited from KT activities and projects organized by various academic units and research centres. This evidence indicates the substantial contributions of the Institute in advancing and disseminating new knowledge to inform practical improvement, education innovation, professional development and policy making.

4. Looking Forward

The Institute has further expanded its contribution to transforming schools and the community in 2013/14 through its wide range of knowledge transfer activities and multi-disciplinary postgraduate programmes for professionals. The Institute attaches great importance to extending our high-quality, high-impact research and innovative scholarship to the benefit of both the school sector and the wider community. At the current stage, the Institute considers KT as a form of service to the community and as a profession, rather than as a tool to generate revenue.

A KT Director has recently been appointed to assist the Vice President (Research and Development) in enhancing the institutional policies and initiatives on KT. A taskforce is formed to further review the KT strategies of the Institute to encourage academic units or staff to create impacts of their research to the community through KT activities, and to promote their impacts to become more visible through various channels or media means.

The Institute will continue to provide a supportive and sustainable environment for the development of the KT culture. We expect that in the coming five years, the achievements and impacts of the Institute's research and development will reach new heights with its further enhanced research capacity and expanded KT activities.

(i) Project Title

Reforming School Assessment Culture under a New Academic Structure: Assessment for, as, and of Learning

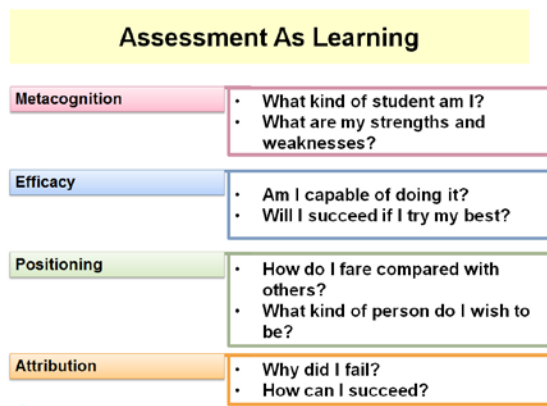
(ii) Name of Principal Investigator

Prof Magdalena Mok Mo-ching, Chair Professor of Assessment and Evaluation and Co-Director of Assessment Research Centre

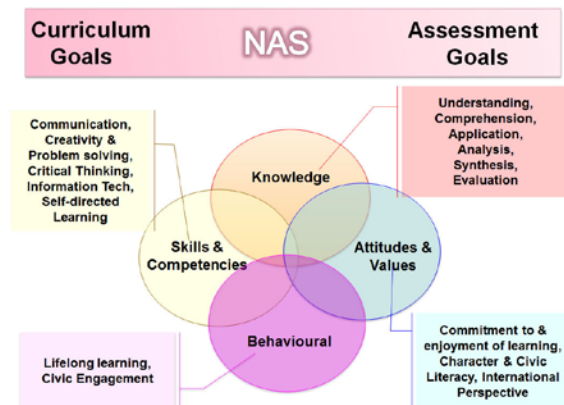
(iii) Summary

The Assessment Research Centre (ARC) believes that assessment is not only a means to evaluate the learning outcomes of students (Assessment of Learning, AOL) but also as a way to provide feedback (Assessment for Learning, AFL) and enhance the metacognition of students (Assessment as Learning, AAL), thereby improving subsequent learning and teaching. By producing academic papers and organising workshops, we promoted the ideas of AOL, AFL, and AAL to local and overseas education communities. Moreover, the collaboration with the Education Bureau (EDB) in mid-2013 provided a good platform for further knowledge dissemination.

[Pic 1: Assessment as Learning, AAL]



[Pic 2: Curriculum and assessment goals in the new academic structure]



From May to October 2013, we 7 seven workshops under the tender project with EDB entitled “Workshop Series for School Leaders on New Academic Structure 2013: Reforming School Assessment Culture under New Academic Structure,” which attracted 404 school leaders (i.e., principal, vice or assistant principals, and panel heads) from 95 secondary schools. In the workshops, we introduced the concepts of AOL, AFL, and AAL with several supporting examples of measurement tools, such as SP Xpress, Rasch, and Lexile. The two secondary school principals we invited shared their collaborative knowledge on good practices of reforming school assessment culture. We encouraged the participating schools to exchange views and interact by randomly assigning them to different groups. Most of the participants showed appreciation toward our arrangement.

[Pic 3 and Pic 4: Participants from different schools discuss in groups]



In addition, 3 seminars were organised in May 2013–October 2013, which attracted over 1,000 participants from approximately 400 secondary schools. Most participants have found the workshops and seminars inspiring. In fact, 11 of the participating schools invited our speaker(s) to visit their schools individually to present the same or similar topics to their teachers, who are unable join the school leader workshops, between August 2013 and June 2014.

(iv) Underpinning Research

We included our previous research on AOL, AFL, and AAL; SP Xpress; Rasch Modelling; and Lexile Framework for Reading to produce materials for the training workshops or seminars. Moreover, we referred to our past findings on quality feedback and achievement goals.

[Pic 5: Prof. Magdalena Mok discusses the use of SP Xpress in school assessment]



[Pic 6: Achievement goals of students has an important role in their academic performance]



(v) References to the Research

Mok, M. M. C. (Ed.)(2013). *Self-directed Learning Oriented Assessments in the Asia-Pacific*. Dordrecht Heidelberg New York London: Springer. (427 pages). ISBN 978-94-007-4506-3 (e-book: ISBN 978-94-007-4507-0)(DOI 10.1007/978-94-007-4507-0).

Mok, M. M. C., Lam, S. M., Ngan, M. Y., Yao, J. J., Wong, M. Y. W., Xu, J. K., & Ting, S. Y. C. (2012). Student-Problem Chart: An Essential Tool for SLOA. In M. M. C. Mok, (Ed.). *Self-directed Learning Oriented Assessments in the Asia-Pacific*, pp. 203-221. New York: Springer. ISBN 978-94-007-4506-3 (DOI 10.1007/978-94-007-4507-0)

莫慕貞、丁彥銓、何昊璇、黃英華、謝棹南、徐坤、姚靜靜 (2011)。優化學習導向評估之 SP Xpress 2.2。Hong Kong: Pace Publications Ltd. (134 pages).

Mok, M. M. C. (2010). *Self-directed Learning Oriented Assessment: Assessment that Informs Learning & Empowers the Learner*. Hong Kong: Pace Publications Ltd. (144 pages)

(vi) Details of the Impact or Benefit

The project enabled school leaders to effectively share their frontline experience on school assessment. In addition, the project facilitated the reflection and preparation of the school leaders for school improvement on assessment culture, providing concrete feedback to school leaders for improving school-based assessment culture. The implemented project also empowered panel heads and teachers to initiate the improvement of the assessment culture, disseminated theoretical knowledge on assessment and, at the same time, suggested concrete steps to apply these theories in practice. Finally, the project introduced the school leaders to various assessment tools (e.g., SP Xpress, Winsteps, and Lexile) and provided them with an understanding of the strengths and limitations of the tools and suggested and discussed ways to effectively plan school-based assessments across year levels from S1 to S6.

