

Programme at a Glance

Date	Time	Items	
18 December, 2019	9:00 ~	Registration	
	9:30 - 10:00	Welcome Speech: Dr. Simon So	
	10:00 - 11:00	Presentation Session 1	
	11:00 - 12:00	Presentation Session 2	
	12:00 - 13:30	Lunch	
	13:30 - 14:30	Presentation Session 3.1 and 3.2	
	14:30 - 15:30	Presentation Session 4.1 and 4.2	
	15:30 - 16:00	Coffee Break	
	16:00 - 17:00	Presentation Session 5.1 and 5.2	
19 December, 2019	9:30 ~	Registration	
	10:00 - 11:00	Local Teacher Sharing Session 1 (Cantonese with supplementary English)	Hands-on Session 1
	11:00 - 12:00	Keynote Speech 1: Prof. Mitchel Resnick	
	12:00 - 13:30	Lunch	
	13:30 - 14:30	Local Teacher Sharing Session 2 (Cantonese with supplementary English)	Hands-on Session 2
	14:30 - 15:30	Local Teacher Sharing Session 3 (Cantonese with supplementary English)	Hands-on Session 3
	15:30 - 16:00	Coffee Break	
	16:00 - 17:00	Local Teacher Sharing Session 4 (Cantonese with supplementary English)	
	18:00 - 20:00	Conference Dinner	
20 December, 2019	9:30 ~	Registration	
	10:00 - 11:00	Presentation Session 6.1 and 6.2	
	11:00 - 12:00	Keynote Speech 2: Dr. Hidenobu Sumioka	
	12:00 - 13:30	Lunch	
	13:30 - 14:30	Presentation Session 7.1 and 7.2	
	14:30 - 15:30	Presentation Session 8.1 and 8.2	
	15:30 - 16:00	Coffee Break	
	16:00 - 17:00	Session's Best Award and Closing Session	

Day 1: 18 December, 2019 (Wednesday)

9:30 – 10:00	Welcome Speech: Dr. Simon So Venue: D1-LP-02
Session 1 Theme: Invited and PC Member Presentation Times: 10:00 – 11:00 Venue: D1-LP-07 Session Chair: TBC	
10:00 – 10:30	Challenges and Opportunities with Hong Kong Students' STEM Aspirations: An Exploratory Analysis with Gifted Student Members (Invited Presentation) <i>Tze Ho Fung, Research Division, Hong Kong Academy for Gifted Education, Hong Kong</i> <i>Wing Mui Winnie So, Centre for Education in Environmental Sustainability, The Education University of Hong Kong, Hong Kong</i>
10:30 – 11:00	Integrated STEM: A Practical Model (Virtual Presentation) <i>Mahnaz Moallem, Department of Educational Technology & Literacy, College of Education, Towson University, Towson Maryland, U.S.A.</i>
Session 2 Theme: PC Member Presentation Times: 11:00 – 12:00 Venue: D1-LP-07 Session Chair: TBC	
11:00 – 11:30	Scientific Computing for First-year Students at Liberal Arts Colleges in USA (Virtual Presentation) <i>Arun K. Sharma, Department of Physical Sciences, Wagner College, USA</i>
11:30 – 12:00	Children Doing Mathematics Research Projects: A Pedagogical Experiment (Virtual Presentation) <i>Mei-Shiu Chiu, Department of Education, National Chengchi University, Taiwan</i>
Session 3.1 Theme: STEM Teacher Education and Professional Development Times: 13:30 – 14:30 Venue: D1-LP-07 Session Chair: TBC	
13:30 – 13:50	School-STEM Professional Collaboration: Teachers' Concerns for Implementing STEM Learning <i>Wing Mui Winnie So, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i> <i>Qianwen He, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i> <i>Yu Chen, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i>
13:50 – 14:10	Equipping Teachers in STEM education for Intelligent Disability Students by Peer Coaching <i>Wing Mui Winnie So, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i> <i>Qianwen He, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i>

