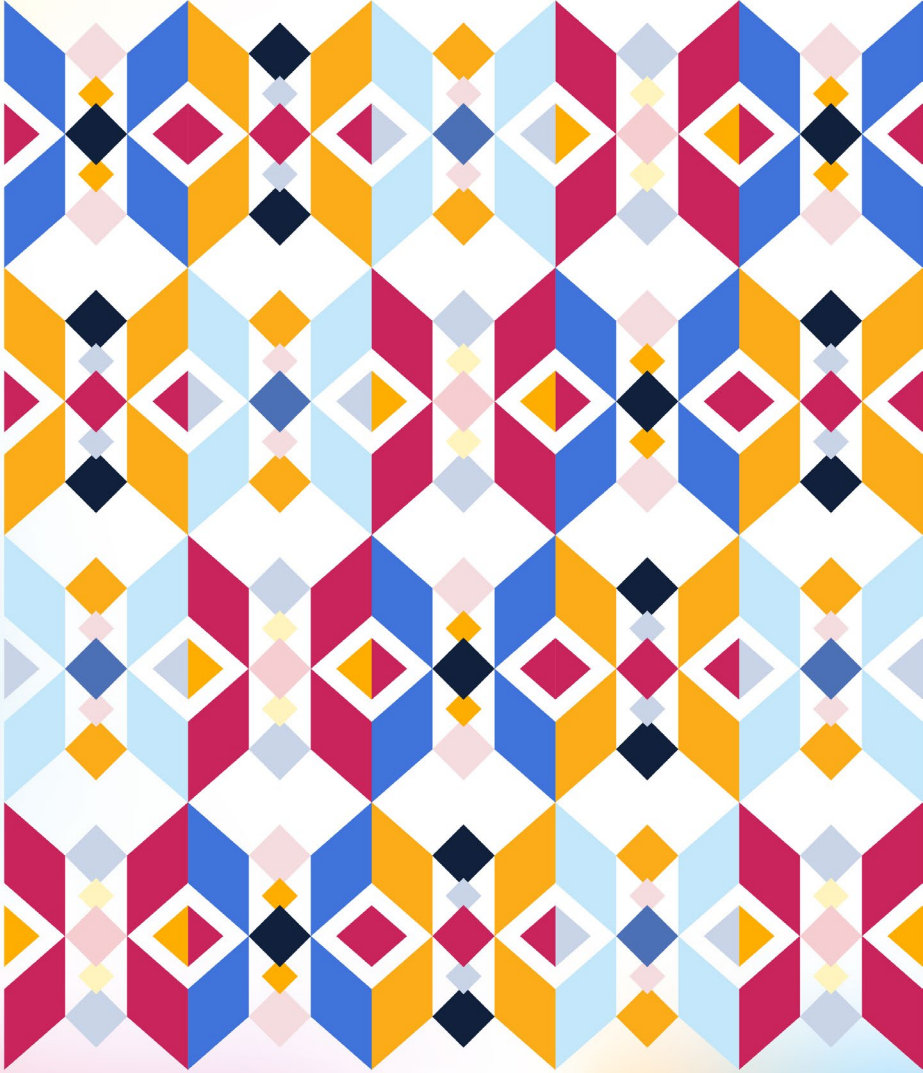

PROGRAM BOOK

Educational Technologies: Empowering Minds from Diverse Contexts

ICCE 2024

32nd International Conference on Computers in Education

25-29 November 2024

MANILA, PHILIPPINES

ORGANIZED BY:

APSCE

HOSTED BY:

ATENEO DE MANILA UNIVERSITY

ATENEO LABORATORY FOR THE LEARNING SCIENCES

ARETE

SPONSORED BY:

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Vcut

San Miguel BEER

Message from the

Conference Chair

Maria Mercedes T. RODRIGO

Conference Chair
Ateneo de Manila University
Philippines

On behalf of the organizing committee, I would like to welcome all participants of the 32nd International Conference on Computers in Education (ICCE) 2024, the flagship conference of the Asia-Pacific Society for Computers in Education (APSCE). I am particularly delighted to welcome this conference back to Manila. This is the second time we have been privileged to host ICCE, and we are grateful to APSCE for this opportunity.

The conference theme of ICCE 2024, "Educational Technologies: Empowering Minds from Diverse Contexts" signifies the importance of catering to learners from diverse cultural and socio-economic backgrounds. With the geometric growth of artificial intelligence applications, the digital divide threatens to increase, further separating those with high access to technology from those from under-resourced contexts. It is therefore important to design educational interventions to a wide breadth of learner types, in order to ensure education quality and equity.

As part of our program, we welcome four world-class keynote speakers: **Michelle BANAWAN** of the Asian Institute of Management, Philippines will present her work on learning from Generative Artificial Intelligence (GenAI) through an in-depth examination of how it processes knowledge and constructs reasoning paths. **Mirjam HAUCK** is from the Open Centre for Languages and Cultures and Associate Head for Internationalisation, Equality, Diversity and Inclusion in the School of Languages and Applied Linguistics at the Open University/UK. She will discuss a framework for critical virtual exchange as a context for critical Global Citizenship Education. **Dragan GAŠEVIĆ** is Distinguished Professor of Learning Analytics and Director of Research in the Department of Human Centred Computing of the Faculty of Information Technology and the Director of the Centre for Learning Analytics at Monash University, Australia. He will discuss FLoRA, a platform that uses AI to support complex reading and writing tasks. Finally, **Seiji ISOTANI**, Visiting Professor of Education at the Harvard Graduate School of Education, USA and a Professor of Computer Science and Learning Technology at the University of São Paulo,

Brazil, will be discussing his work on the impact of gamification on learning and motivation and the strategies for achieving effective personalization.

They will be joined by three inspiring theme-based speakers. **Ching Sing CHAI** is a professor at the Chinese University of Hong Kong and Associate Dean of Higher Education. He will discuss a reframing of the Technological Pedagogical Content Knowledge (TPACK) framework as the Intelligent Pedagogical Content Knowledge (IPACK) for AI. **Wenli CHEN**, an Associate Professor and Head of the Learning Sciences and Assessment Academic Group at the National Institute of Education, Nanyang Technological University (NTU) Singapore, will present her work on Multi-Modal Learning Analytics. Finally, **Johanna PÖYSÄ-TARHONEN** is a senior researcher at the Finnish Institute for Educational Research (FIER), University of Jyväskylä, Finland, and a Docent at the Philosophical Faculty, University of Eastern Finland. She will discuss the current landscape, challenges, and prospects of computer-supported collaborative work.

For making ICCE 2024 possible, I thank the organizing committee for all their hard work and perseverance. I thank the International Program Coordination Chair and Co-Chair, Akihiro Kashihara and Bo Jiang, our Local Organizing Committee Chair, Jessica Sugay and her team, and our consultants, Ju-Ling Shih, Hiroaki Ogata, and Lung Hsiang Wong. I also thank the many sub-conference chairs, program committee members, organizers of the Workshops, Tutorials, Work-In-Progress Posters (WIPP), Doctoral Student Consortium (DSC), Posters, Early Career Workshops (ECW), and Extended Summaries (ES). I am grateful to all the paper authors and registered participants for joining us this year.

A special note of thanks goes to Managing Secretary of APSCE Pham-Duc Tho for his tireless work, the standing committee, and the Executive Committee of APSCE.

I thank the “home court” that has given us every possible advantage in their power: Ateneo de Manila University, the Ateneo Laboratory for the Learning Sciences, Faura Research Foundation, and Arete.

Finally, I thank our sponsors: the Office of Naval Research Global, PHINMA Education, PLDT, Smart Communications, Inc., OT Kang Scholarship Foundation, Department of Science and Technology Philippine Council for Industry, Energy, and Emerging Technology Research and Development, SM Foundation, Unilab Foundation, Chemrez Technologies, and CL Follosco Group.

I wish all the participants a fruitful and engaging conference!
Thank you & *mabuhay!*

Akihiro KASHIHARA

The University of Electro-Communications, Japan

Bo JIANG

East China Normal University, China

Message from the

International Program Coordination Chairs

Welcome to the 32nd International Conference on Computers in Education (ICCE) organized by the Asia-Pacific Society for Computers in Education (APSCE)! ICCE is an annual conference series addressing a broad range of issues related to using Information and Communication Technology (ICT) for education and learning. ICCE2024 takes place in Manila, Philippines from November 25-29, 2024. The main purpose is to provide researchers from all over the world with the opportunities to share research and new ideas for building the future of the field of Computers in Education.

ICCE 2024 continues the meta-conference tradition of the previous ICCEs. The conference is organized into seven Sub-Conferences specializing specific themes. Each Sub-Conference is organized by a program committee appointed by the respective Special Interest Group (SIG: refer to ***https://apsce.net/special-interest-groups***). These Sub-Conferences are:

- **C1:** ICCE Sub-Conference on Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning
- **C2:** ICCE Sub-Conference on Computer-supported Collaborative Learning (CSCL) and Learning Sciences
- **C3:** ICCE Sub-Conference on Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure
- **C4:** ICCE Sub-Conference on Technology Enhanced Learning for Mobility of Learners and Learning Experiences (TEML)

C5: ICCE Sub-Conference on Educational Gamification and Game-based Learning (EGG)
C6: ICCE Sub-Conference on Technology Enhanced Language Learning (TELL)
C7: ICCE Sub-Conference on Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP)

The International Program Committee is led by a strong and dedicated team, which includes the Conference Chair, the Program Coordination Chair and Co-Chair, Sub-Conference Chairs and Co-Chairs and experts in the field of Computers in Education from many different countries or economies. Former ICCE local organizing and program coordination chairs have played important roles as consultants in overseeing the organization process of this conference.

ICCE2024 received a total of 188 papers (153 full, 29 short, and 6 posters) from 21 different countries or economies. Table 1 provides the submissions by the country of the first author in each paper. Top five countries with the highest number of submissions were Japan, Philippines, India, Taiwan, and Hong Kong. Submissions were also received from the Middle East, Europe, America and Africa, which signals the international interest toward ICCE 2024.

Table 1. Paper Submission Statistics (based on the first author's country)

Countries/Economies					
Japan	49	United States	6	Thailand	2
Philippines	39	Canada	4	Tunisia	2
India	16	Australia	3	Croatia	1
Taiwan	16	Indonesia	3	Israel	1
Hong Kong	13	Malaysia	3	Romania	1
Singapore	12	New Zealand	2	Spain	1
China	11	South Korea	2	United Kingdom	1

All papers were subjected to a rigorous review process by at least three reviewers from the respective Sub-Conference program committees. After the reviews were completed, a metareview was provided for each paper. In total, 660 reviews and meta-reviews were received. After a discussion period within the individual program committees led by the Sub-Conference Executive Chairs and Co-Chairs, recommendations were made to the Program Coordination Chair and Co-Chair, who oversaw the review process and quality for all

Sub-Conferences. This resulted in 38 full papers, 62 short papers, and 42 posters accepted across the seven Sub-Conferences. The overall acceptance rate for full papers was 24.84%, which reflects our efforts to continue the maintenance of the quality of presentations at ICCE 2024. The complete statistics of paper acceptance is shown in Table 2.

Table 2. Paper Acceptance Statistics

Sub-Conference	C1: AIED/ITS	C2: CSCL	C3: ALT	C4: TEML	C5: EGG	C6: TELL	C7: PTP	Total
Total Submissions	39	19	44	16	21	15	34	188
Submitted as Full Paper	32	13	36	14	20	10	28	153
25% of Submitted as Full Paper	8.00%	3.25%	9.00%	3.50%	5.00%	2.50%	7.00%	38.25%
Accepted as Full Paper	6	3	10	4	5	3	7	38
Full Paper %	18.75%	23.08%	27.78%	28.57%	25.00%	30.00%	25%	24.84%
Accepted as Short Paper	8	7	17	5	5	8	12	62
Accepted as Poster	12	4	10	3	3	1	9	42
Rejected	13	5	7	8	8	3	6	46
Overall %	66.67%	73.68%	84.09%	75.00%	61.90%	80.00%	82.35%	75.53%

In addition to full papers, short papers and posters, ICCE 2024 includes various program components, such as Keynote Speeches, Theme-based Invited Speeches, Workshops, Tutorials, Interactive Events, Panels, Work-in-Progress Posters (WIPP), Extended Summary (ES), Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SATELUC), Doctoral Student Consortia (DSC), and Early Career Workshop (ECW). All the papers in these program components are published in separate proceedings with their own ISBN numbers. Pre-conference events are held on the first two days of the conference, including 8 workshops, 2 tutorials, 2 Interactive Events, DSC, ECW, and APSCE Student Wing Workshop.

We are grateful to all who contributed to making ICCE 2024 a successful conference. First, we thank all the paper authors for their contributions and for choosing ICCE 2024 as a venue to present their research. We would also like to

thank the IPC Executive Chairs/Co-Chairs and members, who undertook the responsibility of reviewing and selecting papers that represent research of high quality. Specially thanks to our Keynote and Invited Speakers for accepting our invitations and bringing inspiring research to the ICCE 2024 participants. The Local Organizing Committee deserves a big thank you for their hard work.

We hope that all participants will find ICCE 2024 interesting and inspiring, and that they will enjoy not only academic activities but also exciting cultural experiences in Manila, Philippines.

Message from the

Local Organizing Chair

Jessica O. SUGAY

Local Organizing Committee Chair
Ateneo de Manila University
Philippines

Welcome to Manila! The Ateneo de Manila University (ADMU), through the Ateneo Laboratory for the Learning Sciences (ALLS) is honored to host ICCE 2024 and to welcome the ICCE community to our Loyola Heights Campus!

After having first hosted ICCE 2018, we thank the Asia Pacific Society for Computers in Education (APSCE) for again entrusting us with this event.

For making this conference possible, we thank our Conference Chair Maria Mercedes RODRIGO, IPC Chair Akihiro KASHIHARA, IPC Co-Chair Bo JIANG, the Local Organizing Committee Core Team – Ma. Rosario M. MADJOS (Registration & Finance), Japheth Duane C. SAMACO (Logistics), John Michael B. SANTOS (Creatives & Publicity), Romell Ian B. DE LA CRUZ (Web Site Management), and Mar Joseph Aureos G. MEJILLA (Programs). We thank the many ADMU undergraduate students who comprise our LOC SubCore and Volunteers Pool.

We thank our sponsors: Areté, Office of Naval Research Global, PHINMA Education, PLDT Smart, O.T. Kang Scholarship Foundation, Inc., DOST-PCIEERD, Faura Research Foundation, SM Foundation, Unilab Foundation, Torre Lorenzo Development Corp., Chemrez Technologies, Inc., CL Follosco Group, Inc., Jack 'n Jill brands — Chippy, Cloud 9, Hello! Desserts, Mang Juan, Piattos, Roller Coaster, and Vcut — and San Miguel Beer.

Lastly, we thank the more than 250 conference participants for all their contributions to the conference and for their presence. We hope that you find some time to enjoy Manila's sites, food, and shopping!

Organization

STANDING COMMITTEE

Conference Chair
Maria Mercedes RODRIGO, Ateneo de Manila University, Philippines

International Program Coordination Chair
Akihiro KASHIHARA, The University of Electro-Communications, Japan

International Program Coordination Co-Chair
Bo JIANG, East China Normal University, China

Local Organizing Committee Chair
Jessica O. SUGAY, Ateneo de Manila University, Philippines

Consultants
Ju-Ling SHIH, National Central University, Taiwan
Hiroaki OGATA, Kyoto University, Japan
Lung-Hsiang WONG, Nanyang Technological University, Singapore

SUB-CONFERENCES

C1: ICCE Sub-Conference on Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning
PC Executive Chair
Sébastien LALLÉ, Sorbonne University, France

PC Co-Chairs
Luc PAQUETTE, University of Illinois at Urbana-Champaign, USA
Michelle P. BANAWAN, Asian Institute of Management, Philippines

C2: ICCE Sub-Conference on Computer-supported Collaborative Learning (CSCL) and Learning Sciences
PC Executive Chair
Gaoxia ZHU, Nanyang Technological University, Singapore

PC Co-Chairs
Daniel BODEMER, University of Duisburg-Essen, Germany
Lenka SCHNAUBERT, University of Nottingham, UK
Juan ZHENG, Lehigh University, USA

C2: ICCE Sub-Conference on Computer-supported Collaborative Learning (CSCL) and Learning Sciences
Advisor
Ben CHANG, National Central University, Taiwan

C3: ICCE Sub-Conference on Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure
PC Executive Chair
Shinobu HASEGAWA, Japan Advanced Institute of Science and Technology, Japan

PC Co-Chairs
Seb DIANATI, Charles Darwin University, Australia
Tudur Sadashiva Ashwin DIXIT, Vanderbilt University, USA
Mohamed Elsayed AHMED, South Valley University, Egypt

C4: ICCE Sub-Conference on Technology Enhanced Learning for Mobility of Learners and Learning Experiences (TEML)
PC Executive Chair
Patcharin PANJABUREE, Khon Kaen University, Thailand

PC Co-Chairs
Liang CHANGHAO, Kyoto University, Japan
Daner SUN, The Education University of Hong Kong, Hong Kong
Ivica BOTIČKI, University of Zagreb, Croatia
Michael Shane TUTWILER, University of Rhode Island, USA

C5: ICCE Sub-Conference on Educational Gamification and Game-based Learning (EGG)
PC Executive Chair
Junfeng YANG, Hangzhou Normal University, China

PC Co-Chairs
Chen SUN, University of Manchester, UK
Chih-Pu DAI, University of Hawaii, Manoa, USA
Lu HUANG, Hangzhou Normal University, China

C6: ICCE Sub-Conference on Technology Enhanced Language Learning (TELL)
PC Executive Chair
Rustam SHADIEV, Zhejiang University, China

PC Co-Chairs
Jozef COLPAERT, University of Antwerp, Belgium
Wen-Chi Vivian WU, Asia University, Taiwan
Brendan FLANAGAN, Kyoto University, Japan
Yanjie SONG, The Education University of Hong Kong, Hong Kong

C7: ICCE Sub-Conference on Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP)
PC Executive Chair
Jayakrishnan Madathil WARRIEM, Indian Institute of Technology Madras, India

