

# PROGRAM AT A GLANCE

**DSC:** Doctoral Student Consortia    **ECW:** Early Career Workshop

**W:** Workshop    **WIPP:** Work-in-progress Posters

All times are in Bangkok Time Zone

November 22 (Monday)	November 23 (Tuesday)	November 24 (Wednesday)	November 25 (Thursday)	November 26 (Friday)
8:00 – 10:00 Tutorial / W02 / W03 / W04 / W06 / W09	8:00 – 10:00 DSC / W01 / W07 / W08 / W12		8:00 – 9:00 Keynote: Tiffany BARNES	
		9:00 – 9:40 Opening Ceremony	9:00 – 9:40 Theme-based Speaker (Jon MASON)	9:00 – 10:00 Keynote: Gwo-Jen HWANG
		9:40 – 10:00 DRA Speech	9:40 – 10:00 Parallel Sessions	
10:00 – 10:20 Break		10:00 – 10:10 Break		
		10:10 – 11:10 Keynote: Kulthida TUAMSUK	10:10 – 12:30 Panel 3	10:10 – 11:20 Parallel Sessions
10:20 – 12:00 Tutorial / W02 / W03 / W04 / W06 / W09	10:20 – 12:00 DSC / W01 / W07 / W08 / W11 / W12			11:20 – 12:30 Parallel Sessions
		11:10 – 12:30 Parallel Sessions		11:10 – 12:00 Closing Ceremony
12:00 – 1:00 Lunch		12:30 – 1:30 Lunch		
1:00 – 3:00 Student Wing Meeting W02 / W05 / W06 W09 / W11	1:00 – 3:00 ECW / W01 / W07 / W10 / W12	1:30 – 2:50 Panel 2	1:30 – 2:50 Parallel Sessions	1:00 – 3:30 EC Meeting
			1:30 – 2:30 Keynote: Pierre DILLENBOURG	
			2:30 – 2:40 Break	
		2:50 – 3:00 Break	2:40 – 3:40 Panel 1	2:40 – 4:00 Parallel Sessions
3:00 – 3:20 Break		3:00 – 3:40 Theme-based Speaker (Ana GIMENO)	3:00 – 4:00 Parallel Sessions	
3:20 – 5:00 SIG Leaders Meeting W02 / W05 / W06 W09 / W11	3:20 – 5:00 ECW / W01 / W07 / W10 / W12		4:00 – 5:30 Parallel Sessions	
			3:40 – 4:20 Theme-based Speaker (Baltasar FERNANDEZ- MANJON)	4:00 – 4:30 Parallel Sessions
			4:30 – 5:30 Posters / WIPP	
	5:00 – 6:00 IPC Meeting			

### November 22 (Monday)

Time	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
8:00 – 10:00	Tutorial - Kit-Build Concept Map: Effective Online Learning Through Concept Map Recomposition	Workshop 2	Workshop 3	Workshop 4	Workshop 6	Workshop 9
10:00 – 10:20	BREAK					
10:20 – 12:00	Tutorial - Kit-Build Concept Map: Effective Online Learning Through Concept Map Recomposition	Workshop 2	Workshop 3	Workshop 4	Workshop 6	Workshop 9
12:00 – 1:00	LUNCH					
1:00 – 3:00	Student Wing Meeting	Workshop 2	Workshop 11	Workshop 5	Workshop 6	Workshop 9
3:00 – 3:20	BREAK					
3:20 – 5:00	SIG Leaders Meeting	Workshop 2	Workshop 11	Workshop 5	Workshop 6	Workshop 9

### November 23 (Tuesday)

Time	Room 1	Room 2	Room 3	Room 4	Room 5
8:00 – 10:00	DSC	Workshop 1	Workshop 7	Workshop 8	Workshop 12
10:00 – 10:20	BREAK				
10:20 – 12:00	DSC	Workshop 1	Workshop 7	Workshop 8	Workshop 12
12:00 – 1:00	LUNCH				
1:00 – 3:00	ECW	Workshop 1	Workshop 7	Workshop 10	Workshop 12
3:00 – 3:20	BREAK				
3:20 – 5:00	ECW	Workshop 1	Workshop 7	Workshop 10	Workshop 12
5:00 – 6:00	IPC Meeting				

### November 24 (Wednesday)

Time	Room 1	Room 2	Room 3	Room 4
9:00 – 9:40	Opening Ceremony			
9:40 – 10:00	DRA Speech			
10:00 – 10:10	BREAK			
10:10 – 11:10	Keynote: Kulthida TUAMSUK			
11:10 – 12:30		EGG-1	ALT/LA/DI-1	PTP-1
12:30 – 1:30	LUNCH			
1:30 – 2:50	Panel 2 - Leveraging Student- Generated Ideas (SGI) to facilitate socio-constructivist learning and conceptual change	AIED/ITS-1	TELL-1	PTP-2
2:50 – 3:00	BREAK			
3:00 – 4:00	3:00 – 3:40 Theme-based Speaker 1: Ana Gimeno (C6)	AIED/ITS-2	PTP-3	CUMTEL-1
4:00 – 5:00		CSCL/LS-1	ALT/LA/DI-2	CUMTEL-2

**November 25 (Thursday)**

Time	Room 1	Room 2	Room 3
8:00 – 9:00	Keynote: Tiffany BARNES		
9:00 – 10:00	9:40 – 10:00 Theme-based Speaker (Jon MASON)	AIED/ITS-3	CUMTEL-3
10:00 – 10:10	BREAK		
10:10 – 11:20	Panel 3 - Seeking quality in EdTech solutions: Perspectives from across the ecosystem	AIED/ITS-4	ALT/LA/DI-3
11:20 – 12:30		CSCL/LS-2	ALT/LA/DI-4
12:30 – 1:30	LUNCH		
1:30 – 2:30	Keynote: Pierre DILLENBOURG		
2:30 – 2:40	BREAK		
2:40 – 4:00	2:40 – 3:40 Panel 1 - The Role of Artificial Intelligence in STEM Education	EGG-2	TELL-2
4:00 – 4:30	3:40 – 4:20 Theme-based Speaker (Baltasar FERNANDEZ-MANJON)	PTP-4	ALT/LA/DI-5
4:30 – 5:30	Posters & WIPP		

**November 26 (Friday)**

Time	Room 1	Room 2	Room 3
9:00 – 10:00	Keynote: Gwo-Jen HWANG		
10:00 – 10:10	BREAK		
10:10 – 11:10		ALT/LA/DI-6	PTP-5
11:10 – 12:00	CLOSING CEREMONIES		
12:00 – 1:30	LUNCH		
1:00 – 3:30	EC Meeting		

