






# ICCE2020 Main Conference Accepted Papers

-  (BOPN) Best Overall Paper Award Nominee
-  (BSPN) Best Student Paper Award Nominee
-  (BTDPN) Best Technical Design Paper Award Nominee

## C1 – Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning

(Full = 4, Short = 7, Poster = 4, Total = 15)

Paper ID	Title	Authors	Category
16	Automatic Assessment of Comment Quality in Active Video Watching  (BOPN)  (BSPN)	Negar Mohammadhassan, Antonija Mitrovic, Kourosh Neshatian and Jonathan Dunn	FULL Paper
46	Characterising Video Segments to Support Learning	Abrar Mohammed and Vania Dimitrova	FULL Paper
144	Attainable Range Prediction of Group Product by Aggregation of Individual Products in Group Learning with Kit-build Concept Map	Yusuke Hayashi, Toshihiro Nomura and Tsukasa Hirashima	FULL Paper
157	Utilizing Crowdsourcing and Topic Modeling to Generate Knowledge Components for Math and Writing Problems  (BTDPN)	Steven Moore, Huy Nguyen and John Stamper	FULL Paper
10	Primary students' readiness for learning of artificial intelligence: A case study in Beijing	Ching Sing Chai, Pei-Yi Lin, Morris Siu-Yung Jong, Yun Dai and Thomas Chiu	SHORT Paper
51	Predicting Student Success for Programming Courses in a Fully Online Learning Environment	Neil Arvin Bretana, Mehdi Robati, Aastha Rawat, Aashi Pandey, Shreya	SHORT Paper

		Khatri, Kritika Kaushal, Sidarth Nair, Gerald Cheang and Rhoda Abadia	
69	LiveDots: Real time Interactive Braille Music Translator to Integrate Blind Students into Music Classes	Claudia Guerrero García-Heras, Óscar Díaz Robagorda, Lucas de Torre Barrio, Borja Manero and María Guijarro Mata-García	SHORT Paper
111	Learner Model of Knowledge Grounding in Discovery Learning	Takuya Wada, Yuki Hayashi, Kazuhisa Seta and Tomoko Kojiri	SHORT Paper
124	Using the Community of Inquiry framework to develop an educational chatbot: lesson learned from a mobile instant messaging learning environment	Congyao Qin, Weijiao Huang and Khe Foon Hew	SHORT Paper
129	Learning by Problem-Posing as Kit-Building for Structure Understanding of Polynomial Factorization	Sho Yamamoto, Hiroyoshi Enomoto, Yusuke Hayashi and Tsukasa Hirashima	SHORT Paper
155	Predicting end-of-session actions using the information of learning materials in online educational systems	Daichi Takehara	SHORT Paper
27	Using Augmented Reality in Innovating Pedagogy: Students and Psychologists' Perspectives	Hazel Trapero, Ryan Ebarido, Jypzie Catedrilla, Laiza Limpin, Josephine de la Cuesta, Cecilia Leañó and Michelle Renee Ching	POSTER
58	Accuracy-aware Deep Knowledge Tracing with Knowledge State Vectors and an Encoder-Decoder Architecture	Qiushi Pan and Taro Tezuka	POSTER
114	ITS Promoting Realization of Misguided Self-Confidence in One's Own Comprehension	Tomoki Aburatani, Kazuhisa Seta, Yuki Hayashi and Mitsuru Ikeda	POSTER
166	Designing Technology Supported Scaffolding for Fractions Learning in Primary	Daner Sun	POSTER

## C2 – Computer-supported Collaborative Learning (CSCL) and Learning Sciences

(Full = 5, Short = 6, Poster = 4, Total = 15)

