



ICCE 2024

The 32nd International Conference
on Computers in Education

MANILA, PHILIPPINES

WS01: 4th International Workshop on Embodied Learning: Technology Design, Analytics & Practices

Monday, November 25

09:00–10:30	WS01-1
W01-004F	Exploring Cognitive Engagement in AI-driven Adaptive Psychomotor Sport Training <i>Miguel PORTAZ, Rwitajit MAJUMDAR, and Olga C. SANTOS</i>
W01-005F	Exploring Graph Slopes Through a Series of Embodied Learning Experiences <i>Priyadharshni ELANGAIVENDAN, Melwina ALBUQUERQUE, Shizuka DARA, and Sanjay CHANDRASEKHARAN</i>
10:50–12:20	WS01-2
W01-006F	Unpacking interaction Markers of Critical Thinking <i>Aditi KOTHIYAL, Rwitajit MAJUMDAR, Shitanshu MISHRA, Jayakrishnan Madathil WARRIEM, and Prajakt PANDE</i>
W01-007F	Actions and interactions at collaborative engineering design hackathon: Looking through the lens of embodied cognition <i>Soumya NARAYANAN, Navneet KAUR, and Rwitajit MAJUMDAR</i>
W01-008F	Designing an AI-Enhanced Timeline for Monitoring Multimodal Interactions in Embodied Learning Environments <i>Joyce FONTELES, Namrata SRIVASTAVA, Eduardo DAVALOS, Ashwin T S, and Gautam BISWAS</i>



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WS02: The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024)

Tuesday, November 26

09:00–10:30	WS02-1
W02-003F	Exploring Learning Analytics: A Case Study of Tertiary Educators' Utilization and Integration of AnimoSpace LMS in the Online Learning Environment <i>Rozanne Tuesday FLORES and Ethel ONG</i>
W02-007F	An Implementation of Augmented Reality in Guided Inquiry-based Learning for Enhancing Primary Students' Mental Models in Science <i>Sasivimol PREMTHAISONG, Pawat CHAIPIDECH, Phattaraporn PONDEE, and Niwat SRISAWASDI</i>
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 <i>Joselito Christian Paulus VILLANUEVA, John Lorence VILLAMIN, and Joshua TUMOLVA</i>
10:50–12:20	WS02-2
W02-014F	Exploring Skills Enhancement in Student Teacher through Implementation of Design Thinking in Unplugged Game Creation <i>Tian Wong LING, Mas Nida Md. KHAMBARI, Mohd Mokhtar MUHAMAD, Sharifah Intan Sharina Syed-ABDULLAH, and Saiful Hasley RAMLI</i>
W02-017F	Factors influencing ChatGPT use behaviour among trainee teachers <i>Sarala VALAIDUM and Jazihan MAHAT</i>
W02-009S	Design and Implementation of an Educational Escape Rooms Class <i>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, and Maria Mercedes T. RODRIGO</i>
13:20–14:50	WS02-3
W02-002S	A Preliminary Investigation of the Definition and Components of Computational Thinking in the Malaysian Education Landscape: From Educational Technology Experts' Perspective <i>Ahmad Sarji Abdul HAMED, Su Luan WONG, Mohd Zariat Abdul RANI, Mas Nida Md KHAMBARI, Nur Aira Abd RAHIM, Fariza KHALID, and Priscilla MOSES</i>
W02-006S	PERS: A Personalized Recommender System for Student-Generated Questions <i>Pham-Duc THO</i>
W02-010S	A User Acceptance Testing Tool for Mobile Game-based Learning Application <i>Christian Jade D. GUILLEN and Saturnina F. NISPEROS</i>
W02-016S	Sociotechnical Challenges of Older Educators in Delivering Medical Education Online <i>Ryan EBARDO, John Byron TUAZON, and Miriam Louella FERMIN</i>



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WS02: The 13th International Workshop on ICT Trends in Emerging Economies (WICTTEE 2024)

Tuesday, November 26

15:10–16:10	WS02-4
W02-013S	Minecraft as a Tool for Digital Game-Based Learning: Enhancing Conceptual Understanding and Attitudes <i>Sakda CHALEEPLIAM, Sasivimol PREMTHAISONG, and Pawat CHAIPIDECH</i>
W02-008S	COGNICRAFT: Smart Exam Question Generation with AI And Bloom's Taxonomy <i>Christian SAGADRACA, Zainal SANTOS, Danilo SIMON, Jr., Marianne Jessica TOLENTINO, and Reymar VENTURA</i>
W02-004S	Development and Evaluation of a Hybrid Mobile-Learning App Using Design Science Research (DSR) Framework <i>Joselito Christian Paulus VILLANUEVA, John Lorence VILLAMIN, and Joshua TUMOLVA</i>