# CONFERENCE PROGRAM

**DSC:** Doctoral Student Consortia    **ECW:** Early Career Workshop

**W:** Workshop    **WIPP:** Work-in-progress Posters

**F** Full Paper (20 mins. presentation, 5 mins. Q&A)

**S** Short Paper (10 mins. presentation, 5 mins. Q&A)

**ES** Extended Summary (10 mins presentation + 5 mins Q&A)

**D** Demo Paper

**BOPN** Best Overall Paper Nominee

**BSPN** Best Student Paper Nominee

**BTDPN** Best Technical Design Paper Nominee

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22 November 2021 (Monday)		
8:00 – 10:00	<p>Tutorial: Kit-Build Concept Map: Effective Online Learning Through Concept Map Recomposition  <i>Aryo PINANDITO, Hiroshima University, Japan, Universitas Brawijaya, Indonesia</i>  <i>Didik Dwi PRASETYA., Hiroshima University, Japan, Universitas Negeri Malang, Indonesia</i>  <i>Yusuke HAYASHI, Hiroshima University, Japan</i>  <i>Tsukasa HIRASHIMA, Hiroshima University, Japan</i></p>	Room 1
	<p>Workshop W02: The 14th Workshop on Technology Enhanced Learning by Posing/Solving Problems/ Questions            Workshop Organizers:  <i>Yusuke HAYASHI, Hiroshima University, Japan</i>  <i>Tsukasa HIRASHIMA, Hiroshima University, Japan</i>  <i>Kazuaki KOJIMA, Teikyo University, Japan</i>  <i>Tomoko KOJIRI, Kansai University, Japan</i>  <i>Jon MASON, Charles Darwin University, Australia</i>  <i>Tanja MITROVIC, University of Canterbury, New Zealand</i>  <i>Fu-Yun YU, National Cheng Kung University, Taiwan</i></p> <p>Complete list of papers:            (Note that the actual sequence of presentations will be determined by the workshop organizers)</p> <p>#W02-01 F: Adopting Online Teaching and Learning Utilizing AI Technology Enhancements Throughout the COVID-19 Pandemic and Beyond            Paul JENKINS, Nitin NAIK, Longzhi YANG</p> <p>#W02-02 D: A Learning Game on the Structure of Arithmetic Story by Chained Sentence Integration            Kohei YAMAGUCHI, Yusuke HAYASHI, Tsukasa HIRASHIMA</p> <p>#W02-03 S: Exploring the Effects of the Collaborative and Cooperative Test-construction Strategies            Chun-Ping WU</p> <p>#W02-04 S: Adopting No-Code Methods to Visualize Computational Thinking            Derrick HYLTON, Shannon SUNG, Charles XIE</p> <p>#W02-05 F: Co-construction of Question-Led Inquiries            Melvin FREESTONE, Jon MASON</p> <p>#W02-06 F: The Design and Effects of Online Contextual Student Generated Questions for English Grammar Learning            Chih-Chung LIN, Fu-Yun YU</p>	Room 2
	<p>Workshop W03: Applications of Artificial Intelligence, Data Science and Intelligent Systems for Educational Research and Development (AIDS-ED)            Workshop Organizers:  <i>Assoc. Prof. Tossapon BOONGOEN, Mae Fah Luang University (MFU), Thailand</i></p> <p>Co-organizers:  <i>Prof. Qiang SHEN &amp; Dr Changjing SHANG, Aberystwyth University, UK</i>  <i>Asst.Prof. Shao-Chen CHANG, Yuan Ze University, Taiwan</i>  <i>Prof. Taesu CHEONG, Korea University, South Korea</i>  <i>Assoc.Prof. Kraisak KESORN Naresuan University, Thailand</i>  <i>Asst.Prof. Chih-Hung CHEN, National Taichung University of Education, Taiwan</i></p>	Room 3

**22 November 2021 (Monday)**

8:00 – 10:00	<p>Workshop W03 Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W03-01 F: Adopting Online Teaching and Learning Utilizing AI Technology Enhancements Throughout the COVID-19 Pandemic and Beyond Paul JENKINS, Nitin NAIK, Longzhi YANG</p> <p>#W03-02 F: A Comparative Study of Missing Value Imputation Methods for Education Data Phimmarin KEERIN</p> <p>#W03-03 S: Learning Activities Diagnostic Model Based on Educational Data Mining of Online Social Media Behavior Khwunta KIRIMASTHONG, Pakphoom PROMMOO</p> <p>#W03-04 S: Improved Cluster Analysis for Graduation Prediction using Ensemble Approach Patcharaporn PANWONG, Natthakan IAM-ON, James MULLANEY</p>	Room 3
	<p>Workshop W04: Innovative Designs for Language Education : Transformative Technology Leadership Chair Organizer: <i>Dr. Bhornsawan INPIN, Mae Fah Luang University, Chiang Rai, Thailand</i></p> <p>Co-Chair Organizers: <i>Xiong YUZHEN, Jinan University, China</i> <i>Mei-Rong Alice CHEN, National Taiwan University of Science and Technology, Taiwan</i> <i>Chi-Jen LIN, National Taiwan University of Science and Technology, Taipei, Taiwan</i> <i>Phirunkhana PHICHIENSATHIEN, Mae Fah Luang University, Chiang Rai, Thailand</i></p> <p>Organizers: <i>Teeraparp PREDEEPOCH, Mae Fah Luang University, Chiang Rai, Thailand</i> <i>Nutdhavuth MEECHAIYO, Mae Fah Luang University, Chiang Rai, Thailand</i></p> <p>Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W04-002: Thai-Chinese Interpretation Online Course Design-Identifying and accommodating learners' needs Fang YUAN, Kanlaya KHAOWBANPAEW</p> <p>#W04-003: "How Do You Build a Literature Course?": An Online Resource for Literature Curriculum Development Panida MONYANONT, Teeranuch ANURIT</p> <p>#W04-004: Design and Development of Video Instruction Utilizing a Flipped Classroom Model: Implementing Examples of Synonyms 不 and 沒 Lalita RUKVICHAI, Natsarun LAKSANAPEETI</p> <p>#W04-005: The Development of Flipped Learning Model for Foreign Language Class Chun-Ye KIM</p> <p>#W04-007: A Challenge of Assistive Technology (AT) to the Needs of Visually Impaired (VIP) Learners in English Vocabulary Learning Phirunkhana PICHIENSATHIEN, Bhornsawan INPIN</p>	Room 4
	<p>Workshop W06: The 1st ICCE Workshop on EMBODIED Learning: Technology Design, Analytics &amp; Practices Organizers: <i>Rwitajit MAJUMDAR, Kyoto University, Japan</i> <i>Aditi KOTHİYAL, Swiss Federal Institute of Technology Lausanne (EPFL) Switzerland.</i> <i>Prajakt PANDE, Roskilde University, Denmark.</i> <i>Shitanshu MISHRA, MGIEP UNESCO, India.</i> <i>Jayakrishnan Madathil WARRIEM, IIT Madras, India.</i></p> <p>Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W06-01 F: Investigating Computer Designs for Grounded and Embodied Mathematical Learning Mitchell NATHAN, Candace WALKINGTON, Michael SWART</p> <p>#W06-02 S: Design for Remote Embodied Learning: The Hidden Village-Online Ariel FOGEL, Michael SWART, Jennifer SCIANNA, Matthew BERLAND, Mitchell NATHAN</p>	Room 5

**22 November 2021 (Monday)**

8:00 – 10:00	<p>Workshop W06: The 1st ICCE Workshop on EMBODIED Learning: Technology Design, Analytics &amp; Practices</p> <p>#W06-04 F: Embodied learning in makerspaces Ravi SINHA, Geetanjali DATE, Sanjay CHANDRASEKHARAN</p> <p>#W06-05 F: How Diseases Spread: Embodied Learning of Emergence with Cellulo Robots Hala KHODR, Jerome BRENDER, Aditi KOTHIYAL, Pierre DILLENBOURG</p> <p>#W06-06 S: An AI-enhanced Pattern Recognition Approach to Analyze Children's Embodied Interactions Ceren OCAK, Theodore J. KOPCHA, Raunak DEY</p> <p>#W06-07 S: Programming-RIO: Initiating Individuals into Computational Thinking using Real-world IoT Objects Spruha SATAVLEKAR, Shitanshu MISHRA, Ashutosh RAINA, Sridhar IYER</p> <p>#W06-09 S: Making mechanisms: how academic language mediates the formation of dynamic concepts Joseph SALVE, Pranshi UPADHYAY, Mashood K K, Sanjay CHANDRASEKHARAN</p> <p>#W06-10 F: Preparations for Multimodal Analytics of an Enactive Critical Thinking Episode Rwitajit MAJUMDAR, Duygu ŞAHIN, Yuanyuan YANG, Huiyong LI</p> <p>#W06-11 F: Teacher enaction: modeling how teachers build new mechanism concepts in students' minds Pranshi UPADHYAY, Joseph SALVE, Mashood K K, Sanjay CHANDRASEKHARAN</p>	Room 5
	<p>Workshop W09: The 10th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2021)</p> <p>Chair: <i>Bo JIANG, East China Normal University, China</i></p> <p>Co-chair: <i>Patcharin PANJABUREE, Mahidol University, Thailand</i> <i>Jayakrishnan M., Indian Institute of Technology Madras, India</i> <i>May TALANDRON-FELIPE, University of Science and Technology of Southern Philippines, Philippines</i></p> <p>Consultant: <i>Su Luan WONG, Universiti Putra Malaysia, Malaysia</i></p> <p>Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W09-02 S: The effectiveness of object-oriented-QR Monopoly in enhancing ice-breaking and education UX: A preliminary study Chien-Sing LEE, Kian-Wei LEE</p> <p>#W09-03 S: Mapping the Development of ICT from the Trend of Blended Learning: A Systematic Literature Review of the Blended Learning Trend in Education Lin WANGA, Muhd Khaizer OMARA, Noor Syamilah ZAKARIAA, &amp; Nurul Nadwa ZULKIFLIB</p> <p>#W09-04 S: Students' Online Learning Experience during the COVID-19 pandemic: A Case Study at Universiti Putra Malaysia Su Luan WONGA, Mas Nida MD KHAMBARIB</p> <p>#W09-05 F: Transactional Distances During Emergency Remote Teaching Experiences Ma. Monica L. MORENO, Maria Mercedes T. RODRIGO, Johanna Marion R. TORRES, Timothy Jireh GASPAS, Jenilyn L. AGAPITO</p> <p>#W09-06 F: Exploring the differences in the cultivation of computational thinking in primary through meta-analysis based on the perspective of the contrast between the East and the West L Xiu GUAN, Guoxia WEIB, Bo JIANG, Xiang FENGA</p> <p>#W09-07 F: Designing Prototype Laryngo-App Using 3D Model in Anatomy of Larynx Poonyawee JIRARATTANAWAN, Ratchanon NOBNOP, Sujitra ARWATCHANANUKUL, Wimwipha SEEDET, Yootthapong TONGPAENG</p> <p>#W09-08 S: Comparing computational thinking in Scratch and non-Scratch Web design projects: A meta-analysis on framing and refactoring Chien-Sing LEE</p> <p>#W09-09 S: ICT used in Problem-Based Learning: Case study of a Thai University Nikorn RONGBUTSRI</p>	Room 6