14:10 – 14:30	<p>Relationships Between STEM Teacher Preparedness and Secondary School Teachers' Belief and Competence in China</p> <p><i>Mingming Zhou, Faculty of Education, University of Macau, Macau SAR</i></p> <p><i>Huan Song, Institute of Teacher Education, Beijing Normal University, China</i></p> <p><i>Xiaotian Zhang, Faculty of Education, University of Macau, Macau SAR</i></p> <p><i>Jianjian Wu, Institute of Teacher Education, Beijing Normal University, China</i></p>
<p>Session 3.2 Theme: Pedagogical Strategies to STEM Education</p> <p>Times: 13:30 – 14:30 Venue: D1-LP-08</p> <p>Session Chair: TBC</p>	
13:30 – 13:50	<p>Problem Solving as a Creative Critical Process in STEM Pedagogy</p> <p><i>Allen Leung, Department of Education Studies, Hong Kong Baptist University, Hong Kong SAR</i></p>
13:50 – 14:10	<p>The Pedagogy of Applying Augmented Reality in Coding Education</p> <p><i>James K.S. Tang, School of Science and Technology, The Open University of Hong Kong, Hong Kong SAR</i></p> <p><i>Jeff K.T. Tang, School of Science and Technology, The Open University of Hong Kong, Hong Kong SAR</i></p> <p><i>Fu-lee Wang, School of Science and Technology, The Open University of Hong Kong, Hong Kong SAR</i></p> <p><i>Tak-lam Wong, Faculty of Computing Studies and Information Systems, Douglas College, Canada</i></p>
14:10 – 14:30	<p>A Study on Productive Failure as a STEM Pedagogy</p> <p><i>Orieta Hing-yi Wong, Centre for Special Educational Needs and Inclusive Education, The Education University of Hong Kong, Hong Kong</i></p> <p><i>Terrence Wai-keung Wong, Carmel Alison Lam Foundation Secondary School, Hong Kong</i></p>
<p>Session 4.1 Theme: STEM Teacher Education and Professional Development</p> <p>Times: 14:30 – 15:30 Venue: D1-LP-07</p> <p>Session Chair: TBC</p>	
14:30 – 14:50	<p>Developing a MOOC for the Professional Development of STEM Educators</p> <p><i>Yeung Chung Lee, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i></p> <p><i>Wing Yan Valerie Yip, Faculty of Education, The University of Hong Kong, Hong Kong</i></p> <p><i>Kwok-chi Victor Lau, Department of Curriculum and Instruction, The Chinese University of Hong Kong, Hong Kong</i></p> <p><i>Siu Shu Eddie Lam, Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hong Kong</i></p> <p><i>Chi Ho Yeung, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i></p>

14:50 – 15:10	<p>Developing In-service Primary Teachers' Professional Competence in Coding, Physical Computing and Computational Thinking</p> <p><i>Wing Wah Simon So, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p>
15:10 – 15:30	<p>Design of a Blended Course for Interdisciplinary STEM Teacher Learning (Virtual Presentation)</p> <p><i>Jolien De Meester, Faculty of Engineering Science, KU Leuven, Belgium</i></p> <p><i>Wim Dehaene, Faculty of Engineering Science, Department of Electrical Engineering ESAT-MICAS, KU Leuven, Belgium</i></p> <p><i>Hanne Deprez, Faculty of Engineering Technology, KU Leuven, Belgium</i></p> <p><i>Kristien Van Loo, Faculty of Engineering Science, KU Leuven, Belgium</i></p>
<p>Session 4.2 Theme: Pedagogical Strategies to STEM Education</p> <p>Times: 14:30 – 15:30 Venue: D1-LP-08</p> <p>Session Chair: TBC</p>	
14:30 – 14:50	<p>A Case Study on Adopting Innovative Pedagogical Strategies in STEM Education in a Primary School</p> <p><i>Yanjie Song, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong PRC</i></p> <p><i>Jiixin Cao, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong PRC</i></p>
14:50 – 15:10	<p>Exploring Students Performance in ICT-Supported STEM Learning Activities at Primary School</p> <p><i>Wing Kei Yeung, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p> <p><i>Daner Sun, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p>
15:10 – 15:30	<p>STEM Education in Action: an Experience of Teaching an Aeronautical Course</p> <p><i>Wing Shui Ng, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p>
<p>Session 5.1 Theme: Curriculum Design and Literacy Development in STEM</p> <p>Times: 16:00 – 17:00 Venue: D1-LP-07</p> <p>Session Chair: TBC</p>	
16:00 – 16:20	<p>Examining Artificial Intelligence Literacy of Primary School Students in Indonesia</p> <p><i>Stefanus Relmasira, Department of Primary Teacher Education, Universitas Kristen Satya Wacana, Indonesia</i></p> <p><i>Yiu Chi Lai, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p> <p><i>Chi Fuk Henry So, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p>