Paper ID	Title	Authors	Category
19	Unpacking students' modelling behavior in the Sun-Earth system: Use of digital media tool-based epistemological resources 🏆(BTDPN)	Hinal Kiri, Harshit Agrawal, Shanize Forte, Durgaprasad Karnam and Sanjay Chandrasekharan	FULL Paper
45	From Monitoring to Sharing of Attention in Dyadic Interaction: The Affordances of Gaze Data to Better Understand Social Aspects of Remote Collaborative Problem Solving 🏆(BOPN)	Johanna Pöysä-Tarhonen, Nafisa Awwal, Päivi Häkkinen and Suzanne Otieno	FULL Paper
105	Observing Facial Muscles to Estimate the Learning State During Collaborative Learning: A Focus on the ICAP Framework	Yuying Cai, Shigen Shimojo and Yugo Hayashi	FULL Paper
115	Learning Analytics of Critical Reading Activity: Reading Hayavadana during Lockdown	Rwitajit Majumdar, Geetha Bakilapadavu, Reek Majumder, Mei-Rong Alice Chen, Brendan Flanagan and Hiroaki Ogata	FULL Paper
158	Using Log and Discourse Analysis to Improve Understanding of Collaborative Programming 🏆(BSPN)	Bernard Yett, Caitlin Snyder, Ningyu Zhang, Nicole Hutchins, Shitanshu Mishra and Gautam Biswas	FULL Paper
8	Interest-driven creation, computational thinking and storytelling in learning Python	Nandakumara Vegan, Chien-Sing Lee, Madhavan Balan Nair and James Ean-Huat Ooi	SHORT Paper
66	Investigate the Influence of Interactive Immediacy on Collaborative Knowledge Construction in Online Discussions	Wanyu Zhang, Luyue Li, Lei Zhang, Fan Ye and Ning Ma	SHORT Paper
77	Supporting Collaborative Inquiry for Geography and Teamwork Learning: The Techno-Pedagogical Design of My Groupwork Buddy for Geography	Elizabeth Koh, Yi-Huan Tee, Dhivya Suresh, Betsy Ng, Helen Hong and Tricia Seow	SHORT Paper
107	Improving pre-service teachers' ICT-integrated lesson design through formative peer feedback	Wenli Chen, Zhongling Pi and Jesmine Tan	SHORT Paper
146	Computational Thinking Activities in Number Patterns: A Study in a Singapore Secondary School	Shiau Wei Chan, Chee Kit Looi, Weng Kin Ho, Wendy Huang, Peter Seow, Longkai Wu and Mi Song Kim	SHORT Paper

156	Prompting Learner-Learner Collaborative Learning for Deeper Interaction: Conversational Analysis Based on the ICAP Framework	Shigen Shimojo and Yugo Hayashi	SHORT Paper
28	Learning Math Problem Solving with a Robot Peer Tutor	Aaron Nol Bautista, Jabin Raymond Gerardo, Harvey Lallave, Patrick Luigi Latorre, Ethel Ong, Jocelynn Cu, Minie Rose Lapinid and Auxencia Limjap	POSTER
48	Changes in the effect of concept map-based autonomous learning under different levels of self-regulation	Lu Cheng, Fan Chen, Jiayu Niu, Xueying Xu and Ning Ma	POSTER
89	Online Collaborative Kit-Build Concept Map: Conversation Analysis and Learning Effect in Collaborative Learning of English as a Foreign Language	Aryo Pinandito, Yusuke Hayashi and Tsukasa Hirashima	POSTER
120	Proposal of Note-map for Collaborative Reading using an E-book System	Juan Zhou, Hideyuki Takada and Chengjiu Yin	POSTER

### C3 – Advanced Learning Technologies (ALT), Learning Analytics and Digital Infrastructure

(Full = 6, Short = 16, Poster = 1, Total = 23)