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WS03: Analysis and Design of Problems/Questions in the Digital Environment: The 17th Workshop on Technology Enhanced Learning by Posing/Solving Problems/Questions

Monday, November 25

09:00–10:30	WS03-1
W03-002	Question Generation Support System Using Others' Research Frames <i>Daiki MAEDA, Kota KUNORI, and Tomoko KOJIRI</i>
W03-005	Learning Effectiveness and Reflections on AI Literacy in Junior High School Students with Game-Based Learning and Problem-Based Learning <i>Shih-Hua HUANG and Ting-Chia HSU</i>
W03-009	Does Experience of Feedback Generation Promote Student Novel Problem Posing? An Empirical Study in a Database Course <i>Kazuaki KOJIMA</i>
10:50–12:20	WS03-2
W03-004	Difficulty-Controllable Reading Comprehension Question Generation Considering the Difficulty of Reading Passages <i>Yuto TOMIKAWA and Masaki UTO</i>
W03-006	Iterative Problem Solving in the Integration of Design Thinking and Game-Based Learning into Enhancing Computational Thinking and AI Literacy <i>Tai-Ping HSU and Ting-Chia HSU</i>
W03-007	Design and Development of a Stepwise Learning Environment for Problem Posing of Arithmetic Word Problem <i>Yusuke HAYASHI, Nagito YAMAMOTO, Susumu SHIMAKAWA, and Tsukasa HIRASHIMA</i>



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WS04: The 8th Computer-Supported Personalized and Collaborative Learning

Tuesday, November 26

09:00–10:30	WS04-1
W04-003 F	Investigating the Impact of Cooperative Group Learning on Blended Teaching and Learning Outcomes: A Case Study of Sixth-grade Students in an Elementary School <i>De Jun MO and Joni Tzuchen TANG</i>
W04-008 F	Investigating Students' Online Learning Perception through the Lens of Constructivism <i>May Marie P. TALANDRON-FELIPE, Kent Levi A. BONIFACIO, and Gladys S. AYUNAR</i>
W04-001 S	Integrating Virtual Environment in Teaching Courses <i>Chiu-Jung CHEN and Pei-Lin LIU</i>
10:50–12:20	WS04-2
W04-007 F	Investigating the Role of AI Book Discussion Companions in Enhancing Student Performance: A Pilot Study on Self-Efficacy <i>Yi-Cheng TSAI, Chang-Yen LIAO, and Hsiao-Tung YANG</i>
W04-013 F	Investigation of skills training system using TF-IDF for the plasterer's skeletal data <i>Ryota TANAKA, Naka GOTODA, Lee SAERON, Ryo KANDA, Ayaka HUNABIKI, Hirotake KANISAWA, Kanae KANDA, Yuka TAKAI, and Toshihiro HAYASHI</i>
W04-002 S	The Trends in Computer-Supported Virtual Reality Collaborative Learning <i>Ching-Yi CHANG and Cheng-Huan CHEN</i>
13:20–14:50	WS04-3
W04-012 F	Addressing Public Speaking Anxiety with an AI Speech Coach <i>Frederick Voltair GARCIA, Jr., Nicanor Froilan PASCUAL, Miguel Elijah SYBINGCO, and Ethel ONG</i>
W04-004 S	Combining Interest-Driven Creator Theory with Peer Assessment Digital System: A Method for Enhancing EFL Learners' English Oral Skills <i>Chih-En KUO, Charles Y. C. YEH, and Tak-Wai CHAN</i>
W04-005 S	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 <i>Wen-Lung HUANG and Chia-Jung CHANG</i>
W04-010 S	Developing an LLM-empowered Agent to Enhance Student Collaborative Learning through Group Discussion <i>Sixu AN, Yicong LI, Yu YANG, Yunsi Tina MA, and Guandong XU</i>
15:10–17:00	WS04-4
W04-006 S	Exploring the Effect of Collaborative Programming Learning Environment on Student's Computer Programming Competencies and Cognitive Learning <i>Chia-Jung CHANG and Wen-Lung HUANG</i>
W04-009 S	Investigating the Impact of Kahoot! on EFL Grammar Learning <i>Jonathan Y. CHIN and Ben CHANG</i>
W04-011 S	Designing an LLM-based Dialogue Tutoring System for Novice Programming <i>Julieto PEREZ and Ethel ONG</i>