A total of 18 workshops and 3 seminars were conducted. These workshops and seminars benefited approximately 2,000 school leaders and teachers from over 500 local secondary schools. The project events yielded a high satisfaction rate. The table below shows the average ratings of each question on the feedback forms collected after the events.

[Pic 7 and Pic 8: Knowledge on assessment is transferred to school leaders during the workshops]



Feedback forms in EDB format

Questions	Ratings (max. 5)
1. The workshop enhances my knowledge toward AFL and AAL.	4.18
2. The workshop enhances my knowledge on school-based assessments across year levels.	4.08
3. The workshop inspires me with ideas of improving school-based assessment culture.	4.13
4. The objective(s) of the workshop is/are achieved.	4.13
5. The information of the workshop is useful to my work.	4.22
6. The speaker(s) is/are well-prepared.	4.62
7. I am satisfied with the performance of the speaker(s).	4.47
8. Overall, I am satisfied with this workshop.	4.25

Feedback forms in ARC format

Questions	Ratings (max. 4)
1. Overall, I am satisfied with the workshop.	3.25
2. The workshop is helpful to my professional development.	3.21
3. The information of the workshop is useful to my work/learning.	3.19
4. Overall, the speaker is effective.	3.34
5. The venue is appropriate for the workshop.	3.32
6. The program is appropriately designed.	3.23
7. The contents of the workshop is consistent with theme of the workshop.	3.35
8. Would you recommend this workshop to your colleagues?	3.02
9. My understanding on the captioned topic improved after the workshop.	3.14
10. I know how to enhance my teaching through the captioned topic after the workshop.	3.10

Not only did we share our knowledge to the workshop participants but we also invited two experienced secondary school principals, who implemented assessment reform in their own schools with remarkable achievements, to transfer their knowledge. This method allowed for the establishment of a foundation for future collaboration between these two schools and those participating schools such that school visits were arranged among them.

(i) Project Title

Transmission of Cantonese Opera as a Cultural Heritage in Schools, Community, Higher education and Professional Sectors: Tradition, Transformation and Beyond

(ii) Name of Principal Investigator

Dr Leung Bo-wah, Associate Professor of Department of Cultural and Creative Arts

(iii) Summary

This project is related to the different aspects and issues of Cantonese opera in Hong Kong. The preservation of the genre faces challenges since it is not welcome by the younger generation and the great masters are in their twilight years. Successful and efficient transmissions of artistry and promotion to the younger audience have been identified as two major issues concerning the sustainability of the Cantonese opera in Hong Kong. The project addresses a broad topic that can be divided into various major aspects, including the transmission of Cantonese opera in schools with a teacher-artist partnership, as well as in oral tradition, community sector, and higher education.

(iv) Underpinning Research

This research was led by Dr Leung Bo Wah, Associate Professor, Department of Cultural and Creative Arts since 2008. Co-investigators in different sub-projects included include Professor Samuel Leong, Head, Department of Cultural and Creative Arts, Dr Cham-Lai Suk Ching, former Principal Curriculum Development Officer (Arts Education), Education Bureau, Dr Mok On-nei, Annie, Lecturer and Mr Raymond Yuen, Senior Teaching Fellow of Department of Cultural and Creative Arts. The following are the key research projects.

Pilot Project on Teaching and Learning of Cantonese Opera in Schools

This project aimed to pilot a teacher–artist partnership approach in teaching Cantonese opera in general music lessons in schools. 2 primary and 2 secondary schools participated in this project with a Cantonese opera artist. During the teaching period, Dr Leung visited each school for class observation, provision of consultation, and feedback. Meanwhile, a set of pre- and post-teaching questionnaires was delivered to all students to gain feedback on their learning. The major focus of the survey was the motivation changes of learning. Findings indicated significant differences in learning motivation enhancement after learning in primary students and less significantly in secondary students. Qualitative data showed that teachers tended to hesitate teaching the genre because they were trained in Western classical music. However, collaboration with an artist is an effective strategy for learning with the artist while teaching. In addition, a CD-ROM was produced to disseminate the findings of the project to all schools in Hong Kong.

Partnership Project on Teaching and Learning of Cantonese Opera in Primary and Secondary Schools

Dr Leung made the project large-scale by further extending it to more schools with the support of the QEF over three years. A total of 48 schools joined the project, with 13 artists, 101 music teachers, and approximately 4800 students. During the study, student motivation learning was also measured with similar results. Furthermore, the Transformative Learning Theory was used as a theoretical framework for investigating some participating teachers' transformation in terms of perceptions toward Chinese



music and Cantonese opera. A longitudinal study was designed by comparing the perception of some teachers who participated in the pilot study and in this study through two rounds of interviews held in 2008 and 2011. Findings reveal that the transformation of teachers' beliefs and musical preferences are difficult and time consuming. However, external environments such as education reform can be a catalyst in facilitating teacher transformation as learning. In addition, long-term experiences in teaching Chinese music may help change teachers' perception. This finding is encouraging in convincing music teachers to teach some genres that they are unfamiliar with. Teaching Cantonese opera in schools is regarded as the foundation of transmission of the genre; it helps nurture the younger generation to develop a basic understanding of the genre so that they can possibly accept and even appreciate

Cantonese opera. Apart from research, two CD-ROMs were produced with video clips of good practices of teaching, a list of teaching materials and audio-visual materials, and teaching plans of participating schools.

Transmission and Pedagogical Models in Cantonese Opera: A Study on the Chinese Oral and the Western Conservatory Traditions in Hong Kong

Nurturing professional artists to transmit artistry from great masters is another major issue. Traditionally, Cantonese opera was transmitted through apprenticeship in an oral tradition. However, apprenticeship faded because of socio-economic changes in Hong Kong. Instead, many artists choose to establish child troupes for students to learn the genre as co-curricular activities. Some schools offer Cantonese opera as an after-school activity. In mainland China, the tradition is to transmit different art forms through higher education programs in academies or universities. Hong Kong has also started to adopt the same approach by establishing university degree and diploma programs to nurture professional artists. Facing such a complicated situation, this study aims to 1) document and investigate the nature and characteristics of apprenticeship in Cantonese opera through in-depth interviews of five master artists with apprenticeship background, 2) investigate two local children troupes for Cantonese opera on their approaches



to transmission, 3) investigate the Cantonese opera programs of two institutions in Hong Kong and China to see how professional artists are nurtured, and 4) integrate all of the above findings to propose a transmission model of Cantonese opera for consideration of relevant parties in Hong Kong.