Paper ID	Title	Authors	Category
14	Extending Deep Knowledge Tracing: Inferring Interpretable Knowledge and Predicting Post-System Performance 🏆 (BSPN) 🏆(BTDPN)	Richard Scruggs, Ryan Baker and Bruce McLaren	FULL Paper
50	Introducing a Mock Technique into a Learning Support System for Program Design Based on Testability	Masaya Muramatsu, Yasuhiro Noguchi, Satoru Kogure, Koich Yamashita, Tatsuhiro Konishi and Yukihiro Itoh	FULL Paper
85	Reimagining the Conceptualization, design and delivery of Learning Analytics applications	Aneesha Bakharia and Linda Corrin	FULL Paper
91	A Unified Approach for Analysing Computer Science Courses: An Australian Case Study	Sameera Jayaratna, Caslon Chua, Mohammed Eunus Ali and Timos Sellis	FULL Paper
123	Identifying Student Engagement and Performance from Reading Behaviors in Open eBook Assessment	Brendan Flanagan, Rwitajit Majumdar, Kensuke Takii, Patrick Ocheja, Mei-Rong Alice Chen and Hiroaki Ogata	FULL Paper
143	Applying Learning Analytics to Map Students' Self-Regulated Learning Tactics in an Academic Writing Course 🏆(BOPN)	Ward Peeters, Mohammed Saqr and Olga Viberg	FULL Paper
18	Experimental Design of Automated Extraction for 3-Level Tutoring Support Information in Programming Exercises	Yasuhiro Noguchi, Kousei Ayabe, Koichi Yamashita, Satoru Kogure, Raiya Yamamoto, Tatsuhiro Konishi and Yukihiro Itoh	SHORT Paper
32	A Prototype Framework for a Connected Lifelong Learner Model	Patrick Ocheja, Brendan Flanagan, Solomon Sunday Oyelere, Louis Lecailliez and Hiroaki Ogata	SHORT Paper
34	Using Sequence Clustering to Unveil Students' Learning Strategies and Explore the Relationship with Cognitive Load	Ching-Hsiang Kang, Anna Y. Q. Huang, Owen H.T. Lu, Bin-Shyan Jong and Stephen J. H. Yang	SHORT Paper
35	Impact of School Closure during COVID-19 Emergency: A Time Series Analysis of Learning Logs	Hiroyuki Kuromiya, Rwitajit Majumdar, Taisyo Kondo, Taro Nakanishi, Kensuke Takii and Hiroaki Ogata	SHORT Paper

42	Improving Classification in Imbalanced Educational Datasets using Over-sampling	Zeynab Mohseni, Rafael Messias Martins, Marcelo Milrad and Italo Masiello	SHORT Paper
43	Applying Key Concepts Extraction for Evaluating the Quality of Students' Highlights on e-Book	Albert Yang, Irene Y.L Chen, Brendan Flanagan and Hiroaki Ogata	SHORT Paper
44	How Does The Quality of Students' Highlights Affect Their Learning Performance in e-Book Reading	Albert Yang, Irene Y.L. Chen, Brendan Flanagan and Hiroaki Ogata	SHORT Paper
68	An educational system with functions of guidance and adaptive advice to support problem solving based on basic concepts of statistics	Kanako Suzuki and Tatsuhiro Konishi	SHORT Paper
98	OpenLA: Library for Efficient E-book Log Analysis and Accelerating Learning Analysis	Ryusuke Murata, Tsubasa Minematsu and Atsushi Shimada	SHORT Paper
106	Sequence Pattern Mining for the identification of reading behavior based on SQ3R reading strategy	Owen H.T. Lu, Anna Y.Q. Huang, Che-Yu Kuo and Stephen J.H. Yang	SHORT Paper
128	Improving Skill for Self-Reviewing Presentation with Robot	Ryotaro Seya and Akihiro Kashihara	SHORT Paper
142	Middle-School Students' Behavior Pattern and Strategy Selection in Problem Solving: A Study Based on Data from PISA 2012	Yang Liu, Bo Yang, Lan Wu and Baoping Li	SHORT Paper
147	A warm-up for adaptive online learning environments – the Elo rating approach for assessing the cold start problem	Maciej Pankiewicz	SHORT Paper
150	Design of a Self-Reflection Model in GOAL to Support Students' Reflection	Huiyong Li, Rwitajit Majumdar, Yuanyuan Yang and Hiroaki Ogata	SHORT Paper
159	Automatic Feedback Models to Students Freely Written Comments	Jihed Makhlouf and Tsunenori Mine	SHORT Paper
165	Exploring Temporal Study Patterns in eBook-based Learning	Gökhan Akçapınar, Mohammad Nehal Hasnine, Rwitajit Majumdar, Mei-Rong Alice Chen, Brendan Flanagan and Hiroaki Ogata	SHORT Paper
15	Assessing young learners' situational interest in an immersive virtual reality learning environment: the role of epistemic curiosity	Kun-Hung Cheng	POSTER