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WS06: GenAI in Education – From Hallucinations to Reality: Integrating Learning Analytics and Generative AI for Enhancing Personalized Learning Experiences

Tuesday, November 26

09:00–10:30	WS06-1
W06-001 F	Analyzing teacher–student dialogues in online one-on-one primary mathematics tutoring: A lag sequential analysis of group differences <i>Gary CHENG, Bo JIANG, Daner SUN, Ming GAO, and Zhixuan SONG</i>
W06-004 F	Supporting Teacher–Student Book Talk and Book Wish Lists with AI-Driven Technology <i>Chih-En KUO and Hong-Min TU</i>
W06-005 F	AVERY: A GenAI-based Approach to Enhancing Learner Engagement in English Writing <i>Ka-Lai WONG, Patrick OCHEJA, Brendan FLANAGAN, and Hiroaki OGATA</i>
10:50–12:20	WS06-2
	Panel Discussion
13:20–14:50	WS06-3
W06-007 F	How AI Supports Returning Adult Learners in a Developing Economy: Enhancing Academic Writing Through Self-Determination Theory <i>Mary Rose MARTINEZ and Ryan EBARDO</i>
W06-009 F	Developing a multimodal learning analytics approach to examine students’ cognitive presence and metacognition in a metaverse environment <i>Yanjie SONG, Lei TAO, Hao DENG, and Jiachen FU</i>
W06-010 F	Integrating ChatGPT into Flipped Learning: Enhancing Students’ Creative Writing Skills and Perception <i>Worapong KHUIBUT, Sasivimol PREMTHAISONG, and Pawat CHAIPIDECH</i>
15:10–17:00	WS06-4
W06-011 F	Competency-based Assessment in the Era of Generative Artificial Intelligence: Perspectives of Selected STEM Educators <i>Friday Joseph AGBO, Heather Kitada SMALLEY, and Kathryn NYMAN</i>
W06-006 S	A Case Study for Educators with ChatGPT and Plato’s Allegory of the Cave <i>Anna Y.Q. HUANG, Jain-Wei TZENG, Chi-Sheng HUANG, Zhi-Chi LIU, and Owen H.Q. LU</i>
W06-008 S	Supporting Students’ Post-Exam Reflection Needs in College Automation Engineering Course Using LLM <i>Edward ANOLIEFO, Patrick OCHEJA, Regina OCHONU, Brendan FLANAGAN, and Hiroaki OGATA</i>



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WS07: The 7th Workshop on Predicting Performance Based on the Analysis of Reading and Learning Behavior

Tuesday, November 26

09:00–10:30	WS07-1
W07-001 F	Exploring Cross-Disciplinary Education: Enhancing Science Learning with Digital Picture Books <i>Yan-Yu JAU and Joni Tzuchen TANG</i>
W07-002 F	Methods of Balancing Model Explainability and Performance in Identifying At-Risk Students <i>Tiffany T.Y. HSU, Owen LU, and Brendan FLANAGAN</i>
10:50–12:20	WS07-2
W07-003 F	Effects of the Self-Regulated Learning and Motivation on Learning Achievements of the Programming Courses <i>Mu-Sheng CHEN and Ting-Chia HSU</i>
W07-004 F	GazeViz: A Web-Based Approach for Visualizing Learner Gaze Patterns in Online Educational Environment <i>Eduardo DAVALOS, Namrata SRIVASTAVA, Yike ZHANG, Amanda GOODWIN, and Gautam BISWAS</i>



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WS08: The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop)