## 22 November 2021 (Monday)

8:00 – 10:00	<p>Workshop W09: The 10th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2021)</p> <p>#W09-10 S: I Work to Learn: The Lived Experiences of Working Students in Online Learning During COVID-19 Ryan EBARDO, Santoso WIBOWO</p> <p>#W09-11 S: Developing a taxonomy of Edtech products for teachers: An integrated analysis from research literature and product landscape ISHIKAA, Gargi BANERJEE, Sahana MURTHY</p> <p>#W09-12 S: A Development of Instructional Video for Increasing Learners' Motivation and Content Mastery in Video Learning Environment Atima KAEWSA-ARD</p> <p>#W09-13 S: Design of Customizable Gamified Augmented Reality Apps: Towards Embracing Active Learning Mas Nida MD KHAMBARI, Dan WANG, Su Luan WONG, Priscilla MOSES, Mohd. Najwan MD. KHAMBARI, Rahmita Wirza O.K. RAHMAT, Fariza KHALID</p> <p>#W09-14 S: Promoting Transformative Citizenship in Diverse Society: An Appraisal of Massive Open Online Course as a Teaching Platform Anna Christi SUWARDI</p> <p>#W09-15 F: Perception of parents towards fun puzzle games in helping mild autistic children improve their computational thinking skills Chien-Sing LEE, Joey Nelson YATIM</p>	Room 6
10:00 – 10:20	BREAK	
10:20 – 12:00	Continuation - Tutorial: Kit-Build Concept Map: Effective Online Learning Through Concept Map Recomposition (Room 1) Workshop W02 (Room 2) / Workshop W03 (Room 3) / Workshop W04 (Room 4) Workshop W06 (Room 5) / Workshop W09 (Room 6)	
12:00 – 1:00	LUNCH	
1:00 – 3:00	Student Wing Meeting: <i>Alwyn Vwen Yen LEE, Nanyang Technological University, Singapore</i>	Room 1
	Continuation - Workshop W02 (Room 2) / Workshop W06 (Room 5) / Workshop W09 (Room 6)	
	<p>Workshop W11: The 5th International Workshop on Information and Communication Technology for Disaster and Safety Education (ICTDSE2021)</p> <p>Organizers: <i>Hisashi HATAKEYAMA, Tokyo Institute of Technology, Japan</i> <i>Hiroyuki MITSUHARA, Tokushima University, Japan</i></p> <p>Advisory Member: <i>Ruggiero LOVREGLIO, Massey University, New Zealand</i></p> <p>Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W11-002 S: Qualitative Evaluation of Information Display in a Regional Safety Map "Hamādo-map" Yasuhisa OKAZAKI, Tatsunari MEGURO, Hiroshi WAKUYA, Yukuo HAYASHIDA, Nobuo MISHIMA</p> <p>#W11-003 S: Towards Building Mental Health Resilience through Storytelling with a Chatbot Ethel ONG, Melody Joy GO, Rebecalyn LAO, Jaime PASTOR, Lenard Balwin TO</p> <p>#W11-004 F: Observing Evacuation Behaviors of Surprised Participants in Virtual Reality Earthquake Simulator Hiroyuki MITSUHARA, Itsuki TANIOKA, Masami SHISHIBORI</p> <p>#W11-005 S: A Proposal to Use Walk Rally Learning with Mystery Solving to Foster Attachment to Place and Understanding of Regional Characteristics Hisashi HATAKEYAMA, Masao MUROTA</p>	Room 3

**22 November 2021 (Monday)**

1:00 – 3:00	<p>Workshop W05: The International Workshop on Learning Innovations in Science and Pre-Engineering Education (IWISPE)</p> <p>Chair: <i>Jintana WONGTA, King Mongkut's University of Technology Thonburi, Thailand</i></p> <p>Co-Chair: <i>Feline Panas ESPIQUE, Saint Louis University, Philippines</i> <i>Cecilia A. MERCADO, Saint Louis University, Philippines</i> <i>Hideaki ABURATANI, National Institute of Technology (NIT) HQ, Japan</i> <i>Chiu-Lin LAI, National Taipei University of Education, Taiwan</i> <i>Ekapong HIRUNSIRISAWAT, King Mongkut's University of Technology Thonburi, Thailand</i> <i>Sukanlaya TANTIWISAWARUJI, King Mongkut's University of Technology Thonburi, Thailand</i> <i>Charoenchai WONGWATKIT, Mae Fah Luang University, Thailand</i></p> <p>Consultant: <i>Kongkarn VACHIRAPANUNG, Learning Institute of King Mongkut's University of Technology Thonburi, Thailand</i></p> <p>Complete list of papers: <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W05-001 S: Using Stellarium in Educating the Young Generation on Ancient Lanna Astronomy Pongsakorn PROMMING, Marut WONGTAPIN, Cherdasak SAELEE, Orapin RIYAPRAO</p> <p>#W05-002 S: Gaining Holistic Insight to Inthakin Festival via Stellarium Sky-mapping Veerapat SINTUPONG, Satanan SANPABOPIT, Suphakarn CHAISUK, Cherdasak SAELEE, Orapin RIYAPRAO</p> <p>#W05-003 F: Development an Online Workshop in Developing AI-Driven Mobile Application: Design and Analysis of Aidea Workshop 2021 Chirayu INTARATANOO, Jintana WONGTA, Natlada SIMASATHIEN, Panchika LORTARAPRASERT, Peerapat SUPASRI, Sattarin CHOOCHOUY</p> <p>#W05-004 S: The Design Process of STEM Learning Activities for Problem-Solving on the PM 2.5 Mask: The case of Primary School in Thailand Jirapipat THANYAPHONGPHAT, Wantana AREEPRAYOLKIJ, Suttikan LAKANUKAN</p> <p>#W05-005 S: ISOCHEM: Development of an Interactive 3D Game on the Web in Augmented Reality to Enhance Students' Learning of Isomers of Organic Chemistry Pannida PRASANSON, Jirapipat THANYAPHONGPHAT, Chatchadaporn PINTHONG</p> <p>#W05-006 S: A Development of Gamified Learning for Nursing Students' Public Health Investigation Process Pimpisa CHOMSRI, Pattranit SRISERM, Mullika MATRAKUL</p> <p>#W05-007 F: Targeting Chemistry Competencies on Plastic Circular Economy with Technology-assisted Citizen Inquiry: A Proposal of Learning Matrix Anggiyani Ratnaningtyas Eka NUGRAHENI, Banjong PRASONGSAP, Niwat SRISAWASDI</p> <p>#W05-008 F: Promoting Core Competencies of High School Biology through Citizen Inquiry Technology: A Case of Polluting Microplastics Arum ADITA, Chawadol SRIBOONPIMSUAY, Niwat SRISAWASDI</p>	Room 4
3:00 – 3:20	BREAK	
3:20 – 5:00	<p>SIG Leaders Meeting: <i>Weiqin CHEN, Oslo and Akershus University College of Applied Science, Norway</i></p> <p>Continuation - Workshop W02 (Room 2) / Workshop W11 (Room 3) / Workshop W05 (Room 4) Workshop W06 (Room 5) / Workshop W09 (Room 6)</p>	Room 2

**23 November 2021 (Tuesday)**

8:00 – 10:00	<p>Doctoral Student Consortium</p> <p>Chair: <i>Morris JONG, The Chinese University Hong Kong, Hong Kong, China</i></p> <p>Co-Chairs: <i>Hiroaki OGATA, Kyoto University, Japan</i> <i>Bo JIANG, East China Normal University, China</i> <i>Jayakrishnan Madathil WARRIEM, Indian Institute of Technology Madras, India</i></p>	Room 1
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**23 November 2021 (Tuesday)**