(v) References to the Research

Key peer-reviewed publications:

Leung, B. W. (under review). Transmission of Cantonese opera in conservatory tradition: Two case studies in south China and Hong Kong. *Music Education Research*.

Leung, B. W. (under review). School as cradle for nurturing professional Cantonese opera artists in Hong Kong: Two case studies. *Research Studies in Music Education*.

Leung, B. W. (2014). Utopia in arts education: The transmission of Cantonese opera with oral tradition in Hong Kong. *Pedagogy, Culture & Society*. [online] DOI: 10.1080/14681366.2014.922604

Leung, B. W. (2014). Teachers' transformation as learning: Teaching Cantonese opera in Hong Kong schools with a teacher-artist partnership. *International Journal of Music Education*, 32(1), 119-131. DOI: 10.1177/0255761413491174

Leung, B. W. (2014). Transmission and Transformation of Cantonese opera in Hong Kong: From School Education to Professional Training. In S. Leong & B. W. Leung (Eds.), *Creative arts in education and culture: Perspectives from Greater China*. Dordrecht: Springer.

梁寶華 (2013) : 香港中小學粵劇教學研究: 教師和藝人之協作和互動, 輯於黃兆漢 (主編), 驚艷一百年: 2013 紀念任劍輝女士百年誕辰粵劇藝術國際研討會論文集, (770-780), 香港, 中華書局。

Leung, B. W., & Leung, E. C. K. (2010). Teacher-artist partnership in teaching Cantonese opera in Hong Kong schools: Student transformation. *International Journal of Education & the Arts*, 11(5). [on-line] website: <http://www.ijea.org/v11n5/>.

Selected External Grant Funding:

1. Pilot Project on Teaching and Learning of Cantonese Opera in Schools
Funding Scheme: Cantonese Opera Development Fund and Metropolitan Lion Club
Principal Investigator: Dr Leung Bo-wah
Period: 2007 – 2008
Amount Awarded: HK\$156,000 + \$46,200
2. Partnership Project on Teaching and Learning of Cantonese Opera in Primary and Secondary Schools
Funding Scheme: Quality Education Fund
Principal Investigator: Dr Leung Bo-wah
Period: 2009 – 2012
Amount Awarded: HK\$2,660,600

3. Transmission and pedagogical models in Cantonese Opera: A study on the Chinese oral and the Western conservatory traditions in Hong Kong (HKIEd-GRF842811)

Funding Scheme: General Research Fund
 Principal Investigator: Dr Leung Bo-wah
 Period: 2011 – 2013
 Amount Awarded: HK\$782,200

(vi) Details of the Impact or Benefit

A major impact of collaborative teaching projects in schools is the promotion of learning Cantonese opera in schools in Hong Kong. The Chinese Artists Association of Hong Kong, the representative organization of Cantonese opera practitioners, liaised with Dr Leung to investigate the possibilities to organize training programs in schools. As a result, three secondary schools started to launch their Cantonese opera programs in both formal and informal curricula.

The impact of the GRF project can be expected soon since the study has just been completed. Dr Leung is going to host a seminar in the Yaumatei Theatre in September 2014 to disseminate the findings of the study. Stakeholders including local and international academics from higher education,

Cantonese opera practitioners and tutors, government officials, and school principals and teachers will be invited to attend the seminar and share their views and comments on the proposed model. More comprehensively designed programmes for nurturing professional artists will be developed in the near future.

Based on his achievements, Dr Leung has become an expert in the international transmission of local cultures and Cantonese opera. He successfully received a book contract from Springer in 2012 to publish his book entitled “Creative arts in education and culture: A perspective from the Greater China” (published in 2013), in which he is one of the co-editors. This book has raised the issue of preservation of traditional cultural arts in Greater China to be an important issue in Asia.

預計首年學習的成果。

創作 - 創作簡單白癡 - 以廣東小調填上新詞或說白。 配以動作，表達簡單情節或故事 - 以粵劇的基本身段，創作動作演出	評賞 - 從音樂、拍子評賞廣東小調 - 分辨動作演出的好壞	技能 - 音樂技巧：拍子、節奏、音準等 - 粵劇演唱：演唱、說白、表演身段 - 中國語文：朗讀、認識語文(語) - 手、腳、腰的姿態及靈活	認識藝術情景 - 不同藝術形式的組合 (如音樂、舞蹈、形體等) - 地方文化與戲劇發展 - 粵劇演出涉及的不同部門
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粵劇課程的出路。



(i) Project title

The Hong Kong Jockey Club SMILE Project
(Supporting and Maximizing Individual Learning Efficacy)

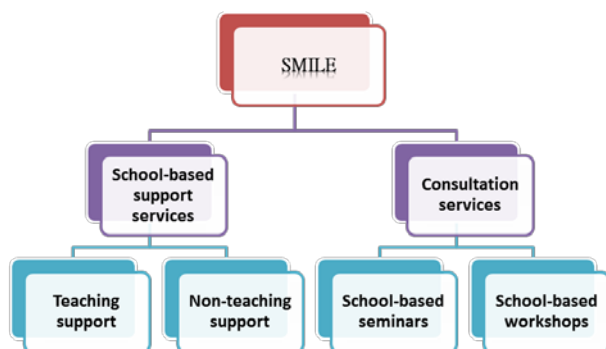
(ii) Name of Principal Investigator

Prof Kenneth Sin Kuen-fung, Professor (Practice) of Department of Special Education and Counselling and Director of Centre for Special Educational Needs and Inclusive Education

(iii) Summary

Through the support of the Education Bureau for the Chief Executive's Community Project in 2012/2013, the Hong Kong Jockey Club Charities Trust funded a three-year project (2013–2016) HKIEd for up to HK\$10.5 million. The project is led by Prof Sin Kuen Fung, Dr Ho Fuk Chuen, and Dr Tsang Kwan Lan Vicky. The beneficiaries are the HKIEd's Department of Special Education and Counselling (SEC) and the Centre for Special Educational Needs and Inclusive Education (CSENIE). The project, entitled 'The Hong Kong Jockey Club Supporting and Maximizing Individual Learning Efficacy (SMILE) Project' will provide innovative front-line support to mainstream Hong Kong schools with the following objectives:

1. To enhance the learning and adaptive abilities of students with attention deficit/hyperactive disorder (AD/HD) or intellectual disability (ID);
2. To aid teachers in the development of appropriate teaching strategies and materials for such students;
3. To improve school-wide approaches to supporting these students by engaging school administration, teachers, and parents;
4. To establish learning communities within schools and enhance the professional capacity of teachers to cater to student diversity through professional exchanges, sharing of resources, and knowledge transfer.