Monday, November 25

09:00–10:30	WS08-1
W08-001 F	Novice Programmers' Saccadic Patterns in Error Message Comprehension and Syntax Error Identification <i>Caren PACOL, Maria Mercedes RODRIGO, and Christine Lourrine TABLATIN</i>
W08-004 F	Challenges and Opportunities for Designing and Implementing Ubiquitous Game-based Learning to Cultivate Digital Citizenship in Thailand <i>Patcharin PANJABUREE, Gwo-Jen HWANG, Niwat SRISAWASDI, Ungsinun INTARAKAMHANG, and Sasipim POOMPIMOL</i>
W08-005 S	Reducing Undergraduate Students' Information Technologies (ITs) Anxiety through Implementation of Blended Learning: A Case Study in the Basic Natural Science Course <i>Anggiyani Ratnaningtyas Eka NUGRAHENI, Anggraeni Dian PERMATASARI, and Antuni WIYARSI</i>
10:50–12:20	WS08-2
W08-002 F	Predicting Emotional Impact on Peer review, Peer assessment, and Self-Assessments Using Deep Learning and NLP in STEM Education <i>Pascal Muam MAH</i>
W08-008 F	Leveraging Generative AI for Automatic Scoring in Chemistry Education: A Web-Based Approach to Assessing Conceptual Understanding of Colligative Properties <i>Sri YAMTINAH, Dimas Gilang RAMADHANI, Antuni WIYARSI, Hayuni Retno WIDARTI, and Ari Syahidul SHIDIQ</i>
W08-010 S	Fostering TPACK Self-Efficacy among Pre-Service Chemistry Teachers: A Case Study from Indonesia <i>Anggiyani Ratnaningtyas Eka NUGRAHENI, and Niwat SRISAWASDI</i>



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WS08: The 12th Workshop on Technology-Enhanced STEM Education (TeSTEM Workshop)

Monday, November 25

13:20–14:50	WS08-3
W08-003 F	Math Learning Application on Mobile Devices Following the STEAM Educational Model <i>Nguyen Manh Thang and Pham-Duc THO</i>
W08-011 F	Does Interactive Augmented Reality Enhance Primary Students' Geometric Understanding and Visual-Spatial Skills in Mathematics Learning? <i>Atcharaporn ASSAWAPHUM, Sasivimol PREMTHAISONG, and Pawat CHAIPIDECH</i>
W08-007 S	Promoting Quantitative Analysis in School Chemistry with Technology-supported Hands-on Laboratory Learning: A Case of Arduino-based Portable Spectrophotometer <i>Ari Syahidul SHIDIQ, Fa'ari SALSABILLA, Murni RAMLI, Sri MULYANI, Hayuni Retno WIDARTI, and NAHADI</i>
15:10–17:00	WS08-4
W08-009 F	The Urgency of Small-Scale Laboratory Learning Media with Ethno-Electrochemical Contexts Based on Content Creators <i>Hayuni R. WIDARTI, Sumari, Munzil, Nahadi, Ari S. SHIDIQ, Berliyana I. PANULATSIH, Ghaitza Z. S. P. PUTRI, Nafisah KHAIRUNNISA, and Deni A. ROKHIMA</i>
W08-012 F	Exploring the Effect of Marker-Based AR Gamification on Primary Students' Science Concepts and Motivation <i>Pawat CHAIPIDECH, Sasivimol PREMTHAISONG, Phattaraporn PONDEE, and Niwat SRISAWASDI</i>
W08-006 S	Exploring the Impact of Digital Divide on the Academic Performance of STEM Students in Hybrid Modality <i>May Marie P. TALANDRON-FELIPE and Jundy V. INTAO</i>



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WS09: The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation

Monday, November 25

09:00–10:30	WS09-1
W09-001 S	AR2: Augmented Reality for Enhanced Reading Comprehension <i>Allan Jay ESTEBAN</i>
W09-002 S	Developing the Interactive Game-based Picture Book "Food Ninja" to Enhance Creativity in Elementary School Students <i>Wen Chun LAN, De Jun MO, and Joni Tzuchen TANG</i>
W09-003 F	An Estimation of Student Well-being Using Experience Sampling <i>Arthur NEBRAO, Jr. and Maria Mercedes RODRIGO</i>
W09-004 S	Exploring the Use of Short Video Social Media for Learning ESL in Indonesia <i>Riska SAPUTRA, Tsaqufal JALILY, and Intan SETIANI</i>
W09-005 S	Narrative Introduction Text Generation Support System According to Reader Preferences <i>Ryusei SHIMONAKA, Kota KUNORI, and Tomoko KOJIRI</i>
W09-007 S	Galvanic Skin Responses and Flow: Insights from Multimodal Learning Analytics in Personal Learning Environment <i>Yu-Lin HO, Yuan-Hsuan LEE, and Jiun-Yu WU</i>
10:50–12:20	WS09-2
W09-006 F	Transforming Student Feedback into Institutional Action Plans: A Data-Driven Approach <i>Arlene Mae CELESTIAL-VALDERAMA</i>
W09-008 F	BioMol DigiGames: An App for the Mastery of Biomolecules <i>Joshua TUMOLVA, John Lorence VILLAMIN, Joselito Christian Paulus VILLANUEVA, and Armando Victor GUIDOTE</i>
W09-009 S	The Era of Learning Programming Through Program: Challenges and Potential of ChatGPT in Revolutionizing High School Programming Education <i>Tzu-Chi YANG</i>
W09-010 S	Code Visualization System for Writing Better Code through Trial and Error in Programming Learning: Classroom Implementation and Practice <i>Shintaro MAEDA, Kento KOIKE, and Takahito TOMOTO</i>
W09-011 S	Optimization of Non-Verbal Information for English Conversation Agents Using Interactive Evolutionary Computation <i>Yuma SHIMOSAKA, Emmanuel AYEDOUN, and Masataka TOKUMARU</i>



