20th IEEE International Conference on Advanced Learning Technologies

(ICALT 2019)

July 6-9, 2020

Tartu, Estonia (Online)

Conference Presentation

The 20th IEEE International Conference on Advanced Learning Technologies (ICALT 2020) is organized by the Institute of Education, University of Tartu, Tartu, Estonia. The Institute of Education is focusing on educational research in a wide area from teacher education to educational technologies. The Institute has been actively involved in several international networks and professional associations. The Institute of Education also offers an international PhD programme on education and international master's programme on Educational Technology.

Hosted：

Online

Organized by：

Institute of Education, University of Tartu

Venue Map：

See the last page for **the virtual lobby room.**

Keynotes：
"Helping Young Learners Develop Inquiry and Critical Thinking Skills"
Kaushal Kumar Bhagat
Centre for Educational Technology, Indian Institute of Technology Kharagpur

Mike Spector
Learning Technologies Department, College of Information, The University of North Texas

"Learning Analytics: State of Adoption and Evidence of Effectiveness"
Dirk Ifenthaler
Chair of Learning, Design and Technology, University of Mannheim

"Empowering Communities of the World to Contribute into Improving Digital Learning"
Märt Aro
Co-Founder, DreamApply

Presentation Guidelines

- All presentation date/time is in GMT. Please refer to https://time.is/GMT for finding the time difference that your local time may have from the GMT.

- Presentation time for full papers will be 20 minutes plus 5 minutes for questions.

- Presentation time for short papers will be 15 minutes plus 5 minutes for questions.

- Discussion session will have two stages. In the first stage, each discussion paper's presenter will have 3-minute to give all participants a brief and clear idea of their research. Presenters can use up to three slides for the 3-minute presentation. After that, each discussion paper will have its own "virtual" room so participants can visit and discuss with its authors in more details.

- All presenters should get familiar with how to use Zoom for their presentation. More instructions can be seen at https://sisu.ut.ee/icalt2020/zoom-instructions-presenters.

- All of the presentations (except Doctoral Consortium and individual sessions for discussion papers) will be recorded and made available for the registered participants.
  NOTE: The IEEE copyright covers presentations.

Conference Agenda at a Glance

Time in GMT	DAY 1, July 6, 2020			
12:00 - 12:40	**Open Ceremony** Session 1-1A			
12:40 - 13:30	**IEEE TCLT Annual Meeting** (everyone is encouraged and welcome) Session 1-2A			
13:30 - 14:00	**Break**			
14:00 - 15:00	**Keynote** Kaushal Kumar Bhagat & Mike Spector Helping Young Learners Develop Inquiry and Critical Thinking Skills Session 1-3A			
15:00 - 15:30	**Break**			
15:30 - 17:00	**i-OPENLearn Session #1** Session 1-4A	**DIGITEL Session #1** Session 1-4B	**BDELA Session #1** Session 1-4C	**Doctoral Consortium Session** Chairs: Luis Pablo Prieto Santos, Tallinn University, Estonia & Maria Jesus Rodriguez Triana, Tallinn University, Estonia Session 1-5D
17:00 - 17:30				
*	https://time.is/GMT			

Time in GMT	DAY 2, July 7, 2020		
6:00 - 7:00	**Doctoral Consortium Session** Chairs: Luis Pablo Prieto Santos, Tallinn University, Estonia & Maria Jesus Rodriguez Triana, Tallinn University, Estonia Session 2-0D		
7:00 - 8:00			
8:00 - 9:00	**Keynote** Dirk Ifenthaler A look into learning analytics findings supporting study success Session 2-1A		
9:00 - 9:30	**Break**		
9:30 - 10:40	**TELL Session #1** Session 2-2A	**CSCL Session #1** Session 2-2B	**MA-TEL Session #1** Session 2-2C
10:40 - 11:00	**Break**		
11:00 - 12:30	**TELoTS Session #1** Session 2-3A	**ARVWET Session #1** Session 2-3B	**APTeL Session** Session 2-3C
12:30 - 13:00	**Break**		
13:00 - 13:50	**Women in Engineering Panel** (everyone is encouraged and welcome) Session 2-4A		
13:50 - 14:10	**Break**		
14:10 - 15:40	**TeDISABLE Session** Session 2-5A	**DIGITEL Session #2** Session 2-5B	**AISLE Session** Session 2-5C
15:40 - 16:00	**Break**		
16:00 - 16:15	**Comedy night** Karl- Alari Varma Session 2-6A		
16:15 - 16:30	**Break**		
16:30 - 17:00	**Quiz night** What do you know about Estonia and Tartu? Session 2-7A		

* https://time.is/GMT

Time in GMT	DAY 3, July 8, 2020		
6:00 - 7:00			
7:00 - 8:00	**Keynote** Märt Aro Empowering communities of the world to contribute into improving digital learning Session 3-1A		
8:00 - 8:30	**Break**		
8:30 - 9:40	**i-OPENLearn Session #2** Session 3-2A	**TeSTEM Session #1** Session 3-2B	**BDELA Session #2** Session 3-2C
9:40 - 10:30	**Break**		
10:30 - 11:30	**i-OPENLearn Session #3** Session 3-3A	**TeSTEM Session #2** Session 3-3B	**BDELA Session #3** Session 3-3C
11:30 - 12:00	**Break**		
12:00 - 13:30	**Discussion Session #1** Intro 45-minute session (3-minute each for presenter) + Parellel individual 45-minute session **Session 3-4A** **(+ individual sessions)**		
13:30 - 14:00	**Break**		
14:00 - 14:40	**Exclusive live concerts** Estonian musicians Session 3-5A		
14:45 - 15:30	**Break**		
15:30 - 17:00	**Discussion Session #2** Intro 45-minute session (3-minute each for presenter) + Parellel individual 45-minute session **Session 3-6A** **(+ individual sessions)**		
	* https://time.is/GMT		