PC Co-Chairs
Navneet KAUR, Indian Institute of Technology Delhi, India
Lucian NGEZE, University of Dodoma, Tanzania
Prajakt PANDE, Southern Methodist University, USA

OTHER COMPONENTS

Workshop/Tutorial/Interactive Event
Chair
Hiroyuki MITSUHARA, Tokushima University, Japan

Co-Chairs
Ma. Louise Antonette N. DE LAS PEÑAS, Ateneo de Manila University, Philippines

Advisor
Chiu-Lin LAI, National Taipei University of Education, Taiwan

Work-In-Progress Posters (WIPP)
Chair
Vwen Yen Alwyn LEE, Nanyang Technological University, Singapore

Co-Chairs
Si ZHANG, Central China Normal University, China
Chiu-Lin LAI, National Taipei University of Education, Taiwan
Yun WEN, Nanyang Technological University, Singapore

Doctoral Student Consortium (DSC)
Chair
Lin FENG, Singapore University of Social Sciences, Singapore

Co-Chair
Vwen Yen Alwyn LEE, Nanyang Technological University, Singapore
Yuyao TONG, The University of Hong Kong
Huiying CAI, Jiangnan university, China

Early Career Workshop (ECW)
Chair
Chiu-Lin LAI, National Taipei University of Education, Taiwan

Co-Chairs
Shao-Chen CHANG, Yuan Ze University, Taiwan
Jon MASON, Charles Darwin University, Australia

Advisor
Hui-Chun CHU, Soochow University, Taiwan

Extended Summary (ES)
Chair
Kae NAKAYA, Osaka University, Japan

Co-Chairs
Emmanuel AYEDOUN, Kansai University, Japan
Chien-Liang LIN, Ming Chuan University, Taiwan

Advisor
Juan ZHOU, Tokyo Institute of Technology, Japan

APSCE Excellence Scholarship Award
Chair
Jazihan MAHAT, Universiti Putra Malaysia, Malaysia

Co-Chairs
Vwen Yen Alwyn LEE, Nanyang Technological University, Singapore

Consultant
Su Luan WONG, Universiti Putra Malaysia

Technical Advisor
Nur Aira Abd Rahim, Universiti Putra Malaysia

Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SALUTEC)
Chair
Lung-Hsiang WONG, Nanyang Technological University, Singapore

Co-Chair
Mas Nida Md. Khambari, Universiti Putra Malaysia, Malaysia
Ivica BOTIČKI, University of Zagreb, Croatia
Nur Aira Abd Rahim, Universiti Putra Malaysia
Saida ULFA, State University of Malang, Indonesia

Panel
Chair
Bo JIANG, East China Normal University, China

Co-Chair
Jerry Chih-Yuan SUN, National Yang Ming Chiao Tung University, Taiwan

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Programs Coordinator
Mar Joseph Aureos G. MEJILLA, Ateneo de Manila University, Philippines

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Olivia Frances V. MANGLAPUS
Anahata Joselle C. PEREZ

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John Riz Daniel D. RAMOS

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Ronelyn D. CANTERA

Secretariat
Layla Mikel VILLANUEVA
Johannes Martin G. PISCASIO

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Niles Tristan V. CABRERA
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Marielle Dana C. GILLE
Cuitlauzina Brianna CERBITO
Grayfhiel Imman CAMPOS
Larissa Drew C. ANG
Joaquin Alonzo A. SALAZAR
Louise Angelo O. TENORIO
Christine TABLATIN

ICCE 2024

32nd International Conference on Computers in Education

MANILA, PHILIPPINES

The 32nd International Conference on Computers in Education (ICCE 2024) is organized by the Asia-Pacific Society for Computers in Education (APSCE) and will be hosted by the Ateneo de Manila University (ADMU). ICCE 2024 will be held on 25-29 November 2024, from Monday to Friday at Areté, Ateneo de Manila University, Quezon City, Philippines. Pre-conference events (e.g., Doctoral Student Consortium, workshops, and tutorials) will be conducted on the first two days and the main conference will begin on 27 November 2024.

Accepted papers in the main conference, workshops, Early Career Workshop, Doctoral Student Consortium, Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SATELUC), and Work-in-Progress Posters will be published in proceedings, which will be submitted to Elsevier for inclusion in Scopus. Proceedings of the main conference will also be submitted to Thomson Reuters for inclusion in the Conference Proceedings Citation Index.

Educational Technologies: Empowering Minds from Diverse Contexts

ICCE showcases papers about educational initiatives addressing the diverse needs, characteristics, and circumstances of learners. By designing technologies to accommodate both formal and informal learning environments, high- and under-resourced schools, and a wide breadth of learner types, our community hopes to spread the benefits of these interventions, contributing to greater equity.

ABOUT THE CONFERENCE

The conference is held at the the Areté, Ateneo de Manila University.

Ateneo de Manila University (Ateneo) is a Filipino, Catholic, and Jesuit university that stands as one of the leading and influential institutions of higher learning in the Philippines. Its holistic, liberal, and humanistic learning and formation programs stem from its Jesuit roots and are a manifestation of a 500-year-old educational tradition.

As the **Creativity and Innovation Hub of the Ateneo, Areté** provides the space and freedom for groups from different fields and persuasions to create, collaborate on, and share knowledge, skills, and practices. It features theaters, art galleries, studios, laboratories, a makerspace, teaching and meeting rooms, and several open areas.

Registration & Secretariat Details
Upon first arrival at the Conference, proceed to the Registration Area at Registration Area at the 4th Floor Lobby (outside of the Loft) Innovation Wing, Areté. Registration opens at 8:30 AM daily.

- Show any ID that indicates your name.
- Collect your conference kit.

If you need information and assistance, please visit the Registration Desk or the Secretariat Room at College ‘66.
Email: icce2024@ateneo.edu
Mobile: +63 908 343 5761

Presentations of Full Papers and Short Papers

Presentation Length:

- Full Paper : 20 minutes + 5 minutes Q&A
- Short Paper : 10 minutes + 5 minutes Q&A
- Extended Summary : 9 minutes + 3 minutes Q&A

Guidelines

- Please check in with your Session Chair before the session in which your presentation begins.
- Please bring your own computer for the presentation to prevent potential compatibility issues. The connection between the computer and the projector is via HDMI. Alternatively, a laptop will be available for participants to use, if necessary. Also please bring a USB flash drive with you, containing file copies of your presentation (PDF).
- Please set up and test your presentation in the designated room prior to your session.
- You may use the ICCE 2024 presentation template linked on the website in preparing your presentation. This is optional. You are free to design your presentation as you see fit.

Poster Presentations

Guidelines:

- Your poster should be within 90cm (width) × 120cm (height). The orientation of posters is Portrait.
- Poster presentations will be divided into two sessions. The presentation time for each session is 60 minutes. Please check your presentation time in the Program.
- Please include the following details in the poster: title of the paper, the names and affiliations of the authors.
- The contents of the poster should be clear and concise. Figures, tables and letters on the posters should be large and clear enough that they are readable from a 1-meter distance. Letters in font size less than 1 cm should be avoided.
- Electrical power outlets will **not** be available for the poster presentation.
- Wi-Fi Internet connection will be provided.
- Posters will be displayed in different locations in Room P for Regular Poster, WIPP Poster and SATELUC. Please check the details at the venue.
- All necessary materials such as thumbtacks or mounting adhesives will be provided at the venue.
- Posters may be posted and removed at any time during the main conference, November 27-29. Please post your poster before your presentation time. However, please do not set up your poster during the time when there is a session in the room. Please be sure to remove your poster and take it back home with you.

Meals
Snacks and Buffet lunches will be served with descriptions of ingredients. Participants with indicated special diet options will be served separately at a designated area.

Social Events
The Welcome Reception (November 26, 5:30 PM) will be held at [VENUE]. The Dinner Banquet (November 28, 6:30 PM) will be held at [VENUE].

Prayer Room
A prayer room is provided within the complex. Please ask our conference volunteers to guide you to the room.

Shuttle Services
The Local Organizing Committee (LOC) will provide shuttle service from our partner hotels to the conference venue and vice-versa.

Getting Around
The ICFULL 2024 LOC recommends the following modes of transportation.

Grab
- Download the mobile application and register for an account. This service requires an internet connection over Wi-Fi or mobile data.
- Specify your pick-up point and your destination.
- The application will display an estimated fare to be paid. Payment may be made in cash (Philippine Pesos), charged to your credit card or debit card, or any applicable payment method you may have.
- The application displays a notification with the vehicle and driver information. Most vehicles accommodate four passengers and two medium-sized luggage.

Metered Taxis
- Taxis are clearly marked and appear in a variety of colors.
- Yellow taxis are specific to the airport.
- Always insist that the taxi driver activates the meter.

Use Google Maps or Waze to navigate to **Areté Ateneo.**

FLOOR LAYOUT:
ARETÉ ATENEO

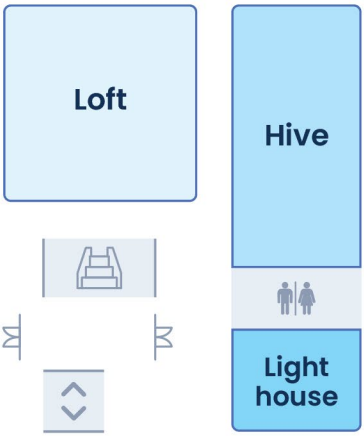
Ground Floor (GF)
- Ubuntu Space
- Hyundai Hall

2nd Floor (2F)
- Innovation Lobby

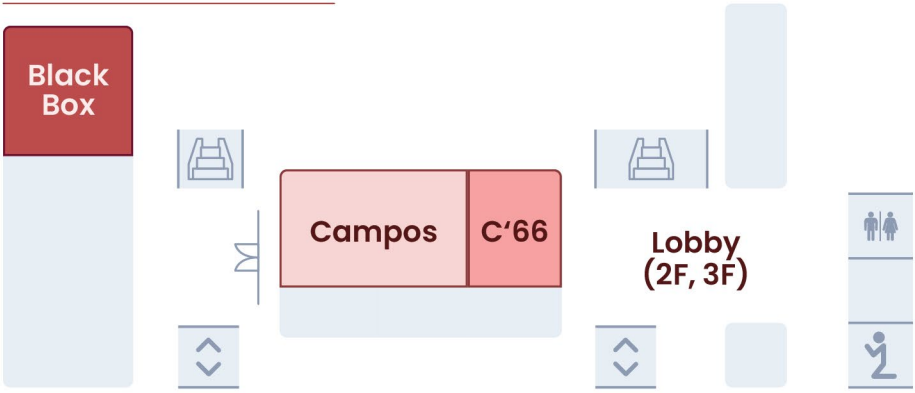
3rd Floor (3F)
- Doreen Black Box
- Joselito & Olivia Campos Interactive Teaching Lab
- College '66 Co-Lab
- Prayer Room

Roofdeck (RD)
- The Loft
- The Hive
- JJ Atencio Lighthouse

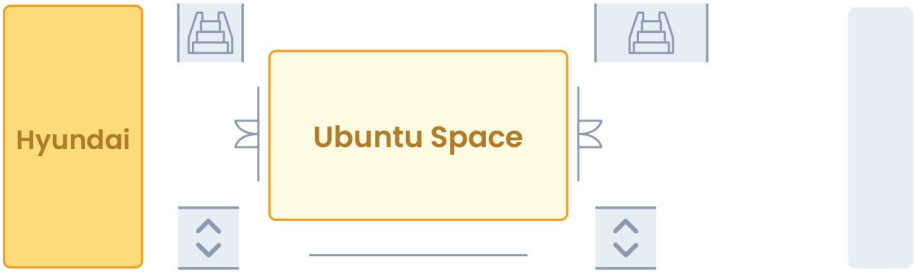
ROOFDECK (RD)



3RD FLOOR (3F)



GROUND FLOOR (GF)



CAMPUS MAP: ATENEO

The LOC recommends entering the campus at Gate 3 (Vehicles) or Gate 3.5 (Pedestrians)

MAP OVERVIEW:
KATIPUNAN AVE.

LOCAL INFORMATION

Weather/Climate & Time
The tropical weather in the Philippines is currently in the rainy season, usually in the months of June to November. Average temperature ranges from 25ºC to 32ºC. Rains are expected in the month of November.

The Philippines follows the GMT+8 time zone.

Language & Currency
The Philippines, especially Metro Manila, is generally bilingual (English and Filipino). Provinces and regions across the country also speak a variety of dialects.

The Philippine Peso (PHP) is the national currency of the Philippines. Foreign Currency Exchange centers and banks are easily accessible in most parts of the country.

Electrical Voltage
Electrical voltage in the Philippines is 220 volts. Gadgets and appliances that require 110 volts should use a voltage converter.

Smoking
Ateneo de Manila University is a smoke-free campus.
Smoking, e-cigarettes, and vaping are strictly prohibited on campus.

Telecommuncations & Emergency Numbers
When calling Manila from abroad, phone numbers follow the format:

Landline Numbers: +63 2 #### ####
Mobile Numbers: +63 9## ### ####

Prepaid mobile SIM cards are widely accessible in airports, malls, and convenience stores. ICFULL 2024 recommends the services of Smart Communications.

- National Emergency Hotline
  911
- National Disaster and Risk Reduction and Management Council (NDRRMC)
  +63 2 8911 5061
- Red Cross
  143
- Philippine National Police
  +63 2 8722 0650
- Metro Manila Development Authority
  136
- Manila International Airport Authority
  +63 917 839 6242

PROGRAM AT A GLANCE

ECW: Early Career Workshop **DSC:** Doctoral Student Consortia
WIPP: Work-in-Progress Posters

Time	Nov 25	Nov 26	Time	Nov 27	Time	Nov 28	Nov 29
8:30 – 9:00	**Registration**						
9:00 – 10:30	**Workshops ECW**	**Workshops DSC**	9:00 – 10:30	**Opening Ceremony**		**Keynote Speaker**	**Keynote Speaker**
			10:00 – 10:20	**Coffee/Tea Break**			
10:30 – 10:50	**Coffee/Tea Break**		10:20 – 11:20	**Keynote Speaker**	10:20 – 11:20	**Theme Speakers**	**Parallel Sessions** 10:20 – 11:10 11:10 – 12:00
10:50 – 12:20	**Workshops ECW**	**Workshops DSC**	11:20 – 12:20	**Panel-3 Parallel Sessions IPC Meeting**	11:00 – 12:00	**Panel-1 Parallel Sessions**	
					12:00 – 13:00	**Lunch**	
12:20 – 13:20	**Lunch**				13:00 – 14:00	**Keynote Speaker**	**Parallel Sessions**
13:20 – 14:50	**Workshops Interactive Events Tutorial**	**Workshops DSC Tutorial Student Wing** 14:30 – 16:30	13:20 – 14:00	**Theme Speaker**	14:00 – 15:30	**Parallel Sessions**	**Closing Ceremony** 14:15 – 15:15
14:50 – 15:10	**Coffee/Tea Break**		14:00 – 15:00	**Parallel Sessions**			
15:10 – 17:00	**Workshops Interactive Events Tutorial**	**Workshops Tutorial Student Wing**	15:00 – 15:20	**Coffee/ Tea Break**			
			15:20 – 16:50	**Panel-2 Parallel Sessions**	15:30 – 15:50	**Coffee/ Tea Break**	
					15:50 – 16:50	**Parallel Sessions**	
17:00 – 17:30			16:50 – 17:50	**Poster/WIPP SATELUC**	**Poster/WIPP**		
17:30 – 19:30		**Welcome Reception**	18:00 – 22:00	**APSCE EC Meeting**	18:30 – 21:30	**Dinner Banquet**	

CONFERENCE PROGRAM

Monday, 25 November 2024		
9:00 to 10:30	**ECW:** Early Career Workshop *Session Chair: Chiu-Lin LAI* **ECW01:** Can Use of Technologies help Reduce Biases in Academic Recruitment *Kashmira DAVE* **ECW02:** Leveraging AI-Powered Virtual Meeting Summaries: Towards an Evidence-Based Classroom Observation Assessment *Arlene Mae CELESTIAL VALDERAMA* **Advisors** Tzu-Chi YANG Assistant Professor, National Yang Ming Chiao Tung University Cheng-Huan CHEN Associate Professor, National Tsing Hua University Shao-Chen CHANG Assistant Professor, Yuan Ze University	Doreen Black Box
	W01-1: 4th International Workshop on Embodied Learning: Technology Design, Analytics & Practices *Session Chair: Rwitajit MAJUMDAR* **W01-004F:** Exploring Cognitive Engagement in AI-Driven Adaptive Psychomotor Sport Training *Miguel PORTAZ, Rwitajit MAJUMDAR & Olga C. SANTOS* **W01-005F:** Exploring Graph Slopes Through a Series of Embodied Learning Experiences *Priyadharshni ELANGAIVENDAN, Melwina ALBUQUERQUE, Shizuka DARA & Sanjay CHANDRASEKHARAN*	The Loft
	W03-1: Analysis and Design of Problems/Questions in the Digital Environment: The 17th Workshop on Technology Enhanced Learning by Posing/Solving Problems/Questions *Session Chair: Yusuke HAYASHI* **W03-002:** Question Generation **Support System Using Others' Research Frames** *Daiki MAEDA, Kota KUNORI & Tomoko KOJIRI* **W03-005:** Learning Effectiveness and Reflections on AI Literacy in Junior High School Students with Game-Based Learning and Problem-Based Learning *Shih-Hua HUANG & Ting-Chia HSU* **W03-009:** Does Experience of Feedback Generation Promote Student Novel Problem Posing? An Empirical Study in a Database Co*Kazuaki KOJIMA*	The Hive