In the project, the expert team will provide innovative front-line assistance to mainstream Hong Kong schools by introducing a wide range of support strategies and curriculum approaches for the diverse learning needs of students with special educational needs (SEN), particularly students with AD/HD and ID. The project tasks will include intensive school-based support, consultancy, seminars on differentiated instruction, empirical study on student learning, school-wide support for teachers adapted to different SEN teacher training profiles, strategic resource production, teacher

empowerment and curricular support. A total of 24 schools will receive intensive school-based support and 120 schools will receive consultancy from the team.

(iv) Underpinning Research

With the development of integrated education, over 30,000 SEN students are presently enrolled in Hong Kong's regular primary and secondary schools. The Education Bureau has provided various types of support to such schools, through grants, workforce, curriculum support, and teacher training. Likewise, HKIED provides teachers a wide range of SEN trainings. In-service training courses mainly aim to transfer skills and knowledge. Thus, school-based support is crucial to assist schools in the development of integrated education and aiding trained teachers to apply what they learned. We note the gap between training and support and seek to adopt strategies to address the challenges entailed by learner diversity, including concerted professional efforts, scientific research, university-school partnerships, and the development of appropriate instructional resources. The proposed project will thus employ a cross-sector collaboration model between universities and schools

(v) References to the Research

The implementation of inclusive education (IE) is one of the most important trends in educational policy around the world. This type of education was mentioned in the Hong Kong Government document *School Education in Hong Kong: A Statement of Aims* in 1993, which states that "every school should help all its students, whatever their level of ability, including those with special educational needs to develop their potential as fully as possible in both academic and non-academic directions". The Hong Kong Education Department started its first pilot project to help mainstream schools accommodate SEN students during the school year 1997–1998. Hence, the Hong Kong Education Bureau has progressively promoted the development of integrated education through different funding schemes, such as the New Funding Mode Scheme (2007–2008), a three-tier school support intervention model (Education Bureau, 2007).

Over the years, CSENIE has completed two territory-wide projects reviewing inclusive education in Hong Kong and Macau. The outcome of the *Study on Equal Learning Opportunities for Students with Disabilities under the Integrated Education System*, funded by the Equal Opportunity Commission, as well as the *Review on the Inclusive Education and Special Education in Macau*, which was funded by the Macau Education and Youth Bureau, led to calls for school reform to cater to diverse learning needs. The insights presented in these reviews facilitated four GRF projects on the following themes:

- Examining the Pivotal Factors of Attitudes Toward Inclusive Education Among Parents of Children with and without Special Educational Needs in a Chinese Community: Hong Kong (2014–2016)
- Examination of the Supporting Mode of Teaching Assistants and the Learning Outcome of SEN students in Inclusive Hong Kong Schools (2013–2015)
- Post-school Outcomes of Senior Secondary Graduates with Special Educational Needs (2012–2014)
- Teaching Students with Autism Spectrum Disorders in Ordinary Schools: Design and Evaluation of a Culturally Sensitive Holistic Inclusive Model (2012–2014)

The SMILE project is expected to contribute to the above research on inclusive practice in Hong Kong schools through the development of professional networks, addressing areas of concern, providing

consultancy, and improving school practices.

(vi) Details of the Impact or Benefit

The project will include a wide range of activities that will highly impact or benefit school reform and introduce inclusive practice.



Firstly, schools with large SEN student populations (i.e., $N > 30$, mostly with AD/HD or ID) will be invited to join the project and receive intensive school-based support. Such support will be provided through 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. External professional support, particularly the testing of differentiated instruction, aims to better equip schools to meet diverse learning needs.



Secondly, consultancy with schools that need immediate help will be arranged. The team will offer consultancy to schools with large AD/HD and ID student populations through staff development programs, resource support, and advice in addressing diverse learning needs. The schools will collaborate with either the CSENIE or SEC that will deploy experts to help in the process. The service may extend to individual parents who need advice for their children with SEN.



Thirdly, annual seminars for primary and secondary school teachers will be organized to share successful practices and new knowledge on SEN teaching and learning. Updates and innovative strategies will be the foci of the seminars.

Fourthly, topics such as “Learning by Students with AD/HD & ID”, “Teacher Effectiveness”, and “School-wide Support Approach” will be examined in participating schools. A comparative study of different school profiles and of teachers with or without training will enhance our understanding of the current development, teacher training, and resource support. The results will inform schools and the government of the current policy’s effectiveness and the need for future changes.

Finally, successful practices and related resources and deliverables will be recorded in CD and handbook forms. Topics will cover strategies in supporting SEN students. Teacher empowerment and curricular support are essential to teacher education and school support.

(vii) References to the Corroboration of Impact or Benefit

By the end of the project, a total of 24 schools will receive intensive school-based support and 120 schools will benefit from the team’s consultancy. With support from the University, the schools may further address the needs of around 4,500 SEN students (mostly with AD/HD or ID). The deliverables and reports will likewise contribute to school development, teacher education and policy making.

Year	Intensive school-based support (108 hours)		Consultancy for schools (18 hours)		Seminars for knowledge transfer
	Secondary School	Primary School	Secondary School	Primary School	Schools
13–14 Semester 1	2	2	10	10	All primary schools
13–14 Semester 2	2	2	10	10	All secondary schools
14–15 Semester 1	2	2	10	10	All primary schools
14–15 Semester 2	2	2	10	10	All secondary schools
15–16 Semester 1	2	2	10	10	All primary schools
15–16 Semester 2	2	2	10	10	All secondary schools
Total	12	12	60	60	1,000 (all schools in HK)
ADHD & ID students (30 per school)	360	360	1,800	1,800	

(i) Project title

Application of Environmental Science and Education in Plastic Waste and Pollution Treatment

(ii) Name of Principal Investigator

Dr Stephen Chow Cheuk-fai, Associate Professor of Department of Science and Environmental Studies and Environmental Technological Innovation Coordinator of Centre for Education in Environmental Sustainability

(iii) Summary

Winner of the 2012/13 President's Award for Outstanding Performance in Research (Early Career Research Excellence Award) from the Institute, Dr Chow is interested in environmental education and science research. In 2013, he and his research partner, Professor Winnie So Wing Mui, obtained a HK\$10 million fund to apply their environmental research to real-world situations through "I Act, U Act!—Education for Plastic Waste Recycling in Primary Schools" and "Design and Synthesis of Bimetallic Complexes to Detect and Degrade Industrial Pollutants."