8:00 – 10:00	<p>Workshop W01: The Applications of Information and Communication Technologies in Adult and Continuing Education Organizers: <i>Xibei XIONG, Guangxi Normal University, China</i> <i>Chunping ZHENG, Beijing University of Posts and Telecommunications, China</i> <i>Jyh-Chong LIANG, National Taiwan Normal University, Taiwan</i> <i>Min-Hsien LEE, National Taiwan Normal University, Taiwan</i></p> <p>Complete list of papers: (Note that the actual sequence of presentations will be determined by the workshop organizers)</p> <p>#W01-001 F: Understanding Usage Continuance of Webinars among Professionals in the New Normal Ryan EBARDO, Jefferson COSTALES, Don Erick BONUS, Santoso WIBOWO, John Byron TUAZON, José Rizal University</p> <p>#W01-002 F: Research on Design Thinking and TPACK of Physical Education Pre-service Teachers Hungying LEE, Chingwei CHANG, Chiyang CHUNG</p> <p>#W01-003 F: A Review Study of the Application of Machine Translation in Education from 2011 to 2020 Yuyao ZHEN, Yaning WU, Guangming YU, Chunping ZHENG</p> <p>#W01-004 F: Online Interaction and Learning Engagement of Senior High School Students in a Less-Developed Region in China Jingyi WANG, Chunping ZHENG</p> <p>#W01-005 F: Perceived Teacher Support in Online Literature Reading: Scale Development, Validation, and Prediction of Continuous Reading Intention Yan SUN, Ying ZHOU, Jyh-Chong LIANG</p>	Room 2
	<p>Workshop W07: The 5th Computer-Supported Personalized and Collaborative Learning Organizers: <i>Robin CHIU-PIN, Lin National Tsing Hua University, Taiwan</i> <i>Sherry Y. CHEN, National Central University, Taiwan and Brunel University, UK</i> <i>Gwo-Haur HWANG, National Yunlin University of Science and Technology, Taiwan</i> <i>Fu-Yun YU, National Cheng Kung University, Taiwan</i> <i>Wenli CHEN, National Institute of Education (NIE), Nanyang Technological University (NTU), Singapore</i> <i>Jitti NIRAMITRANON, Kasetsart University, Thailand</i> <i>Shu-Yuan TAO, Takming University of Science and Technology, Taiwan</i> <i>Hsiu-Ling CHEN, National Taiwan University of Science and Technology, Taiwan</i></p> <p>Complete list of papers: (Note that the actual sequence of presentations will be determined by the workshop organizers)</p> <p>#W07-01 S: Design and Implementation of an iOS APP: Multimedia Interactive System and Items for Woodworking Teaching Chong-Shiuh KOONG, Hung-Chang LIN, Chao-Chin WU, Chun-Hsien CHEN, Po-Huan LEE, Hsi-Chuan WANG</p> <p>#W07-02 F: The design of An Online Collaborative Orientation's Learning Activities to nurture Soft skills, Life skills and Self-directed learning Chanakan GROSSEAU, Jintana WONGTA, Arnon THONGSAW, Kongkarn VACHIRAPANANG</p> <p>#W07-03 F: Leveraging Context for Computer-Supported Student-generated Questions and EFL Learning in Grammar Instruction: Its Effects on Task Performance Wen-Wen CHENG, Fu-Yun YU</p> <p>#W07-04 Poster: Mobile Learning System Combined with Adaptive Recommendation Mechanism--Taking outdoor learning activities of literature and history as an example Yu-Zhen DAI, Kai-Yi CHIN</p> <p>#W07-05 F: Academic Help-seeking Preference of Students during Online Flexible Learning May Marie P. TALANDRON-FELIPE, Gladys S. AYUNAR, Kent Levi A. BONIFACIO</p> <p>#W07-06 F: A Proposed Teacher Professional Development Program for Promoting Adult Teacher's TPACK in STEM Education Pawat CHAIPIDECH, Niwat SRISAWASDI</p> <p>#W07-07 Poster: The Impact of Inquiry-based Integrated STEM on Student's Perception of Learning Science and Computer Programming Chia-Jung CHANG, Shu-Yuan TAO</p>	Room 3

**23 November 2021 (Tuesday)**

8:00 – 10:00	<p>Workshop W08: Explorations in Online Teaching Modalities and Strategies</p> <p>Organizers:  <i>Ma. Louise Antonette N. DE LAS PENAS, Ateneo de Manila University, Philippines</i>  <i>Fr. Johnny C. GO, SJ, Ateneo de Manila University, Philippines</i>  <i>Isabel Pefianco MARTIN, Ateneo de Manila University, Philippines</i>  <i>Fr. Francis ALVAREZ, SJ, Ateneo de Manila University, Philippines</i>  <i>Galvin Radley L. NGO, Ateneo de Manila University, Philippines</i></p> <p>Complete list of papers:  <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#EOTMTS-001 F: Balancing the Pedagogical and Practical Concerns in Remote Higher Education: A Cyberethnography  <i>Jose Eos TRINIDAD, Samantha Joan ACKARY, Lyka Janelle PACLEB, Sophia Sue TABANAO, Jan Llenzi DAGOHYO</i></p> <p>#EOTMTS-004 F: Do Boredom, Escapism, Apathy, and Information Overload lead to Zoom Fatigue?  <i>Ryan EBARDO, Reynold PADAGAS, Hazel TRAPERO</i></p> <p>#EOTMTS-005 F: Exploring student behavior during Student-Generated Questions activities on Programming Learning  <i>Pham-Duc THO, Chih-Hung LAI, Thieu-Thi TAI</i></p> <p>#EOTMTS-006 F: Prelude to Full Online Learning: Educational Interventions from the Voice of the Customers  <i>Arlene Mae CELESTIAL-VALDERAMA, Albert A. VINLUAN, Joel B. MANGABA</i></p>	Room 4
	<p>Workshop W12: The 9th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop)</p> <p>Chair: <i>Charoenchai WONGWATKIT, Mae Fah Luang University, Thailand</i></p> <p>Co-Chairs:  <i>Niwat SRISAWASDI, Khon Kaen University, Thailand</i>  <i>Patcharin PANJABUREE, Mahidol University, Thailand</i>  <i>Ying-Tien WU, National Central University, Taiwan</i>  <i>Sasithorn CHOOKAEW, King Mongkut's University of Technology North Bangkok, Thailand</i></p> <p>Complete list of papers:  <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W12-01 F: Trends of Engineering Design Process in STEM Education: A Systematic Review of the Evidence during 2017-2021  <i>Teerarat SOPAKITIBOON, Surakit TUAMPOEMSAB, Sasithorn CHOOKAEW, Suppachai HOWIMANPORN</i></p> <p>#W12-02 S: Design and Development of an Augmented Reality Application for Learning a Serial-Link Robot Kinematics  <i>Sarut PANJANA, Tarinee TONGGOED</i></p> <p>#W12-03 S: Designing a Mobile Application to Promote Vocational Students' Learning in Basic Technical Drawings Course  <i>Tiptiya INTIP, Metha OUNGTHONG, Sasithorn CHOOKAEW</i></p> <p>#W12-04 S: Design and Development of a Low-Cost Robotic Platform for STEM Education of an Automatic Control System: Rotary-Type Double Inverted Pendulum Case  <i>Wiput TUVAYANOND, Piyanun RUANGURAI</i></p> <p>#W12-05 S: Developing a PLCs Experimental Kit through Role-playing for Students in Vocational Education  <i>Boonkert SONTIPAN, Suppachai HOWIMANPORN, Sasithorn CHOOKAEW</i></p> <p>#W12-07 S: Using Series Elastic Actuator as a Tool to Motivate Students Engineering Learning in STEM Education  <i>Piyanun RUANGURAI, Chaiyaporn SILAWATCHANANAI</i></p> <p>#W12-08 S: Designing a Project-based Plant to Enhance Mechatronics Students for Self-learning Embedded Control System  <i>Chaiyaporn SILAWATCHANANAI, Piyanun RUANGURAI</i></p>	Room 5