Monday, 25 November 2024		
9:00 to 10:30	**W08-1:** The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop) Session Chair: Pawat CHAIPIDECH **W08-001F:** Novice Programmers' Saccadic Patterns in Error Message Comprehension and Syntax Error Identification Caren PACOL, Maria Mercedes RODRIGO & Christine Lourrine TABLATIN **W08-004F:** Challenges and Opportunities for Designing and Implementing Ubiquitous Game-Based Learning to Cultivate Digital Citizenship in Thailand Patcharin PANJABUREE, Gwo-Jen HWANG, Niwat SRISAWASDI, Ungsinun INTARAKAMHANG & Sasipim POOMPIMOL **W08-005S:** Reducing Undergraduate Students' Information Technologies (ITs) Anxiety Through Implementation of Blended Learning: A Case Study in the Basic Natural Science Course Anggiyani Ratnaningtyas Eka NUGRAHENI, Anggraeni Dian PERMATASARI & Antuni WIYARSI	JJ Atencio Lighthouse
	W09-1: The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation Session Chair: Jerry Chih-Yuan SUN **W09-001S:** AR²: Augmented Reality for Enhanced Reading Comprehension Allan Jay ESTEBAN **W09-002S:** Developing the Interactive Game-Based Picture Book "Food Ninja" to Enhance Creativity in Elementary School Students Wen Chun LAN, De Jun MO & Joni Tzuchen TANG **W09-003F:** An Estimation of Student Well-Being Using Experience Sampling Arthur W. NEBRAO, Jr. & Maria Mercedes T. RODRIGO **W09-004S:** Exploring the Use of Short Video Social Media for Learning ESL in Indonesia Riska SAPUTRA, Tsaqufal JALILIY & Intan SETIANI **W09-005S:** Narrative Introduction Text Generation Support System According to Reader Preferences Ryusei SHIMONAKA, Kota KUNORI & Tomoko KOJIRI **W09-007S:** Galvanic Skin Responses and Flow: Insights from Multimodal Learning Analytics in Personal Learning Environment Yu-Lin HO, Yuan-Hsuan LEE & Jiun-Yu WU	Campos Interactive Teaching Lab
10:30 to 10:50	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space

Monday, 25 November 2024		
10:50 to 12:20	**W01-2:** 4th International Workshop on Embodied Learning: Technology Design, Analytics & Practices Session Chair: Jayakrishnan M. WARRIEM **W01-006F:** Unpacking Interaction Markers of Critical Thinking *Aditi KOTHIYAL, Rwitajit MAJUMDAR, Shitanshu MISHRA, Jayakrishnan Madathil WARRIEM & Prajakt PANDE* **W01-007F:** Actions and Interactions at Collaborative Engineering Design Hackathon: Looking Through the Lens of Embodied Cognition *Soumya NARAYANAN, Navneet KAUR & Rwitajit MAJUMDAR* **W01-008F:** Designing an AI-Enhanced Timeline for Monitoring Multimodal Interactions in Embodied Learning Environments *Joyce FONTELES, Namrata SRIVASTAVA, Eduardo DAVALOS, Ashwin T S & Gautam BISWAS*	The Loft
	W03-2: Analysis and Design of Problems/Questions in the Digital Environment: The 17th Workshop on Technology Enhanced Learning by Posing/Solving Problems/Questions Session Chair: Shitanshu MISHRA **W03-004:** Difficulty-Controllable Reading Comprehension Question Generation Considering the Difficulty of Reading Passages *Yuto TOMIKAWA & Masaki UTO* **W03-006:** Iterative Problem Solving in the Integration of Design Thinking and Game-Based Learning into Enhancing Computational Thinking and AI Literacy *Tai-Ping HSU & Ting-Chia HSU* **W03-007:** Design and Development of a Stepwise Learning Environment for Problem Posing of Arithmetic Word Problem *Yusuke HAYASHI, Nagito YAMAMOTO, Susumu SHIMAKAWA & Tsukasa HIRASHIMA*	The Hive
	W08-2: The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop) **W08-002F:** Predicting Emotional Impact on Peer Review, Peer Assessment, and Self Assessments Using Deep Learning and NLP in STEM Education *Pascal Muam MAH* **W08-008F:** Leveraging Generative AI for Automatic Scoring in Chemistry Education: A Web Based Approach to Assessing Conceptual Understanding of Colligative Properties *Sri YAMTINAH, Dimas Gilang RAMADHANI, Antuni WIYARSI, Hayuni Retno WIDARTI & Ari Syahidul SHIDIQ* **W08-010S:** Fostering TPACK Self Efficacy Among Pre-Service Chemistry Teachers: A Case Study from Indonesia *Anggiyani Ratnaningtyas Eka NUGRAHENI & Niwat SRISAWASDI*	JJ Atencio Lighthouse

Monday, 25 November 2024		
10:50 to 12:20	**W09-2:** The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation Session Chair: Tzu-Chi YANG **W09-006F:** Transforming Student Feedback into Institutional Action Plans: A Data-Driven Approach *Arlene Mae CELESTIAL VALDERAMA* **W09-008F:** BioMol DigiGames: An App for the Mastery of Biomolecules *Joshua TUMOLVA, Armando Victor GUIDOTE, John Lorence VILLAMIN & Joselito Christian Paulus VILLANUEVA* **W09-009S:** The Era of Learning Programming Through Program: Challenges and Potential of ChatGPT in Revolutionizing High School Programming Education *Tzu-Chi YANG* **W09-010S:** Code Visualization System for Writing Better Code Through Trial and Error in Programming Learning: Classroom Implementation and Practice *Shintaro MAEDA, Kento KOIKE & Takahito TOMOTO* **W09-011S:** Optimization of Non-Verbal Information for English Conversation Agents Using Interactive Evolutionary Computation *Yuma SHIMOSAKA, Emmanuel AYEDOUN & Masataka TOKUMARU*	Campos Interactive Teaching Lab
12:20 to 13:20	**Lunch** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
13:20 to 17:00	**IE01:** Interactive Event-1 **Educ-AI-tion: Bridging Divides with Educational GenAI** *Ahmad Salahuddin MOHD HARITHUDDIN, Nurul Amelina NASHARUDDIN, Nur Aira Abd Rahim, & Mas Nida Md. Khambari* *Universiti Putra Malaysia, Malaysia*	The Loft
	IE02: Interactive Event-2 **Improving Learning through Information Organization Using Kit-Build Concept Map** *Rian FITRIANSYAH & Lintang Matahari HASANI* *Hiroshima University, Japan*	Doreen Black Box
	TU01: Tutorial 1 **Leveraging Deep NLP for Agentic LLM Use in Teaching and Learning** *Michelle BANAWAN Asian Institute of Management, Philippines*	The Hive
	W08-3: The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop) Session Chair: Anggiyani Ratnaningtyas Eka NUGRAHENI **W08-003F:** Math Learning Application on Mobile Devices Following the STEAM Educational Model *Nguyen-Manh THANG & Pham-Duc THO*	JJ Atencio Lighthouse

Monday, 25 November 2024		
13:20 to 17:00	**W08-011F:** Does Interactive Augmented Reality Enhance Primary Students' Geometric Understanding and Visual-Spatial Skills in Mathematics Learning? *Atcharaporn ASSAWAPHUM, Sasivimol PREMTHAISONG & Pawat CHAIPIDECH* **W08-007S:** Promoting Quantitative Analysis in School Chemistry with Technology-Supported Hands-On Laboratory Learning: A Case of Arduino-Based Portable Spectrophotometer *Ari Syahidul SHIDIQ, Fa'ari SALSABIILA, Sri YAMTINAH, Sri MULYANI, Murni RAMLI, Hayuni Retno WIDARTI & Nahadi*	JJ Atencio Lighthouse
	W09-3: The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation Session Chair: Yanjie SONG **W09-012S:** Exploring the Benefits of Strategic Hesitations in Language Learning Robots *Ryusei AZUMA, Emmanuel AYEDOUN & Masataka TOKUMARU* **W09-013S:** Zooming In on Educator Well-Being: Exploring Behavior Attributes, Zoom Fatigue, and Burnout Dynamics *Kevynn DELGADO, Mary Rose MARTINEZ, Christine Jamela VALSADO & Ryan EBARDO* **W09-014S:** The Effect of Collaborative Anchoring on the Development of Digital Curation Skills Among Nursing College Students *Chun-Hao CHANG* **W09-015F:** Enhancing Health Education and Learning Motivation in Primary Students Through Augmented Reality and Game-Based Learning: A Case Study *Nattapat BUNYUEN, Sasivimol PREMTHAISONG & Pawat CHAIPIDECH* **W09-016S:** Improving Engagement in Museums Through Virtual Reality Educational Escape Rooms (VREER): A Framework and Usability Study *Eric Cesar E. VIDAL Jr., Nicko R. CALUYA, Joan Dominique L. LEE, Kenneth King L. KO, Jed Laszlo O. JOCSON & Gerick Jeremiah Niño N. GO* **W09-017S:** Explore the Effect of Metacognitive Awareness on University Students' Learning Outcomes in the Metaverse: Evidence from Eye-Tracking Data *Tinghui WU, Yanjie SONG & Xuesong ZHAI*	Campos Interactive Teaching Lab
14:50 to 15:10	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space

Monday, 25 November 2024		
15:10 to 17:00	**W08-4:** The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop) Session Chair: Anggiyani Ratnaningtyas Eka NUGRAHENI **W08-009F:** The Urgency of Small-Scale Laboratory Learning Media with Ethno-Electrochemical Contexts Based on Content Creators *Hayuni R. WIDARTI, Sumari, Munzil, Nahadi, Ari S. SHIDIQ, Berliyana I. PANULATSIH, Ghaitsa Z. S. P. PUTRI, Nafisah KHAIRUNNISA & Deni A. ROKHIM* **W08-012F:** Exploring the Effect of Marker-Based AR Gamification on Primary Students' Science Concepts and Motivation *Pawat CHAIPIDECH, Sasivimol PREMTHAISONG, Phattaraporn PONDEE & Niwat SRISAWASDI* **W08-006S:** Exploring the Impact of Digital Divide on the Academic Performance of STEM Students in Hybrid Modality *May Marie P. TALANDRON-FELIPE & Jundy V. INTAO*	JJ Atencio Lighthouse

CONFERENCE PROGRAM

Tuesday, 26 November 2024		
09:00 to 10:30	**W02-1:** The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024) Session Chair: Ryan EBARDO **W02-003F:** Exploring Learning Analytics: A Case Study of Tertiary Educators' Utilization and Integration of AnimoSpace LMS in the Online Learning Environment *Rozanne Tuesday G. FLORES & Ethel C. ONG* **W02-007F:** An Implementation of Augmented Reality in Guided Inquiry-Based Learning for Enhancing Primary Students' Mental Models in Science *Sasivimol PREMTHAISONG, Pawat CHAIPIDECH, Phattaraporn PONDEE & Niwat SRISAWASDI* **W02-001S:** Design and Assessment of a Mobile Cloud Learning Platform for the Classroom: Examining the Efficiency of Blended Learning in Post-COVID Science Education *Joselito Christian Paulus VILLANUEVA, John Lorence VILLAMIN & Joshua TUMOLVA*	Doreen Black Box
	DSC-1: Doctoral Student Consortium Session Chair: Feng LIN **244:** Real-Time Adaptive Learning Environments Using Gaze and Emotion Recognition Engagement and Learning Outcomes *AboulHassane CISSE* **254:** Developing a Multimodal Learning Analytics Approach for Collaborative Learning and Metacognitive Strategies in Virtual Learning Environments for Primary Science Education *Lei TAO & Yanjie SONG* **223:** Competition and Collaboration: A Multi-Modal Analysis of Cognitive Load and Behavior Patterns in Game-Based Learning *Lishan ZHENG & Wenli CHEN*	The Loft
	W04-1: The 8th Computer-Supported Personalized and Collaborative Learning Session Chair: Cheng-Huan CHEN **W04-007F:** Investigating the Role of AI Book Talk Companion in Enhancing Student Performance: A Pilot Study on Self-Efficacy *Yi-Cheng TSAI, Hsiao-Tung YANG, Chang-Yen LIAO, Yen-Cheng YEH & Tak-Wai CHAN* **W04-008F:** Investigating Students' Online Learning Perception Through the Lens of Constructivism *May Marie P. TALANDRON-FELIPE, Kent Levi A. BONIFACIO & Gladys S. AYUNAR* **W04-001S:** Integrating Virtual Environment in Teaching Courses *Chiu-Jung CHEN & Pei-Lin LIU*	The Hive

Tuesday, 26 November 2024		
09:00 to 10:30	**W06-1:** GenAI in Education - From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences Session Chair: Yiling DAI **W06-001F:** Analyzing Teacher-Student Dialogues in Online One-on-One Primary Mathematics Tutoring: A Lag Sequential Analysis of Group Differences *Gary CHENG, Bo JIANG, Daner SUN, Ming GAO & Zhixuan SONG* **W06-004F:** Supporting Teacher-Student Book Talk and Book Wish Lists with AI-Driven Technology *Chih-En KUO, Hong-Min TU, Chang-Yen LIAO & Tak-Wai CHAN* **W06-005F:** AVERY: A GenAI-Based Approach to Enhancing Learner Engagement in English Writing *Ka-Lai WONG, Patrick OCHEJA, Brendan FLANAGAN & Hiroaki OGATA*	JJ Atencio Lighthouse
	W07-1: The 7th Workshop on Predicting Performance Based on the Analysis of Reading and Learning Behavior **W07-001F:** Exploring Cross-Disciplinary Education: Enhancing Science Learning with Digital Picture Books *Yan-Yu JAU & Joni Tzuchen TANG* **W07-002F:** Methods of Balancing Model Explainability and Performance in Identifying At-Risk Students *Tiffany T.Y. HSU, Brendan FLANAGAN & Owen H.T. LU*	Campos Interactive Teaching Lab
10:30 to 10:50	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
10:50 to 12:20	**W02-2:** The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024) Session Chair: Ryan EBARDO **W02-014F:** Exploring Skills Enhancement in Student Teacher Through Implementation of Design Thinking in Unplugged Game Creation *Tian Wong LING, Mas Nida Md. Khambari, Mohd Mokhtar MUHAMAD, Sharifah Intan Sharina Syed-ABDULLAH & Saiful Hasley RAMLI* **W02-017F:** Factors Influencing ChatGPT Use Behaviour Among Trainee Teachers *Sarala VALAIDUM & Jazihan MAHAT* **W02-009S:** Design and Implementation of an Educational Escape Rooms Class *Jesus Alvaro C. PATO, Gerick Jeremiah Niño N. GO, Paolo Santino P. CAOILE, Gio Gabriel C. REYES, Joaquin Enrique B. SINJIAN, Jerold Luther P. AQUINO & Maria Mercedes T. RODRIGO*	Doreen Black Box
	DSC-2: Doctoral Student Consortium Session Chair: Alwyn Vwen Yen LEE **253:** A Proposal for a Quantitative Evaluation Model for Error Image Generation in L2 Vocabulary Learning *Kazuki SUGITA, Wen GU, Koichi OTA, Prarinya SIRITANAWAN & Shinobu HASEGAWA*	The Loft

Tuesday, 26 November 2024		
10:50 to 12:20	**DSC-2:** Doctoral Student Consortium **212:** Development and Validation of a Problem-Solving Instrument (Multiple-Choice Questions) for Computational Thinking Among Trainee Teachers in the Klang Valley, Malaysia *Ahmad Sarji Abdul HAMED, Su Luan WONG & Mohd Zariat Abdul RANI* **217:** OKLM: Open Knowledge and Learner Model Using Educational Big Data *Kensuke TAKII, Changhao LIANG & Hiroaki OGATA*	The Loft
	W04-2: The 8th Computer-Supported Personalized and Collaborative Learning Session Chair: Chin-Jung CHEN **W02-003F:** Exploring Learning Analytics: A Case Study of Tertiary Educators' Utilization and Integration of AnimoSpace LMS in the Online Learning Environment *Rozanne Tuesday G. FLORES & Ethel C. ONG* **W04-013F:** Investigation of Skills Training System Using TF-IDF for the Plasterer's Skeletal Data *Ryota TANAKA, Naka GOTODA, Lee SAERON, Ryo KANDA, Ayaka HUNABIKI, Hirotake KANISAWA, Kanae KANDA, Yuka TAKAI & Toshihiro HAYASHI* **W04-002S:** The Trends in Computer-Supported Virtual Reality Collaborative Learning *Ching-Yi CHANG & Cheng-Huan CHEN*	The Hive
	W06-2: GenAI in Education - From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences Session Chair: Patrick OCHEJA **Panel Discussion**	JJ Atencio Lighthouse
	W07-2: The 7th Workshop on Predicting Performance Based on the Analysis of Reading and Learning Behavior **W07-003F:** Effects of the Self-Regulated Learning and Motivation on Learning Achievements of the Programming Courses *Mu-Sheng CHEN & Ting-Chia HSU* **W07-004F:** GazeViz: A Web-Based Approach for Visualizing Learner Gaze Patterns in Online Educational Environment *Eduardo DAVALOS, Namrata SRIVASTAVA, Yike ZHANG, Amanda GOODWIN & Gautam BISWAS*	Campos Interactive Teaching Lab
12:20 to 13:20	**Lunch** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space

Tuesday, 26 November 2024		
13:20 to 14:50	**W02-3:** The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024) Session Chair: John Byron TUAZON **W02-002S:** A Preliminary Investigation of the Definition and Components of Computational Thinking in the Malaysian Education Landscape: From Educational Technology Experts' Perspective *Ahmad Sarji Abdul HAMED, Su Luan WONG, Mohd Zariat Abdul RANI, Mas Nida Md. Khambari, Nur Aira Abd Rahim, Fariza KHALID & Priscilla MOSES* **W02-006S:** PERS: A Personalized Recommender System for Student-Generated Questions in Programming Courses *Pham-Duc THO* **W02-010S:** A User Acceptance Testing Tool for Mobile Game-Based Learning Application *Christian Jade D. GUILLEN & Saturnina F. NISPEROS* **W02-016S:** Sociotechnical Challenges of Older Educators in Delivering Medical Education Online *Ryan EBARDO, John Byron TUAZON & Miriam Louella FERMIN*	Doreen Black Box
	DSC-3: Doctoral Student Consortium Session Chair: Feng LIN **248:** Exploring the Young Learners' Interactions with AI-Generated Multimodal Feedback in Collaborative Writing *Xinyu GUO* **241:** The Bane of AI in Teaching: Innovation Resistance in Higher Education Instructional Design & Delivery *Estefanie BERTUMEN & Ethel ONG* **Discussion**	The Loft
	W04-3: The 8th Computer-Supported Personalized and Collaborative Learning Session Chair: Jonathan Y. CHIN **W04-012F:** Addressing Public Speaking Anxiety with an AI Speech Coach *Frederick Voltair GARCIA Jr., Nicanor Froilan PASCUAL, Miguel Elijah SYBINGCO & Ethel ONG* **W04-005S:** Exploring the Impact of Integrating Auto-Photography and Imagery Strategies into Computer-Supported Collaborative Learning: A Case Study in a General Education Course on Climate Change *Wen-Lung HUANG & Chia-Jung CHANG* **W04-010S:** Developing an LLM-Empowered Agent to Enhance Student Collaborative Learning Through Group Discussion *Sixu AN, Yicong LI, Yu YANG, Yunsi MA, Gary CHENG & Guandong XU*	The Hive