Time in GMT	DAY 4, July 9, 2020		
7:40 - 8:30	**WMUTE Session** Session 4-1A	**DIGITEL Session #3** 4-1B	
8:30 - 9:00	**Break**		
9:00 - 10:30	**TELoTS Session #2** Session 4-2A	**CSCL Session #2** Session 4-2B	**TELL Session #2** Session 4-2C
10:30 - 11:00	**Break**		
11:00 - 12:30	**MA-TEL Session #2** Session 4-3A	**ARVWET Session #2** Session 4-3B	**TeASSESS Session** Session 4-3C
12:30 - 13:00	**Break**		
13:00 - 14:00	**Future Collaboration Panel** Panel Moderator: Phillip Benachour Panelists: Selected from participants' applications Session 4-4A		
14:00 - 14:30	**Break**		
14:30 - 15:00	**Best Paper Award Announcement & Close Ceremony** Session 4-5A		
15:00 - 15:30	**Break**		
15:30 - 16:00	**Virtual walking tour in Tartu with live commentary from a local**		
*	https://time.is/GMT		

Conference Agenda

7/6/2020 (Monday)	
* https://time.is/GMT	
12:00 – 12:40 Session 1-1A	**Opening Ceremony**
12:40 – 13:30 Session 1-2A	**IEEE TCLT Annual Meeting** Chaired by **Maiga Chang**, Athabasca University, Canada **(TCLT Chair)** **(open for everyone)**
13:30 – 14:00	**Break**
14:00 – 15:00 Session 1-3A	**Keynote** **Kaushal Kumar Bhagat, Mike Spector** Helping Young Learners Develop Inquiry and Critical Thinking Skills Chaired by **Kinshuk, University of North Texas, USA**
15:00 – 15:30	**Break**
15:30 – 17:00	**i-OPENLearn Session #1** **Session 1-4A** **Session Chair** **Diana Andone, Politehnica University of Timisoara, Romania** 154S Success Indicators for Massive Open Online Courses (MOOCs) Brenda Cecilia Padilla Rodriguez *Best Short Paper Award Nomination 100S Development and evaluation of a mobile educational application to support teaching of management of process in Operating Systems

	Eduardo Gomes de Oliveira, Mateus Soares Ferreira de Oliveira, Nerval Rabelo Neto, Fabiano De Paula Soldati, Talita Lara Carvalho Nassur 127F Can we afford it? The cybernetic determinants for pedagogical models in MOOCs Philip Tubman, Murat Oztok, Phil Benachour 077F A Recommender System For Open Educational Videos Based On Skill Requirements Mohammadreza Tavakoli, Sherzod Hakimov, Ralph Ewerth, Gabor Kismihok *Best Full Paper Award Nomination
15:30 – 17:00	**DIGITEL Session #1** **Session 1-4B** **Session Chair** **Isabela Gasparini, UDESC, Brazil** 091S A study on the impact of gamification on students' behavior and performance through learning paths Êrica Peters Do Carmo, Ana Carolina Tomé Klock, Elaine Harada Teixeira de Oliveira, Isabela Gasparini 080F Promoting student engagement in the design of digital games The creation of games using a Toolkit to Game Design Pedro Beça, Mónica Aresta, Cláudia Ortet, Rita Santos, Ana Veloso, Sofia Ribeiro 092F A Novel Approach to Interactive Dialogue Generation Based on Natural Language Creation with Context-Free Grammars and Sentiment Analysis Fabrizio Palmas, Jakob Raith, Gudrun Klinker 105S Simplifiying Serious Games Authoring and Validation with

	uAdventure and SIMVA Pérez-Colado Iván José, Pérez-Colado Víctor Manuel, Martínez-Ortiz Iván, Freire-Morán Manuel, Fernández-Manjón Baltasar
15:30 – 17:00	**BDELA Session #1** **Session 1-4C** **Session Chair** **Vive Kumar, Athabasca University, Canada** 102S Assessing the Impact of Public Health Campaigns Through Epidemiological, Communication and Education Indicators Rafael Pinto, Lyrene Silva, Ricardo Valentim, Carlos Oliveira, Juciano Lacerda, Rodrigo Silva, Jailton Paiva, Vivekanandan Kumar *Best Short Paper Award Nomination 136F "A Little Knowledge is a Dangerous Thing": A method to minimize knowledge compartmentalization and oversimplification Crystiam Kelle Pereira, Bernardo Pereira Nunes, Sean W. M. Siqueira, Ruben Manrique, Jerry Fernandes Medeiros *Best Student Paper Award Nomination 042F Towards a Maturity Model for Learning Analytics Adoption An Overview of its Levels and Areas Elyda Freitas, Fernando Fonseca, Vinicius Garcia, Rafael Mello, Dragan Gašević 004S Social Interactions Clustering MOOC Students: An Exploratory Study Lei Shi, Alexandra Cristea, Ahmed Alamri, Armando Maciel Toda, Wilk Oliveira

15:30 – 17:30	**Doctoral Consortium Session #1** **Session 1-5D** **Chairs:** **Luis P. Prieto, Tallinn University, Estonia** **Maria Jesus Rodriguez-Triana, Tallinn University, Estonia** **Mentors:** **Kshitij Sharma, Norwegian University of Science and Technology (NTNU), Norway** **Yannis Dimitriadis, Universidad de Valladolid, Spain** **Sean Wolfgand Matsui Siqueira, Federal University of the State of Rio de Janeiro, Brazil** 045DC Multimodal Learning Analytics for Understanding Collocated Collaboration in Authentic Classroom Settings Pankaj Chejara 048DC Overcoming the Difficulties for Teachers in Collaborative Learning Using Multimodal Learning Analytics Reet Kasepalu 151DC Using Learning Analytics and Adaptive Formative Assessment to Support At-risk Students in Online Self-paced Courses Hongxin Yan