**23 November 2021 (Tuesday)**

8:00 – 10:00	<p>Workshop W12: The 9th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop)  #W12-09 S: Integrated Knowledge and Skills with Multi-Material Learning for Engineering Students during COVID-19  Suppachai HOWIMANPORN, Ornanong TANGTRONGPAIROS, Sasithorn CHOOKAEW</p> <p>#W12-10 S: Design Web-based Personalized Environment for Industrial Robots Learning  Dechawut WANICHSAN, Konggri PITANON, Sasithorn CHOOKAEW</p> <p>#W12-11 F: Development of a Gamified Number Line App for Teaching Estimation and Number Sense in Grades 1 to 7  Debbie Marie B. VERZOSA, Ma. Louise Antonette N. DE LAS PEÑAS, Maria Alva Q. ABERINB, Agnes D. GARCIANO, Jumela F. SARMIENTO, &amp; Mark Anthony C. TOLENTINO</p> <p>#W12-15 F: Case-based Professional Learning Course for Fostering Preservice Science Teachers' Technological Pedagogical and Content Knowledge of Inquiry with Mobile Game  Phattaraporn PONDEE, Niwat SRISAWASDI</p>	Room 5
10:00 – 10:20	BREAK	
10:20 – 12:00	Continuation - Doctoral Student Consortium (Room 1) Workshop W01 (Room 2) / Workshop W07 (Room 3) Workshop W08 (Room 4) / Workshop W12 (Room 5)	
12:00 – 1:00	LUNCH	
1:00 – 3:00	<p>Early Career Workshop  Chair:  <i>Mas Nida MD. KHAMBARI, Universiti Putra Malaysia, Malaysia</i></p> <p>Co-Chairs:  <i>Ryan EBARDO, José Rizal University, Philippines</i>  <i>Sharifah Intan Sharina SYED ABDULLAH, Universiti Putra Malaysia, Malaysia</i>  <i>Patcharin PANJABUREE, Mahidol University, Thailand</i></p> <p>Consultant:  <i>Jon MASON, Charles Darwin University, Australia</i></p>	Room 1
	Continuation - Workshop W01 (Room 2) / Workshop W07 (Room 3) Workshop W12 (Room 5)	
	<p>Workshop W10: The 8th ICCE workshop on Learning Analytics and Evidence-based Education  Organizers:  <i>Huiyong LI, Kyoto University, Japan</i>  <i>Rwitajit MAJUMDAR, Kyoto University, Japan</i>  <i>Brendan FLANAGAN, Kyoto University, Japan</i>  <i>Weiqin CHEN, Oslo Metropolitan University, Norway</i>  <i>Hiroaki OGATA, Kyoto University, Japan</i></p> <p>Complete list of papers:  <i>(Note that the actual sequence of presentations will be determined by the workshop organizers)</i></p> <p>#W10-001 S: Short Answer Questions Generation by Fine-Tuning BERT and GPT-2  Danny C.L. TSAI, Willy J.W. CHANG, Stephen J.H. YANG</p> <p>#W10-002 S: Exploring the Correlation between Students' Attention and Learning Performance  Xin-Ping HUANG, Chung-Kai YU and Stephen J.H. YANG</p> <p>#W10-004 F: Identifying Students' Stuck Points Using Self-Explanations and Pen Stroke Data in a Mathematics Quiz  Ryosuke NAKAMOTO, Brendan FLANAGAN, Kyosuke TAKAMI, Yiling DAI, Hiroaki OGATA</p> <p>#W10-005 S: Toward Educational Explainable Recommender System: Explanation Generation based on Bayesian Knowledge Tracing Parameters  Kyosuke TAKAMI, Brendan FLANAGAN, Yiling DAI, Hiroaki OGATA</p> <p>#W10-006 S: Performance prediction and importance analysis using Transformer  Akiyoshi SATAKE, Hironobu FUJIYOSHI, Takayoshi YAMASHITA, Tsubasa HIRAKAWA, Atsushi SHIMADA</p>	Room 4

<b>23 November 2021 (Tuesday)</b>		
1:00 – 3:00	Workshop W10: The 8th ICCE workshop on Learning Analytics and Evidence-based Education #W10-008 F: BEKT: Deep Knowledge Tracing with Bidirectional Encoder Representations from Transformers Zejie TIAN, Guangcong ZHENG, Brendan FLANAGAN, Jiazhi MI, Hiroaki OGATA  #W10-010 F: Designing Nudges for Self-directed Learning in a Data-rich Environment Kinnari GATARE, Prajish PRASAD, Aditi KOTHIYAL, Pratiti SARKAR, Ashutosh RAINA, Rwitajit MAJUMDAR	Room 4
3:00 – 3:20	BREAK	
3:20 – 5:00	Continuation - Early Career Workshop (Room 1) Workshop W07 (Room 3) / Workshop W10 (Room 4) / Workshop W12 (Room 5)	
5:00 – 6:00	IPC Meeting	Room 1

<b>24 November 2021 (Wednesday)</b>		
9:00 – 9:40	OPENING CEREMONY	Room 1
9:40 – 10:00	DRA Speech: Maria Mercedes T. RODRIGO, Ateneo de Manila University, Philippines	Room 1
10:00 – 10:10	BREAK	
10:10 – 11:10	Keynote Speech 1: Kulthida Tuamsuk (C7) Moderator: <i>Thepchai SUPNITHI, National Electronics and Computer Technology Center, Thailand</i>	Room 1
11:10 – 12:30	EGG-1 Session Chair: <i>Maria Mercedes T. RODRIGO, Ateneo de Manila University</i>  #6: Integrating Parsons Puzzles with Scratch - BOPN, BSPN (Full) Jeffrey BENDER, Bingpu ZHAO, Lalitha MADDURI, Alex DZIENA, Alex LIEBESKIND, Gail KAISER  #3: A RECIPE for Teaching the Sustainable Development Goals (Short) Maria Mercedes RODRIGO, Walfrido David DIY, Abigail Marie FAVIS, Francesco AMANTE, Janina Carla CASTRO, Ingrid Yvonne HERRAS, Juan Carlo MALLARI, Kevin Arnel MORA, Johanna Marion R. TORRES and Ma. Assunta CUYEGKENG  #20: Children Preference Analysis of A Mathematics Game- "Lily's Closet" (Short) Wei Tung NIEN, Yi Chen WANG, Joni Tzuchen TANG  #154: Tinkery: A Tinkerer's Nursery for Problem Solving with Lego Mindstorms (Short) Ashutosh RAINA, Sridhar IYER, Sahana MURTHY	Room 2
11:10 – 12:30	ALT/LA/DI-1 Session Chair: <i>Tsukasa HIRASHIMA, Hiroshima University, Japan</i>  #35: Generic Skill Assessment System (Full) Makoto MIYAZAKI, Hiroyoshi WATANABE, Mieko MASAHA, Kumiko TAKAI  #127: A Machine Learning Approach for Estimating Student Mastery by Predicting Feedback Request and Solving Time in Online Learning System (Full) Kannan N  #78: Classification of learning patterns and outliers using Moodle course material clickstreams and quiz scores (Short) Konomu DOBASHI  #86: Investigating the Tightness of Connection between Original Map and Additional Map in Extension Concept Mapping (Full) Didik PRASETYA, Aryo PINANDITO, Yusuke HAYASHI, Tsukasa HIRASHIMA	Room 3
	PTP-1 Session Chair: <i>Dan KOHEN-VACS, Holon Institute of Technology, Israel</i>  #83: Mining Students' Engagement Pattern in Summer Vacation Assignment (Full) Hiroyuki KUROMIYA, Rwitajit MAJUMDAR, Hiroaki OGATA  #140: Alternative Approach for Evaluation Adapted for Times of Emergent Conditions (Full) Dan KOHEN-VACS, Meital AMZALAG	Room 4