Tuesday, 26 November 2024		
13:20 to 14:50	**W06-3:** GenAI in Education - From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences Session Chair: Tzu-Chi YANG **W06-007F:** How AI Supports Returning Adult Learners in a Developing Economy: Enhancing Academic Writing Through Self-Determination Theory *Mary Rose MARTINEZ & Ryan EBARDO* **W06-009F:** Developing a Multimodal Learning Analytics Approach to Examine Students' Cognitive Presence and Metacognition in a Metaverse Environment *Yanjie SONG, Lei TAO, Hao DENG & Jiachen FU* **W06-010F:** Integrating ChatGPT into Flipped Learning: Enhancing Students' Creative Writing Skills and Perception *Worapong KHUIBUT, Sasivimol PREMTHAISONG & Pawat CHAIPIDECH*	JJ Atencio Lighthouse
13:20 to 17:00	**SW:** Student Wing Chair: Yanjie SONG, The Education University of Hong Kong **Introduction** **Topic: Get Your Research Published: Essential Tools and Strategies** *Yin YANG, The Education University of Hong Kong* Q&A Session **Topic: Unlock Your Early Career Success: Tips and Opportunities for Securing Grants** *Shurui BAI, The Education University of Hong Kong* Q&A Session Interactive Session Closing	Campos Interactive Teaching Lab
	TU02: Tutorial 2 **Designing Learning Experiences for Science, Technology, Engineering and Mathematics (STEM) Education using Minecraft** *Dominique Marie Antoinette MANAHAN & Louise Marie TULAYBA* *Ateneo de Manila University, Philippines*	Assemble at Ubuntu Space
14:50 to 15:10	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
15:10 to 17:00	**W02-4:** The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024) Session Chair: Ryan EBARDO **W02-013S:** Minecraft as a Tool for Digital Game-Based Learning: Enhancing Conceptual Understanding and Attitudes in Mathematics Learning *Sakda CHALEEPLIAM, Sasivimol PREMTHAISONG & Pawat CHAIPIDECH*	Doreen Black Box

Tuesday, 26 November 2024		
15:10 to 17:00	**W02-4:** The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024) **W02-008S:** Cognicraft: Smart Exam Question Generation with AI and Bloom's Taxonomy *Christian SAGADRACA, Zainal SANTOS, Danilo SIMON Jr., Marianne Jessica TOLENTINO & Reymar VENTURA* **W02-004S:** Development and Evaluation of a Hybrid Mobile-Learning App Using Design Science Research (DSR) Framework *John Lorence VILLAMIN, Joselito Christian Paulus VILLANUEVA & Joshua TUMOLVA*	Doreen Black Box
	DSC: Doctoral Student Consortium **Discussion**	The Loft
15:10 to 17:00	**W04-4:** The 8th Computer-Supported Personalized and Collaborative Learning Session Chair: Chia-Jung CHANG **W04-006S:** Exploring the Effect of Collaborative Programming Learning Environment on Student's Computer Programming Competencies and Cognitive Learning *Chia-Jung CHANG & Wen-Lung HUANG* **W04-009S:** Investigating the Impact of Kahoot! On EFL Grammar Learning *Jonathan Y. CHIN & Ben CHANG* **W04-011S:** Designing an LLM-Based Dialogue Tutoring System for Novice Programming *Julieto PEREZ & Ethel ONG*	The Hive
	W06-4: GenAI in Education - From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences Session Chair: Owen LU **W06-011F:** Competency-Based Assessment in the Era of Generative Artificial Intelligence: Perspectives of Selected STEM Educators *Friday Joseph AGBO, Heather Kitada SMALLEY & Kathryn NYMAN* **W06-006S:** A Case Study for Educators with ChatGPT and Plato's Allegory of the Cave *Anna Y.Q. HUANG, Jain-Wei TZENG, Chi-Sheng HUANG, Zhi-Qi LIU, Bryan Carl TANUJAYA & Owen H.Q. LU* **W06-008S:** Supporting Students' Post-Exam Reflection Needs in College Automation Engineering Course Using LLM *Edward ANOLIEFO, Patrick OCHEJA, Regina OCHONU, Brendan FLANAGAN & Hiroaki OGATA*	JJ Atencio Lighthouse
17:00 to 19:30	**Welcome Reception**	**Ubuntu Space**

CONFERENCE PROGRAM

C1: AIED/ITS C2: CSCL C3: ALT C4: TEML
C5: EGG C6: TELL C7: PTP

BOPN Best Overall Paper Award Nominee
BSPN Best Student Paper Award Nominee
BTDPN Best Technical Design Paper Award Nominee
F Full Paper (20 minutes presentation + 5 minutes Q&A)
S Short Paper (10 minutes presentation + 5 minutes Q&A)
ES Extended Summary (9 minutes presentation + 5 minutes Q&A)

Wednesday, 27 November 2024		
09:00 to 10:00	**Opening Ceremony**	Hyundai Hall
10:00 to 10:20	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
10:20 to 11:20	**Keynote Speech: Dragan GAŠEVIĆ** **Getting Ready for the Age of AI: Developing Self-Regulated Learners** Session Chair: Jon MASON	Hyundai Hall
11:20 to 12:20	**Panel-3** **Learning Languages in "Smarter" Ways: Theory-Informed Utilization of Smart Technologies in Contextualized, Authentic & Communicative Language Learning** *Lung-Hsiang WONG, Yun WEN, Vivian Wen-Chi WU, Yoshiko GODA & Ting-Chia HSU*	Hyundai Hall
	ALT-1 Session Chair: Ashwin T. S. **64F:** Proficiency Modeling in Junior High Math: Adapted Cognitive Statistical Models to E-Book Learning Contexts *Changhao LIANG, Kensuke TAKII & Hiroaki OGATA* **98F:** An Embodied Projection Recognition System for Situated Learning to Enhance Learning Effectiveness and Self-Reflection Ability *Hui-Ting LIU, Zi-Ting DING, Su-Hang YANG, Jian-Yu WU, Jen-Hang WANG, Po-Yao CHAO, Yung-Yu ZHUANG & Gwo-Dong CHEN*	Doreen Black Box

Wednesday, 27 November 2024		
11:20 to 12:20	**TEML-1** Session Chair: Ivica BOTICKI **71F BSPN:** Linking Real-World Experiences with Course Contents: A Text Mining Approach Toward Effective "There and Back Again" *Manabu ISHIHARA, Izumi HORIKOSHI & Hiroaki OGATA* **75F BTDPN:** Marrying Physical and Virtual Realms: An Embodied, Multi-Modal Approach to Situational Learning in Digital Reality *Vando Gusti AL HAKIM, Yao-En CHEN, Meng-Heng LIN, Chia-Ying CHANG, Jen-Hang WANG, Chih-Kai CHANG, YungYu ZHUANG, Su-Hang YANG & Gwo-Dong CHEN*	The Loft
	AIED/ITS-1 **58F BSPN:** The Impact of Instructional Videos Supported by AI-Driven Tutoring System on EFL Listening and Speaking *Xiangyu TAN & Xiuyuan ZUO* **137F:** LLM-Generated Personalized Analogies to Foster AI Literacy in Adult Novices *Cassie Chen CAO, Eason CHEN, Zoe FANG, Lydia Y CAO, Jionghao LIN & Ruizhe LI*	The Hive
	PTP-1 Session Chair: Sahana MURTHY **24F:** Do Academic Stress and Risk Propensity Affect Behavioral Intention to Use ChatGPT Among University Students? *Brylle SAMSON, Ronnie LURIAGA & Ryan EBARDO* **53F:** Who Is a Good Computational Thinker? Mapping Behavioral Dispositions of Middle-School Children Based on Real-Life, Algorithmic Tasks *Shashaank V. PINNAMARAJU, Lazar TONY & Anveshna SRIVASTAVA*	JJ Atencio Lighthouse
	International Program Committee (IPC) Meeting (open meeting) All program committee members are welcome to attend this meeting	Campos Interactive Teaching Lab
12:20 to 13:20	**Lunch** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
13:20 to 14:00	**Theme-Based Invited Speech** Session Chair: Yun WEN **How to Better Understand the Collaborative Component in Computer-Supported Collaborative Learning (CSCL): Current Landscape, Challenges and Future Prospects** *Johanna PÖYSÄ-TARHONEN*	Hyundai Hall

Wednesday, 27 November 2024		
14:00 to 15:00	**ALT-2** Session Chair: Shinobu HASEGAWA **196F BOPN:** Combining Multimodal Analyses of Students' Emotional and Cognitive States to Understand Their Learning Behaviors *Ashwin T S, Caitlin SNYDER, Celestine E. AKPANOKO, Srigowri M P & Gautam BISWAS* **136S:** Development of Metacognitive Reflection Support System on Creative Discussion *Toshimasa SHIMIZU, Yuki HAYASHI & Kazuhisa SETA* **149S:** Utilization of Japanese Public Educational Data by Retrieval Augmented Generation for Policy Research *Kyosuke TAKAMI*	Doreen Black Box
	Meet the APSCE Executive Committee	The Loft
	AIED/ITS-2 Session Chair: Maria Mercedes T. RODRIGO **13S:** UniSpLLM: An Integrated Approach for Enhancing Reasoning and Education with Large Language Models *Hanyu ZHAO, Yuzhuo WU, Yang YU, Xiaohua YU & Liangyu CHEN* **106S:** Availability and Effectiveness of Generative AI for Web-Based Investigative Learning *Yutaka WATANABE & Akihiro KASHIHARA* **122S:** Developing a LLMs-Driven System Based on Human-AI Progressive Code Generation Framework to Assist Mathematics Learning *Chun Yan Enoch SIT, Yin YANG, Wing Kei YEUNG & Siu Cheung KONG*	The Hive
	TELL-1 Session Chair: Brendan FLANAGAN **123F BSPN:** TAMMY: Supporting EFL Translation Practice with an LLM-Powered Chatbot *Steve WOOLLASTON, Brendan FLANAGAN, Patrick OCHEJA, Yiling DAI & Hiroaki OGATA* **172F BTDPN:** Impact of Online Video Dubbing Activities on Grade 5 Students' Pronunciation, Accuracy, and Fluency in English Speaking: An Experimental Research *Min XIE & Alex Wing Cheung TSE*	JJ Atencio Lighthouse
	CSCL-1 Session Chair: Cheng-Huan CHEN **31F:** Unveiling the Interplay of Students' Epistemic Emotions and Knowledge Building Activities in Design Studios *Alwyn Vwen Yen LEE, Chew Lee TEO, Aloysius ONG & Katherine YUAN* **144F BOPN, BSPN:** MESHing Minds: Bridging the Gap Between Creativity and IoT Programming Through Collaborative Mixed Reality *Yusuke SAKABE, Emmanuel AYEDOUN & Masataka TOKUMARU*	Campos Interactive Teaching Lab

Wednesday, 27 November 2024		
15:00 to 15:20	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
15:20 to 16:50	**Panel-2** **Global Harwell in an Examination Driven Education System and an Excellence Pursuing Society: Possible? How? Better with Digital Technologies** *Fu-Yun YU, Tak-Wai CHAN, Sahana MURTHY, Su Luan WONG, Wenli CHEN, Hyo-Jeong SO & Hiroaki OGATA*	Hyundai Hall
	ALT-3 Session Chair: Ashwin T. S. **97F:** Analyzing Student Behavior in Viat-Map: Steps and Time as Performance Indicators *Banni Satria ANDOKO, Vivin Ayu LESTARI, Agung Nugroho PRAMUDHITA, Amalia NURAINI, Inda Khoirun NISAK & Tsukasa HIRASHIMA* **113F:** Comparison of Learners' Self-Direction Behavior Across Contexts and Phases *Junya ATAKE, Chia-Yu HSU, Huiyong LI, Izumi HORIKOSHI, Rwitajit MAJUMDAR & Hiroaki OGATA* **131S:** Progressive Behavior Patterns of Online Discussion at Different Circle of Self-Regulated Learning *Shih-Hua HUANG, De-Yu SHIAU, Yung-Sian FANG & Ting-Chia HSU* **143S:** Forest/CR: Critical Paper Reading Support System *Tomoya KII, Kazuhisa SETA & Yuki HAYASHI*	Doreen Black Box
	EGG-1 Session Chair: Hyo-Jeong SO **16F BSPN:** Design and Evaluation of the Usability of a Game-Based Learning Application for Learners with Dyslexia *Vincent GARCIA, Arnel OCAY, Joshua PERADILLA, Mary Rose SAGUIPED & Myla Karen ARENAS* **72F:** Comparing Effects of Adaptive Gamification and One-Size-Fits-All Gamification on Students' Task Completion Process and Learning Performance *Shurui BAI & Yingxue LIU* **162F BOPN:** Dialogue Game-Based Learning for AI Ethics Education *Hyo-Jeong SO & Sung-Eun KIM* **125S:** Detecting Off-Task Behavior of Learners in Minecraft Using Exploration and Personalized Features *Maricel A. ESCLAMADO & Maria Mercedes T. RODRIGO*	The Loft
	AIED/ITS-3 Session Chair: May Marie TALANDRON-FELIPE **175F:** Evaluating the Performance of Copula-Based Item Response Theory Models for Interpretable Assessment *Eduardo GUZMÁN & Eva MILLÁN*	The Hive

Wednesday, 27 November 2024		
15:20 to 16:50	**AIED/ITS-3** **80S:** Enhancing Diversity in Difficulty-Controllable Question Generation for Reading Comprehension via Extended T5 *Teruyoshi GOTO, Yuto TOMIKAWA & Masaki UTO* **190S:** The Effect of Feature Reliability on the Generalization of Machine Learning Models in Educational Data *Yingbin ZHANG* **258ES:** Exploring High School Students' Transition from Traditional Search Engines to ChatGPT for Course Learning: A Push-Pull-Mooring Model Perspective *Chien-Liang LIN, Chih-Yu YANG, Pei-Chi WU, Yu-Cheng LIN & Chi-Heng LI* **266ES:** Exploring Dialogue Patterns in Argumentation with Pre-Set ChatGPT Personas *Seunmin EUN & Seonmin JIN*	The Hive
	PTP-2 Session Chair: Jayakrishnan WARRIEM **61F BOPN:** Representing Learning Progression of Unguided Exercise Solving: A Generalization of Wheel-Spinning Detection *Taisei YAMAUCHI, H. Ulrich HOPPE, Yiling DAI, Brendan FLANAGAN & Hiroaki OGATA* **6S:** Factors Contributing to the Negative Online Learning Academic Self-Concept of College Students *Rex BRINGULA, Roman Paulo BAET, Ralph Lawrence GARCIA, Franchesca Mari MORALES, Jan Carlo RAMOS, Hanna Sophia SARMIENTO & Edmon TORRES* **7S:** Teachers' Perspectives on Integrating AI Tools in Classrooms: Insights from the Philippines *Vanessa B. SIBUG, Vicky P. VITAL, John Paul P. MIRANDA, Emerson Q. FERNANDO, Almer B. GAMBOA, Hilene E. HERNANDEZ, Joseph Alexander BANSIL, Elmer M. PENECILLA & Dina D. GONZALES* **10S:** Research on the Dual-Pathway Impact of Artificial Intelligence Technology on Teachers' Human-Machine Collaboration *Yujie XU & Yiling HU* **30S:** Does Learning Interest Predict Academic Performance in an Interest-Driven HyFlex Course? *Liang Jing TEH, Su Luan WONG, Mohd Zariat ABDUL RANI, Mas Nida Md. Khambari & Sai Hong TANG*	JJ Atencio Lighthouse
	SIG 2 Community Building (CB) Session Computer-Supported Collaborative Learning and Learning Sciences (CSCL) Chair: Lenka SCHNAUBERT, University of Nottingham, United Kingdom	Campos Interactive Teaching Lab
16:50 to 17:50	**Poster Session 1:** Posters, Work-in-Progress Posters (WIPP), SATELUC	Innovation Lobby (2nd Floor)
18:00 to 22:00	**APSCE Executive Committee (EC) Meeting** (closed meeting)	

CONFERENCE PROGRAM

C1: AIED/ITS C2: CSCL C3: ALT C4: TEML
C5: EGG C6: TELL C7: PTP

BOPN Best Overall Paper Award Nominee
BSPN Best Student Paper Award Nominee
BTDPN Best Technical Design Paper Award Nominee
F Full Paper (20 minutes presentation + 5 minutes Q&A)
S Short Paper (10 minutes presentation + 5 minutes Q&A)
ES Extended Summary (9 minutes presentation + 5 minutes Q&A)

Thursday, 28 November 2024		
09:00 to 10:00	**Keynote Speech: Mirjam HAUCK** **Critical Virtual Exchange for Critical Global Citizenship Education** Session Chair: Yanjie SONG	Hyundai Hall
10:00 to 10:20	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
10:20 to 11:00	**Theme-Based Invited Speech: Ching Sing CHAI** **In Search of Intelligent Pedagogical Content Knowledge (IPACK)** Session Chair: Rwitajit MAJUMDAR	Hyundai Hall
	Theme-Based Invited Speech: Wenli CHEN **Multi-Modal Learning Analytics for Learning Design** Session Chair: Ivica BOTICKI	Doreen Black Box
11:00 to 12:00	**Panel-1** **Digital Technology for Inclusive and Equitable Quality Education** *Weiqin CHEN, Jon MASON, Faisal BADAR, Shitanshu MISHRA & Maria Mercedes T. RODRIGO*	Hyundai Hall
	ALT-4 Session Chair: Yilling DAI **4S:** Exploring the Relationship of Personality Domains and Visual Attention Patterns in Novice Programmers *Caren PACOL, Maria Mercedes RODRIGO & Christine Lourrine TABLATIN* **35S:** Construction of a Japanese Language Learning Support System That Enables Word Accent Learning *Satoru KOGURE, Kazuki TOMITA, Yasuhiro NOGUCHI, Koichi YAMASHITA, Tatsuhiro KONISHI & Makoto KONDO* **41S:** Developing a Feedback Analytic Tool to Support Instructor Reflection *Feng LIN, Chenchen LI, Rebekah Wei Ying LIM & Yew Haur LEE*	Doreen Black Box