7/7/2020 (Tuesday)	
* https://time.is/GMT	
06:00 – 08:00	**Doctoral Consortium Session #2** **Session 2-0D** **Chairs:** **Luis Pablo Prieto Santos, Tallinn University, Estonia** **Maria Jesus Rodriguez Triana, Tallinn University, Estonia** **Mentors:** **Juan I. Asensio-Pérez, Universidad de Valladolid, Spain** **Tobias Ley, Tallinn University, Estonia** **Bernardo Pereira Nunes, The Australian National University, Australia** 085DC A Multimodal Learning Analytics Approach to Support Evidence-based Teaching and Learning Practices Shashi Kant Shanka 110DC Improving Research Skills with Lean-Agile-based Instruction: Lean-Agile led, Analytics oriented platform for flexible, self-regulated, inclusive learning Geetha Paulmani 173DC Hybrid Translation and Language Model for Micro Learning Material Recommendation Jiayin Lin
08:00 – 09:00 Session 2-1A	**Keynote** **Dirk Ifenthaler** A look into learning analytics findings supporting study success Chaired by **Demetrios G Sampson, University of Piraeus, Greece &**

	Curtin University, Australia
09:00 – 09:30	Break
09:30 – 10:40	**TELL Session #1** **Session 2-2A** **Session Chair** **Scott Grant, Monash University, Australia** 164S Impact of Gender Differences on Motivation, Engagement and Interaction Behaviour in Learning English as a Second Language Using Mobile Application Ramkumar Rajendran, Gargi Banerjee, Deepak Pathak, Sivaranjani Sivamohan 089F Digital Learning Theater with Automatic Instant Assessment of Body Language and Oral Language Learning Jen-Hang Wang, Yen-Hua Chen, Shao-Yun Yu, Yu-Ling Huang, Gwo-Dong Chen 084S Facilitating online cross-cultural learning project with speech-enabled language translation technology Rustam Shadiev, Narzikul Shadiev, Mirzaali Fayziev
09:30 – 10:40	**CSCL Session #1** **Session 2-2B** **Session Chair** **Andreas Lingnau, Institute of Computer Science, Germany** 160S Aleph: An indicator of decision-making patterns within collaborative marking sessions for writing assessment that can predict reliability Nicolás Herrera, Jorge Villalon, Gonzalo Muñoz, Gabriela Baez 027F Assessing Virtual Communities of Practice in Informal Learning Environments

	Rogerio Ferreira da Silva, Itana M. S. Gimenes, José Carlos Maldonado *Best Full Paper Award Nomination *Best Student Paper Award Nomination 146S Designing a System for Enhancing the Sharing of Best Teaching Practices among Universities' Instructors Nouf Almujally, Mike Joy
09:30 – 10:40	**MA-TEL Session #1** **Session 2-2C** **Session Chair** **Phillip Benachour, Lancaster University, UK** 056S Examining University Students' Motivation, Abilities and Preferences Related to Learning to Learn Marc Beardsley, Nicolas Felipe Gutierrez, Davinia Hernandez-Leo 121F The Impact of Perceived Security on Intention to use E-Learning Among Students Ali Farooq, Farhan Ahmad, Nyla Khadam, Birgy Lorenz, Jouni Isoaho 066S The relationship between Self-regulation and Flow Experience in Online Learning: Results from Three Countries Qingqing Wan, Mengyu Liu, Bojun Gao, Tingwen Chang, Ronghuai Huang
10:40 – 11:00	**Break**
11:00 – 12:30	**TELoTS Session #1** **Session 2-3A** **Session Chair** **Chandan Dasgupta, IIT Bombay, India** 029S

	Design Strategies and Optimizations for Human-Data Interaction Systems in Museums A'Aeshah Alhakamy, Francesco Cafaro, Milka Trajkova, Sreekanth Kankara, Rashmi Mallappa, Sanika Vedak 076F The Role of Music in 21st Century Education -Comparing Programming and Music Composing Samuli Laato, Sampsa Rauti, Erkki Sutinen 168F Enhancing Critical Thinking Skills of Elementary School Students through Collaborative Learning Sie Wai Sylvia Chew, Xuan-Yang Huang, Fu-Hui Hsu, Nian-Shing Chen 044S Oh! Another Deadline: Cohort Analysis of Learner's Behaviors in Self-Directed Tasks Rwitajit Majumdar, Huiyong Li, Yuan Yuan Yang, Brendan Flanagan, Gökhan Akçapınar, Hiroaki Ogata
11:00 – 12:30	**ARVWET Session #1** **Session 2-3B** **Session Chair** **Tassos A. Mikropoulos, University of Ioannina, Greece** 169S Augmented Reality-based application to foster sustainable agriculture in the context of aquaponics Juan Garzón, Silvia Baldiris, Juan Acevedo, Juan Pavón 073S Comparing Authoring Workflows and Learning Paths in Web & Mixed Reality Environments Benedikt Hensen, Ralf Klamma 093S Defining extended Reality Training: a long-term definition for all industries