The dramatic increase in solid waste loads in Hong Kong over the past 10 years indicates that the three strategic landfills in the region will soon be exhausted. Plastic waste comprises approximately 20% of the total waste load in Hong Kong. This problem is a consequence of our overreliance on plastic for clothing, tableware, furniture, electric equipment, bags, and even vehicle components. Plastic harms the environment in the long run because they are nonbiodegradable and can release toxic substances. Considering this situation, Centre for Education in Environmental Sustainability (CEES) and the Lam Foundation are coorganizing an HK\$8 million 4.5 year project entitled, "I Act, U Act!—Education for Plastic Waste Recycling" program. The project leaders, Dr Chow and Professor So, designed the program to educate the next generation, particularly primary school students, on the importance and methods of proper plastic recycling.

Aside from the plastic situation, the extensive use and improper disposal of organic/inorganic chemicals from various industries have also led to serious pollution problems worldwide. Over the past decades, several incidents that involve serious contamination of water sources have resulted in severe financial, political, and health costs. Under this context, Dr Chow and his team designed a multifunctional device that can selectively monitor the level of organic pollutants and magnify weak detection signals, and subsequently, degrade pollutants into harmless substances. To the team's knowledge, no example of such multifunctional molecular device has been reported in previous studies.

(iv) Underpinning Research

The underpinning research was conducted by the research team led by Dr Chow, associate professor at the Department of Science and Environmental Studies (SES), The Hong Kong Institute of Education, and his research partner, Professor So, director of CEES and head of SES, Faculty of Liberal Arts and Social Sciences, The Hong Kong Institute of Education, since the establishment of CEES in 2013.

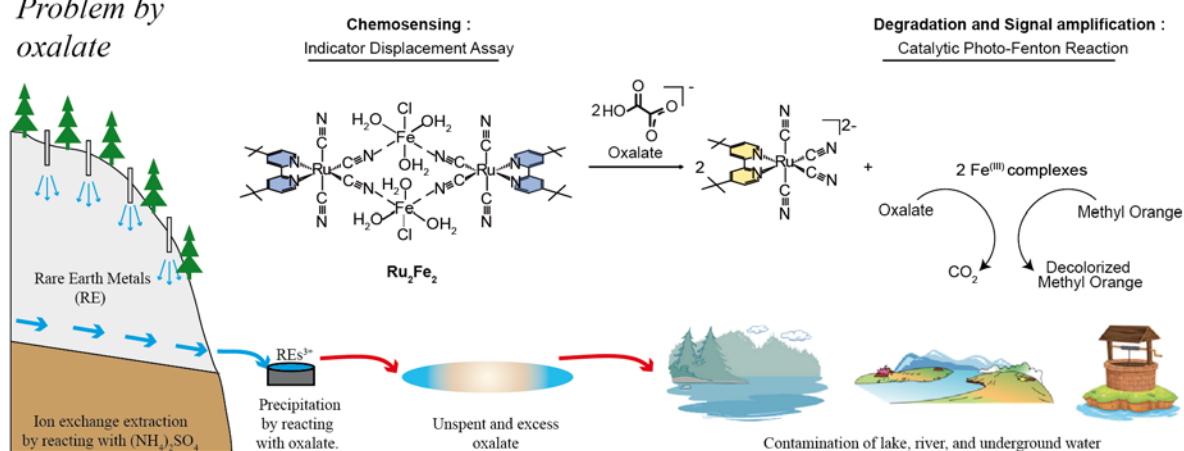
The plastic waste situation is a critical problem worldwide; thus, a study that aims to investigate the effects of novel scientific and educational innovations in plastic waste recycling on students is imperative. Dr Chow and Prof. So used instruments such as specifically designed plastic recycling bins as well as pre- and post-test questionnaires and inquiry learning tools to assess change in knowledge, attitude, and behavior of students toward plastic classification. The results reveal that inquiry learning strategies significantly improve knowledge of students regarding plastic classification as well as their corresponding beliefs.



The widespread use of organic chemicals in various industries has led to serious wastewater problems worldwide. Dr Chow explores the feasibility of a new type of multifunctional supramolecular device that includes the functions of a chemosensor, a photooxidation catalyst, and catalytic signal amplifiers to treat spent chemicals (e.g., cyanide, oxalic acid, azo dyes, carboxylic acids, and organophosphate pesticides). Through a special chemical design, the device can first determine the concentrations of pollutants in water bodies through signal amplification and then degrade the pollutants into harmless substances. The smart molecular device can automatically degrade pollutants when their levels reach a certain detection threshold.

Environmental Problem by oxalate

Solving the Problem by:



(v) References to the Research

The research was supported by a grant from the Early Career Scheme (ECS) of the Research Grants Council, a grant from the Crouch Foundation, and a donation from the Lam's Foundation grants. The team published 10 articles in reputable science and education journals. All publications are listed in the SCI/SSCI international database, which is recognized worldwide. According to the Journal Citation Report® 2012, six of Dr Chow's articles are rated among the top 10%. One of his articles, which concerns the chemosensing of dimethyl sulfide in foods, was highly recognized and even highlighted as the cover story.

Key Peer-reviewed Publications:

Chow, C. F., Ho, P. Y., Gong, C. B. (2014). Ru(II)-Fe(III) Bimetallic Complex as a Multifunctional Device for Detecting, Signal Amplifying, and Degrading Oxalate DOI: 10.1039/C4AN00350K. *Analyst*.

Nie, H. M., Gong, C. B., Tang, Q., Ma, X. B., **Chow, C. F.** (2014). Visual and Reversible Detection of Cyanide Ions in Protic Solvents by a Novel Colorimetric Receptor. *Dyes and Pigments*, 106, 74–80.

Chow, C. F., Gong, F. W., Gong, C. B. (2014). Chemodosimetric Analysis in Food-Safety Monitoring: Design, Synthesis, and Application of Bimetallic Re(I)-Pt(II) Complex for Detection of Dimethyl Sulfide in Foods (COVER PAGE) DOI:10.1039/C4AN00120F. *Analyst*.

Chow C. F., Lam M. H. W., Wong W. Y. (2013). Design and Synthesis of Heterobimetallic Ru(II)-Ln(III) Complexes as Chemodosimetric Ensembles for the Detection of Biogenic Amine Odorants. *Analytical Chemistry*, 85, 8246–8253.

Chow C. F., Kong H. K., Leung S. W., Chiu B. K. W., Koo C. K., Lei E. N. Y., Lam M. H. W., Wong W. T., Wong W. Y. (2011). Heterobimetallic Ru(II)-Eu(III) Complex as Chemodosimeter for Selective Biogenic Amine Odorants Detection in Fish Sample. *Analytical Chemistry*, 83, 289–296.