Thursday, 28 November 2024		
11:00 to 12:00	**ALT-4** **139S:** Effect of Re-Composition Concept Mapping for Sharing Reference Maps on Serial Concept Mapping: A Preliminary Study *Rian FITRIANSYAH, Harry Budi SANTOSO, Lia SADITA, Baginda Anggun Nan CENKA, Syifa NURHAYATI, Yusuke HAYASHI & Tsukasa HIRASHIMA*	Doreen Black Box
	AIED/ITS-4 Session Chair: Michelle BANAWAN **94F BOPN:** Predicting and Analyzing Students' Higher-Order Questions in Collaborative Problem-Solving *Shan ZHANG, Toni V. EARLE-RANDELL, Qian SHEN, Anthony F. BOTELHO, Maya ISRAEL, Kristy Elizabeth BOYER, Collin F. LYNCH & Eric WIEBE* **120F BTDPN:** Reflection Support System with Audience Robots for Presentation Practice *Yuya KISHIMOTO & Tomoko KOJIRI*	The Loft
	TEML-2 Session Chair: Changhao LIANG **132F:** Classifying Self-Reflection Notes: Automation Approaches for GOAL System *Zixu WANG, Chia-Yu HSU, Izumi HORIKOSHI, Huiyong LI, Rwitajit MAJUMDAR & Hiroaki OGATA* **50S:** Using Educational VR Systems to Promote Inquiry-Based Learning in Natural Science *Shu-Ying TSAI, Zhi-Hong CHEN & Min-Hsuan WENG* **135S:** Generative Artificial Intelligence in Education: Evaluating Students' Self-Efficacy and Utilization in Their Homework *Elanie VIZCONDE, Ma. Rowena CAGUIAT & Ethel ONG*	The Hive
	PTP-3 Session Chair: Mas Nida Md. Khambari **19S:** Using a Teaching Framework to Identify Resilient and Persistent Teaching Practices During the Pandemic *Ma. Monica L. MORENO, Johanna Marion R. TORRES, Timothy Jireh GASPAR, Jenilyn A. CASANO & Maria Mercedes T. RODRIGO* **92S:** Evaluating the Effectiveness of a Professional Development Course on Artificial Intelligence Literacy for Administrative Staff in Higher Education *Siu Cheung KONG, Zoe Wai Sum MAK, Yue WU & Yin YANG* **140S:** From Textbooks to Classroom Implementation: Experience Report of Middle School Science Teachers' Pedagogy for Activity-Based Learning *Zun Phoo MO, Sunny Prakash PRAJAPATI, Sheeja VASUDEVAN & Sahana MURTHY* **155S:** Appropriating AI-Powered Pedagogical Affordances for Vocabulary Learning Xinyu GUO & Yun WEN	JJ Atencio Lighthouse

Thursday, 28 November 2024		
12:00 to 13:00	**Lunch** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
13:00 to 14:00	**Keynote Speech: Michelle BANAWAN** **Learning from Generative AI for Cognitive and Pedagogical Advancement** Session Chair: Maria Mercedes RODRIGO	Hyundai Hall
14:00 to 15:30	**ALT-5** Session Chair: Banni Satria ANDOKO **48F BTDPN:** Designing Recommendations for Productive Learning Habit-Building from Learning Logs *Chia-Yu HSU, Izumi HORIKOSHI, Huiyong LI, Rwitajit MAJUMDAR & Hiroaki OGATA* **101F:** Designing Interaction Scenario for Alleviating Persistence in Learning Strategies *So SASAKI & Akihiro KASHIHARA* **166F:** Enhancing Vocational Training Through Immersive Technology: A Study on Digital Magic Mirrors *Jen-Hang WANG, Hung-Wei TSENG, Su-Hang YANG, Chih-Kai CHANG, Yung-Yu ZHUANG & Gwo-Dong CHEN* **145S:** Facilitating Thinking like a Historian in Open-Ended Learning Space: A White Box Approach *Aoi MATSUURA, Yuki HAYASHI & Kazuhisa SETA*	Doreen Black Box
	CSCL-2 Session Chair: Ben CHANG **52S:** Students' Verbal Interaction Patterns in Computer-Supported Collaborative Learning: The Role of Individual Preparation *Wenli CHEN, Lishan ZHENG, Mei-Yee Mavis HO, Qianru LYU, Hua HU & Zirou LIN* **88S**: Enhancing Social Learning in Active Video Watching *Ehsan BOJNORDI, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN, Jay HOLLAND & Negar MOHAMMADHASSAN* **124S:** Rethinking Trust in Human-AI Collaboration in the Generative AI *Era Yijie LU & Bo JIANG* **147S:** Infrastructuring for Collective Cognitive Responsibility: A Case Study of Student Knowledge Building Design Studio *Chew Lee TEO, Aloysius ONG, Alwyn LEE, Guangji YUAN & Kennedy LOO* **148S:** Review of Different Assessment Methods Used by Online Inquiry-Based Learning Systems That Support Argumentation *Nitesh Kumar JHA, Plaban Kumar BHOWMIK & Kaushal Kumar BHAGAT* **200S:** Investigating Secondary School Students' Academic Emotions in Data Science Learning *Gaoxia ZHU, Chew Lee TEO, Guangji YUAN, Chin Lee KER, Aloysius ONG & Alwyn Vwen Yen LEE*	The Loft

Thursday, 28 November 2024		
14:00 to 15:30	**EGG-2** Session Chair: Jie-Chi YANG **65F BTDPN:** A Robot-Assisted Scenario Training for Students with ASD *Ka Yan FUNG, Kwong Chiu FUNG, Tze-Leung Rick LUI, Feifan PANG, Huamin QU, Shenghui SONG & Kuen Fung SIN* **103F:** Exploring the Impact of Incorporating Digital Escape Room on Learners' Performance and Motivation in Environmental Sustainability Education *Yu-Chao LAI & Jie-Chi YANG* **133S:** Middle School Students' Ability to Detect Lies When Interacting with an Educational AI Robot *Ahmed SALEM & Kaoru SUMI*	The Hive
	PTP-4 Session Chair: Shitanshu MISHRA **114F BTDPN:** Extraction of Important Characteristics for Data-Informed Guidance and Counseling from Daily Usage Log Data *Junya ATAKE, Chia-Yu HSU, Izumi HORIKOSHI & Hiroaki OGATA* **146F:** Driving Informed EdTech Quality Decisionmaking: A Research-Practice Partnership-Based Solution for Diverse Stakeholders' Needs *Ishika ISHIKA, Angelina Susan PHILIP, Sheeja VASUDEVAN & Sahana MURTHY* **20S:** Determinants of ChatGPT Adoption in Academe & Other Fields – A Review on Theoretical Perspective *Gerand Boy O. ELINZANO & Michelle Renee CHING* **171S:** Exploring the Entanglement Between Technology and Pedagogy: A Case Study of Knowledge Building *Yee Yin TAN, Seng Chee TAN & Chew Lee TEO*	JJ Atencio Lighthouse
	SIG 10 Community Building (CB) Session Learning Analytics and Educational Data Mining (LAEDM) Chair: Ashwin T S, Vanderbuilt University, United States of America	Campos Interactive Teaching Lab
15:30 to 15:50	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
15:50 to 16:50	**ALT-6** Session Chair: Shinobu HASEGAWA **91S:** Boosting Course Recommendation Explainability: A Knowledge Entity Aware Model Using Deep Learning *Tianyuan YANG, Baofeng REN, Boxuan MA, Tianjia HE, Chenghao GU & Shin'ichi KONOMI* **191S:** Error Tolerance in Automatic Short Answer Grading with Large Language Models: The Case of Handwriting Recognition Errors *Ziqi TAN, Yingbin ZHANG & Su MU* **209ES:** Identifying Key Indicators of Proficiency in Junior High Math: Roles of Daily Handwriting Learning Logs *Yudai OKAYAMA, Changhao LIANG, Kensuke TAKII & Hiroaki OGATA*	Doreen Black Box

Thursday, 28 November 2024		
15:50 to 16:50	**ALT-6** **267ES:** Relationship Analysis Between Procrastination Behavior and Non-Cognitive Abilities *Yasuhisa TAMURA & Keito MORINO*	Doreen Black Box
	AIED/ITS-5 Session Chair: Rwitajit MAJUMDAR **151F:** Facilitating Holistic Evaluations with LLMs: Insights from Scenario-Based Experiments *Toru ISHIDA, Tongxi LIU, Hailong WANG & William K. CHEUNG* **126S:** Is Internal State Feedback in an E-Learning Environment Acceptable to People? *Atsushi ASHIDA, Ryosuke KAWAMURA, Shizuka SHIRAI, Noriko TAKEMURA, Mehrasa ALIZADEH, Hideaki HAYASHI & Hajime NAGAHARA* **211ES:** Integrating Explanations in Active Video Watching *Raul Vincent LUMAPAS, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN, Pasan PEIRIS & Jay HOLLAND*	The Loft
	TELL-2 Session Chair: Yanjie SONG **158F BOPN:** Open Knowledge and Learner Model: Mathematical Representation and Applications as Learning Support Foundation in EFL *Kensuke TAKII, Changhao LIANG & Hiroaki OGATA* **157S:** The Effect of LINE Chatbot with Escape Game Design on English Learning Achievement, Situational Interest, and Student Engagement *Elva Yi-Fang LO & Jerry Chih-Yuan SUN* **112S:** Examining Augmented Reality's Influence on Pronunciation Training: Insights from PinyinGuo's Application and Comparative Avatar Testing *Daria SINYAGOVSKAYA*	The Hive
	PTP-5 Session Chair: Aditi KOTHIYAL **95S:** Determinants of ICT Competency Among Public School Teachers in Bukidnon *Gladys S. AYUNAR, Nathalie Joy G. CASILDO, May Marie P. TALANDRON-FELIPE, Kent Levi A. BONIFACIO, Jinky G. MARCELO & Fe S. SEBUGUERO* **226ES:** Preliminary Exploration on the Dimensions of Digital Learning Agility Among Teachers in Malaysia *Nur Dania MOHD ROSLI, Kamilah ABDULLAH, Mas Nida Md. Khambari, Su Luan WONG, Noor Syamilah ZAKARIA, Priscilla MOSES & Nur Aira Abd Rahim* **228ES:** Analysis of Factors Influencing Teacher Behavioural Engagement in Distance Training Based on MOA and SDT *Zhou JIN* **257ES:** The Impact of AI Literacy on Teacher Efficacy and Identity: A Study of Korean English Teachers *Seunmin EUN & Anna KIM*	JJ Atencio Lighthouse

Thursday, 28 November 2024		
16:50 to 17:50	**SIG 6 Community Building (CB) Session** Technology Enhanced Language Learning (TELL) Chair: Yanjie SONG, The Education University of Hong Kong, Hong Kong	JJ Atencio Lighthouse
	Poster Session 2: Posters, Work-in-Progress Posters (WIPP), SATELUC	Innovation Lobby (2nd Floor)
18:30 to 21:30	**Conference Banquet**	**Leong Hall Roof Deck**

CONFERENCE PROGRAM

C1: AIED/ITS C2: CSCL C3: ALT C4: TEML
C5: EGG C6: TELL C7: PTP

BOPN Best Overall Paper Award Nominee
BSPN Best Student Paper Award Nominee
BTDPN Best Technical Design Paper Award Nominee
F Full Paper (20 minutes presentation + 5 minutes Q&A)
S Short Paper (10 minutes presentation + 5 minutes Q&A)
ES Extended Summary (9 minutes presentation + 5 minutes Q&A)

Friday, 29 November 2024		
09:00 to 10:00	**Keynote Speech: Seiji ISOTANI** **Personalized Gamification Experiences: From Design to Impact** Session Chair: Bo JIANG	Hyundai Hall
10:00 to 10:20	**Coffee / Tea Break** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
10:20 to 12:00	**ALT-7/8** Session Chair: Huiyong LI **70F:** Effectiveness of Information Organizing Activities After Lecture in Mathematics: A Comparison Between Kit-Build Concept Mapping and Structured Summary Writing *Lintang Matahari HASANI, Kasiyah JUNUS, Lia SADITA, Tsukasa HIRASHIMA & Yusuke HAYASHI* **77F BSPN:** Automated Recommendations for Revising Lecture Slides Using Reading Activity Data *Erwin D. LOPEZ Z, Cheng TANG, Yuta TANIGUCHI, Fumiya OKUBO & Atsushi SHIMADA* **40S:** Optimizing Causal Inference Approach for Exploring Shallow Reading Behavior with Generative Adversarial Networks *Yu BAI, Fuzheng ZHAO, Wenhao WANG & Chengjiu YIN* **60S:** Exploring Linguistic Sophistication of Discussion Board Posts in University Learning Management Systems *Michelle P. BANAWAN, Clarence James MONTEROZO & Maria Mercedes T. RODRIGO* **227ES:** Toward Contextualized Handwriting Process Analysis: Comparison Between Problem Types in Math *Shunsuke TONOSAKI, Taito KANO, Satomi HAMADA, Izumi HORIKOSHI & Hiroaki OGATA*	Doreen Black Box

Friday, 29 November 2024		
10:20 to 12:00	**TEML-3/4** Session Chair: Sasipim POOMPIMOL **51F BOPN:** Low vs. High Immersion in Metaverse-Based Learning: How Pre-Service Teachers Balanced Between Instruction and Assessment in Learning Design *Darmawansah DARMAWANSAH, Dani PUSPITASARI & Gwo-Jen HWANG* **160S:** Participatory Design of an AI Digital Textbook with Deaf and Hard-of-Hearing Students *Ga Young LEE, Jieun CHOI, Seonhee NA & Hyo-Jeong SO* **161S:** Technology Considerations in Building Virtual Educational Avatars *Antun DROBNJAK & Ivica BOTICKI* **194S:** Data-Driven Peer Recommendation and Its Applications in Extracurricular Learning *Peixuan JIANG, Changhao LIANG & Hiroaki OGATA*	The Loft
10:20 to 11:10	**AIED/ITS-6** Session Chair: Riichiro MIZOGUCHI **238ES:** Personalized Comment Reviewing in Active Video Watching: Investigation of Learners' Cognitive Load *Ehsan BOJNORDI, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN & Jay HOLLAND* **251ES:** AI-Driven Feedback for Enhancing Students' Mathematical Problem-Solving: The ScaffoldiaMyMaths System *Daner SUN, Jingyun WANG, Lan YANG, Kee-lee CHOU, Zhixuan SONG & Zhizi ZHENG* **259ES:** A Study on High School Students' Continuance Intention to Use ChatGPT for Learning Assistance: An Exploration Based on Self-Determination Theory *Chien-Liang LIN, Tian-Yun LIN, Shi-En LIN & Yu-Chen LIN*	The Hive
	CSCL-3 Session Chair: Gaoxia ZHU **185F:** Online Making-Based Learning at Scale: Towards Equity in STEM Learning *Deeksha GAUTAM, Aditi KOTHIYAL, Rashmi SHEORAN, Neha GARG, Adithi IYER, Ashutosh BHAKUNI, Jay THAKKAR, Jyothi KRISHNAN & Manish JAIN* **99S:** Verbal Interaction Patterns in Online Collaborative Learning Design: Comparison of High Performing and Low Performing Groups *Wenli CHEN, Lishan ZHENG, Mei-Yee Mavis HO, Hua HU & Qianru LYU*	JJ Atencio Lighthouse
11:10 to 12:00	**TELL-3** Session Chair: Daria SINYAGOVSKAYA **115S:** Improve English Pronunciation at Word Level for Thai EFL Learners in Southern Region Using End-to-End Automatic Speech Recognition *Nattapol KRITSUTHIKUL, Kongpop BOONMA, Jirapond MUANGPRATHUB, Wasan NA CHAI & Thepchai SUPNITHI*	The Hive

Friday, 29 November 2024		
11:10 to 12:00	**TELL-3** **128S:** Investigation on the Usage Status of a Support System for Writing English Paragraph Outlines in English Classes *Afifah ILHAM, Tomohiro KUROKI, Akira NAKANO & Hidenobu KUNICHIKA* **152S:** Mapping Morphological Patterns: A Framework for Rinconada Bikol Language Morphological Analysis and Stemming *Tiffany Lyn PANDES & Joshua MARTINEZ*	The Hive
	PTP-6 Session Chair: Arlene VALDERAMA **183F:** Constructing Desirable Learning Habits: Evidence from an Instructional System Design Course Based on the IDC Theory *Anveshna SRIVASTAVA, Sandeep YADAV, Sahana MURTHY & Sridhar IYER* **188F BSPN:** The Impact of Using an Online Collaborative Platform in Blended Learning on Postsecondary Vocational School Year One Students' Self-Regulated Learning Abilities: a Quasi-Experimental Research *Siyou WU and Alex Wing Cheung TSE*	JJ Atencio Lighthouse
12:00 to 13:00	**Lunch** Food Service Station & Dining Area: Ubuntu Space Food Service Station: The Loft Dining Area: The Loft, The Hive, JJ Atencio Lighthouse	The Loft & Ubuntu Space
13:00 to 14:00	**ALT-9** Session Chair: Anveshna SRIVASTAVA **9S:** Code Tracing Support Environment Based on Visualization of Cooperative Behavior of Multiple-Flows *Yasuhiro NOGUCHI, Kotaro SUNAMA, Satoru KOGURE, Raiya YAMAMOTO, Koichi YAMASHITA & Tatsuhiro KONISHI* **90S:** Peer Feedback Feature Analysis with Large Language Models: An Exploratory Study *Qianru LYU, Zirou LIN & Wenli CHEN* **214ES:** Relationship Between Students' Scores in Weekly Tests and Final Exam *Satomi HAMADA, Izumi HORIKOSHI & Hiroaki OGATA* **218ES:** Exploring Reading Speed Profiles in EFL Extensive Reading *Hatsune ICHIDATE, Yiling DAI, Brendan FLANAGAN & Hiroaki OGATA*	Doreen Black Box
	TELL-4 Session Chair: Leung Ho Philip YU **14S:** Enhancing Chinese Language Education Through AI-Assisted Project-Based Learning: A Qualitative Study on Learning Values and Multimedia Skills Development *Satoko SUGIE* **184S:** Development of a Chatbot and Evaluation of Its Effects on Learning and Intrinsic Motivation of a Public Secondary School's Spanish Language Learners *Julian Eymard JANUBAS, Josiah Jose DEYSOLONG, Hanz Lucas ESTOPIA, Karl Mykell TABBAY & Jun Rangie OBISPO*	The Loft