16:20 – 16:40	<p>Obstacles to Interdisciplinary STEM Curriculum: A Bernsteinian Analysis <i>Ka-Lok Cheng, Faculty of Education, The University of Hong Kong, Hong Kong</i></p>
<p>Session 5.2 Theme: Assessment and Evaluation of STEM Times: 16:00 – 17:00 Venue: D1-LP-08 Session Chair: TBC</p>	
16:00 – 16:20	<p>Principal Engagement in the Evaluation Process: Teacher Narratives <i>Ahmed Mohammed Alkaabi, United Arab Emirates University, Al Ain, UAE</i></p>
16:20 – 16:40	<p>Instruments to Measure Improvement in STEM Related Career Aspiration <i>Rong Kang, Center for Child and Family Science, The Education University of Hong Kong, Hong Kong</i> <i>Yu Chen, Department of Science and Environmental Studies, The Education University of Hong Kong, Hong Kong</i></p>
16:40 – 17:00	<p>Hong Kong Secondary Students' View of STEM and Their STEM Career Interest <i>Hui Min Chia, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i> <i>Qiaoping Zhang, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p>

Day 2: 19 December, 2019 (Thursday)

19/12 ASTEM Workshop					
Time	Event				
09:30 - 10:00	Registration 登記				
10:00 - 11:00	宣道會鄭榮之中學 "具芬蘭特色的STEM教育" <i>Location: D1-LP-06</i>	宣道會陳朱素華紀念中學 "由拔尖到普及的校本STEM課程" <i>Location: D1-LP-07</i>	荔景天主教中學 "STEM Education: How to help students to think outside the box in practice STEM教育：如何讓學生在實踐中跳出思維框框" <i>Location: D1-LP-08</i>	大埔舊墟公立學校(寶湖道) "多元化體驗式STEM課程" <i>Location: D2-LP-10</i>	STEM 工作坊 (1) "Have a fun classroom with Scratch x micro:bit" <i>Location: D3-LP-11</i>
11:00 - 12:00	Keynote Speech "Cultivating Creativity Through Coding" Prof. Mitchel Resnick, LEGO Papert Professor of Learning Research at the MIT Media Lab <i>Location: D1-LP-02</i>				
12:00 - 13:30	Lunch 午餐 (有膳食提供)				
13:30 - 14:30	Ms. LIU, Shu Ting 劉舒婷老師 "First timer in design and innovation" <i>Location: D1-LP-06</i>	樂善堂余近邨中學 "From Coding, STEM, Maker to AI Education - Curriculum Planning and Implementation 由編程教育、STEM教育、創客教育走向人工智能教育，如何有效規劃及推展課程" <i>Location: D1-LP-07</i>	香港浸會大學附屬學校王錦輝中小學 "物聯網概念在本校小學部已經開始萌芽了 - 從歸納經驗，走向創建解決方法" <i>Location: D1-LP-08</i>	中華基督教青年會小學 "一間小學的STEM教育" <i>Location: D2-LP-10</i>	STEM 工作坊 (2) "Quick Prototyping Workshop - The Internet of Things" #m5Stack <i>Location: D3-LP-11</i>
14:30 - 15:30	中華基督教會燕京書院 "STEM x AI - Promoting STEM Education with 5E Instructional Model (STEM x AI - 透過5E學習模式推動STEM教育)" <i>Location: D1-LP-06</i>	香海正覺蓮社佛教正覺中學 "從STEM 教育走出「多元能力、多元出路」" <i>Location: D1-LP-07</i>	明愛胡振中中學 "Development of interdisciplinary STEAM projects: linking to the curriculum and reinforcing learning" #Arduino #RaspberryPi #Python #Scratch #DataLogger <i>Location: D1-LP-08</i>	聖愛德華天主教小學 "STEM x 創新教育" <i>Location: D2-LP-10</i>	STEM 工作坊 (3) "Make Fun Games with Scratch x micro:bit" <i>Location: D3-LP-11</i>
15:30 - 16:00	Coffee Break 茶點				
16:00 - 17:00	中華基督教會協和小學 <i>Location: D1-LP-06</i>	薈色園主辦可道中學 "STEM 教育發展在可道" #光雕 #RaspberryPi3 #GoogleAI <i>Location: D1-LP-07</i>	禮賢會彭學高紀念中學 "創客教育計劃" #maker #makereducation <i>Location: D1-LP-08</i>	伯裘書院 <i>Location: D2-LP-10</i>	香港聖公會何明華會督中學 "AI 教育初探" <i>Location: D3-LP-07</i>