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WS09: The 4th Workshop on Innovative Technologies for Enhancing Interactions and Learning Motivation

Monday, November 25

13:20–14:50	WS09-3
W09-012 S	Exploring the Benefits of Strategic Hesitations in Language Learning Robots <i>Ryusei AZUMA, Emmanuel AYEDOUN, and Masataka TOKUMARU</i>
W09-013 S	Zooming In on Educator Well-Being: Exploring Behavior Attributes, Zoom Fatigue, and Burnout Dynamics <i>Kevynn DELGADO, Mary Rose MARTINEZ, Christine Jamela VALSADO, and Ryan EBARDO</i>
W09-014 S	The Effect of Collaborative Anchoring on the Development of Digital Curation Skills Among Nursing College Students <i>Chunhao CHANG</i>
W09-015 F	Enhancing Health Education and Learning Motivation in Primary Students through Augmented Reality and Game-Base Learning: A Case Study <i>Nattapat BUNYUEN, Pawat CHAIPIDECH, and Sasivimol PREMTHAISONG</i>
W09-016 S	Improving Engagement in Museums through Virtual Reality Educational Escape Rooms (VREER): A Framework and Usability Study <i>Eric Cesar E. VIDAL, Jr., Nicko CALUYA, Joan Dominique L. LEE, Kenneth King L. KO, Jed Laszlo O. JOCSON, and Gerick Jeremiah Niño N. GO</i>
W09-017 S	Exploring the Effect of Metacognitive Awareness on University Students' Learning Outcomes in the Metaverse: Evidence from Eye-tracking Data <i>Tinghui WU, Yanjie SONG, and Xuesong ZHAI</i>



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Doctoral Student Consortium (DSC)

Tuesday, November 26

09:00–10:30	DSC-1
244	Real-time Adaptive Learning Environments Using Gaze and Emotion Recognition Engagement and Learning Outcomes <i>Aboul Hassane CISSE</i>
254	Developing a multimodal learning analytics approach for collaborative learning and metacognitive strategies in virtual learning environments for primary science education <i>Lei TAO and Yanjie SONG</i>
223	Competition and Collaboration: A Multi-Modal Analysis of Cognitive Load and Behavior in Game-based Learning <i>Lishan ZHENG and Wenli CHEN</i>
10:50–12:20	DSC-2
253	A Proposal for a Quantitative Evaluation Model for Error Image Generation in L2 Vocabulary Learning <i>Kazuki SUGITA, Wen GU, Koichi OTA, Prarinya SIRITANAWAN, and Shinobu HASEGAWA</i>
212	Development and Validation of a Problem-Solving Instrument (Multiple-Choice Questions) for Computational Thinking Among Trainee Teachers in the Klang Valley, Malaysia <i>Ahmad Sarji Abdul HAMED, Su Luan WONG, and Mohd Zariat Abd RANI</i>
217	OKLM: Open Knowledge and Learner Model Using Educational Big Data <i>Kensuke TAKII, Changhao LIANG, and Hiroaki OGATA</i>
13:20–14:50	DSC-3
248	Exploring the Young Learners' Interactions with AI-generated Multimodal Feedback in Collaborative Writing <i>Xinyu GUO</i>
241	The Bane of AI in Teaching: Innovation Resistance in Higher Education Instructional Design & Delivery <i>Estefanie BERTUMEN and Ethel ONG</i>
	Discussion



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Student Wing (SW)

Tuesday, November 26

14:30–16:30	Student Wing Workshop
	Chair: <i>Prof. Yanjie SONG</i> , The Education University of Hong Kong
	Introduction
	Topic: Get Your Research Published: Essential Tools and Strategies <i>Yin YANG</i> , The Education University of Hong Kong
	Q&A Session
	Topic: Unlock Your Early Career Success: Tips and Opportunities for Securing Grants <i>Shurui BAI</i> , The Education University of Hong Kong
	Q&A Session
	Interactive Session
	Closing