Friday, 29 November 2024		
13:00 to 14:00	**TELL-4** **186S:** Enhancing Language Learning Through Multimodal AI-Driven Feedback on Picture Descriptions: An Eye-Tracking Study *Ruibin ZHAO, Zhiwei XIE, Yipeng ZHUANG, Huixian LI, Philip L. H. YU*	The Loft
	EGG-3 Session Chair: Ming-Chi LIU **73S:** ICCE 2024 FLOU: Evaluating the Intrinsic Motivation of Learners in Gamifying Academic Programs Through a Gamified Mobile Application *Marl Vincent AGRAVANTE, Jeru Kian FERNANDEZ, Ma. Louisa PEREZ & Joshua MARTINEZ* **164S:** Designing an Educational Game for Facilitating Development of Media and Information Literacy *Jun XIE, Xiang LI, Kotomi HASEGAWA, Zhichun LIU & Frank REICHERT* **262ES:** Developing a Visualized Data Guessing Game to Assess Data Literacy *Ruei-Yi XIE & Ming-Chi LIU*	The Hive
14:15 to 15:15	**CLOSING CEREMONY**	Hyundai Hall

EARLY CAREER RESEARCHER AWARD WINNER (2024)

Dr. Mas Nida Md. Khambari is a Graduate Technologist and Senior Lecturer in Instructional Technology and Learning Design at the Faculty of Educational Studies, Universiti Putra Malaysia (UPM). Her research interests and specialization include Information Technology, Educational Technology, Instructional Technology & Learning Design, Teachers' Professional Development, Digital Learning Agility, and Gamification. She has authored more than 50 research articles in the field of educational technology. She is also a principal investigator to four research grants with a total fund of USD47,465.00. She is also a research collaborator to 14 other research grants in the areas of medical education, engineering education, computer sciences, and science education, amounting to USD207,103.00. The core of her work is in close collaboration with pre-service teachers and practitioners to help them understand and implement creator mindset through design thinking for gamification and develop innovative learning designs that can trigger learners' interest and immerse them in the learning process. She advocates playful yet impactful learning by optimising digital and non-digital technologies that empower both teachers and learners. To date, Mas Nida has produced more than 18 copyrighted innovations, including mobile apps, web-based apps, board games, and teaching modules. Due to her outstanding contributions, she received three of the most coveted awards in UPM — the Putra InnoCreative Award for Best InnoCreative Educator (Face To Face Immersive Learning Experience) in 2019, Vice Chancellor Fellowship Award in Teaching and Learning in 2020, and Outstanding Supervision Award 2023.

Mas Nida's leadership qualities is evident when she was appointed as the Deputy Director (Innovations in Teaching and Learning) at the Centre for Academic Development and Leadership Excellence (CADe-Lead), UPM from 2023 to 2024 where she spearheaded the development of 21 micro-credentials courses. Due to her leadership acumen, she has just been recently appointed as the Deputy Director of International Institute of Online Education (IIOE) National Centre UNESCO-ICHEI Malaysia. She currently serves as the Visiting Professor at the State Islamic Institute Kerinci, Indonesia.

Mas Nida has contributed tremendously to APSCE's growth at the very early stage of her career until the present. Among the notable positions she has held include being the Chair of SIG: Developments of ICT in the Asia Pacific (DICTAP), Chair of APSCE Merit Scholarship, Chair of SIG: Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP), Chair of Workshop on ICT Trends in Emerging Economies (WICTTEE), Chair of Early Career Workshop (ECW), and Co-Chair of Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SATELUC). Her hard work and dedication to APSCE were recognized when she was appointed as an Executive Committee member since 2021. Being passionate about her work with APSCE, she took on the challenge as the Local Organizing Chair to host the first ever hybrid ICCE in Kuala Lumpur in 2022.

LAST TEN YEARS' EARLY CAREER RESEARCHER AWARD WINNERS

2023 – APSCE Early Career Researcher Award
Rwitajit MAJUMDAR, Kyoto University, Japan

2022 – APSCE Early Career Researcher Award
Daner SUN, The Education University of Hong Kong, Hong Kong

2021 – APSCE Early Career Researcher Award
Bo JIANG, East China Normal University, China

2020 – APSCE Early Career Researcher Award
Kaushal Kumar BHAGAT, Indian Institute of Technology, Kharagpur, India

2019 – APSCE Early Career Researcher Award
Chengjiu YIN, Kobe University, Japan

2018 – APSCE Early Career Researcher Award
Ting-Chia HSU, National Taiwan Normal University, Taiwan

2017 – APSCE Early Career Researcher Award
Jon MASON, Charles Darwin University, Australia

2015 – APSCE Early Career Researcher Award
Morris Siu-yung JONG, The Chinese University of Hong Kong, Hong Kong

SPEAKERS OF APSCE WEBINAR SERIES

(December 2023 to November 2024)

APSCE Webinar #43: How Students Can Creatively Use Chatbots to Create Simulations, Apps, and Much More
Date: 18 March 2024 (Monday)
Speaker: Prof. Ken KAHN, University of Oxford, UK
Moderator: Prof. Ivica BOTICKI, University of Zagreb, Croatia
Curated by: APSCE Classroom, Ubiquitous and Mobile Technology-Enhanced Learning (CUMTEL) SIG (currently TEML SIG)

APSCE Webinar #44: Understanding Self-Directed Out-of-Class Language Learning with Technology
Date: 2 April 2024 (Tuesday)
Speaker: Assoc. Prof. Chun LAI, The University of Hong Kong, Hong Kong
Moderator: Assoc. Prof. Yanjie SONG, The Education University of Hong Kong, Hong Kong
Curated by: APSCE Technology-Enhanced Language Learning (TELL) SIG

APSCE Webinar #45: Scaffolding in Game and Problem-based Learning: Our DBR Story of EcoJourneys
Date: 24 April 2024 (Wednesday)
Speaker: Dr. Haesol BAE, University at Albany, State University of New York, USA
Moderator: Dr. Jewoong MOON - University of Alabama, USA
Curated by: APSCE Educational Games and Gamification (EGG) SIG

APSCE Webinar #46: The Whats, Whys, and Hows of Internet Ethnography for Education
Date: 21 May 2024 (Tuesday)
Speaker: Dr. Ryan EBARDO, De La Salle University, Philippines
Moderator: Dr. Jayakrishnan MAHATHIL, IIT Madras, India
Curated by: APSCE Practice-Driven Research, Teacher Professional Development, Policy of ICT in Education (PTP) SIG

APSCE Webinar #47: Introduction to a Rigorous Process for Asking Better Questions: An Essential and Long-overlooked Learning Technology
Date: 10 July 2024 (Wednesday)
Speakers: Dr. Dan ROTHSTEIN, Right Question Institute (RQI), USA, and
Ms. Tomoko OUCHI, Right Question Institute (RQI), USA
Moderator: Dr. Shitanshu MISHRA, UNESCO MGIEP, India
Curated by: Educational Use of Problems/Questions in Technology-Enhanced Learning (EUPQ) SIG

APSCE Webinar #48: The role of AI in education and assessment
Date: 5 August 2024 (Monday)
Speaker: Prof. Edward PALMER, University of Adelaide, Australia
Moderator: Assoc. Prof. Bo JIANG, East China Normal University, China
Curated by: Artificial Intelligence in Education/Intelligent Tutoring Systems and Adaptive Learning (AIED/ITS/AL) SIG

APSCE Webinar #49: Approaches in Human-AI Collaborative Storytelling towards Learning and Mental Well-being
Date: 22 August 2024 (Thursday)
Speaker: Dr. Ethel ONG, De La Salle University, Philippines
Moderator: Dr. Ryan EBARDO, De La Salle University, Philippines
Curated by: Development of Information and Communication Technology in the Asia-Pacific Neighborhood (DICTAP) SIG

APSCE Webinar #50: Collaborative learning with AI: AI as a partner in CSCL?
Date: 9 September 2024 (Monday)
Panelists: Jason LODGE, University of Queensland, Australia,
Andy NGUYEN, University of Oulu, Finland, and
Yun WEN, Nanyang Technological University, Singapore
Moderator: Lenka SCHNAUBERT, University of Nottingham, UK
Curated by: APSCE Computer-Supported Collaborative Learning and Learning Sciences (CSCL) SIG

APSCE Webinar #51: Advancing the Theory of Learning by Teaching with a Teachable-agent Technology
Date: 6 November 2024 (Wednesday)
Speaker: Assoc. Prof. Noboru MATSUDA, North Carolina State University, USA
Moderator: Dr. Ashwin Tudur SADASHIVA, Vanderbilt University, USA
Curated by: Development of Learning Analytics and Educational Data Mining (LAEDM) SIG

APSCE Webinar #52: Computational Thinking and AI in Schools: What We Can Do Better?
Date: 20 November 2024 (Wednesday)
Speaker: Prof. Valentina DAGIENE, Vilnius University, Lithuania
Moderator: Prof. Ting-Chia HSU, National Taiwan Normal University, Taiwan
Curated by: Computational Thinking in Education / STEM (CTE/STEM) SIG

KEYNOTE SPEAKER

Michelle Banawan

Asian Institute of Management

C1: Sub-Conference on Artificial Intelligence in Education/Intelligent Tutoring Systems (AIED/ITS)

Learning from Generative AI for Cognitive and Pedagogical Advancement

In an era where Generative AI (GAI) is rapidly transforming education, understanding the cognitive models and knowledge-building processes behind these tools is crucial for educators. This keynote explores the role reversal of learning from GAI—not just in terms of the output it generates but through an in-depth examination of its underlying cognition and reasoning frameworks. By dissecting how AI models like ChatGPT O1 process knowledge, construct reasoning paths, and engage in problem-solving, we can glean insights that reshape how we approach instructional scaffolding and educational design.

The talk will delve into how educators can leverage this understanding to develop more sophisticated scaffolding techniques, informed by GAI's cognition models. Emphasizing the transition from surface-level interactions to a deeper engagement with AI's knowledge construction methods, we will explore strategies that educators can adopt to enhance critical thinking, problem-solving, and inquiry-based learning in students.

Relevant to ICCE's mission to advance educational technology, this presentation offers a forward-looking perspective on how generative AI tools provide not just an instructional aid but also a model for developing more

effective educational frameworks grounded in cognitive science and AI reasoning.

Dr. Michelle Pacifico-Banawan currently leads the Bachelor of Science in Data Science and Business Administration at the Asian Institute of Management as Academic Program Director, the Philippines' first Transnational Higher Education Program with the University of Houston. With a Ph.D. in Computer Science from Ateneo de Manila University, her academic career and work has been centered on bridging technology with education, as evidenced by her postdoctoral research at Arizona State University's Science of Learning and Educational Technology Laboratory and her leadership in academia. Her current work extends to pivotal advocacy and research on the impact of Generative AI (GAI) in education and various domains.

Dr. Banawan's dedication to integrating GAI into educational paradigms has seen her actively engage as a resource speaker globally, sharing insights and practical applications of GAI across education, industries, and beyond. She is currently involved in various initiatives in shaping future educational strategies through GAI in Asia and the Pacific. This advocacy allows her to contribute to developing trust in AI systems, governance, creating meaningful engagements, and prioritizing pedagogy to harness AI's potential effectively.

KEYNOTE SPEAKER

Dragan Gašević

Monash University

C3: ICCE Sub-Conference on Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure.

Getting ready for the age of AI: Developing self-regulated learners

The burgeoning field of generative AI presents both opportunities and challenges for education. While AI offers powerful tools, concerns about information accuracy and how individuals interact with generative AI tools underscore the need for strong self-regulated learning (SRL) skills. This talk explores strategies for educators and education technology developers to foster SRL in students, empowering them to become independent and adaptive learners. Drawing on the findings of multiple empirical studies, it will examine the implications of generative AI on SRL abilities, focusing on how learners can effectively engage in evaluative judgment, apply learning strategies, and solve information problems.

The key takeaway is that the use of generative AI tools may limit learners' ability to effectively deploy and develop their SRL skills. The talk will also highlight promising ways to address these limitations. Finally, it will explore potential partnerships to equip educators with the tools needed to prepare learners for an AI-integrated learning landscape.

Dragan Gašević is Distinguished Professor of Learning Analytics and Director of Research in the Department of Human Centred Computing of the Faculty of Information Technology and the Director of the Centre for Learning Analytics at Monash University. Dragan's research interests center around data analytic, AI, and design methods that can advance understanding of self-regulated and collaborative learning. He is a founder and served as the President (2015-2017) of the Society for Learning Analytics Research.

He is a recipient of the Life-time Member Award (2022) as the highest distinction of the Society for Learning Analytics Research (SoLAR) and a Distinguished Member (2022) of the Association for Computing Machinery (ACM). In 2019-2023, he was recognized as the national field leader in educational technology in The Australian's Research Magazine that is published annually. He led the EU-funded SHEILA project that received the Best Research Project of the Year Award (2019) from the Association for Learning Technology.

KEYNOTE SPEAKER

Mirjam Hauck

The Open University UK

C6: ICCE Sub-Conference on
Technology Enhanced Language Learning (TELL)

Critical Virtual Exchange for Critical Global Citizenship Education

UNESCO's (2014) broad definition of Global Citizenship Education is centered on the aim to "empower learners to engage and assume active roles, both locally and globally, to face and resolve global challenges and ultimately to become proactive contributors to a more just, peaceful, tolerant, inclusive, secure and sustainable world" (p. 15). Scholars like Stein and Andreotti (2021) whose works is grounded in critical pedagogy and postcolonial theory, question such common understandings of GCE which foreground self-improvement and the development of leadership skills to save the world rather than addressing the economic and cultural roots of the inequalities in the way power and wealth/labor are distributed in a global complex and uncertain system. They challenge hegemonic discourses, the masking of global complexity, and the perpetuation in education of colonial ideologies, and they encourage us "to think otherwise" (Andreotti, 2006, p. 7).

Similarly, Helm and Hauck (2020) distinguish between hegemonic and non-hegemonic forms of virtual exchange (VE). VE refers to structured online collaborative learning between geographically and/or culturally diverse groups of students, aimed at fostering intercultural dialogue through digitally mediated project work. VE is a research-informed practice and serves as a valuable tool in advancing Internationalisation at Home in Higher

Education, integrating intercultural dimensions into curricula, and expanding opportunities for global learning beyond physical mobility.

Reljanovic Glimäng (2022) adds an additional conceptual layer to Helm and Hauck's distinction, namely the notion of safe (hegemonic) versus brave (non-hegemonic) spaces in VE where learners can engage in thinking otherwise.

Non-hegemonic, brave VE, then, is critical virtual exchange (CVE) which I propose as an ideal context for critical Global Citizenship Education in Andreotti's (2006) sense, i.e. with notions of power, voice, and difference at its core. I will introduce a framework for CVE (Hauck, 2023; in press) that highlights what distinguishes this approach to Internationalisation at Home (Beelen and Jones, 2015; O'Dowd & Beelen, 2021) from VE as we know it, and will present exchange examples from both the Global North and the Global South that speak to the CVE agenda.

Dr. Mirjam Hauck is the Director of The Open Centre for Languages and Cultures and Associate Head for Internationalisation, Equality, Diversity and Inclusion in the School of Languages and Applied Linguistics at the Open University UK. She is also a Senior Fellow of the UK's Higher Education Academy and has written numerous articles and book chapters on the use of technologies for the learning and teaching of languages and cultures, in virtual exchange (VE) contexts in particular, i.e. online collaborative learning between groups of students in different cultural contexts and/or geographical locations.

Currently her scholarly work focuses on theorizing and framing the nascent field of critical virtual exchange (CVE), i.e. VE through the social justice and inclusion lens which aims to ensure more equitable and inclusive student exchange experiences.

Dr. Hauck presents regularly at conferences, seminars, and workshops worldwide. She is the President of the European Association for Computer Assisted Language Learning (EUROCALL), and the Chair of the Language and Culture Expert Community of the European Association for International Education (EAIE). She serves as Associate Editor of the *CALL Journal* and is a member of the editorial board of *ReCALL and LLT*.

KEYNOTE SPEAKER

Seiji Isotani

University of Sao Paulo / Harvard University

C5: ICCE Sub-Conference on Educational Gamification and Game-based Learning (EGG)

Personalized Gamification Experiences: From Design to Impact

The one-size-fits-all approach to designing gamification experiences has led to uneven results. While it may work well for some, it can demotivate others due to its failure to account for individual or domain-specific differences. This issue is particularly problematic in educational settings, where learning outcomes are strongly linked to student motivation and engagement. In response, personalized gamification offers a promising solution by tailoring learning experiences to individuals. However, several key questions must be addressed to achieve effective personalization: What specific elements should be used to adapt the design? How does gamification influence students, and how does its impact evolve over time? How can personalization be (semi-) automated to ensure scalability and efficiency? In this keynote, I will synthesize findings from multiple studies conducted by my group, exploring the impact of gamification on learning and motivation, as well as various strategies for personalization. These strategies include the use of player profiles and learning activity types to adapt gamification designs through machine learning. Our empirical studies indicate that personalized gamification can enhance students' flow experience, motivation, and learning outcomes. Additionally, we examine potential risks, such as gender bias in the design of gamification systems, which may lead to unintended consequences.