## C4 – Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL)

(Full = 2, Short = 5, Poster = 2, Total = 9)

Paper ID	Title	Authors	Category
36	Peer Influence, Risk Propensity and Fear of Missing Out in Sharing Misinformation on Social Media during the COVID-19 Pandemic 🏆(BSPN)	Josephine de la Cuesta, Ryan Ebarido, Jypzie Catedrilla and Santoso Wibowo	FULL Paper
90	The Influence of Augmented Reality Embedding Cognitive Scaffolds on Elementary Students' Scientific Learning 🏆(BOPN)	Xinyue Jiao, Zifeng Liu and Su Cai	FULL Paper
5	Development and Field Testing of a Narrative-Centered Digital Game for English Comprehension	Jenilyn Agapito, Dominique Marie Antoinette Manahan, Ma. Monica Moreno, Jose Isidro Beraquit, Ingrid Yvonne Herras, Kevin Arnel Mora, Johanna Marion Torres and Ma. Mercedes Rodrigo	SHORT Paper
9	Enhancing Customers' Knowledge and Decision Making using Augmented Reality	Nilufar Baghaei	SHORT Paper
53	Investigating the effect of the interactive learning environments on the social semantic tagging behavior	Tien-Yu Hsu, Jun-Ming Chen and Hsin-Yi Liang	SHORT Paper
97	Pandemic 2020 and Education: Responding from Kiribati	Faisal Badar, Jon Mason and Marebu Flood	SHORT Paper
132	Design Explorations to Support Learner's Mental Health using Wearable Device and GOAL application	Taisho Kondo, Huiyong Li, Yuanyuan Yang, Rwitajit Majumdar and Hiroaki Ogata	SHORT Paper
116	Construction of Reasonable Accommodation by Chatbot Using SNS and Operation of an Accessibility Center	Noboru Ueno, Hiroyuki Mitsuhara and Masami Shishibori	POSTER
149	Predicting Stag and Hare Hunting Behaviors Using Hidden Markov Model	Rex Bringula and Ma. Mercedes Rodrigo	POSTER

## C5 – Educational Gamification and Game-based Learning (EGG)

(Full = 3, Short = 6, Poster = 1, Total = 10)

Paper ID	Title	Authors	Category
109	Story Generation System using Player's Emotions as a Review of Gamed-based Learning 🏆(BTDPN)	Shusuke Sato and Kaoru Sumi	FULL Paper
133	Investigating the Effects of Gamifying SQL-Tutor 🏆(BOPN) 🏆(BSPN)	Faiza Tahir, Antonija Mitrovic and Valerie Sotardi	FULL Paper
140	Design of a Game-based Intelligent Learning Environment to Remediate Fraction Addition/Subtraction Misconceptions through Bar Models and Misconception-eliciting Problems	Jarl Brent Obedoza and Raymund Sison	FULL Paper
33	Studying the Effect of Musical Advergemes on Consumer Education and Engagement	Forouzan Farzinnejad, Hadi Khezrian, Mohsen Kasiri and Nilufar Baghaei	SHORT Paper
61	Engaging the families with young children in museum visits with a mixed-reality game: a case study	Tien-Yu Hsu, Hsin-Yi Liang and Jun-Ming Chen	SHORT Paper
67	Applying Component-based Strategy to Design an Educational Board Game for Children to Learn Chinese Characters	Hui-Ling Hsu and Zhi-Hong Chen	SHORT Paper
76	Game-Based Learning in Language Education: A Review of Empirical Studies from 2009 to 2018	Chang Xu, Xian Zhang, Xiaohan Yu, Yutong Lu and Chunping Zheng	SHORT Paper
96	The effect of a more knowledgeable other on resilience while playing single player puzzle video games	Megan Pusey, Kok Wai Wong and Natasha Rappa	SHORT Paper
131	VRetorik: A VIRTUAL REALITY VIDEO GAME TO IMPROVE PUBLIC SPEAKING SKILLS	Enrique Fuertes Franco, Javier Navarro Vaquero and Jagoba Montes Larrabaster	SHORT Paper
70	Using a Situated Speech-based Holographic Projection System to Learn the Analects of Confucius	Yang-Hsin Fan, Chi-Fang Huang and Zhi-Hong Chen	POSTER