	Fabrizio Palmas, Gudrun Klinker 055F Seeing the unseen: user experience and technology acceptance in Augmented Reality science literacy Ioannis Vrellis, Michael Delimitros, Panagiota Chalki, Pavlos Gaintatzis, Ioanna Bellou, Tassos A. Mikropoulos *Best Full Paper Award Nomination
11:00 – 12:30	**APTeL Session** **Session 2-3C** **Session Chair** **Elvira Popescu, University of Craiova, Romania** 142F Educational Group Recommendations with Virtual Leaders Yong Zheng 019S Assessing the impact of controllable open learner models on student engagement Bilal Yousuf, Owen Conlan 143F Personalised Learning Design in Moodle Kyparisia Papanikolaou, Maria Boubouka 037S Recognition and Application of Learner's Cognitive Ability for Adaptive E-Learning Bingxue Zhang, Yuxiang Li, Yang Shi, Longfeng Hou
12:30 – 13:00	**Break**
13:00 – 13:50 **(Session 2-4A)**	**Women in Engineering Panel** **(open for everyone)** **Panelists** **Abasi-amefon O. Affia**, Institute of Computer Science, University of Tartu **Michelle Banawan**, Arizona State University, USA & Ateneo de

	Davao University, Philippines **Rita Kuo**, New Mexico Institute of Mining and Technology, USA **María Jesús Rodríguez-Triana**, Centre of Excellence in Educational Innovation, Tallinn University, Estonia **Discussant** **Elvira Popescu**, Computers and Information Technology Department, University of Craiova, Romania & Vice Chair for the IEEE Women in Engineering Romania Section Affinity Group **Chaired by:** **Irene-Angelica Chounta**, Tartu University, Estonia
13:50 – 14:10	**Break**
14:10 – 15:40	**TeDISABLE Session** **Session 2-5A** **Session Chair** **Charalampos Karagiannidis, University of Thessaly, Greece** 011S Evaluation of the Communicability of Virtual Learning Environment Interfaces for Deaf Students Marcelo Lucio Correia de Amorim, Fernando da Fonseca de Souza, Alex Sandro Gomes 106F Accessibility and Personalization in OpenCourseWare (An Inclusive Development Approach) Mirette Elias, Edna Ruckhaus, E.A. Draffan, Abi James, Mari Carmen Suárez-Figueroa, Steffen Lohmann, Abderrahmane Khiat, Sören Auer *Best Full Paper Award Nomination 012S Towards supporting skills of making columnar layout operations by visually impaired students Dariusz Mikułowski, Grzegorz Terlikowski

	*Best Short Paper Award Nomination 061S Improving the readability of dyslexic learners with mobile game-based sight-word training Sajjad Ansari, Hirak Banerjee, Rajlakshmi Guha, Jayanta Mukhopadhyay
14:10 – 15:40	**DIGITEL Session #2** **Session 2-5B** **Session Chair** **Ahmed Tlili Beijing Normal University, China** 152S Screams of joy yield creative projects at the educational robotics workshop in Namibia Annastasia Shipepe, Ilkka Jormanainen, Marcus Duveskog, Erkki Sutinen 087S Comparing the effects of robots and IoT objects on STEM learning outcomes and computational thinking skills between programming-experienced learners and programming-novice learners Chih-Chien Hu, Hsiao-Ting Tseng, Ming-Hsien Chen, Goh Phaik Imm Alexis, Nian-Shing Chen *Best Short Paper Award Nomination 099F Unobtrusive monitoring of learners' game interactions to identify their dyslexia level Ahmed Tlili, Roua Najjar, Fathi Essalmi, Mohamed Jemni, Maiga Chang, Ronghuai Huang, Ting-Wen Chang *Best Full Paper Award Nomination
14:10 – 15:40	**AISLE Session** **Session 2-5C** **Session Chair** **Nian-Shing Chen, National Yunlin University of Science and**

	Technology
	116S
	Co-Designing Machine Learning Apps in K–12 With Primary School Children
	Tapani Toivonen, Ilkka Jormanainen, Juho Kahila, Matti Tedre, Teemu Valtonen, Henriikka Vartiainen
	*Best Short Paper Award Nomination
	052F
	A Digital Reality Theater with the Mechanisms of Real-Time Spoken Language Evaluation and Interactive Switching of Scenario & Virtual Costumes: Effects on Motivation and Learning Performance
	Ming-Yuan Cai, Jui-Yi Wang, Gwo-Dong Chen, Su-Hang Yang, Jen-Hang Wang
	*Best Student Paper Award Nomination
	030F
	A Sophisticated Platform for Learning Analytics with Wearable Devices
	Zhenxing Zhou, Vincent Tam, K.S. Lui, Edmund Lam, Xiao Hu, Allan Yuen, Nancy Law
	104S
	A Study on the Behavor Pattern of Collaborative Knowledge Construction by Analyzing the Design Tasks in Collaborative Learning
	Bojun Gao, Jing Du, Qingqing Wan, Zhenyu Cai, Tingwen Chang, Ronghuai Huang
15:40 – 16:00	**Break**
16:00 – 16:15 **(Session 2-6A)**	**Comedy Night** **Karl-Alari Varma**
15:40 – 16:00	**Break**
16:30 – 17:00 **(Session 2-7A)**	**Quiz Night** **What do you know about Estonia and Tartu?**

7/8/2020 (Wednesday)	
* https://time.is/GMT	
07:00 – 08:00 (Session 3-1A)	**Keynote** **Märt Aro** Empowering communities of the world to contribute into improving digital learning Chaired by **Margus Pedaste, University of Tartu, Estonia**
08:00 – 08:30	**Break**
08:30 – 09:40	**i-OPENLearn Session #2** **Session 3-2A** **Session Chair** **TBA** 144S Quality Prediction of Open Educational Resources A Metadata-based Approach Mohammadreza Tavakoli, Mirette Elias, Gabor Kismihok, Soren Auer 128F AI in Cybersecurity Education- A Systematic Literature Review of Studies on Cybersecurity MOOCs Samuli Laato, Ali Farooq, Henri Tenhunen, Tinja Pitkämäki, Antti Hakkala, Antti Airola 138F Students as OER co-creators Diana Andone, Vlad Mihaescu, Silviu Vert, Andrei Ternauciuc, Radu Vasiu
08:30 – 09:40	**TeSTEM Session #1** **Session 3-2B** **Session Chair**