Seiji Isotani is a Visiting Professor of Education at the Harvard Graduate School of Education and a Professor of Computer Science and Learning Technology at the University of São Paulo, Brazil. He earned his Ph.D. from Osaka University, Japan, and was a postdoctoral researcher at Carnegie Mellon University. For over 15 years, Isotani has dedicated his research career to advancing the science of how people learn with interactive and intelligent educational technologies, and to exploring the design and implementation of public policies that ensure every student receives the personalized support needed for fulfilling and meaningful educational experiences. He is renowned for his work in the fields of Gamification in Education and Artificial Intelligence in Education for resource-constrained environments.

Since 2017, he has served as a technical and scientific advisor to the Brazilian Ministry of Education, designing and implementing public policies related to educational technologies. He was a key contributor to the development of norms for the K-12 Computer Science Curriculum in Brazil and to the design and implementation of educational policies that have significantly influenced over 50 million students nationwide. Examples include the policy to evaluate, acquire, and distribute books to every student in the country, the establishment of the Brazilian National Hybrid Learning Network, and the Policy for Learning Recovery. The latter policy was acclaimed at the 2022 World Economic Forum as a groundbreaking post-COVID-19 innovation.

THEME-BASED INVITED SPEAKER

Wenli Chen

Nanyang Technological University (NTU) Singapore

C4: Sub-Conference on Technology Enhanced Learning for Mobility of Learners and Learning Experiences (TEML)

Multi-Modal Learning Analytics for Learning Design

The Multi-Modal Learning Analytics (MMLA) aims comprehensively understand and optimise learning and the environments in which learning by measuring, collecting, analysing and reporting of various modalities of data about learners and their contexts. Drawing on the learning sciences and cognitive neuroscience theories and methods, Dr Chen Wenli's research team has conducted studies that involve collecting and analysing diverse modalities of data in collaborative learning contexts with the aim to understand and optimize the learning design. The multi-modal data include cognitive (brain activity captured by fNIRS), visual attention (eye movement tracked by eye tracker), and behavioural (verbal, textual, gesture etc) data when learners are engaged in learning activities. Both inter-brain synchrony and joint attention are examined to inform the level of synergy among the learners in collaborative learning. Analysing multi-modal data in temporal manner can provide insights in both learning outcome and process. This fine-grained analysis offers valuable information on the learning trajectory of learners. The MMLA and temporal analysis approaches provide promising results in advancing our understanding and support of learning design. In addition, the methodological, practical, and ethical challenges associated with MMLA are discussed.

Dr. Wenli Chen is an Associate Professor and Head of the Learning Sciences and Assessment Academic Group at the National Institute of Education, Nanyang Technological University (NTU) Singapore. She is a specialized in Computer-Supported Collaborative Learning (CSCL) and learning analytics. Dr Chen has been invited to deliver keynote speeches at numerous international conferences and has received several Best Paper Awards. She was honoured with the "Distinguished Researcher Award" by the Asia-Pacific Society for Computers in Education and the "Nanyang Education Award" from NTU.

Currently, Dr Chen serves as the Editor-in-Chief for the Journal of Computers in Education, and Learning: Research and Practice, and as the Associate Editor for Instructional Science, Asia Pacific Journal of Education, and Research and Practice in Technology Enhanced Learning.

Dr. Chen is currently the executive committee member for the Asia Pacific Society of Computers in Education and the Global Chinese Society of Computers in Education. She was the co-chair of the CSCL community committee of the International Society of the Learning Sciences (ISLS) (2016-2021). She was the Program Committee Chair or Co-chair for the International Conference of CSCL in 2022, International Conference on Computers in Education 2017, Global Chinese Conference on Computers in Education 2014, and the Organizing Committee Chair for International Conference of the Learning Sciences 2016, and International Conference on Computers in Education 2012.

THEME-BASED INVITED SPEAKER

Johanna Pöysä-Tarhonen

University of Jyväskylä

C2: Sub-Conference on Computer-Supported Collaborative Learning (CSCL) and Learning Sciences

How to Better Understand the Collaborative Component in Computer-Supported Collaborative Learning (CSCL): Current Landscape, Challenges and Future Prospects

Given the ubiquity of collaboration in everyday learning environments, collaboration is still frequently presumed to manifest spontaneously, without requiring additional support. In the realm of Computer-Supported Collaborative Learning (CSCL), despite a substantial body of research in this field, what underlies successful collaboration and collaborative learning remains a challenge. Since its inception, research in Computer-Supported Collaborative Learning (CSCL) has drawn from a rich mixture of diverse theoretical and methodological underpinnings, merging three interrelated components: collaboration within various social learning formations, centred around a shared task, enabled by technologies. My talk explores the collaborative component within CSCL, with collaboration itself as the object of study. I contend that to focus on collaboration is important as the process of nurturing collaborative practices is likened to foster the development of additional capabilities supporting us to learn. By focusing on the recent CSCL research, including examples of my own work, I will discuss aspects related to the 'anatomy' of (un)successful collaboration. I will explore how we may unveil the complex interacting elements and dynamics of collaboration in CSCL environments through studying the very foundational basis of social

interaction by leveraging the theories of joint attention and joint action as well as employing advanced empirical methods such as eye-tracking. I will also address the challenges posed by the increasing complexity of these types of data, particularly in terms of integrating theories and empirical evidence in this regard. I will conclude by focusing on the emerging opportunities and challenges of collaboration by the integration of AI in CSCL environments, while also raising the question of what collaboration entails within this context.

Dr. Johanna Pöysä-Tarhonen is a senior researcher at the Finnish Institute for Educational Research (FIER), University of Jyväskylä, Finland, and a Docent at the Philosophical Faculty, University of Eastern Finland. She holds a PhD in Instructional Technology from KU Leuven, Belgium. Much of her work has focused on collaborative learning practices in varied technology-rich educational settings, most recently on remote collaborative problem solving. Additionally, she maintains a keen interest in learning environments research, with her current focus on hybrid collaborative learning spaces as well as their scalability across different levels of education. She has led research projects and research bids as well as secured funding for studies in learning environments research and Computer-Supported Collaborative Learning (CSCL), funded by the Research Council of Finland (formerly the Academy of Finland) and the Ministry of Education and Culture, Finland. She has published several research papers in esteemed international journals, field-defining books, and conference proceedings.

THEME-BASED INVITED SPEAKER

Ching Sing Chai

Chinese University of Hong Kong

C7: Sub-Conference on Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP)

In search of Intelligent Pedagogical Content Knowledge (IPACK)

The advancements of artificial intelligence (AI) have made it necessary for teachers to consider how they could integrate AI into teaching and learning. While research in this area is still in its early stage, it seems clear that the technological pedagogical content knowledge needs to be reframed as intelligent pedagogical content knowledge (IPACK), especially for the use of AI in Education (AIED). This study attempts to provide a pilot review on existing studies and propose an initial framework to facilitate teacher's design of IPACK. Associated case studies from various subjects will also be shared.

Ching Sing Chai is a professor at the Chinese University of Hong Kong. He is currently the Associate Dean of Higher Education. His research interests are in the areas of Technological Pedagogical Content Knowledge (TPACK), Artificial Intelligence in education, teachers' beliefs, design thinking and students' learning with ICT. He has published more than 150 journal articles in reputable journals listed in the Web of Science. He has also co-authored several monographs including "Design Thinking for Education: Conceptions and Applications in Teaching and Learning", a Springer-published book.

WORKSHOPS

W01: The 4th ICCE workshop on EMBODIED Learning: Technology Design, Analytics, and Practices

25 November 2024, The Loft, Areté Ateneo

Organizers:
Rwitajit Majumdar, Kumamoto University, Japan
Prajakt Pande, Southern Methodist University (SMU), Dallas, Texas, USA
Aditi Kothiyal, Indian Institute of Technology Gandhinagar, India
Jayakrishnan Madathil Warriem, IIT Madras, India
Shitanshu Mishra, MGIEP UNESCO, India
Soumya Narayanan, KLE Technological University Hubballi, India

W02: The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024)

26 November 2024, Doreen Black Box, Areté Ateneo

Conference Chair:
Dr. Ryan Ebardo, De La Salle University, Philippines

Conference Co-chairs:
Dr. Charoenchai Wongwatkit, Mae Fah Luang University, Thailand
Dr. Long -Wei Zheng, City University of Macau, Macao, China
Dr. Hazel Trapero, University of the Philippines - Cebu, Philippines
Dr. Jypzie Catedrilla, Mindanao State University - General Santos, Philippines
Dr. Nur Aira Abd Rahim, Universiti Putra Malaysia, Malaysia
Dr. Saida Ulfa, Universitas Negeri Malang, Indonesia
Dr. Ramkumar Rajendran, Indian Institute of Technology Bombay, India
Dr. Laiza Limpin, Mindanao State University - General Santos, Philippines

This workshop aims to provide an interactive channel for interdisciplinary researchers and practitioners to present papers, communicate, and discuss relevant issues regarding the ICT trends in developing countries. The workshop invites contributions from researchers from emerging economies or those working on issues related to emerging economies to share scholarly findings and professional education.

WORKSHOPS

W03: Analysis and Design of Problems/Questions in the Digital Environment: The 17th Workshop on Technology Enhanced Learning by Posing/Solving Problems/Questions

25 November 2024, The Hive, Areté Ateneo

Organizers:
Shitanshu Mishra, UNESCO MGIEP, India
Yusuke Hayashi, Hiroshima University, Japan
Jon Mason, Charles Darwin University, Australia
Chun-Ping Wu, National University of Tainan, Taiwan
Sho Yamamoto, Kindai University, Japan
Tsukasa Hirashima, Hiroshima University, Japan
Kazuaki Kojima, Teikyo University, Japan
Tomoko Kojiri, Kansai University, Japan
Tanja Mitrovic, University of Canterbury, New Zealand
Takahito Tomoto, Chiba Institute of Technology, Japan
Fu-Yun Yu, National Cheng Kung University, Taiwan

Problems/questions are indispensable in the teaching and learning process. Adequate problems/questions give essential motivation for learning. Problems/questions posed by the learners are believed to help them in their learning and inquiry path. Moreover, problems/questions with adequate quality in various testing conditions are believed to enable teachers to assess individual students' capability and readiness of transfer in specific domain knowledge. Despite this, there are still many areas in need of systematic investigation to promote knowledge and skills facilitated by a problems/questions approach, including learning by problem solving and/or generation. For instance: what criteria constitute as adequate test item quality (in addition to frequently cited psychometric index like item difficulty, discrimination index); how to best assess a learner's capability with appropriate quality level within constraints (e.g., an optimal number of items, time limitation, etc.); any feasible metadata heuristics and/or techniques for problems/questions selection; any promising alternative strategies for compiling a sufficient number of problems/questions; any scaffolding techniques for question-generation implementation and instructional diffusion and so on.

WORKSHOPS

W04: The 8th Computer-Supported Personalized and Collaborative Learning

26 November 2024, The Hive, Areté Ateneo

Organizers:
Dr. Ben Chang, National Central University, Taiwan
Dr. Sunny S. J. Lin, National Yang Ming Chiao Tung University (NYCU), Taiwan
Dr. Robin Chiu-Pin Lin, National Tsing Hua University, Taiwan
Dr. Sherry Y. Chen, National Central University, Taiwan
Dr. Gwo-Haur Hwang, National Yunlin University of Science and Technology, Taiwan
Dr. Fu-Yun Yu, National Cheng Kung University, Taiwan
Dr. Lung Hsiang Wong, National Institute of Education, Nanyang Technological University (NTU)
Dr. Shu-Yuan Tao, Takming University of Science and Technology, Taiwan
Dr. Hsiu-Ling Chen, National Taiwan University of Science and Technology, Taiwan
Dr. Ching-Yi Chang, Taipei Medical University, Taiwan

The development of advanced information technologies has opened up new opportunities in the area of computer supported learning environments. A key aspect of this work lies within the fact that students can access learning material at any time and any places. As a result of such convenience, a wide range of people have begun using computer supported learning environments for supporting instruction. Thus, it is important to ensure that such computer supported learning environments can accommodate diverse students' needs.

To address this issue, it is necessary to incorporate personalization into the development of computer supported learning environments. Personalization is acknowledged as a useful approach to develop added value services in computer supported learning environments. It can help students with different characteristics, backgrounds and needs to get different types of content presentation and navigation support. In this context, a deep understanding of personalization is essential for the development of computer supported learning environments.

WORKSHOPS

W05: The Eighth International Workshop on Information and Communication Technology for Disaster and Safety Education (ICTDSE 2024)

Organizers:
Hisashi HATAKEYAMA, Tokyo Institute of Technology, Japan
Hiroyuki MITSUHARA, Tokushima University, Japan

W06: GenAI in Education - From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences

26 November 2024, JJ Atencio Lighthouse, Areté Ateneo

Organizers:
Patrick Ocheja, Kyoto University, Japan
Brendan Flanagan, Kyoto University, Japan
Yiling Dai, Kyoto University, Japan
Owen H.T. Lu, National Chengchi University, Taiwan
Hiroaki Ogata, Kyoto University, Japan

The integration of Generative AI into educational settings offers exciting opportunities and significant challenges that are transforming teaching and learning approaches. As these technologies develop, they enable innovative content creation and personalized learning experiences, but also raise critical concerns about the accuracy and reliability of AI-generated content. At ICCE 2024, we invite scholars, educators, and practitioners to submit papers that explore the combination of Generative AI with learning analytics to improve educational strategies and outcomes. We are looking for contributions that improve the precision of AI outputs, tailor AI applications to educational needs, or showcase innovative AI support for personalized learning and teaching.

WORKSHOPS

In this maiden edition, we focus on how Generative AI can be effectively merged with learning analytics to deliver accurate interventions and deepen insights into student engagement, performance, and learning experiences. We welcome submissions that offer practical implementations and theoretical insights into integrating AI into educational practices. Topics might include adapting teaching models to incorporate AI, managing AI's influence on learning environments, evolving assessment landscape in the age of GenAI and addressing the ethical use of AI in education. We encourage you to contribute your research on the effectiveness of AI systems, propose new models for combining AI with learning analytics, or discuss the impact of these technologies on educational settings. This symbiotic relationship is likely to drive the next wave of innovations in educational technology, making learning more personalized, engaging, and effective.

W07: The 7th Workshop on Predicting Performance Based on the Analysis of Reading and Learning Behavior

26 November 2024, Joselito & Olivia Campos
Interactive Teaching Lab, Areté Ateneo

Organizers:
Brendan Flanagan, Kyoto University, Japan
Owen H.T. Lu, National Chengchi University, Taiwan
Atsushi Shimada, Kyushu University, Japan
Hsiao-Ting Tseng, National Central University, Taiwan
Albert C.M. Yang, National Chung-Hsing University, Taiwan
Fumiya Okubo, Kyushu University, Japan
Hiroaki Ogata, Kyoto University, Japan

As the adoption of digital learning materials in modern education systems is increasing, the analysis of reading behavior and their effect on student performance gains attention. The main motivation of this workshop is to foster research into the analysis of students' interaction with digital textbooks and find new ways in which it can be used to inform and provide meaningful feedback to stakeholders: teachers, students and researchers. The previous years workshops at ICCE18, LAK19 and LAK20

focused on reading behavior in higher education, and LAK21, LAK22, LAK23 and LAK24 on secondary school reading behavior, pre/post COVID-19 pandemic changes and students' coding behavior. Participants of this year's workshop at ICCE2024 will be given the opportunity to analyze several different datasets, including secondary school prediction of academic performance for more than one subject. As with previous years, additional information on lecture schedules and syllabus will also enable the analysis of learning context for further insights into the preview, in-class, and review reading strategies that learners employ. In addition, this workshop will accept a wide range of research topics on learning analytics, educational technology, and learning support systems in the post COVID-19 era, including applications of AI in education, proposals for new educational systems, new evaluation methods, and so on.

W08: The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop)

25 November 2024, JJ Atencio Lighthouse, Areté Ateneo

Chair:
Anggiyani Ratnaningtyas Eka Nugraheni, Yogyakarta State University, Indonesia

Co-chairs:
Pawat Chaipidech, Khon Kaen University, Thailand
Sasithorn Chookaew, King Mongkut's University of Technology North Bangkok, Thailand
Charoenchai Wongwatkit, Mae Fah Luang University, Thailand
Niwat Srisawasdi, Khon Kaen University, Thailand
Patcharin Panjaburee, Khon Kaen University, Thailand
Shao Chen Chang, Yuan Ze University, Taiwan
Antuni Wiyarsi, Yogyakarta State University, Indonesia

STEM (Science, technology, engineering, and mathematics) involves the study of, and coherent integration among, various academic disciplines, especially the four cardinal disciplines of STEM. It has been advocated that STEM education is becoming even more important to preparing students for work in the technologically advanced world. Also, STEM education is vital for the nation's competitiveness in

the global economy. Therefore, STEM education has been widely recognized as one of the central parts in the education reform movement. To make STEM education effective, the use of innovative and digital technologies, such as online interactive learning environments and systems, digital games, augment reality (AR), mobile app., simulations and animations, and sensor-based tools and robots in STEM education should be an important research issues. These technologies have been applied in many and different ways to assist students and teachers in the rhythm of learning and teaching process for STEM education. Such digital technologies call for partnerships in which pedagogies are involved in instructional reform. Clearly, the effectiveness of innovative and digital technologies is also closely connected to the pedagogy through which they are employed. Therefore, the focus of any technology-related teaching and learning should not be on the digital technology itself, but on how digital technologies can pedagogically use to improve students' STEM learning.

To address this important issue, this workshop aims to explore the application of innovative educational technologies and pedagogies in STEM education from both research and practice perspectives.

W09: The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation

25 November 2024, Joselito & Olivia Campos
Interactive Teaching Lab, Areté Ateneo

Organizers:
Jerry Chih-Yuan Sun, National Yang Ming Chiao Tung University, Taiwan
Sherry Y. Chen, National Central University, Taiwan
Hui-Chun Chu, Soochow University, China
Shih-Jou Yu, National Yang Ming Chiao Tung University, Taiwan

The purpose of this workshop (The 4th Workshop on Innovative technologies for enhancing interactions and learning motivation) focuses on innovative technologies for enhancing interactions and learning motivation. The workshop welcomes all of the submissions using innovative technologies to enhance learning motivational factors, such as self-efficacy, goal orientation, learning interest, anxiety, intrinsic and

extrinsic motivation, or any antecedents or consequences of learning motivational factors, such as self-determination, learning behavior or learning performance. The content of innovative technologies may include Interactive Response Systems (IRS), bio-feedback, feedback based on learning analytics, online feedback, Augmented Reality (AR)/Virtual Reality (VR)-based feedback, feedback on wearable devices, and chatbot feedback. The innovative technologies are not limited to the innovation of the teaching/learning devices; we also welcome submissions for innovative instructional design, strategies for using the technological tools, innovative perspectives and research outcomes of relevant topics. The workshop creates opportunities for researchers from various domains to present their research findings. The findings of each work in this workshop could stimulate future research studies for enhancing interactions and learning motivation.

