

WORLD EDUCATIONAL RESEARCH ASSOCIATION

International Research Network “Computational Thinking Education in Primary and Secondary Schools”

Annual Progress Report for IRN Year 1 (1 May 2019 - 30 April 2020)

A. List of IRN Participants

1. KONG, Siu Cheung [Convener]	(The Education University of Hong Kong, Hong Kong)
2. LOOI, Chee Kit [Co-Convener]	(Nanyang Technological University, Singapore)
3. BISWAS, Gautam	(Vanderbilt University, USA)
4. CHAN, Tak-Wai	(National Central University, Taiwan)
5. HOPPE, Ulrich	(University Duisburg-Essen, Germany)
6. HUANG, Ronghuai	(Beijing Normal University, China)
7. JONG, Morris Siu-Yung	(The Chinese University of Hong Kong, Hong Kong)
8. MILRAD, Marcelo	(Linnaeus University, Sweden)
9. NUSSBAUM, Miguel	(The Catholic University of Chile, Chile)
10. OGATA, Hiroaki	(Kyoto University, Japan)
11. SHIH, Ju-Ling	(National Central University, Taiwan)
12. SO, Wing Mui Winnie Kong)	(The Education University of Hong Kong, Hong Kong)
13. SPECHT, Marcus	(Technical University of Delft, The Netherlands)
14. SULLIVAN, Florence	(University of Massachusetts Amherst, USA)

B. Accomplishment of IRN in Year 1 (1 May 2019 - 30 April 2020)

Since its inception in May 2019, the IRN has targeted on investigating and advocating the practice, research and policy conducive to the effective computational thinking education in primary and secondary schools. As at the date of report submission, the IRN organized two external panels; held one internal meeting; submitted one symposium-proposal; and signed one book-contract for achieving the IRN-specific research initiatives.

<i>Past Events</i>	<i>Outcomes</i>
<u>1st IRN-specific panel</u> [in CTE 2019] June 12, 2019 // 11:45 am to 12:45 pm // The Education University of Hong Kong, Hong Kong	- Organized an IRN-specific panel for disseminate purposes
<u>2nd IRN-specific panel</u> [in ICCE 2019] December 5, 2019 // 11:20 am to 12:20 pm // Howard Beach Resort Kenting, Taiwan	- Organized an IRN-specific panel for disseminate purposes
<u>1st IRN meeting</u> [in ICCE 2019] December 5, 2019 // 12:20 pm to 1:20 pm // Howard Beach Resort Kenting, Taiwan	- Initial IRN plans for collaboration synergy on funding application and publication preparation
<u>Preparation: IRN-specific symposium for WERA Focal Meeting 2020+1</u> March 2020 // WERA	- Submitted a proposal for organizing an IRN-specific symposium
<u>Preparation: IRN-specific academic book</u> April 2020 // The MIT Press	- Completed contract-signing for IRN-specific book publication

IRN Past Event 1: The external panel at CTE (International Conference on Computational Thinking Education) 2019 on June 12, 2019 was entitled “International Forum on Research, Practices and Policies on Computational Thinking Education in K-12”. The IRN Convener, the IRN Co-Convener, and three IRN Participants served as the panelists to deliver panel presentations for disseminating the overall vision of the IRN on computational thinking education. This panel was well-received by the conference participants.

IRN Past Event 2: The external panel at ICCE (International Conference on Computers in Education) 2019

on December 5, 2019 was entitled “Assessments for Computational Thinking in Primary and Secondary Schools”. The IRN Convener, the IRN Co-Convener, and one IRN Participant served as the panelists to deliver panel presentations for disseminating the advocacy of the IRN on the assessment for computational thinking education. This panel was well-received by the conference participants.

IRN Past Event 3: The first internal meeting at ICCE (International Conference on Computers in Education) 2019 on December 5, 2019 was chaired by the IRN Convener, with the presence of the IRN Co-Convener and three IRN Participants. The delegates mutually shared research experience and insights on the progress of computational thinking education in their own countries/regions. This first meeting led to initial plans of collaborative effort among IRN Participants in funding application and publication preparation.

IRN Past Event 4: The IRN submitted a symposium proposal, as invited by WERA Secretariat, for organizing an invitational symposium “Learning Analytics for Supporting Computational Thinking Development” in WERA Focal Meeting 2020+1 in July 2021 at Universidad de Santiago de Compostela, Spain. The proposed symposium will focus on discussing and illustrating how to take advantage of learning analytics tools to facilitate the assessment of computational thinking.

IRN Past Event 5: The IRN completed contract-signing with The MIT Press for publishing the IRN-specific academic book “Computational Thinking Education in K-12: Artificial Intelligence Literacy and Physical Computing”, which is planned to be published by December 2020. The IRN Convener and four IRN Participants will contribute book chapters to this book.

C. Immediate Plans of IRN for Year 2 (1 May 2020 - 30 April 2021)

For Year 2, the IRN plans to organize one international academic conference; hold three internal meetings; and prepare for one book-publication for the further progress of the IRN-specific research initiatives.

<i>Coming Events</i>	<i>Expected Outcomes</i>
<u>1st IRN-specific conference</u> [CTE 2020] August 19-21, 2020 // The Education University of Hong Kong, Hong Kong	- Organization of the conference CTE 2020
<u>2nd IRN meeting</u> [in CTE 2020] August 19-21, 2020 // The Education University of Hong Kong, Hong Kong	- Draft of research proposal(s) and/or academic publication(s)
<u>3rd IRN meeting</u> [in GCCCE 2020] September 12-16, 2020 // Northwest Normal University, Lanzhou, China	- Draft of research proposal(s) and/or academic publication(s)
<u>4th IRN meeting</u> [online meeting in ICCE 2020 (fully online conference)] November 23-27, 2020 // Organizer: Asia-Pacific Society for Computers in Education (APSCE) // Host: Charles Darwin University, Australia	- Draft of research proposal(s) and/or academic publication(s)
<u>Publication: IRN-specific academic book</u> By December 2020 // Cambridge, MA: The MIT Press	- Publication of an IRN-specific academic book

IRN Coming Event 1: The first IRN-specific conference – International Conference on Computational Thinking Education (CTE) – will be held at the Education University of Hong Kong, Hong Kong, in August 2020. Members in the IRN serve as the conference chair, international advisory committee members and international program committee chairs of CTE 2020. This conference is expected to help the IRN linking with the CTE community, and also spreading research ideas and scale up scholarly endeavors of the IRN.

IRN Coming Event 2 to Coming Event 4: The IRN Convener will chair the second to fourth internal meetings at CTE (International Conference on Computational Thinking Education) in August 2020, GCCCE (Global Chinese Conference on Computers in Education) in September 2020, and ICCE (International Conference on Computers in Education) in November 2020. These meetings are expected to lead to the draft of the proposal(s) for IRN-specific research and the IRN paper(s) for academic publication at a later stage.

IRN Coming Event 5: The IRN will continue preparing the publication of the IRN-specific academic book “Computational Thinking Education in K-12: Artificial Intelligence Literacy and Physical Computing”, which is planned to be published by MIT Press by December 2020.