	Rita Kuo, New Mexico Institute of Mining and Technology, USA 038S Design-Integrated IoT Capacity Building using Tangible Building Blocks Christian Stary, Claudia Kaar 123F Impacts of Observational Learning and Self-regulated Learning Mechanisms on Online Learning Performance: A Case Study on High School Mathematics Course Tzu-Chi Yang 062F Modeling STEM Learning Design Competence Through Discourse Analysis Xiaoling Peng, Bian Wu, Yiling Hu *Best Student Paper Award Nomination
08:30 – 09:40	**BDELA Session #2** **Session 3-2C** **Session Chair** **Dirk Ifenthaler, University of Mannheim, Germany** 114S Developing a Dual Dashboard Early Detection System Mireilla Bikanga Ada, Katarina Turinicova 023F Automatic Assessment of Student Homework and Personalized Recommendation Xia Wang, Tom Gülenman, Niels Pinkwart, Claudia de Witt, Christina Gloerfeld, Silke Wrede *Best Full Paper Award Nomination 041F Supporting students in making informed data sharing decisions: from comprehension to consenting Marc Beardsley, Judit Martínez-Moreno, Patricia Santos,

	Davinia Hernandez-Leo
09:40 – 10:30	**Break**
10:30 – 11:30	**i-OPENLearn Session #3** **Session 3-3A** **Session Chair** **Phillip Benachour, Lancaster University, UK** 156S colMOOC – an Innovative Coversational Agent Platform to Support MOOCs Anastasios Karakostas, Efstathios Nikolaidis, Stavros Demetriadis, Stefanos Vrochidis, Ioannis Kompatsiaris 140S DigiCulture – open education for digital skills Diana Andone, Andrei Ternauciuc, Radu Vasiu, Vlad Mihaescu, Silviu Vert 074S Using a Programming MOOC as an Admission Mechanism for CS Merilin Säde, Reelika Suviste
10:30 – 11:30	**TeSTEM Session #2** **Session 3-3B** **Session Chair** **Rita Kuo, New Mexico Institute of Mining and Technology, USA** 139S Engaging Estonian primary school children in computational thinking through adaptive educational games: A qualitative study Liina Malva, Danial Hooshyar, Yeongwook Yang, Margus Pedaste 094S Four Stages Towards Citizen Science Mindset In School

	Külli Kori 060S Improving Learning by Imitation in Online Courses using Memorization, Learning by Doing and Lecture Architecture for Naive Programmers Siddharth Srivastava, Shalini Lamba, Prabhakar T.V.
10:30 – 11:30	**BDELA Session #3** **Session 3-3C** **Session Chair** **Elvira Popescu, University of Craiova, Romania** 086S MILA: An Interactive Learning Analytics Tool for the Moodle Learning Management System Damiano Distante, Massimo Villa, Nadia Sansone, Stefano Faralli 034S Do different instructional styles affect students' learning on summer assignments? Li Chen, Yufan Xu, Xuewang Geng, Hiroaki Ogata, Atsushi Shimada, Masanori Yamada 026S Learning Analysis of the Relationships among Learning Behaviors, Learning Performance, and Motivation Xuewang Geng, Yufan Xu, Li Chen, Hiroaki Ogata, Atsushi Shimada, Masanori Yamada
11:30 – 12:00	**Break**
12:00 – 13:30	**Discussion Session #1** **Session 3-4A (+ individual sessions)** **Session Chair:** **Maiga Chang, Athabasca University, Canada** **12:00 – 12:45** **Intro 45-minute session (3-minute each for presenter)**

12:45 – 13:30
Parallel individual 45-minute sessions

109D
Research on differences of learning behaviors between students with different achievements in Chinese MOOCs
Huaibo Wang, Jihong Li, Tingwen Chang

051D
Development of Computational Thinking Education System for Elementary School Class
Akiyuki Minamide, Kazuya Takemata, Hirofumi Yamada
*Best Discussion Paper Award Nomination

095D
A computing engine for the New Generation of Learning Environments
Ronghuai Huang, Huanhuan Wang, Wei Zhou, Jing Du, Ting-Wen Chang, Dejian Liu

111D
Effects of Augmented Reality Assisted Learning Materials on Students' Learning Outcomes
Pei-Shan Tsai, Jie-Cun Chen

059D
A Digital Reality Learning Environment with Instant Assessment on Learning with Body and Visual Interaction
Chiu-Chen Yen, Chia-Ying Lee, Gwo-Dong Chen, Jen-Hang Wang, Su-Hang Yang

014D
Development of Game Software for Color Weakness Screening
Kazuya Takemata, Kazuya Nunotani, Mitsuyoshi Maekawa, Akiyuki Minamide
*Best Discussion Paper Award Nomination

009D
Learning English as Foreign Language through Guided Writing Practice: An fMRI Study of Healthy Taiwanese Students

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Hung-Cheng Tai, Chun-Ming Chen, Yuan-Hsiung Tsai, Hsiu-Ling Chen

166D
Hindi-CNL Coder - A Desktop Application for Learning Programming using Native Controlled Natural Language
Siddharth Srivastava, Shalini Lamba

161D
Application of Educational Robots in the Elderly English Vocabulary Learning
Wen-Chi Vivian Wu, Rong-Jyue Wang, Yan-An Enya Jou

097D
The Sequential Recommendation Strategy for the Intelligent Learning of Chinese Vocabulary
Miao Yu, Lei Wang