Selected External Grant Funding:

1. Design and synthesis of bimetallic complexes as bifunctional molecular devices for simultaneously detection and degradation of industrial pollutants (HKIED-ECS800312)

Funding Scheme: Early Career Scheme
Principal Investigator: Dr Stephen Chow Cheuk-fai
Period: 2013 – 2015
Amount Awarded: HK\$825,000

2. Bimetallic-based Strategies for Simultaneously Detection and Remediation of Environmental Pollutants (HKIED-M5002)

Funding Scheme: The Croucher Foundation
Principal Investigator: Dr Stephen Chow Cheuk-fai
Period: 2012 – 2013
Amount Awarded: HK\$144,400

3. “I Act, U Act!” – Education for Plastic Waste Recycling at Primary School

Funding Scheme:	The Lam’s Foundation
Principal Investigator:	Dr Stephen Chow Cheuk-fai and Prof Winnie So Wing-mui
Period:	2014 – 2019
Amount Awarded:	HK\$8,000,000

(vi) Details of the Impact or Benefit

Through knowledge transfer processes that involve extensive interactions with the educational and industrial sectors, the research of Dr Chow and his team has achieved significant global impact.

A total of 32 primary schools with an estimated 15,000 students have joined and benefited from the project. Collaborating partners, including nongovernmental organizations and recycling companies, such as the Yan Oi Tong EcoPark Plastic Resources Recycling Center, have started receiving processed plastic waste with high recycling value from this project. In addition, educational resources have become publicly accessible after project completion.

Based on the success of the research in the areas of chemistry, environment, and education, a collaborative research project called “Development and Application of Supramolecular Sensors for Detecting Water Pollutants” coheaded by Dr Chow and in coordination with the Shenzhen Water (Group) Company Ltd., the City University of Hong Kong, and the Hong Kong Institute of Education (HKIED), is funded by HK\$1 million the PRC Guangdong Province and Ministry.

(vii) References to the Corroboration of Impact or Benefit

Award

Dr Chow received the President’s Award for Outstanding Performance in Research (Early Career Research Excellence Award) from HKIED 2012/13.

Membership in external bodies

Dr Chow was appointed as a visiting professor to the South China Normal University, as well as a member of the Hong Kong Diploma of Secondary Education-Chemistry Subject Committee, Hong Kong Examinations and Assessment Authority (HKEAA), the Curriculum Development Council-HKEAA Committee on Chemistry, the Curriculum Development Institute, and HKEAA. He was appointed as panel adjudicator for the Primary Science Project Competition, the Hong Kong Student Science Project Competition, and the Hong Kong Budding Scientists Award.

教院「膠再用」計劃 明年25小學推行



小學生到教院玩攤位遊戲，認識塑膠回收現況。

教院供圖

香港文匯報訊（記者 鄭伊莎）香港固體廢物過去數十年持續增加，塑膠廢物佔近25%。有見及此，香港教育學院可持續發展教育中心及林氏基金，今年起協辦涉及800萬元的塑膠廢物回收教育計劃——「教育起動，塑膠再用」，為期4年半，有意於明年初在全港其中25間小學推行。教院昨日舉行計劃開幕典禮及大型展覽會，展出多個以塑膠廢物處理為主題的展板及活動攤位，吸引過百名專家學者、業內人士、大專院校及中小學生參加。

塑膠在港生活中無處不在，但其不易分解的特性會為環境帶來破壞，內含的有

毒塑料更會致癌。

首創塑膠分類回收箱

為有效回收塑膠產品，教院可持續發展教育中心總監蘇詠梅及教院科學與環境學系副教授周卓輝，首創把塑膠再分類的回收箱，根據塑膠材料編碼、回收比例及體積，設有獨立回收格，讓使用者按照塑膠種類回收，減低業界回收成本。

中心有意於明年初在全港其中25間小學推行計劃，並為參加的學生大使提供培訓，又於學校設置回收箱推行。蘇詠梅指，希望計劃可提升及培養小學生對塑膠分類的認知、態度和行為，並提升教育界及公眾對環境可持續發展的關注。

教院推8格塑膠分類回收箱

【明報專訊】市區和一般屋苑均有擺放「三色回收箱」分別回收塑膠、廢紙及鋁罐，但所回收的塑膠未經分類，回收商需先把塑膠分類才能加工處理，增加成本。香港教育學院可持續發展教育中心昨推出設有8格的「塑膠分類回收箱」，讓教院學生按塑膠材料的編碼（1至7號，寫於塑膠製品三角形回收標誌的中間）投入不同的回收格中，稍後會將回收箱推展至25所小學。

身兼教院科學與環境學系系主任的可持續發展教育中心總監蘇詠梅，及教院科學與環境學系副教授

周卓輝收集了日本、台灣及香港3地不同類別塑膠的體積數據及回收比率，計算出「塑膠分類回收箱」中不同類別的容量。回收箱一共有8個小格，按塑膠編碼中的1至7號設計，另加一個小格回收塑膠的合成製品，如鐵和膠緊黏在一起的剪刀。

將推展至25小學

蘇詠梅表示，會先在教院擺放兩個2米乘1.6米高的「塑膠分類回收箱」，明年5月起逐步推展至25所小學。周卓輝希望可藉此減低回收業界再分類成本，推廣至全港使用。



教院可持續發展教育中心昨推出「塑膠分類回收箱」，設有8個小格，回收不同類型的塑膠。教院科學與環境學系系主任蘇詠梅（左）及教院科學與環境學系副教授周卓輝（右）稱，希望藉此減低回收後再分類的成本。

（劉焯陶攝）

(i) Project title

Social and Policy Studies: Poverty in Hong Kong

(ii) Name of Principal Investigator

Prof Chou Kee-lee, Professor and Head, Department of Asian and Policy Studies

(iii) Summary

Currently, approximately 20% of Hong Kong people live in poverty. The objective of this project is to develop the best measurement of poverty and identify the causes, consequences, and effective intervention for poverty in different target populations, including the aged population, children, working, and single parents. Led by Prof Kee-Lee Chou, the HKIEd project team is undertaking a number of large-scale longitudinal studies on which the poverty issues for these vulnerable groups are examined. Moreover, micro-simulation models are developed to project the poverty situation in the future decades and how the existing and proposed measures alleviate the poverty problem in Hong Kong. The efforts of this research team have drawn attention from the mass media, policy makers, and the general public. The findings of this investigation will have a strong policy implication in the development of a retirement income protection system and poverty alleviation measures in Hong Kong.