**24 November 2021 (Wednesday)**

11:10 – 12:30	PTP-1 #93: The Use of Video Conferencing Applications Facilitating Students' Behavioral Engagement during Synchronous Learning in the Time of Pandemic (Short) Mark Anthony ARIBON III  #34: Facilitating collaborative learning among businesses, faculty, and students in a purely online setting (Short) Joseph Benjamin ILAGAN, Matthew Laurence UY, Vince Nathan KHO, Joselito OLPOC	Room 4
12:30 – 1:30	LUNCH	
1:30 – 2:50	Panel 2 (C2) - Leveraging Student-Generated Ideas (SGI) to facilitate socio-constructivist learning and conceptual change <i>Lung-Hsiang WONG, Chew Lee TEO, Longkai WU, Nanyang Technological University, Singapore</i>	Room 1
	AIED/ITS-1 Session Chair: <i>Sahana MURTHY, Indian Institute of Technology Bombay, INDIA</i>  #9: Investigating Engagement and Learning Differences between Native and EFL students in Active Video Watching (Full) Negar MOHAMMADHASSAN, Tanja MITROVIC  #121: Authoring Tool for Semi-automatic Generation of Task-Oriented Dialogue Scenarios (Full) Emmanuel AYEDOUN, Yuki HAYASHI, Kazuhisa SETA  #53: A System for Generating Student Progress Reports Based on Keywords (Short) Shumpei KOBASHI, Tunenori MINE  #134: A coding mechanism for analysis of SRL processes in a technology enhanced learning environment (Short) Rumana PATHAN, Sahana MURTHY, Ramkumar RAJENDRAN	Room 2
	TELL-1 Session Chair: <i>May Marie P. TALANDRON-FELIPE, Ateneo De Manila University / University of Science and Technology of Southern Philippines, Philippines</i>  #22: Comparison of English Comprehension among Students from different backgrounds using a Narrative-Centered Digital Game - BTDPN (Full) May Marie P. TALANDRON-FELIPE, Kent Levi A. BONIFACIO, Gladys S. AYUNAR, Ma. Mercedes T. RODRIGO  #88: Modelling the Relationship between English Language Learners' Academic Hardiness and Their Online Learning Engagement during the COVID-19 Pandemic (Short) Lin LUAN, Yanqing YI, Jinjin LIU  #92: Design and Evaluation of a Game-based Language Learning Web Application for English Language Learners in Thailand (Short) Kornwipa POONPON, Wirapong CHANSANAM, Chawin SRISAWAT, Trinwattana POOCHANON  #136: Proctored vs Unproctored Online Exams in Language Courses: A Comparative Study (Short) Mehmet ÇELIKBAĞ, Ömer DELIALIOĞLU	Room 3
	PTP-2 Session Chair: <i>Jon MASON, Charles Darwin University, Australia</i>  #105: Low Adoption of Adaptive Learning Systems in Higher Education and How Can It Be Increased in Fully Online Courses (Full) Rhodora ABADIA, Sisi LIU  #119: Co-designing for a healthy EdTech ecosystem: Lessons from the Tulna research-practice partnership in India (Full) Aastha PATEL, Chandan DASGUPTA, Sahana MURTHY, Rashi DHANANI  #95: The M in STEM and Issues of Data Literacy (Short) Khalid KHAN, Jon MASON  #146: Students with Disabilities and Digital Accessibility in Higher Education under COVID-19 (Short) Weiqin CHEN	Room 4

**24 November 2021 (Wednesday)**

2:50 – 3:00	BREAK	
3:00 – 4:00	3:00 – 3:40 Theme-based Speaker 1: Ana Gimeno (C6) Moderator: <i>Yoshiko GODA, Kumamoto University, Japan</i>	Room 1
	AIED/ITS-2 Session Chair: <i>Yu LU, Beijing Normal University, China</i>  #17: Improving knowledge tracing through embedding based on Metapath (Full) Chong JIANG, Wenbin GAN, Guiping SU, Yuan SUN, Yi SUN  #29: Challenges to Applying Performance Factor Analysis to Existing Learning Systems (Short) Cristina MAIER, Ryan BAKER, Steve STALZER  #30: Does Large Dataset Matter? An Evaluation on the Interpreting Method for Knowledge Tracing (Short) Yu LU, Deliang WANG, Penghe CHEN, Qinggang MENG	Room 2
	PTP-3 Session Chair: <i>Lucian NGEZE, Indian Institute of Technology Bombay, India</i>  #102: Development and Preliminary Evaluation of an Online System in Support of a Student-Generated Testlets Learning Activity (Short) Fu-Yun YU  #130: Learn to design (L2D): A TPD program to support teachers in adapting ICT learning materials to their local context through research-based strategies (Short) Gaurav JAISWAL, Sunita RASTE, Sahana MURTHY  #132: Research on the Construction of Evaluation Indicators System of Pre-service teachers' Teaching Competency in Special Delivery Classroom (Short) Xiangchun HE, Peiliang MA, Xing ZHANG  #152: From teaching to teacher training: Embedding important skills needed to develop a teacher trainer in cascaded Teacher Professional Development Programmes (Short) Lucian Vumilia NGEZE, Sridhar IYER	Room 3
	CUMTEL-1 Session Chair: <i>Brendan FLANAGAN, Kyoto University, Japan</i>  #11: The Potential of Mobile Games in Improving Filipino and English Vocabulary among Children who are Non-native Speakers (Full) May Marie P. TALANDRON-FELIPE, Ma. Mercedes T. RODRIGO  #106: Analytics of Open-Book Exams with Interaction Traces in a Humanities Course - BOPN (Full) Rwitajit MAJUMDAR, Geetha BAKILAPADAVU, Jiayu LI, Hiroaki OGATA, Brendan FLANAGAN, Mei-Rong Alice CHEN	Room 4
	CSCL/LS-1 Session Chair: <i>Fu-Yun YU, National Cheng Kung University, Taiwan</i>  #42: Flip & Slack - Active Flipped Classroom Learning with Collaborative Slack Interactions (Full) Kyong Jin SHIM, Swapna GOTTIPATI, Yi Meng LAU  #151: Designing Support for Productive Social Interaction and Knowledge Co-construction in Collaborative Annotation - BOPN, BSPN (Full) Xinran ZHU, Hong SHUI, Bodong CHEN  #153: Theoretical and Practical Framework for a Multinational, Precollege, Peer Teaching Collaborative (Short) Eric HAMILTON, Danielle ESPINO, Seung LEE  #5: A Measure to Cultivate Engaged Peer Assessors: A Validation Study on its Efficacy (Short) Yu-Hsin LIU, Kristine LIU, Fu-Yun YU	Room 2

**24 November 2021 (Wednesday)**

4:00 – 5:30	<p>ALT/LA/DI-2 Session Chair: <i>Hiroaki OGATA, Kyoto University, Japan</i></p> <p>#48: Prior Knowledge on the Dynamics of Skill Acquisition Improves Deep Knowledge Tracing - BOPN (Full) Qiushi PAN, Taro TEZUKA</p> <p>#57: Blockchain in Education: Visualizations and Validating Relevance of Prior Learning Data (Short) Patrick OCHEJA, Brendan FLANAGAN, Rwitajit MAJUMDAR, Hiroaki OGATA</p> <p>#91: An AES System to assist teachers in grading Language Proficiency and Domain Accuracy using LSTM networks. (Short) Aditya SAHANI, Forum PATEL, Shivani MEHTA, Rekha RAMESH, Ramkumar RAJENDRAN</p> <p>#52: Analysis of the Answering Processes in Split-Paper Testing to Promote Instruction (Short) Shin UENO, Yuuki TERUI, Ryuichiro IMAMURA, Yasushi KUNO, Hironori EGI</p> <p>#ES-01: Improving Face-to-Face Communication Skills using Active Video Watching (Extended Summary) Ja'afaru MUSA, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN</p>	Room 3
	<p>CUMTEL-2 Session Chair: <i>Ryan EBARDO, Jose Rizal University, Philippines</i></p> <p>#129: Human Factors in the Adoption of M-Learning by COVID-19 Frontline Learners (Full) Ryan EBARDO, Merlin Teodosia SUAREZ</p> <p>#137: Design Guidelines for Scaffolding Self-Regulation in Personalized Adaptive Learning (PAL) systems: A Systematic Review (Full) Vishwas BADHE, Gargi BANERJEE, Chandan DASGUPTA</p> <p>#120: EXAIT: A Symbiotic Explanation Education System (Short) Brendan FLANAGAN, Kyosuke TAKAMI, Kensuke TAKII, Dai YILING, Rwitajit MAJUMDAR, Hiroaki OGATA</p> <p>#114: Effects of virtual reality on students' creative thinking during a brainstorming session (Short) Mondheera PITUXCOOSUARN, Victoria ABOU-KALIL, Hiroaki OGATA, Yohei MURAKAMI</p>	Room 4

**25 November 2021 (Thursday)**

8:00 – 9:00	<p>Keynote Speech 4: Tiffany BARNES, North Carolina State University, United States Moderator: <i>Tanja MITROVIC, University of Canterbury, New Zealand</i></p>	Room 1
9:00 – 10:00	<p>9:00 – 9:40 Theme-based Speaker: Jon MASON, Charles Darwin University, Australia Moderator: <i>Ramkumar RAJENDRAN, Indian Institute of Technology Bombay, India</i></p>	Room 1
	<p>AIED/ITS-3 Session Chair: <i>Kazuhisa SETA, Osaka Prefecture University, Japan</i></p> <p>#39: In-process Feedback by Detecting Deadlock based on EEG Data in Exercise of Learning by Problem-posing - BOPN, BTDPN (Full) Sho YAMAMOTO, Yuto TOBE, Yoshimasa TAWATSUJI, Tsukasa HIRASHIMA</p> <p>#68: Gaze- and Semantics-Aware Learning Material to Capture Learners' Comprehension Process (Short) Akio OKUTSU, Yuki HAYASHI, Kazuhisa SETA</p> <p>#68: Learning the Condition of Addition and Subtraction Word Problems by Problem-Posing based on Representation Conversion Model (Short) Yusuke HAYASHI, Natsumi TSUDAKA, Kengo IWAI, Tsukasa HIRASHIMA</p>	Room 2