005D
HCI Technology with Mastery Learning Approach for Children Learning Chinese Characters Writing in Hong Kong
Ka Yan Fung, Kwong Chiu Fung

049D
Learning Chinese as a Second Language by Educational Robots Integrating the Operation of Conditional Logic in Computational Thinking and the Usage of the Causal Sentences
Ting-Chia Hsu, Lung-Hsiang Wong, Guat Poh Aw

120D
Research on Creativity in the Age of Intelligence
Jihong Li, Huaibo Wang, Rongxia Zhuang, Tingwen Chang, Ronghuai Huang

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13:30 – 14:00	Break
14:00 – 14:45 (Session 3-5A)	**Exclusive Live Concerts** **by** **Estonian Musicians**
14:45 – 15:30	Break

15:30 – 17:00	**Discussion Session #2** **Session 3-6A (+ individual sessions)** **Session Chair:** **Maiga Chang, Athabasca University, Canada** **15:30 – 16:15** **Intro 45-minute session (3-minute each for presenter)** **16:15 – 17:00** **Parallel individual 45-minute sessions** 057D XMDD as Key Enabling Technology for Integration of Large scale e-Learning Based on NRENs Salim Saay, Tiziana Margaria 125D Lecture Breakup- A Strategy for Designing Pedagogically Effective Lectures for Online Education Systems Siddharth Srivastava, Shalini Lamba, Prabhakar T.V. 088D Framework for Contemporary Inquiry-based Augmented Reality Learning Margus Pedaste and Geidi Mitt 020D Assessing the impact of Notifications and Visualisations on Gaming Behavior Bilal Yousuf, Athanasios Staikopoulos, Owen Conlan 067D Diversifying educational resources according to learning styles in an online logical thinking course Joaquin Navarro Perales, Francisco Cervantes Pérez, Ana Lidia Franzoni Velázquez 068D Towards Personalized Game-Based Learning in Anti-Phishing Education

Rene Roepke, Ulrik Schroeder, Vincent Drury, Ulrike Meyer

022D
Learning through Creating Artefacts for Outdoor Settings with Smartzoos Application: Students Challenges and Experiences
Kadri Mettis, Terje Väljataga
*Best Student Paper Award Nomination
*Best Discussion Paper Award Nomination

130D
Developing smart device-friendly asymmetric simulations for teaching collaborative scientific inquiry
Leo A. Siiman, Meeli Rannastu-Avalos, Mario Mäeots

163D
Analytics-oriented Preventive Care for Communicable Diseases
Liliana Quyen Tang, Rafael Pinto, Vivekanandan Kumar
*Best Discussion Paper Award Nomination

170D
Using Educational Game for Engaging Students in Learning Foundational Concepts of Propositional Logic
Alden Towler, Daniel Aranda, Ramyaa Ramyaa, Rita Kuo

013D
SupportArr: A Plugin to Comprehend Arrays for Novice Programmers
Vartika Agrahari, Sridhar Chimalakonda
*Best Discussion Paper Award Nomination

017D
Pedagogical Challenges and Ethical Considerations in Developing Critical Thinking in Cybersecurity
Birgy Lorenz, Kaido Kikkas

053D
Theorising the Open Learner Model as an educational tool: An Open Challenge
Emanuele Bardone, Danial Hooshyar, Margus Pedaste

7/9/2020 (Thursday)	
* https://time.is/GMT	
07:40 – 08:30	**WMUTE Session** **Session 4-1A** **Session Chair** **Phillip Benachour, Lancaster University, UK** 165S Little Genius: An Experiment in Internet of Tangible Learning Things Imran Zualkernan, Fadi Aloul, Eilaf Algebail, Mohamed El Refaay, Abdulkarim Ali, Omar El Sabaa *Best Short Paper Award Nomination 050F No More Fear of Every Snake: Applying Chatbot-Based Learning System for Snake Knowledge Promotion Improvement Hsiao-Ting Tseng, Li-Kun Huang, Chen-Chiung Hsieh
07:40 – 08:30	**DIGITEL Session #3** **Session 4-1B** **Session Chair** **Ahmed Tlili Beijing Normal University, China** 149S Gamification in online discussions: How do game elements affect critical thinking? Maria Tzelepi, Katerina Makri, Kyparissia Papanikolaou, Ioannis Petroulis, Maria Moundridou 036S Interactive Robot as Classroom Learning Host to Enhance Audience Participation in Digital Learning Theater Vando Gusti Al Hakim, Su-Hang Yang, Tsung-Han Tsai, Wen-Hsu Lo, Jen-Hang Wang, Tzu-Chun Hsu, Gwo-Dong Chen *Best Student Paper Award Nomination

08:30 – 09:00	Break
09:00 – 10:30	**TELoTS Session #2** **Session 4-2A** **Session Chair** **Chandan Dasgupta, IIT Bombay, India** 007S Decision Making through the Angle of the Ecological Model of Agency Margus Pedaste, Äli Leijen 028S Written or video diary - which one to prefer in teacher education and why? Liina Lepp, Anni Küüsvek, Äli Leijen, Margus Pedaste, Annika Kaziu 124F GeoMaps: An interactive application to enhance map comprehension skills of students Archana Rane, Varun N John, Sahana Murthy 132S Tangible Flowchart Blocks for Fostering Logical Thinking in Visually Impaired Learners Priya Lotlikar, Deepak Pathak, Herold P C, Chandan Dasgupta
09:00 – 10:30	**CSCL Session #2** **Session 4-2B** **Session Chair** **Andreas Lingnau, Institute of Computer Science, Germany** 145S Individual versus computer-supported collaborative self-explanations: how do their writing analytics differ? Laia Albó, Marc Beardsley, Ishari Amarasinghe, Davinia Hernández-Leo 115F Learning and Social Networks – Similarities, Differences and