## C6 – Technology Enhanced Language Learning (TELL)

(Full = 3, Short = 10, Poster = 5, Total = 18)

Paper ID	Title	Authors	Category
52	Improving EFL students' learning achievements and behaviors using a learning analytics-based e-book system	Mei-Rong Alice Chen, Rwitajit Majumdar, Gwo-Jen Hwang, Yihsuan Diana Lin, Hiroaki Ogata, Gökhan Akçapınar and Brendan Flanagan	FULL Paper
55	Trends of E-Book-Based English Language Learning: A Review on Journal Publications from 2010 to 2019 🏆(BOPN) 🏆(BSPN)	Yuko Toyokawa, Mei-Rong Alice Chen, Rwitajit Majumdar, Gwo-Jen Hwang and Hiroaki Ogata	FULL Paper
161	Using Computer-like Rules to Give Automatic Grammatical Written Corrective Feedback A Case Study of Structural Particles “的”, “地” and “得”	Sihui Liu, Ming Ming Chiu, Zhan Wang and Sze Ming Lam	FULL Paper
12	Measuring Students' Online Language Learning Engagement: Towards the Development and Validation of a Scale	Lin Luan, Miao Cao and Yan Dong	SHORT Paper
30	Evaluation of a gamified augmented reality mobile apps to support English language learning among non-native speakers	Dan Wang, Mas Nida Md.Khambari, Su Luan Wong and Abu Bakar Mohamed Razali	SHORT Paper
40	A New Technology Design for Personalized Incidental Vocabulary Learning using Lifelog Image Analysis	Mohammad Nehal Hasnine, Kousuke Mouri, Gökhan Akçapınar, Mahmoud Mohamed Hussien Ahmed and Hiroshi Ueda	SHORT Paper
49	Exploring Online Reading Attention and Task Completion of English Learners at Different Language Proficiency Levels by Eye Tracking Method	Fu-Yun Yu, Wen-Wen Cheng and Jon-Fan Hu	SHORT Paper
74	Exploring English Language Learners' Conceptions of and Engagement in a Virtual Reality Learning Environment	Huilin Wang, Hanyong Liu and Chunping Zheng	SHORT Paper
99	Examining primary students' after-class vocabulary behavioural learning patterns in user-generated learning context: a case study	Yanjie Song, Hiroaki Ogata, Yin Yang and Kousuke Mouri	SHORT Paper
102	Can Mobile Blended Teaching Promote College Freshmen's Participation in English Flipped Classroom?	Hai-Yun Zhou, Sheng-Xue Zhao and Shi-Kun Nie	SHORT Paper

113	Learning on Country: A Game-Based approach towards preserving an Australian Aboriginal Language 🏆(BTDPN)	Cat Kutay, Deborah Szapiro, Jaime Garcia and William Raffe	SHORT Paper
119	TELL for Indigenous Australian languages	Catherine Bow	SHORT Paper
126	Learning Vocabularies through WeChat: A Case Study of Chinese Lower-proficiency Students	Chunlin Lei and Yuyang Cai	SHORT Paper
11	Multi-Channel CNN-BiLSTM for Chinese Grammatical Error Detection	Lung-Hao Lee, Yuh-Shyang Wang, Po-Chen Lin, Chih-Te Hung and Yuen-Hsien Tseng	POSTER
29	Development of Japanese Dictogloss Learning Support Environment for Pronunciation Learning of Japanese Speech	Satoru Kogure, Hiroki Hakamata, Yasuhiro Noguchi, Tatsuhiko Konishi, Makoto Kondo and Yukihiro Itoh	POSTER
79	A Comparative Study on the Translation Quality of Specialized and General Machine Translation Outputs	Xiaohan Yu, Guangming Yu, Zhiyang Liu and Chunping Zheng	POSTER
125	Effect of an Automated Writing Evaluation System on Students' EFL Writing Performance	Limei Zhang and Zheng Huang	POSTER
162	Developing an App to Support Peer Feedback during Emergency Remote Teaching	Tom Gorham	POSTER