**25 November 2021 (Thursday)**

9:00 – 10:00	<p>CUMTEL-3 Session Chair: <i>Aungtinee KITTIRAVECHOTE, Bansomdejchaopraya Rajabhat University, Thailand</i></p> <p>#55: Comparison of Experts and Novices in Determining the Gravitational Acceleration using Mobile Phone with Phyphox Application (Short) Aungtinee KITTIRAVECHOTE, Thanida SUJARITTHAM</p> <p>#116: Karyotype: An interactive learning environment for reasoning and sense making in genetics through a case-based approach (Short) Sunita RASTE, Anurag DEEP, Sahana MURTHY</p> <p>#117: Design and Deployment of a Mobile Learning Cloud Network to Facilitate Open Educational Resources for Asynchronous Learning (Short) Joselito Christian Paulus VILLANUEVA, Mark Anthony MELENDRES, Catherine Genevieve LAGUNZAD, Nathaniel Joseph LIBATIQUE</p> <p>#147: TinkerBot: A Semi-Automated Scaffolding Agent as a Companion for Tinkering. (Short) Shruti JAIN, Ashutosh RAINA, Sridhar IYER</p>	Room 3
10:00 – 10:10	BREAK	
10:10 – 11:20	<p>Panel 3 - Seeking quality in EdTech solutions: Perspectives from across the ecosystem Sahana MURTHY, Indian Institute of Technology Bombay, India</p>	Room 1
	<p>AIED/ITS-4 Session Chair: <i>Ethel ONG, De La Salle University, Philippines</i></p> <p>#65: An Improved Model to Predict Student Performance Using Teacher Observation Reports - BSPN Menna FATEEN, Kyouhei UENO, Tsunenori MINE</p> <p>#23: Diverse Linguistic Features for Assessing Reading Difficulty of Educational Filipino Texts (Short) Joseph Marvin IMPERIAL, Ethel ONG</p> <p>#41: Using Qualitative Data from Targeted Interviews to Inform Rapid AIED Development (Short) Jaclyn OCUMPAUGH, Stephen HUTT, Juliana Ma. Alexandra L. ANDRES, Ryan BAKER, Gautam BISWAS, Nigel BOSCH, Luc PAQUETTE, Anabil MUNSHI</p> <p>#128: Reflection Support Environment for Creative Discussion Based on Document Semantics and Multimodal Information (Short) Atsuya SHONO, Yuki HAYASHI, Kazuhisa SETA</p>	Room 2
	<p>ALT/LA/DI-3 Session Chair: <i>May Kristine Jonson CARLON, Tokyo Institute of Technology, Japan</i></p> <p>#64: A Thematic Summarization Dashboard for Navigating Student Reflections at Scale (Full) Yuya ASANO, Sreecharan SANKARANARAYANAN, Majd SAKR, Christopher BOGART</p> <p>#43: Learning Analytics Dashboard Prototype for Implicit Feedback from Metacognitive Prompt Responses (Short) May Kristine Jonson CARLON, Jeffrey CROSS</p> <p>#62: Analysing reachable and unreachable codes in App Inventor programs for supporting the assessment of computational thinking concepts (Short) Siu Cheung KONG, Chun Wing POON, Bowen LIU</p> <p>#96: Conceptual Level Comprehension Support of The Object-Oriented Programming Source-Code Using Kit-Build Concept Map (Short) Nawras KHUDHUR, Pedro Gabriel Fontales FURTADO, Aryo PINANDITO, Shimpei MATSUMOTO, Yusuke HAYASHI, Tsukasa HIRASHIMA</p>	Room 3
11:20 – 12:30	<p>Panel 3 - Seeking quality in EdTech solutions: Perspectives from across the ecosystem Sahana MURTHY, Indian Institute of Technology Bombay, India</p>	Room 1
	<p>CSCL/LS-2 Session Chair: <i>Priscilla MOSES, Universiti Tunku Abdul Rahman, Malaysia</i></p> <p>#113: Laboratory Study on ICAP Interventions for Interactive activity: Investigation Based on Learning Performance (Full) Shigen SHIMOJO, Yugo HAYASHI</p> <p>#38: STEM and Non-STEM Students' Perception towards Work Environment and Career Prospect (Short) Priscilla MOSES, Tiny Chiu YUEN TEY, Phaik Kin CHEAH</p>	Room 2



**25 November 2021 (Thursday)**

11:20 – 12:30	CSCL/LS-2 #79:Fostering conceptual change in software design (Short) Lakshmi T G, Sridhar IYER  #87:The Effectiveness of Collaborative Concept Map Recomposition and Discussion with Kit-Build Concept Map in Online Learning (Short) Aryo PINANDITO, Didik PRASETYA, Nawras KHUDHUR, Yusuke HAYASHI, Tsukasa HIRASHIMA	Room 2
	ALT/LA/DI-4 Session Chair: <i>Paraskevi TOPALI, GSIC-EMIC Research Group, Spain</i>  #144: Profiling Student Learning from Q&A Interactions in Online Discussion Forums - BSPN (Full) De Lin ONG, Kyong Jin SHIM, Swapna GOTTIPATI  #82: Supporting MOOC Instructors in the Identification of Learner Problems Framed within the Learning Design (Short) Paraskevi TOPALI, Alejandro ORTEGA-ARRANZ, Alejandra MARTÍNEZ-MONÉS, Sara VILLAGRÁ-SOBRINO, Juan Ignacio ASENSIO-PÉREZ, Yannis DIMITRIADIS  #124: Automatic classification of MOOC forum messages to measure the quality of peer interaction (Short) Urvi SHAH, Richa RAMBHIA, Prakruti KOTHARI, Rekha RAMESH, Gargi BANERJEE  #150: Identifying and Comparing Topic Categories and Interaction Features in MOOC Discussions Supported by Danmaku (Short) Bo YANG	Room 3
12:30 – 1:30	LUNCH	
1:30 – 2:30	Keynote Speech 3: Pierre DILLENBOURG, Swiss Federal Institute of Technology, Switzerland Moderator: <i>Kate THOMPSON, Queensland University of Technology, Australia</i>	Room 1
2:30 – 2:40	BREAK	
2:40 – 3:40	Panel 1 - The Role of Artificial Intelligence in STEM Education <i>Siu Cheung KONG, The Education University of Hong Kong, Hong Kong</i>	Room 1
2:40 – 4:00	EGG-2 Session Chair: <i>Jonathan DL CASANO, Ateneo de Manila University, Philippines</i>  #50: Tactical Knowledge Acquisition Support System from Play Videos of Esports Experts (Full) Minato SHIKATA, Tomoko KOJIRI  #103: Robot with Embodied Interactive Modes as a Companion Actor in Journey of Digital Situational Learning Environment and its Effect on Students' Learning Performance - BTDPN (Full) Vando Gusti AL HAKIM, Su-Hang YANG, Jen-Hang WANG, Chiu-Chen YEN, Lung YEH, Gwo-Dong CHEN  #8: Designing Games for Stealth Health & Healthy Lifestyle Education (Short) Nilufar BAGHAEI  #107: Xiphias: Using A Multidimensional Approach Towards Creating Meaningful Gamification-Based Badge Mechanics (Short) Jonathan CASANO, Jenilyn AGAPITO, Nicole Ann TOLOSA	Room 2
	TELL-2 Session Chair: <i>Jingjing LIAN, Peking University, China</i>  #36: A Quasi-experimental Study of University English Learners' Engagement in a Flipped Classroom - BOPN (Full) Jingjing LIAN, Jiyu JIA  #26: Integrating E-learning into Self-regulated Learning Instruction: A Holistic Flipped Classroom Design of a Classical Chinese Reading Intervention Program (Short) Kit Ling LAU  #84: A Flipped Model of Active Reading Using Learning Analytics-enhanced E-book Platform (Short) Yuko TOYOKAWA, Rwitajit MAJUMDAR, Louis LECAILLIEZ, Hiroaki OGATA  #100: The Learning Potential of Online Student-Generated Questions Based on Given Graphics for English Language Learning (Short) Fu-Yun YU	Room 3