	Impact Mohammed Saqr, Calkin Suero Montero 058F Building a Model for finding Quality of Affirmation in a Discussion Forum Aparna Lalingkar, Prakhar Mishra, Sridhar Mandyam, Jagatdeep Pattanaik, Srinath Srinivasa
09:00 – 10:30	**TELL Session #2** **Session 4-2C** **Session Chair** **Sridhar Chimalakonda, IIT Tirupati, India** 071S Students' perceptions towards mobile learning in an English as a foreign language class Alla Krasulia, Katrin Saks 131S L2- A Mini Game for Learning Indian Language Vocabulary Vartika Agrahari, Sridhar Chimalakonda 118S A Vocabulary Recommendation System based on Knowledge Graph for Chinese Language Learning Feipeng Sun, Miao Yu, Xiangling Zhang, Tingwen Chang 162S Analyzing learners' English learning process involving educational robots and IoT-based toys through the lens of zone of proximal development Yueh-Hui Vanessa Chiang, Yu-Jie Zheng, Ya-Wen Cheng, Nian-Shing Chen
10:30 – 11:00	**Break**
11:00 – 12:30	**MA-TEL Session #2** **Session 4-3A** **Session Chair:** **Kyparisia Papanikolaou, School of Pedagogical &**

	Technological Education, Greece
	135S A NUI implementation for an Interactive Learning Environment Maria Lucia Barron-Estrada, Ramon Zatarain-Cabada, Brandon Antonio Cardenas-Sainz
	134S Personality-based emotion recognition for learning environments Ramon Zatarain-Cabada, Maria Lucia Barron-Estrada, Héctor Manuel Cárdenas-López
	043F The challenge of gathering self-reported moods: Cases using a classroom orchestration tool Marc Beardsley, Milica Vujovic, Emily Theophilou, Davinia Hernàndez-Leo, Marta Portero-Tresserra *Best Student Paper Award Nomination
	153S Micro Design Approach for Gamifying Students' Assignments Ahmed Hosny Saleh Metwally, Ahmed Mohamed Fahmy Yousef, Yining Wang
11:00 – 12:30	**ARVWET Session #2** **Session 4-3B** **Session Chair:** **Christian Guetl, Graz University of Technology, Austria** 167F AST[AR] - Towards Using Augmented Reality and Abstract Syntax Trees for Teaching Data Structures To Novice Programmers Vartika Agrahari, Sridhar Chimalakonda 155S Teaching Marker-based Augmented Reality in a PBL Based Online Robotics Competition

	Abhinav Sarkar, Kavi Arya 024F Investigating the effect of immersive virtual reality and planning on simulation learning outcomes：A media and method experiment Jing Nie, Bian Wu
11:00 – 12:30	**TeASSESS Session** **Session 4-3C** **Session Chair:** **Rita Kuo, New Mexico Institute of Mining and Technology, USA** 141S Towards the exploitation of multimodal data to measure students' mental effort Barbara Moissa, Geoffray Bonnin, Anne Boyer 108F Using Peer Assessment in conjunction with Project-Based Learning: A Comparative Study Gabriel Badea, Elvira Popescu 158F The Relationship between Student Performance and Reading Behavior in Open eBook Assessment Brendan Flanagan, Rwitajit Majumdar, Gökhan Akçapınar, Hiroaki Ogata *Best Full Paper Award Nomination
12:30 – 13:00	**Break**
13:00 – 14:00 **(Session 4-4A)**	**Future Collaboration Panel** **(open for everyone)** **Panelists** (in alphabetical order) **TBD** (based on applications received during ICALT 2020) **Chaired by:**

	Phillip Benachour, Lancaster University, UK
14:00 – 14:30	**Break**
14:30 – 15:00 **(Session 4-5A)**	**Best Paper Award Announcement** **&** **Close Ceremony**
15:00 – 15:30	**Break**
15:30 – 16:00 **(Session 4-6A)**	**Virtual Walking Tour in Tartu** **with** **Live commentary from a local**

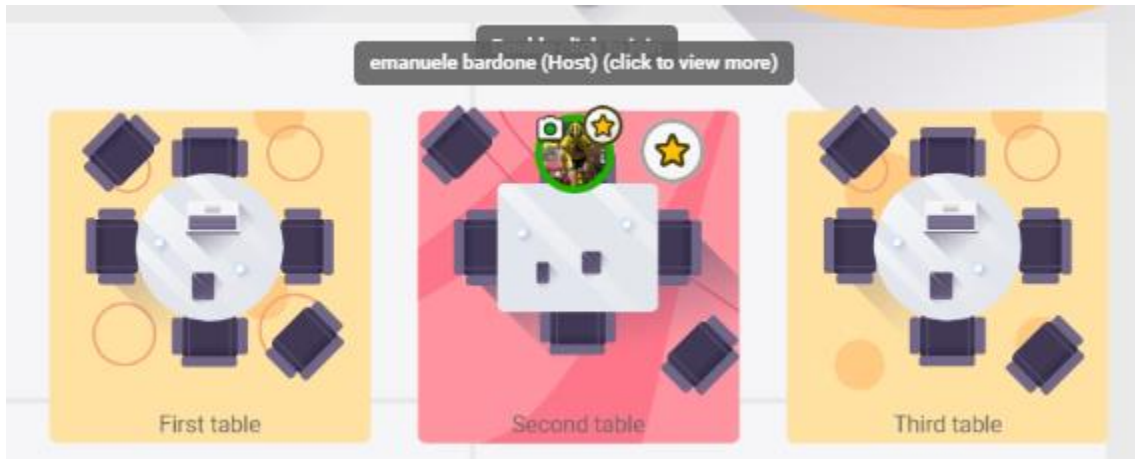**Venue Map**

The virtual lobby room

During the whole duration of the sessions, all participants will have the chance to meet with one another in the so-called "virtual lobby room". The lobby room is a virtual space powered by a video-conference tool called Remo. For a short video-demo, check this: https://youtu.be/AvfjiukhgnE