## C7 – Practice-driven Research, Teacher Professional Development and Policy of ICT in Education (PTP)

(Full = 5, Short = 9, Poster = 5, Total = 19)

Paper ID	Title	Authors	Category
3	Effects of Academic Achievement and Group Composition on Quality of Student-Generated Questions and Use Patterns of Online Procedural Prompts	Fu-Yun Yu and Wen-Wen Cheng	FULL Paper
7	School and teacher level predictors for students' information literacy in Chinese rural and urban education	Liqin Yu, Di Wu, Sha Zhu, Feixiong Chen and Kaige Zhu	FULL Paper
25	Levels of academic teachers digital competence: Polish case-study	Nataliia Demeshkant, Katarzyna Potyrała and Łukasz Tomczyk	FULL Paper
71	Learning Dialogues orchestrated with BookRoll: A Case Study of Undergraduate Physics Class During COVID-19 Lockdown	Vijayanandhini Kannan, Jayakrishnan Warriem Madathil, Rwitajit Majumdar and Hiroaki Ogata	FULL Paper
121	When is flipped classroom more effective and why it flops 🏆(BOPN)	Hew Khe Foon	FULL Paper
13	Can Computer-Based Learning Environments Mitigate Large Class Size?	Ryan Baker, Aishah Al Yammahi, Joe El Sebaaly, Ali Nadaf, Tina Kapp and Seth Adjei	SHORT Paper
26	Experiences with e-learning as challenge for effective training of future generations of teachers	Łukasz Tomczyk	SHORT Paper
38	Supporting Group Learning Using Pen Stroke Data Analytics	Daichi Yoshitake, Brendan Flanagan and Hiroaki Ogata	SHORT Paper
39	What Influence Teachers' Satisfaction towards a Learning Management System? A Structural Equation Modelling	Mei Lick Cheok and Su Luan Wong	SHORT Paper
54	International Student Perspectives on Simulated Preservice Induction 🏆(BTDPN)	Jon Mason, Khalid Khan, Nicolas Gromik and Bing Liu	SHORT Paper
56	Development of Computational Thinking Concepts in Scratch Programming	Siu Cheung Kong, Ming Lai and Cora Ka-Yuk Siu	SHORT Paper
81	Learning Support System for Understanding Pointers Based on Pair of Program Visualizations and Classroom Practices	Koichi Yamashita, Keisuke Sakata, Satoru Kogure, Yasuhiro Noguchi, Tatsuhiko Konishi and Yukihiro Itoh	SHORT Paper
93	Distance Learning Practices: A Reflective Study	Ali Ahmed, Craig Watterson, Nilufar Baghaei and Karsten Lundqvist	SHORT Paper

112	Using Online Learning Environments to Enrich Digital Literacy Competencies of Construction Management Graduates	Thilini Jayawickrama, Rhodora Abadia and Shokry Abdelaal	SHORT Paper
22	E-book based Learning in times of Pandemic	Rwitajit Majumdar, Mei-Rong Alice Chen, Brendan Flanagan and Hiroaki Ogata	POSTER
86	Implementation Challenges of STEM Education: from Teachers' Perspective	Xiaojing Weng, Morris S. Y. Jong and Thomas K.F. Chiu	POSTER
137	Emergency remote teaching in low-resource contexts: How did teachers adapt?	Victoria Abou-Khalil, Samar Helou, Eliane Khalifé, Rwitajit Majumdar and Hiroaki Ogata	POSTER
153	Teacher Professional Development based on the DigCompEdu Framework	Mina Ghomi and Niels Pinkwart	POSTER
164	Bridging School-based Formal and Informal Learning Spaces: A Case Study of Advancing Interest-driven Education in Singapore Schools	Longkai Wu and Sujin He	POSTER