<b>25 November 2021 (Thursday)</b>		
3:40 – 4:20	Theme-based Speaker: Baltasar FERNANDEZ-MANJON, Complutense University of Madrid (UCM) Spain Moderator: Rita KUO, New Mexico Institute of Mining and Technology, USA	Room 1
4:00 – 4:30	PTP-4 Session Chair: Ma. Monica MORENO, Ateneo de Manila University, Philippines  #19: Cura Personalis: Institutionalizing Compassion During Emergency Remote Teaching (Short) Ma. Monica MORENO, Ma. Mercedes RODRIGO, Johanna Marion TORRES, Timothy Jireh GASPAS, Jenilyn AGAPITO  #81: Educational leadership and children's resilience: German and Polish schools during COVID-19 (Short) Paulina BURKOT, Amy SEPIOŁ, Nataliia DEMESHKANT	Room 2
	ALT/LA/DI-5 Session Chair: Yu LU, Beijing Normal University, China  #7: SLP: A Multi-Dimensional and Consecutive Dataset from K-12 Education(Short) Yu LU, Yang PIAN, Ziding SHEN, Penghe CHEN, Shengquan YU  #143: Evaluation of a Motion Capture and Virtual Reality Classroom for Secondary School Teacher Training. (Short) Sandra ALONSO, Daniel LÓPEZ, Andrés PUENTE, Alejandro ROMERO, Ibis ALVAREZ, Borja MANERO	Room 3
4:30 – 5:30	Posters / Work-in-progress Posters	Room 2

<b>26 November 2021 (Friday)</b>		
9:00 – 10:00	Keynote Speech 2: Gwo-Jen HWANG, National Taiwan University of Science and Technology, Taiwan Moderator: Jingyun WANG, Durham University, UK	Room 1
10:00 – 10:10	BREAK	
10:10 – 11:10	ALT/LA/DI-6 Session Chair: Nguyen-Thanh LE, Humboldt-Universität zu Berlin, Germany  #54: From Hello to Bye-Bye: Churn prediction in English Language Learning App (Full) Daevesh SINGH, Rumana PATHAN, Gargi BANERJEE, Ramkumar RAJENDRAN  #126: How Can Pedagogical Agents Detect Learner's Stress? (Full) Nguyen-Thanh LE, Melanie BLECK, Niels PINKWART	Room 2
	PTP-5 Session Chair: Siu Cheung KONG, The Education University of Hong Kong, Hong Kong  #60: From Mathematical Thinking to Computational Thinking: Use Scratch Programming to Teach Concepts of Prime and Composite Numbers (Full) Siu Cheung KONG, Wai Ying KWOK  #112: GUI Based System for Effortless Program Visualization Creation Using Time Series Information - BOPN, BTDPN (Full) Koichi YAMASHITA, Miyu SUZUKI, Satoru KOGURE, Yasuhiro NOGUUCHI, Raiya YAMAMOTO, Tatsuhiro KONISHI, Yukihiko ITOH	Room 3
11:10 – 12:00	CLOSING CEREMONY	
12:00 – 1:30	LUNCH	
1:00 – 3:30	EC Meeting	

# POSTERS (P) & WORK-IN-PROGRESS POSTERS (WIPP)

25 November 2021 (Thursday) 4:30 – 5:30 PM, Room 2

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**P:** Poster

**WIPP:** Work-in-progress Posters

#40 P: Viewpoint Transformation Training System Based on Discovery of Relationships Between Objects  
Kota KUNORI and Tomoko KOJIRI

#47 P: Support System for Understanding Intention in Communication Using Diagrams  
Koushi UEDA and Tomoko KOJIRI

#49 P: Chinese Grammatical Error Detection Using Adversarial ELECTRA Transformers  
Lung-Hao LEE, Man-Chen HUNG, Chao-Yi CHEN, Rou-An CHEN, Yuen-Hsien TSENG

#69 P: Presentation Scenario Design Support System That Prompts Awareness of Other Viewpoints  
Kazumi MASAKADO, Yuki HAYASHI, Kazuhisa SETA

#71 P: Visualization of Topics and Logical Development Based on Reader's Understanding of Inter-sentence Relations for Reading Support  
Yuki OKANIWA, Tomoko KOJIRI

#28 P: Explore the contribution of learning style for predicting learning achievement and its relationship with reading learning behaviors  
Fuzheng ZHAO, Bo JIANG, Juan ZHOU, Chengjiu YIN

#16 P: Research on the application of College Students' online learning cognitive engagement evaluation  
Yonghong WANG, Xiangchun HE

#118 P: Integration of Programming-based Tasks into Mathematical Problem-based Learning  
Zhihao CUI, Oi-Lam NG, Morris JONG

#149 P: Web-Based Engineering Design Activity in Biology: An Assessment on the Demonstration of Higher-Order Thinking Skills  
Ma. Andrea Claire CARVAJAL

#32 P: A Mixed Study to Understand Taiwanese Children's Preference for A Mobile Game  
Yi Chen WANG, Wei Tung NIEN, Joni Tzuchen TANG

#133 P: The impact of Augmented Reality applied in Vocabulary Learning and Use on Elementary EFL School Students  
Chin-Huang LIAO, Wen-Chi Vivian WU, Tin-Chang CHANG, Chang-Hung LEE

#13 P: Birds of Paradise: A Game on Urban Bird Biodiversity Conservation  
Jamielyn Mae VILLANUEVA, Patricia Vianne LEE, James Matthew CUARTERO

#46 P: Suggestions for special education teachers to practice spherical image-based virtual reality instruction in classrooms: a case study  
Kun-Hung CHENG

#51 P: Computational Fluency and the Digital Divide in Japanese Higher Education  
Luc GOUGEON, Jeffrey CROSS

#70 P: Improvement of Teaching Based on the E-book Reader Logs: A Case Study at High School Math Class in Japan  
Taro NAKANISHI, Hiroyuki KUROMIYA, Rwitajit MAJUMDAR, Hiroaki OGATA

#21 P: Composition class using a system that encourages self-review —Focus on second language learning—  
Yan ZHAO, Haruhiko TAKASE, Hidehiko KITA

#89 P: Examining the effects of automatic speech recognition technology on learners' lexical diversity  
Michael JIANG, Morris JONG, Wilfred LAU

#139 P: Technology Integration in a Communicative English Classroom  
Ruth Z. HAUZEL

#WIPP-01: A Trial Study on Restraint of Mind-Wandering while Viewing Educational Videos by Adjusting  
Biofeedback Operations  
Toru NAGAHAMA, Naoki NOSE, Issaku KAWASHIMA, Yusuke MOTITA

#WIPP-02: Narrative Discourse Structure Creation Support System for Reflecting Theme and Emotional Impression  
Atsushi ASHIDA, Masataka TOKUMARU, Tomoko KOJIRI

#WIPP-03: Visualization Method of Movement of Teachers and Students in Classroom using OpenPose  
Misato FUTATSUISHI, Izumi HORIKOSHI, Yasuhisa TAMURA

#WIPP-04: Development of Mapping Function between Variable Value and Object Properties for Program Behavior  
Visualization Tool TEDViT  
Hiroki SOMA, Satoru KOGURE, Yasuhiro NOGUCHI, Koichi YAMASHITA, Raiya YAMAMOTO, Tatsuhiro KONISHI,  
Yukihiro ITOH

#WIPP-05: Extraction Method of Characteristics of Important Body Shapes and their Training Order for Motor Skill  
Acquisition  
Jinya SUMIZAKI, Tomoko KOJIRI

#WIPP-06: Instruction Support System Using Impasse Detector and Major Failure Diagnoser for Programming Exercises  
Tomoki Ikegame, Yasuhiro NOGUCHI, Satoru KOGURE, Koichi YAMASHITA, Raiya YAMAMOTO, Tatsuhiro  
KONISHI, Yukihiro ITOH

#WIPP-07: Augmented Reality (AR) Analytics to Investigate Motor Skills for Crossing the Midline  
Manjeet SINGH, Shaun BANGAY, Atul SAJJANHAR

#WIPP-08: Motivating Ethnic Minority Students in Hong Kong to Learn Chinese Culture with EduVenture VR  
Morris Siu-Yung JONG, Nelson NG, Eric LUK, Jessie LEUNG, Michael Yi-Chao JIANG, Darwin LAU, Chin-Chung TSAI

#WIPP-09: An Augmented Reality Experience for Generating New Audiences for Spanish Dance  
Alejandro ROMERO-HERNANDEZA, Lara MARIN, Borja MANERO

#WIPP-10: The Development and Evaluation of an Online Educational Game Integrated with Real Person-NPC  
mechanism for History Learning  
Shu-Wei LIU, Hung-Yu CHAN, Huei-Tse HOU

#WIPP-11: Role of Preparation using Mobile Application for Summary-speaking Task in Face-to-face English-Speaking  
Pair Work  
Kae NAKAYA, Masao MUROTA

#WIPP-12: Proficiency, learning strategies, and logging behaviors on the dictation training courseware  
Yuichi Ono