(iv) Underpinning Research

Old-age Poverty

Prof Chou is conducting a five-year project, which is funded by the Strategic Public Policy Research Scheme, that evaluates whether our retirement income protection system is effective in eradicating old-age poverty and examines how we can improve our system. We address this problem by using different approaches, including comparative policy analysis, computer micro-simulation modeling, trend analysis, longitudinal data, and information from in-depth interviews of opinion leaders and an opinion survey of the general public.

港人退休儲蓄接近四千億

【本報訊】一項由香港社會政策研究社（社研社）最近發表的調查顯示，港人退休儲蓄總額接近四千億元。調查發現，港人退休儲蓄總額中，有百分之四十一點五是由公積金、公積金及公積金外儲蓄所組成。其餘百分之五十八點五則由個人退休儲蓄、強積金、強積金外儲蓄及個人退休儲蓄外儲蓄所組成。

調查亦發現，港人退休儲蓄總額中，有百分之四十一點五是由公積金、公積金及公積金外儲蓄所組成。其餘百分之五十八點五則由個人退休儲蓄、強積金、強積金外儲蓄及個人退休儲蓄外儲蓄所組成。

調查亦發現，港人退休儲蓄總額中，有百分之四十一點五是由公積金、公積金及公積金外儲蓄所組成。其餘百分之五十八點五則由個人退休儲蓄、強積金、強積金外儲蓄及個人退休儲蓄外儲蓄所組成。

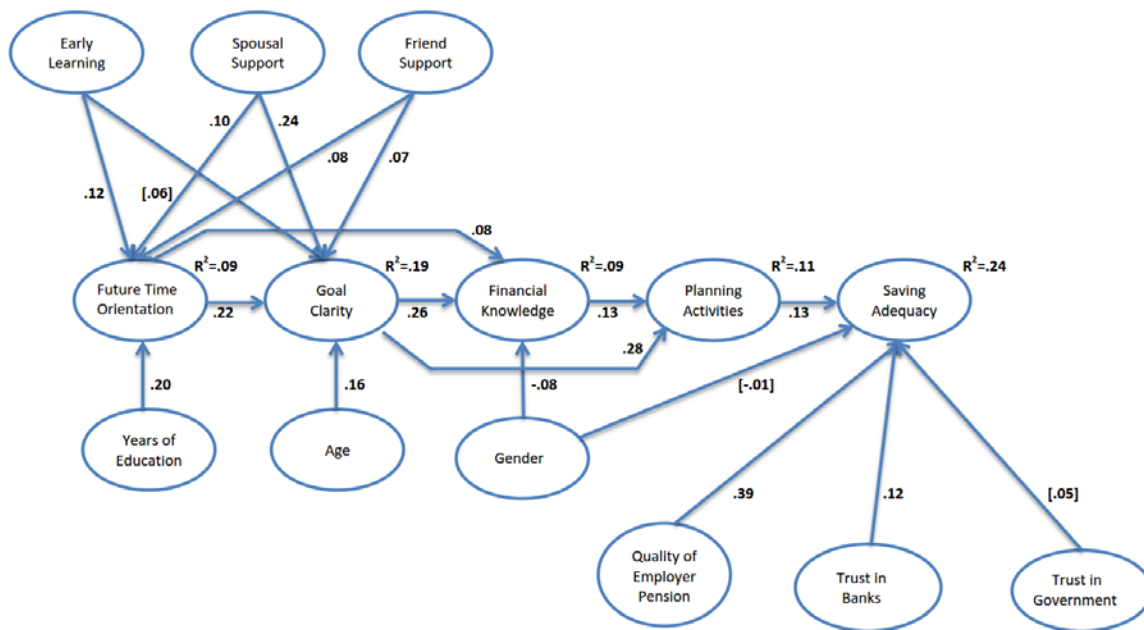
港人退休儲蓄習慣

儲蓄習慣	調查總數	佔總戶數	佔總儲蓄
除公積金、公積金、公積金外儲蓄外，沒有其他退休儲蓄	41.5%	11.4%	41.5%
<\$100,000	10.4%	10.4%	10.4%
\$100,000-\$499,999	15%	6.7%	15%
\$500,000-\$999,999	6.7%	6.7%	6.7%
\$1,000,000-\$1,999,999	6.6%	6.6%	6.6%
\$2,000,000-\$4,999,999	4.1%	4.1%	4.1%
≥\$5,000,000	4.3%	4.3%	4.3%

推算港人退休儲蓄總金額

儲蓄習慣	佔總戶數	佔總儲蓄	總金額 (億元)
除公積金、公積金、公積金外儲蓄外，沒有其他退休儲蓄	41.5%	41.5%	164.49
<\$100,000	10.4%	10.4%	10.40
\$100,000-\$499,999	15%	6.7%	6.70
\$500,000-\$999,999	6.7%	6.7%	6.70
\$1,000,000-\$1,999,999	6.6%	6.6%	6.60
\$2,000,000-\$4,999,999	4.1%	4.1%	4.10
≥\$5,000,000	4.3%	4.3%	4.30
總計	100%	100%	398.39

Figure 1: Path analysis model of Retirement Saving Adequacy in Hong Kong



Note: All path coefficients shown are standardized beta weights. Values in brackets are statistically insignificant at the 5% level.

Moreover, we will develop new measures of old-age poverty, such as expenditure-based, asset-based, absolute measure, social exclusion, and material deprivation indices. This initiative is funded by the Humanity and Social Sciences Prestigious Fellowship Scheme. These new measurements will reflect other dimensions of poverty especially relevant to the elderly, for example, access to health care. Therefore, this study will contribute significantly to the academic literature and to practical policy in poverty reduction.

Child Poverty



Child poverty has profound detrimental effects on children's development and educational attainment.

However, the child poverty rates in migrant families compared with those in Hong Kong-born families remain largely unknown. Therefore, we investigate child poverty in immigrant families and its trend in the

past 30 years so that intervention can be devised to combat child poverty in immigrant families. This study is funded by Public Policy Research Scheme.

Chou, K.L., Cheung, K.C.K., Lau, M.K.W. and Sin, T.C.H. (2014). Trend in child poverty in Hong Kong immigrant families. *Social Indicators Research*, 117, 811–825.

Chou, K.L. (2013). Familial effect of child poverty in Hong Kong Immigrant Families. *Social Indicators Research*, 113, 183–195.