Day 3: 20 December, 2019 (Friday)

Session 6.1 Theme: Exploring STEM Practices Times: 10:00 – 11:00 Venue: D1-LP-07 Session Chair: TBC	
10:00 – 10:20	Autonomous Transport System Explained with Lego Mindstorms EV3 <i>Hiu Laam Naomi Lee, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i> <i>Wai Man Winnie Lam, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i>
10:20 – 10:40	A Case Study of Using Single Board Computers to Promote Stem Education in Hong Kong Primary Schools <i>Ruiqian Yang, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i> <i>Yiu Chi Lai, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i>
Session 6.2 Theme: Digital Technologies for Learning and Teaching in STEM Times: 10:00 – 11:00 Venue: D1-LP-08 Session Chair: TBC	
10:00 – 10:20	The Impact of Different Combinations of Media in a Flipped Mathematics <i>Chun Wai Andy Fan, Faculty of Education, University of Macau, Macau SAR, China</i> <i>Yuntao Joseph Zeng, Faculty of Education, University of Macau, Macau SAR, China</i>
10:20 – 10:40	Creative Visuals for STEM: Video for Building Student Confidence and Enhancing Teacher Preparation <i>Rushton Hurley, Next Vista for Learning, USA</i>
11:00 – 12:00	Keynote Speech "Social Robots for Touch Interaction and Education" <i>Dr. Hidenobu Sumioka, Leader of Presence Media Research Group in Hiroshi Ishiguro Labs, and Interaction Dynamics Lab in Norihiro Hagita Labs, ATR.</i> Venue: D1-LP-02
Session 7.1 Theme: Gender Perspectives in STEM Times: 13:30 – 14:30 Venue: D1-LP-07 Session Chair: TBC	
13:30 – 13:50	Interdisciplinary STEM Education for Girls in School <i>Wan Ng, STEM Education Futures Research Centre, University of Technology Sydney, Australia</i>
13:50 – 14:10	Enhancing Gender Diversity in STEM Through Informal Education Efforts (Virtual Presentation) <i>Mindy Levine, Department of Chemical Sciences, Ariel University, Israel</i>

