

Research Assessment Exercise 2020

Impact Case Study

University: [The Chinese University of Hong Kong |

Unit of Assessment (UoA): [UoA#41—education (incl. curriculum & instruction, education administration & policy and other education) |

Title of case study: [International Student Assessment and Monitoring of Basic Education |

(1) Summary of the impact (indicative maximum 100 words)

[Taking the lead to participate in Programme for International Student Assessment (PISA) among Chinese societies, the Hong Kong Centre for International Student Assessment (HKCISA) has provided baseline indicators for benchmarking the quality and equality of Hong Kong basic education against international standard since the systemic education reform commenced. It has inspired PISA to introduce a new parent survey and developed a new assessment tool. It has also enhanced the analysis and dissemination practices in the global community, development of network for monitoring education quality in Asia-Pacific regions, initiation of PISA in China, and professional collaboration in promoting educators' assessment literacy.]

(2) Underpinning research (indicative maximum 500 words)

[PISA is a triennial international study organized by the Organisation for Economic Co-operation and Development (OECD) which aims to evaluate education systems worldwide. In Hong Kong, HKCISA has successfully implemented the first six cycles of PISA, shedding light on both the quality and equality of Hong Kong's education system, which has undergone a systematic and vigorous reform since 2000.

The coverage of different academic intake in school sampling, which was first used by HKCISA in PISA 2000+, has provided a reliable control for assessing school effectiveness and student improvement of Hong Kong and established baseline and benchmark indicators for delineating the accomplishments and challenges of the education reform [3.1, 3.2, 3.3]. For instance, the outstanding reading performance of Hong Kong students has lent support to the important role of "reading to learn", while their drop in science performance in 2015 has indicated the weaknesses in local STEM education.

Given its cyclical and global nature, PISA enables policymakers to monitor changes in Hong Kong students' performance over time and to make comparisons with other countries [3.1, 3.2]. Over the first six cycles, Hong Kong students performed well and ranked among the top ten of all participating countries/regions in reading, mathematical and scientific literacy. Nevertheless, their non-cognitive outcomes such as test anxiety and self-concept were poorer than the OECD average. Similar patterns have been found in other East Asian societies [3.1]. These findings have been taken as important references by the HKSAR Government, subject experts and educators in evaluating education policies and practices [3.3].

Besides the assessment of literacy performance, participants of PISA including about 30,000 students and their parents, 3,000 teachers and 900 school principals in Hong Kong completed questionnaires for gathering contextual information, which has created a solid base for policy-oriented analysis of the assessment results. HKCISA has developed a parent questionnaire since PISA 2000+, which identifies the essential aspects of parental involvement and investment affecting student learning outcomes [3.4]. This created an impetus for the PISA consortium to include parent survey as a new dimension which was administered as a national option since PISA 2006.

While PISA is a cross-sectional study focusing on 15-year-old students, HKCISA has initiated a ten-year longitudinal research project of adolescents, the first-of-its-kind in Hong Kong since 2013,

for tracing the patterns of transition of PISA 2012 student participants from adolescence (15 years old) to young adulthood (25 years old) and assessing their well-being and capabilities [3.5, 3.6]. A valid and reliable tool named as “Career and Educational Decision Self-Efficacy Inventory for Secondary Students” (CEDSIS) has been developed for assessing the educational and career decision-making self-efficacy of secondary students [3.5]. The project has also contributed to the fields of sociology and higher education by integrating Bourdieu’s reproduction theory and Sen’s capability approach for understanding the relative autonomy of adolescents’ educational expectations [3.6]. Three major grants have been secured for this longitudinal study. With the mixed method design and interdisciplinary collaboration, the findings have provided insights with depth and breath for informing youth transition policies [3.6].

(3) References to the research (indicative maximum of six references)

- [3.1] Ho, S. C. (Ed.) (2017). *What We Learned from PISA: The Outstanding Performance of Students in Hong Kong and East Asia*. Singapore: World Scientific Publishing. Available at: <https://doi.org/10.1142/10198>
- [3.2] Ho, S. C. (2012, 2013). *Student Learning Assessment. Asia-Pacific Education System Review Series No. 5*. Bangkok: UNESCO Bangkok, Asia and Pacific Regional Bureau for Education; Hong Kong: Hong Kong Institute of Education Research, The Chinese University of Hong Kong. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000217816>
- [3.3] Ho, S.C. (2016). The use of large scale assessment (PISA): Insights for policy and practice in the case of Hong Kong. *Research Papers in Education*, 31(5), 516-528. Available at: <https://www.tandfonline.com/doi/full/10.1080/02671522.2016.1225351>
- [3.4] Chiu, M. M., & Ho, S. C. E. (2006). Family effects on student achievement in Hong Kong. *Asia Pacific Journal of Education*, 26(1), 21-35. Available at: <https://www.tandfonline.com/doi/full/10.1080/02188790600607846>
- [3.5] Ho, S.C., & Sum, K. W. (2016). Construction and Validation of the Career and Educational Decision Self-Efficacy Inventory for secondary Students (CEDSIS). *Journal of Psychoeducational Assessment*, 36(2), 162-174. Available at: <https://journals.sagepub.com/doi/full/10.1177/0734282916674135>
- [3.6] Keung, C. P. C., & Ho, E. S. C. (2019). Structure and Agency in Adolescents’ Expectations of Pursuing Post-secondary Education. *Research in Higher Education*, 1-26. Available at: <https://link.springer.com/article/10.1007/s11162-019-09574-8>

(4) Details of the impact (indicative maximum 750 words)

Having secured competitive grants totalling to over HK\$28 million from 2013 to 2019 [5.1], HKCISA has successfully conducted PISA and the follow-up longitudinal project and brought the following significant impact.