Selected External Grant Funding

1. Creating an Adequate and Equalizing but Affordable Retirement Protection System in Hong Kong (HKIED 7001-SPPR-11)

Funding Scheme: Strategic Public Policy Research Scheme
Principle Investigator: Prof Chou Kee-lee
Period: 2012–2017
Amount Awarded HK\$3,250,000

2. Universalism or means-tested benefits for children and single mothers

Funding Scheme: General Research Fund
Principle Investigator: Prof Chou Kee-lee
Period: 2014–2016
Amount Awarded HK\$1,592,500

3. Poverty in old age: New Measurement

Funding Scheme: Humanities and Social Sciences Prestigious Fellowship Scheme
Principle Investigator: Prof Chou Kee-lee
Period: 2015
Amount Awarded HK\$920,000

4. Combating in-work poverty

Funding Scheme: General Research Fund
Principle Investigator: Prof Chou Kee-lee
Period: 2015–2017
Amount Awarded HK\$968,000

5. Longitudinal linkages between family income and learning outcomes among children: Testing two underlying mechanisms

Funding Scheme: Early Career Scheme
Principle Investigator: Dr Kelvin Cheung Cho-kin
Period: 2015–2017
Amount Awarded HK\$659,408

6. Poverty of children living in immigrant families (HKIED 7005-PPR-12)

Funding Scheme: Public Policy Research Scheme
Principle Investigator: Prof Chou Kee-lee
Period: 2013–2014
Amount Awarded HK\$135,744

(vi) Details of the Impact or Benefit

On November 7, 2012, we held a press conference to release the results of a study on retirement private savings in Hong Kong. We found that about 41% of workers do not save for their retirement and that financial literacy is low among them. The findings of the study were reported by eight major newspapers in Hong Kong and used by Mandatory Provident Fund Authority (MPFA) in their Liberal Studies Teaching Kit for secondary school students. MPFA informed me about their consultant paper on the core fund immediately before their press conference because of our work in this area.

On December 13, 2012, we held a press conference to release the findings of an investigation on child poverty in Hong Kong. Our results indicate that about 26% of children live in poverty and that the problem is particularly serious among new arrival and single-parent families. Eleven major newspapers covered our story the day after the press conference.

On January 31, 2013, we held a press conference to release the findings of a study on educational inequality in Hong Kong. We found that the disparity in higher education attainment between the rich and the poor has been widening in the past 20 years despite the rapid expansion of Hong Kong publicly funded undergraduate places in the same period of time. The findings were widely reported on television, radio, and newspapers. Prof Chou was interviewed by NOW Television, cable television, Phoenix TV, Commercial Radio, Hong Kong Radio, and Education Bureau. Chair professors from HKUST and HKU requested the full report.

On June 7, 2013, we held a press conference to release the findings of a study related to the anti-poverty effect of public rental housing. We found that the anti-poverty impact of public rental housing depends on the methods used to estimate the subsidies of public rental housing. The findings were reported by eight major newspapers in Hong Kong.

On August 1, 2013, we held a press conference to release the findings of a study on the severe poverty in Hong Kong. We found that about 8% of Hong Kong people or 545,393 residents live in severe poverty. This figure is the bottom half of the households living below the poverty line (half of the median household income). The findings were widely reported in major newspapers.

On October 29, 2013, we held a press conference to release the findings of a study on child poverty among ethnic minorities in Hong Kong. Our study shows that the Pakistani and mixed (Chinese and other Asian) child poverty rates are much higher than those of Chinese in Hong Kong. These findings were widely reported on television (ATV), radio (CRHK and RTHK), and nine major newspapers. Dr. Celesta Yuen was interviewed by TVB News, and Prof Chou was interviewed by RTHK.

(vii) References to the Corroboration of Impact or Benefit

Since September 2012, we have published 56 newspaper articles on retirement income protection and poverty in the Hong Kong Economic Journal, Mingpao, and Hong Kong Economic Times.

Number of Beneficiaries ^{Note 1}

Key Beneficiary Item	Nature of KT Activities involved ^{Note 2}	2013/14
Number of schools benefited	Categories (4), (5) & (6)	9,996
Number of principals benefited	Categories (1), (3), (4), (5) & (6)	4,511
Number of teachers benefited	Categories (1), (3), (4), (5) & (6)	29,308
Number of students benefited	Categories (4) & (5)	462,267
Number of conference participants benefited	Category (2)	6,431
Number of organizations/ advisory bodies benefited	Category (6)	24

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.

Summary of Performance Indicators

Performance Indicators for Knowledge Transfer Activities			2012/13 (1 July - 30 June)	2013/14 (1 July - 30 June)
1	Continuing Professional Development (CPD) Courses	Number of CPD courses	15	15
		Income from CPD courses	\$9,528,980	\$7,394,000
		Number of key partners	7	4
		Number of student contact hours	1,472	1,684
2	Local/International Professional Conferences	Number of local/international conferences	24	23
		Income from conferences	\$338,439	\$583,700
		Number of key partners	111	84
		Number of presentations	832	809
3	Professional Seminars/Workshops	Number of professional workshops/ seminars	255	261
		Income from seminars/workshops	\$959,492	\$714,050
		Number of key partners	258	355
4	Commissioned/Contract Projects	Number of commissioned/ contract projects	46	69
		Income from projects	\$38,146,179	\$34,107,843
		Number of key partners	126	145
5	Partnership Projects for Change, Improvement & Innovation	Number of partnership projects	85	82
		Income from partnership projects	\$10,083,442	\$10,894,087
		Number of key partners	347	317
6	Consultancies	Number of consultancies	13	9
		Income from consultancies	\$2,096,447	\$1,827,045
7	Professionals Engaged in Academic/Professional Programmes	Number of programmes involved	35	30
		Number of teachers engaged	89	64
		Number of principals engaged	16	42
		Number of other professionals engaged	43	46
8	Commercialized R&D Products and Intellectual Properties(IPs)	Number of commercialized R&D products/ IPs	5	2
		Income from the R&D products/ IPs	\$3,615	\$60,000
9	Social, Community and Cultural Engagement	Number of public lectures/ symposiums/ exhibitions and speeches to a community audience	229	244
		Number of performances and exhibitions of creative works by staff or students	19	19
10	Staff Engaged as Professional Consultants or Members of External Advisory Bodies	Number of staff engaged	32	67
11	Student Engagement	Number of student internships/ placements	2,490	2,554
12	Publicity or Media Exposure	Number of publicity or media exposure related to KT, including print, on-line and electronic media	--	1,131
13	Nexus between Research and Teaching	Number of academic staff using research in teaching/ course activities	248	270
		Percentage of academic staff using research in teaching/ course activities	78.7%	83.3%
		Number of academic staff using teaching as research	124	163
		Percentage of academic staff using teaching as research	39.4%	50.3%
14	Publications with Local and Regional Impacts	Number of publications directly relevant to improvement, innovation and development of professional/educational practices/ policy development	732	684

Notes:

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