EXTENDED SUMMARY

PC Executive Chair
Kae NAKAYA, Osaka University, Japan (nakaya.kae.slics@osaka-u.ac.jp)

Co-chair
Chien-Liang LIN, Ming Chuan University, Taiwan (lin.chienliang@gmail.com)
Emmanuel AYEDOUN, Kansai University, Japan (emay@kansai-u.ac.jp)

Advisor
Juan ZHOU, Tokyo Institute of Technology, Japan (juan.z.kt@gmail.com)

In response to raising concerns about overlapping conference and journal papers, we are pleased to announce another paper category — Extended Summary (ES). The ES session will provide opportunities for authors to pitch main ideas and key results. Four kinds of contributions will be accepted: empirical, technical design, conceptual and literature review papers (maximum 1,500 words).

All ES will be published in the proceedings with an ISBN. Authors of accepted extended summaries are not required to submit a full paper for inclusion in the proceedings. The proceedings will also be indexed by Elsevier Bibliographic Databases and made available on the official ICCE2024 and APSCE websites.

Accepted Papers

Identifying Key Indicators of Proficiency in Junior High Math : Roles of Daily Handwriting Learning Logs
Yudai OKAYAMA, Changhao LIANG, Kensuke TAKII, and Hiroaki OGATA

Integrating Explanations in Active Video Watching
Raul Vincent LUMAPAS, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN, Jay HOLLAND, and Pasan PEIRIS

Relationship Between Students' Scores of Weekly Tests and Final Exam
Satomi HAMADA, Izumi HORIKOSHI, and Hiroaki OGATA

Exploring reading speed profiles in EFL extensive reading
Hatsune ICHIDATE, Yiling DAI, Brendan FLANAGAN, and Hiroaki OGATA

EXTENDED SUMMARY

Accepted Papers

Preliminary Exploration on the Dimensions of Digital Learning Agility among Teachers in Malaysia
Nur Dania MOHD ROSLI, Kamilah ABDULLAH, Mas Nida Md. Khambari, Su Luan WONG, Noor Syamilah ZAKARIA, Priscilla MOSES, and Nur Aira Abd Rahim

Toward Contextualized Handwriting Process Analysis: Comparison between Problem Types in Math
Shunsuke TONOSAKI, Taito KANO, Satomi HAMADA, Izumi HORIKOSHI, and Hiroaki OGATA

Analysis of Factors Influencing Teacher Behavioural Engagement in Distance Training Based on MOA and SDT
Zhou JIN

Personalized Comment Reviewing in Active Video Watching: Investigation of Learners' Cognitive Load
Ehsan BOJNORDI, Antonija MITROVIC, Matthias GALSTER, Sanna MALINEN, and Jay HOLLAND

AI-Driven Feedback for Enhancing Students' Mathematical Problem-Solving: The ScaffoldiaMyMaths System
Daner SUN and Jingyun WANG

The Impact of AI Literacy on Teacher Efficacy and Identity: A Study of Korean English Teachers
Seunmin EUN

Exploring High School Students' Transition from Traditional Search Engines to ChatGPT for Course learning: A Push-Pull-Mooring Model Perspective
Chien-Liang LIN, Chih-Yu YANG, Pei-Chi WU, Chi-Heng LI, and Yu-Cheng LIN

A Study on High School Students' Continuance Intention to Use ChatGPT for Learning Assistance: An Exploration Based on Self-Determination Theory
Tian-Yun LIN, Chien-Liang LIN, Shi-En LIN, Yu-Chen LIN, and Chi-Heng LI

EXTENDED SUMMARY

Accepted Papers

Developing a Visualized Data Guessing Game to Assess Data Literacy
Ruei-Yi XIE and Ming-Chi LIU

Exploring Dialogue Patterns in Argumentation with Pre-set ChatGPT Personas
Seunmin EUN

Relationship Analysis Between Procrastination Behavior and Non-cognitive Abilities
Yasuhisa TAMURA and Keito MORINO

POSTERS

27 & 28 November, Innovation Lobby, Areté Ateneo

C1: ICCE Sub-Conference on Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning

Image-Based Pili (Canarium ovatum, Engl.) Fruit Variety Classifier App: An Approach to Enhancing Teaching Biodiversity and Crop Science
Leo Constantine BELLO and Joshua MARTI

Authorship Forensics Portal
Robert SCHMIDT, Maiga CHANG, Hsiang-Han CHENG, Greg FREDIN, Kevin HAGHIGHAT, and Rita KUO

Designing learner-centered collaborative learning by incorporating AI-based teacher/learner agents with a cognitive model
Yugo HAYASHI, Shigen SHIMOJO, and Tatsuyuki KAWAMURA

Student Perceptions of Using Generative AI-driven Chatbot in Learning Programming
Ean Teng KHOR, Leta CHAN, Elizabeth KOH, and Peter SEOW

Quality Criteria Acquisition Support System of a Product by Explaining It with Components
Kota KUNORI and Tomoko KOJIRI

Exploring Explainable Artificial Intelligence in Active Video Watching
Raul Vincent LUMAPAS, Antonija MITROVIC, Matthias GALSTER, and Sanna MALINEN

A Proposal of Quality Assurance Programming Exercise
Nobuya ISHIHARA, Samsul HUDA, and Yasuyuki Nogami

Enhancing Engagement in Distance Learning: Overcoming Learner Isolation through ICT Tools
Kumiko AOKI, Itaru KANEKO, Ken KURIYAMA, Takeo TATSUMI, and Takahiro MIYAJIMA

Scaffolding Students' Ill-structured Problem Solving Via LLM -- Multi-armed Bandit Problem as a Case
Jiayi LIU and Bo JIANG

Navigating Europe's Artificial Intelligence Act: Application of LLMs in classrooms
Upasana DASGUPTA and Rwitajit MAJUMDAR

POSTERS

27 & 28 November, Innovation Lobby, Areté Ateneo

Learning Support Environment with Fill-in-Blank Exercise Based on Program Visualization System
Koichi YAMASHITA, Shuya SUZUKI, Satoru KOGURE, Yasuhiro NOGUCHI, Raiya YAMAMOTO, Tatsuhiro KONISHI, and Yukihiro ITOH

Learning Support Environment with Fill-in-Blank Exercise Based on Program Visualization System
Koichi YAMASHITA, Shuya SUZUKI, Satoru KOGURE, Yasuhiro NOGUCHI, Raiya YAMAMOTO, Tatsuhiro KONISHI, and Yukihiro ITOH

C2: ICCE Sub-Conference on Computer-supported Collaborative Learning (CSCL) and Learning Sciences
Pyzzles: Towards the design of a Zugzwang-inspired Learning Tool for Novice programmers and its effect on Debugging Skills and Self-Perceived Debugging Confidence
Elijah Justin CALLANTA

BioAnalogica: Designing SBF-Based Analogical Stories to Enhance Understanding of Complex Biological Processes
Meera PAWAR, Sheeja VASUDEVAN, and Sahana MURTHY

Challenging the Eye-Mind Link Hypothesis: Visualizing Gazes For Each Programming Problem
Michael T. LOPEZ II

C3: ICCE Sub-Conference on Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure
Towards the Development of PIA 2.0: A Pedagogical Agent that Exhibits Synthetic Facial Expressions
John Lorenz DELA CRUZ, Paulyn Joy DELA CRUZ, Joyce Antonette GUADALUPE, Jiabianca MACARAEG, Piolo Jose MONTESA, Mark Paul RAMOS, and Rex BRINGULA

Early Detection of At-Risk Students through Learning-Activity Forecasting
Yuya Ozaki, Daisuke Deguchi, Haruya Kyutoku and Hiroshi Murase

POSTERS

27 & 28 November, Innovation Lobby, Areté Ateneo

Program Learning Support System with Visualization Reflecting Teacher's Intent for Learner's Code
Kenzo KOBAYASHI, Satoru KOGURE, Yasuhiro NOGUCHI, Raiya YAMAMOTO, Koichi YAMASHITA, Tatsuhiro KONISHI, and Yukihiro ITOH

Development of Annotation System for Learning from Others in Public Space Design using Extended Reality
Toshiki MUGURUMA, Yusuke YAGI, Yusuke KOMETANI, Saerom LEE, Naka GOTODA, and Rihito YAEGASHI

Development of Labourer Digital Twin Generation and Visualization Function for Hazard Prediction in Off-site Training
Kaito MINOHARA, Toshiki MUGURUMA, Yusuke KOMETANI, Naka GOTODA, Saerom LEE, Ryo KANDA, Shotaro IRIE, and Toru HARAI

What Insights Are Gained from Students' Trace Data in Homework?
Satomi Hamada, Yuko Toyokawa, Taito Kano, Izumi Horikoshi and Hiroaki Ogata

HyCode: A Code Similarity Assessment Tool Utilizing Reccurent Neural Networks
James ABAWAG, Aleczia TORDILLA, and Joshua MARTINEZ

Empowering Educational Researchers with a Privacy-Centric Data Platform: Design, Implementation, and Implications
Isanka WIJERATHNE, Brendan FLANAGAN, and Hiroaki OGATA

Exploring the relationship between assignment submission behavior and final grade of information literacy education using big data
Yuki OE, Etsuko KUMAMOTO, Huiyong LI, and Chengjiu YIN

C4: ICCE Sub-Conference on Technology Enhanced Learning for Mobility of Learners and Learning Experiences (TEML)

A TPB-TAM Approach to Identifying Adoption Factors of Hyflex among Educators
Elanie VIZCONDE, Joshua ISAGUIRRE, Gabriel Luis LIWANAG, and Ryan EBARDO

Designing Interactive Mathematical Teaching Tools for Tablet-Based Learning: Enhancing Student Engagement and Tactile Exploration
Loong-Chuan LEE, Chia-Ying LIN, Yu-Han TAN, and Kuo-Yu LIU

POSTERS

27 & 28 November, Innovation Lobby, Areté Ateneo

C5: ICCE Sub-Conference on Educational Gamification and Game-based Learning (EGG)

Exploring the Effects of Leaderboards on an Online Professional Development Course for Teachers
Aime Michelle LAZARO and Marlene DE LEON

Game-Based College English Translation Instructional Design Based on Representational Redescription Model: Implicit Knowledge Transformed into Explicit Knowledge
Xinyu JIANG, Mengya CHEN, and Lu HUANG

C6: ICCE Sub-Conference on Technology Enhanced Language Learning (TELL)

Implementation and an Evaluation of a Search Function Allowing Misspelling for a Japanese Learning System
Hidenobu KUNICHIKA and Miguel Antonio VILLALOBOS ZUNIGA

C7: ICCE Sub-Conference on Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP)

An Experience Sampling Study of Student Emotional Life: Preliminary Results
Maria Mercedes T. RODRIGO, Liane Peña ALAMPAY, Queena N. LEE-CHUA, and Irish Danielle MORALES

Theory-driven Design for the Development of a Student-Centered Error-correction Online Learning System
Fu-Yun YU

Online Student Testlet-generation as an Innovation Approach to Student-Created Assessment: Its Learning Effects
Fu-Yun YU and Ya-Shin CHANG

Contextual factors affecting large-scale educational technology implementation: policy intention versus practice
Arjun PRASAD, Jayakrishnan WARRIEM, and Sridhar IYER

AI and Data Science Literacy Framework for Educators
Nurul Amelina NASHARUDDIN, Nurfadhlina MOHD SHAREF, and Mohd Khaizer OMAR

POSTERS

27 & 28 November, Innovation Lobby, Areté Ateneo

Challenges to Augmenting Literacy in the Digital Environment
Khalid KHAN and Jon MASON

Unboxing Learner Engagement in an Online SEL for Teachers Course on FramerSpace
Hritik GUPTA, Nandini CHATTERJEE, and Shitanshu MISHRA

WORK-IN-PROGRESS POSTERS (WIPP)

27 & 28 November, Innovation Lobby, Areté Ateneo

Support System for Focused Discussion in Consensus Building for Team Sports
Kazuma KUWADA and Tomoko KOJIRI

Influence of Telepresence Robot on Discussion in Hybrid Classes
Hiroaki ARUGA and Akihiro KASHIHARA

Understanding Collaborative Teacher Growth from the Lens of Digital Learning Agility: A Pathway to Educational Excellence
Kamilah ABDULLAH, Mas Nida Md. Khambari, Su Luan WONG, Noor Syamilah ZAKARIA, Nur Dania MOHD ROSLI, Priscilla MOSES, and Nur Aira Abd Rahim

Proposal for Simulation Environment to Support Understanding of Tactical Positioning
Yuki OHTSUKA and Tomoko KOJIRI

Online Educational Game for Realistic Interior Design with Design Thinking Process and Multidimensional Scaffolding
Chou-Pai YEOH and Huei Tse HOU

An online MMORPG card game based on multi-dimensional scaffolding to develop reading comprehension and contextual problem-solving skills
Cheng-Tai LI, Chou-Pai YEOH, Yu-Chi CHEN, Hung-Yu CHAN, Yun-Chien CHUANG, Yu-Jen LIN, Min-Hsiong HONG, and Huei Tse HOU

WORK-IN-PROGRESS POSTERS (WIPP)

27 & 28 November, Innovation Lobby, Areté Ateneo

Microlearning strategy in ICT education
Kotaro TORII

Instructors' perceptions and use of feedback dashboard
Feng LIN and Rebekah Wei Ying LIM

What do Students Say About ChatGPT? A Topic Modeling Analysis of Perception on GenAI in Academic Writing
Lingxi JIN, Kyuwon KIM, Hyo-Jeong SO, and Ga Young LEE

Exploring Student Emotion via Facial Expressions using Transfer Learning
Tita HERRADURA, Merlin Teodosia SUAREZ, and Macario CORDEL II

The Effect of Stimulus Concurrence on Memorizing Constellations in VR
Nicko CALUYA, Eiji YAHARA, and Damon CHANDLER

Generative AI and XR in Education: Student Co-Created Metaverse Worlds in an International Virtual Exchange
Masako HAYASHI

Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SATELUC)

27 & 28 November, Innovation Lobby, Areté Ateneo

The APSCE International Conference on Computers in Education (ICCE) is pleased to announce the inaugural "Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries" (SATELUC; pronounced as "sa-tuh-luhk"). This showcase is a dedicated poster or demonstration section in the main conference program aimed at encouraging more participation in ICCE from underrepresented countries (defined below) in the field of technology-enhanced learning. Accepted revised proposals will be published in the ICCE Proceedings, which will be submitted to Elsevier for inclusion in Scopus and made available on the official ICCE2024 and APSCE websites.

The objective of this showcase is to provide a platform for researchers, educators, and practitioners from underrepresented countries to report their innovative ideas, research findings, practical applications, or national/regional policies in the field of technology-enhanced learning (TEL). This showcase is not a financial aid program.

Co-Chairs
Lung-Hsiang WONG, Nanyang Technological University, Singapore
Mas Nida Md. Khambari, Universiti Putra Malaysia, Malaysia
Nur Aira Abd Rahim, Universiti Putra Malaysia, Malaysia
Ivica BOTICKI, University of Zagreb, Croatia
Saida ULFA, State University of Malang, Indonesia

Practical Skills Acquisition in Domestic Wiring as Determinants of Entrepreneurship Development among Undergraduate Students In Nigeria
Ismaheel Adewale BADRU (Nigeria)

Transforming Education in Timor-Leste: The Role of e-Learning and Artificial Intelligence in Boosting Student Achievements
Estanislau Sousa SALDANHA, Edio DA COSTA, Aderita Mariana TAKELEB, Salustiano DOS ROEIS PIEDADE, and Carla Alexandra DA COSTA (Timor-Leste)

Learning with Virtual Avatars: Insights into Performance and Resource Needs
Antun DROBNJAK and Ivica BOTICKI (Croatia)

Showcase of Advancements in Technology-Enhanced Learning in Underrepresented Countries (SATELUC)

27 & 28 November, Innovation Lobby, Areté Ateneo

MS Teams acceptance factors among Polish and Ukrainian students
Nataliia DEMESHKANT, Sławomir TRUSZ, Tetiana MATUSEVYCH, and Amy SEPIÓŁ (Poland/Ukraine)

Boosting Literacy with an Educational RPG For Polytechnic Students
Agung PRAMUDHITA, Puteri MAWANGI, and Banni ANDOKO (Indonesia)

Development of the Board Game 'Career Champion': Gamification for Understanding Job Interview Preparation
Farid Angga PRIBADI, Eng. Banni Satria ANDOKO, and Erina SEVIYANTI (Indonesia)

AI Tools Experience in Civitas Academic Portal in Timor Leste
Agostinho Dos Santos GONÇALVES, Sebastião PEREIRA, and Saida ULFA (Timor-Leste)

AI Literacy among Lecturers in University: A Case Study in a Private University in Timor Leste
Agustinho Dos Santos GONCALVES, Jacinto DE OLIVEIRA JUNIOR, Natalino Pereira PARADA, and Saida ULFA (Timor-Leste)

Tridharma-Based Lecturer Performance Assessment System Using the Saw Method
Anita GUTERRES, Delfim DA SILVA, Antonio GUTERRES, and Joaquim DE JESUS VAZ (Timor-Leste)

AI as a Co-Teacher: Enhancing Creative Thinking in Underserved Areas
Roberto ARAYA (Chile)

Global Trends in Computational Thinking in Curricula: A Comparative Review
Martha Nury BONILLA-CASTAÑEDA, Klinge Orlando VILLALBA-CONDORI, Hector CARDONA-REYES, Claudia Acra-DESPRADEL, and Kee-Fui TURNER-LAM (Columbia/Peru/Mexico/Dominican Republic)