Session 7.2 Theme: Early STEM Learning and Teaching Perspectives Times: 13:30 – 14:30 Venue: D1-LP-08 Session Chair: TBC	
13:30 – 13:50	<p>How Do Chinese Kindergarten Teachers Interact with Children during Engineering Designed Process (EDP) in the Architecture-based Blocks Building Activity: Teacher-Child Interaction Patterns and the Perceived Obstacle</p> <p><i>Liman Cai, Faculty of Education, South China Normal University, China</i></p> <p><i>Dandan Wu, Department of Educational Studies, Macquarie University, Australia</i></p> <p><i>Jie Zhu, Faculty of Education, University of Hong Kong, Hong Kong SAR, China</i></p> <p><i>Xi Chen, Faculty of Education, South China Normal University, China</i></p> <p><i>Hui Li, Department of Educational Studies, Macquarie University, Australia</i></p>
13:50 – 14:10	<p>Are Pre-service Teachers Ready to Integrate Technology in Early Childhood Classrooms? The Role of Demographic Factors</p> <p><i>Weipeng Yang, S R Nathan School of Human Development, Singapore University of Social Sciences, Singapore</i></p> <p><i>Dandan Wu, Department of Educational Studies, Macquarie University, Australia</i></p> <p><i>Ting Liao, Department of Early Childhood Education, Zhanjiang Preschool Education College, China</i></p> <p><i>Hui Li, Department of Educational Studies, Macquarie University, Australia</i></p>
14:10 – 14:30	<p>Validation of the Technological Pedagogical Content Knowledge Questionnaire with Chinese Pre-service Preschool Teachers</p> <p><i>Weipeng Yang, S R Nathan School of Human Development, Singapore University of Social Sciences, Singapore</i></p> <p><i>Dandan Wu, Department of Educational Studies, Macquarie University, Australia</i></p> <p><i>Ting Liao, Department of Early Childhood Education, Zhanjiang Preschool Education College, China</i></p> <p><i>Hui Li, Department of Educational Studies, Macquarie University, Australia</i></p>
Session 8.1 Theme: Exploring Modelling in Mathematics Learning Times: 14:30 – 15:30 Venue: D1-LP-07 Session Chair: TBC	
14:30 – 14:50	<p>The Icon of Mathematical Modeling in STEM Education</p> <p><i>Xiaowei Huang, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p> <p><i>Kui Chiu Issic Leung, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p> <p><i>Ka Luen Cheung, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p> <p><i>Man Ho Ling, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong SAR, China</i></p>

14:50 – 15:10	<p>After-School Support Programme: An Analysis of Linear Mixed Modelling Using Data of Non-Standardised School Assessments</p> <p><i>Chun-Yeung Lee, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p> <p><i>King Shun Leung, Department of Mathematics and Information Technology, The Education University of Hong Kong, Hong Kong</i></p>
15:10 – 15:30	<p>Mathematical Modelling vs Artificial Intelligence in High-School Curriculum</p> <p><i>Ieng Tak Leong, Department of Mathematics, Faculty of Science and Technology, University of Macau, Macau</i></p> <p><i>Hio Tong Wu, Department of Mathematics, Faculty of Science and Technology, University of Macau, Macau</i></p>
<p>Session 8.2</p> <p>Times: 14:30 – 15:30</p> <p>Session Chair: TBC</p>	<p>Theme: Maker Education facilitating STEM Learning</p> <p>Venue: D1-LP-08</p>
14:30 – 14:50	<p>Problems Identification As the Key to STEM Exploration — A Study on Science Maker Activity</p> <p><i>Po-Ling Wu, National Taiwan Normal University, Taipei, ROC (Taiwan)</i></p> <p><i>Hsiao-Lan Chen, National Taiwan Normal University, Taipei, ROC (Taiwan)</i></p>
14:50 – 15:10	<p>Developing Computational Thinking and Mathematical Problem Solving Through Digital Making</p> <p><i>Tsz-kit Ng, Hong Kong Chinese Women’s Club College, Hong Kong</i></p> <p><i>Oi-lam Ng, Department of Curriculum and Instruction, The Chinese University of Hong Kong, Hong Kong</i></p>
15:10 – 15:30	<p>The Impact of Tinkering and 3D Printing on Female Students Interest in STEM Career</p> <p><i>Naglaa Ali, Emirates College for Advanced Education, United Arab Emirates</i></p>
16:00 – 17:00	<p>Session’s Best Award and Closing Session</p> <p>Venue: D1-LP-02</p>