The lobby room will be reachable by simply clicking on the links that will be provided by the organizers.
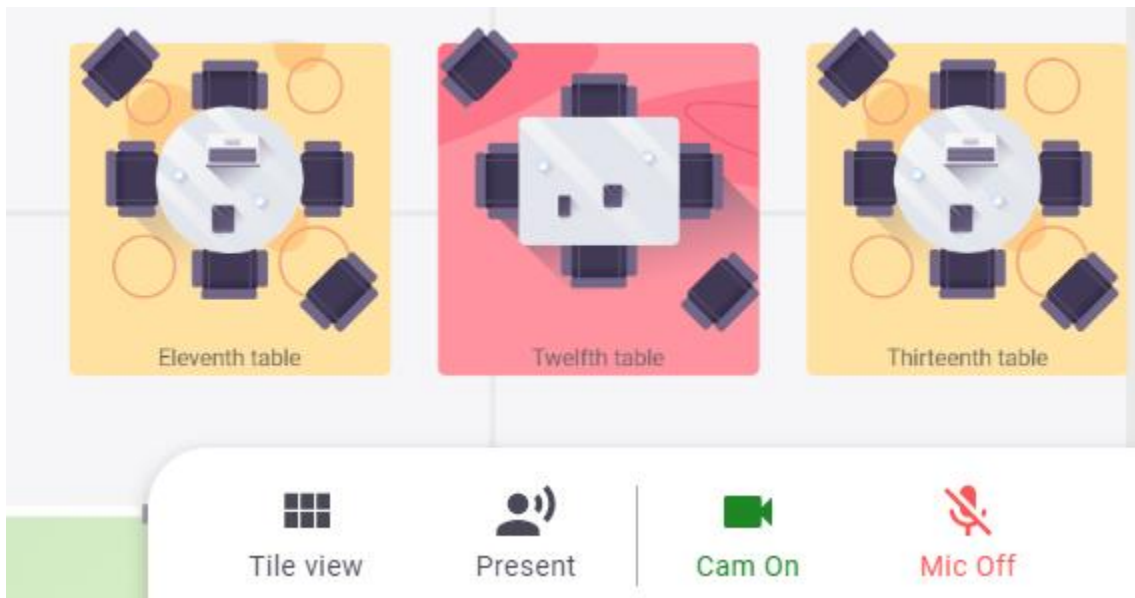
Once you are in the virtual lobby room, you will be automatically assigned to one of the tables, which functions like "breakout rooms". You will then be able to video-chat only with those who are "sitting" on the same table. Each table will allow for a maximum of 6 people.
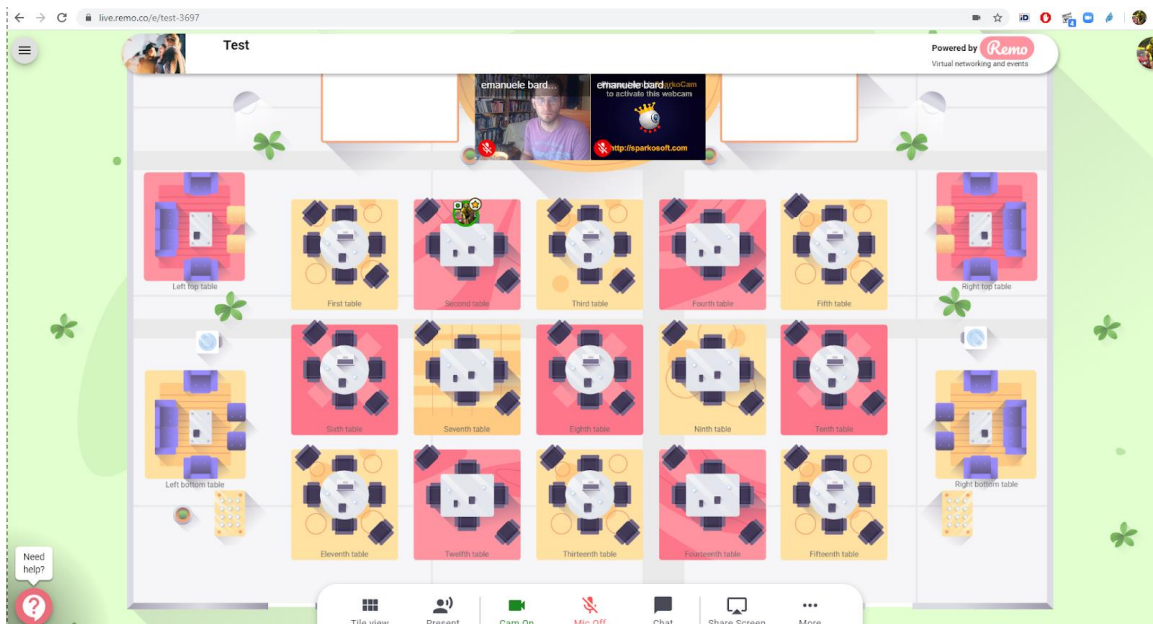
Once you are in the lobby, you can switch from one table to the other. Other participants' names will be shown, when with your mouse you will go over one the bubbles, as shown in the picture.

First table   Second table   Third table

By clicking on "Tile view", you will be able to switch to alternative views.

Eleventh table   Twelfth table   Thirteenth table

Tile view   Present   Cam On   Mic Off

While being on one of the tables in the virtual lobby room, you can share your screen or use the whiteboard at your convenience.