(a) Strengthening the Educational Development in Chinese Societies, Asia-Pacific Regions and beyond

Professor Esther Ho, Director of HKCISA, has been invited to provide consultancy and training for the implementation and analysis of PISA in China [5.2]. HKCISA research team has also been invited to support the educational development of Asia-Pacific Regions and beyond by capitalizing on its expertise in conducting PISA. Particularly, Professor Ho has been a founding member of the Steering Group of Network for Education Quality Monitoring in the Asia-Pacific Region (NEQMAP) established by UNESCO since 2013. This regional network is now participated in by more than 50 government officials and scholars. HKCISA takes an active role in fostering the capacity building, educational quality monitoring research and knowledge sharing among the 20 participating countries/regions [5.3].

From 2009 to 2015, Professor Ho was elected as the Chairperson of Analysis and Dissemination Group (ADG), which advises the OECD-PISA Governing Board (PGB) on the development of

frameworks describing the scope and dimensions of assessment in each PISA cycle, and on the production of PISA thematic reports and other research outputs [5.4]. As the Chairperson, she initiated the survey of analysis and dissemination measures used by the PISA participating countries, which has been continued in each PISA cycle since then.

HKCISA team members were also invited as speakers to share the PISA findings and implications to scholars, officials from governments, UNESCO and World Bank in more than 40 international conferences and seminars in over 15 Asian, American and European countries.

(b) Informing Educational Policy and Monitoring the Basic Education System in Hong Kong

The results of PISA 2000+ to 2015 in Hong Kong have improved the Government's understanding of the status quo of Hong Kong basic education system. Especially, the outstanding performance of Hong Kong students has been cited by the HKSAR Government in policy documents to substantiate the direction of basic education curriculum reform [5.5 (p.2-6, 12-14)] and implementation of "reading to learn" as one of the four key tasks in basic education [5.5 (p.7-11)], and to review the New Academic Structure [5.5 (p.15-19)]. On the other hand, the drop in science performance in PISA 2015 was said to be possibly "attributable to the reduced intensity of science education in new senior secondary curriculum (NSSC) adopted since 2009" [5.5 (p.20-24)], and has prompted the Government and leading scientists to revisit the effectiveness of local STEM education and the admission requirements of local universities [5.5 (p.20-24), 5.6]. This research impact is achieved by HKCISA's effort to keep PISA low-stakes by protecting the confidentiality of school and student identity during the first six PISA cycles.

(c) Improving Educational Practices and Connecting Different Stakeholders

HKCISA has made good use of findings from each PISA cycle to inform education stakeholders by various dissemination measures. In each cycle, HKCISA released the PISA results in a press conference, which attracted a wide coverage in about 20 local newspapers and media [5.7 (p.2-11)]. Besides, a school seminar was held in each cycle to report the results to over 300 secondary school principals, teachers, scholars and government officials, which was well received as evidenced by the high evaluation ratings (4.3 and 4.2 out of 5 points for PISA 2012 and 2015 seminars respectively). Participating schools were informed of their performance by about 900 individual school reports and an online School Data Enquiry System (SDES) developed by HKCISA. Schools testified that they could track their performances in different PISA cycles and make use of school-level PISA data in designing their school development plan [5.7 (p.12-19)].

(d) Professional Collaboration for Enhancing Assessment Literacy and Practices

The subject experts of HKCISA shared PISA findings in over 20 (since 2013) seminars and workshops co-organized with the Education Bureau of HKSAR Government and local professional organizations in education [5.8]. In these events, HKCISA made use of the PISA's state-of-the-art assessment framework and released items to cultivate teachers' assessment literacy and practice. Moving beyond the local level, the HKCISA team was invited to hold professional development activities for policy analysts in Vietnam in 2015 [5.9] and for teachers in Malaysia in 2015 and 2016 [5.10]. These activities have been well received by the participants and have attracted the Ministry of Education in Malaysia to conduct a series of similar teacher training workshop on PISA-like item development [5.10].

(5) Sources to corroborate the impact (indicative maximum of 10 references)

[5.1] Competitive grants records of HKCISA relating to the impact case from 2013 to 2019.

[5.2] Certificates/letters of appointment for providing consultancy and training for PISA in China.

[5.3] Evidence of NEQMAP (Letter of appreciation and references of NEQMAP).

- [5.4] Chair of OECD PISA Analysis and Dissemination Group (2012 to 2016). Extracted pages from Directory of Bodies of the OECD 2012. Paris: OECD.
- [5.5] Citations in policy arena (Extracted pages from the references of Education Bureau and Legislative Council).
- [5.6] The Academy of Sciences in Hong Kong. (2016). Science, Technology and Mathematics Education in the development of the Innovation and Technology Ecosystem of Hong Kong.
- [5.7] Evidence showing the use of PISA data by HKCISA for general public and schools (Selected newspaper and media reportages on PISA 2015 result release; Program and presentation of schools which testified using HKPISA data for school improvement).
- [5.8] Letters of appreciation from local professional organizations.
- [5.9] Letters and program from the Ministry of Education and Training, Vietnam.
- [5.10] Letter and certificates of recognition for contributions to PISA from Universiti Sains Malaysia.