Research Assessment Exercise 2020
Impact Overview Statement

University: The Education University of Hong Kong
Unit of Assessment (UoA): 11 Mathematics and statistics
Total number of eligible staff of the university in the UoA: 13

(1) Context

For research related to mathematics education, the main non-academic user groups and beneficiaries are within the education sector, including teachers and students in kindergartens, primary and secondary schools and other universities, as well as policymakers overseeing education, notably the Education Bureau, and educational technology companies taking advantage of the pedagogical developments. Students are the ultimate beneficiaries. Aligning with the University's Education Plus mission to lead educational innovation, and to promote and support the strategic development of disciplines complementary to education, and as a result of multi-disciplinary collaboration, some research has benefits for the wider general public and commercial sector, such as companies in the financial sector, and the MTR Corporation.

The most significant types of impact are *impacts on practioners and students* from the enhancement of teaching and student learning in mathematics across all levels of education within and beyond Hong Kong through innovations in mathematics teaching; *impact on education policy*; and *economic impact* for companies taking advantage of new policies, curricula and pedagogical developments in schools resulting from the research. There are also *impact on technological resources*.

(2) Approach to impact

Our approach to achieving impact has 5 major elements:

1. *Ensuring the quality, rigour and relevance of our research*, which underpins our value to and reputation in the wider society;

2. *Building strong networks* with policymakers (such as Education Bureau [EDB]); and engaging with school leaders and middle-leaders, to ensure our research is relevant and knowledge can be transferred. We have done this by accepting invitations to participate in policy advisory committees such Curriculum Development Council (CDC); and CDC-HKEAA Committee on Mathematics; and organising our own international events for policymakers, school practitioners and academics, such as International Conference on Mathematics and Mathematics Education (ICMME) (July 2016) and, the Mathematics Olympiad (collaborating with the EDB and schools).

3. We have *tendered for research* that will support local education policy and schools, such as partnering with schools (e.g. Wong's QEF project on the flipped classroom to enhance mathematics education).

4. We have sought out *cross-disciplinary and international collaboration* to strengthen our research and impact (e.g. Ling's research).

5. We implemented a *coherent communications and media strategy* across multiple platforms to engage with the potential beneficiaries of our research, in partnership with the University's Communications Office.

(3) Strategy and plans

Strategy and plans to achieve impact will start at the research planning process, where proposals will include attention to their relevance and strategies for achieving impact. Other plans to transfer our knowledge and achieve impact include continuing to host conferences and reach out to schools through hosting the Mathematics Olympiad and our teacher training and development activities. We will strengthen our national and international networks by building our Visiting Scholar programme and taking advantage of the Croucher Foundation and Tin Ka Ping visitorships. We will adopt a more holistic approach that seeks to align our research with policy directions for STEM education; transfer knowledge through teacher development workshops and Professional Development Programmes and make use of our new Committee for Special Projects to tender for research needed by the community.

(4) Relationship to case studies

Dr Ling's case study reflects Unit's approach to impact, first through ensuring the quality and rigour of the research that underpins the impact. The Unit advised on, supported and approved the grant applications. It supported the collaboration with the project partners: City University of Hong Kong, Chinese University of Hong Kong, Hong Kong Polytechnic University, The University of Hong Kong, National Taiwan University, University of Colorado, Georgia Tech, MTR Corporation Limited, Taipei Metro, and The Taiwan High Speed Rail Corporation; it provided manpower resources for project completion, and supported the researcher in a communications strategy, including the sharing his research outcomes with the engineering industry.