

CONFERENCE PROGRAM
22nd International Conference on
Cognition and Exploratory Learning in Digital Age (CELDA 2025)

Saturday 1st, November 2025

08:30-18:55 Welcome Desk (closes for lunch – 13:00-14:05)
(Room: Óbidos)

09:40-10:00 Session O – Opening Session
(Room: Guimarães)

OPENING SESSION

Profs. Demetrios G. Sampson and Pedro Isaias

10:00-11:00 Session KL – Keynote Presentation
(Room: Guimarães)

“CHALLENGES AND PERSPECTIVES ON THE DEVELOPMENT OF HUMAN LEARNING WITH AI”

Professor Marcus Specht, Learning Sciences in Higher Education at the Research Center for Higher Education of the Future (CATALPA) at the Fernuniversität in Hagen, Germany

11:00-11:30 Coffee Break

11:30-13:00 Session 1.1
Assessment Of Exploratory Technologies
(Room: Guimarães)
Chair: Nane Kratzke

EXPLORING THE AFFORDANCES AND CONSTRAINTS OF SCRATCH IN MATHEMATICS EDUCATION: A STUDY THROUGH THE LENS OF AFFORDANCE THEORY (F013)

Said Hadjerrouit

CONCEPT MAPPING AND CRITICAL THINKING: A SYSTEMATIC REVIEW AND FUTURE DIRECTIONS FOR CONCEPT MAPPING TOOL DEVELOPMENT (F045)

Allan Jeong, Rachel Wong and Jean Baptiste Mbanzabugabo

FROM DASHBOARD TO CLASSROOM: A CASE STUDY OF TEACHER-FACING DASHBOARD IMPACT ON LEARNING PERFORMANCE AND BEHAVIORS (F126)

Xuewang Geng, Kohei Ozaki and Masanori Yamada

11:30-13:00 Session 1.2
Exploratory Technologies // Technology, Learning And Expertise
(Room: Bragança)
Chair: Antonija Mitrovic

HUMAN PERCEPTIONS ON AI-GENERATED IMAGE AND AI-ASSISTIVE SENTENCE CORRECTIONS: ANALYZING LEARNERS CONTEXTUAL VOCABULARY LEARNING BEHAVIOURS WITH AN AI CHATBOT (F171)

Kensuke Akao, Mohammad Nehal Hasnine, Mirai Yamada and Hiroshi Ueda

CONVERSATIONS FOR LEARNING: DESIGNING PERSONIFIED HISTORICAL CHATBOTS TO ENHANCE CRITICAL THINKING IN K-12 STUDENTS (F185)

Karishma Shanghvi, Gurudeo Thakare, Alekh Velayudhan, Ramkumar Rajendran and Lakshmi T. Ganesh

IDENTIFYING PROBLEM-SOLVING PROFILES TO INFORM SCAFFOLDING IN DIGITAL PROBLEM-SOLVING ENVIRONMENTS (F086)

Jörgen Ivar Sikk and Kairit Tammets

13:00-14:15 Lunch Break

14:35-16:15 Session 1.3

Technology, Learning And Expertise // Pedagogical Issues Related With Learning Objects

(Room: Guimarães)

Chair: Matthias Brandl

AI AS THE STUDENT: CONCEPTUAL DESIGN OF A SIMULATION ENVIRONMENT FOR DEVELOPING TEACHER DISCOURSE COMPETENCE (F048)

Sabine Seufert, Philipp Hartmann, Susan McKenney and Sara van der Linden

DIGX: BECOMING EXCELLENT DIGITAL TEACHERS IN FLEMISH SECONDARY EDUCATION (F113)

Bram Bruggeman and Johanna Snoeck

FOSTERING CONCEPTUAL UNDERSTANDING OF PARALLEL CIRCUITS BEHAVIOUR BY CONSTRUCTING QUALITATIVE REPRESENTATIONS (S074)

Tessa Hoogma, Marco Kragten and Bert Bredeweg

INTEGRATING PODCASTING IN TEACHER PREPARATION PROGRAMS TO INCREASE TEACHER SELF-EFFICACY (S019)

Elizabeth Lapon

14:05-16:15 Session 1.4

Exploratory Technologies

(Room: Bragança)

Chair: Allan Jeong

PACKAGED WIDGETS: EVALUATING A CONCEPT FOR FAIR EDUCATIONAL TECHNOLOGY COMPONENTS (F022)

Frederic Salmen, Sergej Görzen, René Röpke and Ulrik Schroeder

HUMANS VS. AI IN GRADING STUDENTS' TEXTS – A PILOT STUDY WITH 3 TEACHERS AGAINST ONE AI (F035)

Felix Weber and Hendrik Hubbertz

EXPLORABLES: EVALUATING A CONCEPT FOR REMIXABLE INTERACTIVE LEARNING RESOURCES (F076)

Frederic Salmen, René Röpke and Ulrik Schroeder

A CASE REPORT ON THE IMPLEMENTATION OF A WEBXR PLATFORM FOR TEACHING AND LEARNING IN THE CHINESE LANGUAGE ENHANCEMENT PROGRAMME (HKU) (S181)

Ming Wai Chung and Chi Ming Chan

WHAT DRIVES EMPLOYEES TO ENGAGE IN CONTINUING EDUCATION? IMPLICATIONS FOR COURSE RECOMMENDER SYSTEMS – A SYSTEMATIC LITERATURE REVIEW (S083)

Floris K. Scherb and Dirk Ifenthaler

16:15-16:45 Coffee Break

16:45-18:55 Session 1.5

Student-centered Learning

(Room: Guimarães)

Chair: Felix Weber

DESIGN THINKING AS AN INNOVATIVE PEDAGOGICAL TOOL (F202)

Pedro Isaias and Paula Miranda

MEASURING SEMANTIC SIMILARITY OF LEARNING OUTCOMES: COMPUTATIONAL APPROACHES AND EDUCATIONAL IMPLICATIONS (F152)

Sorana Cimpan, Francesco Floris, Marina Marchisio Conte and Sergio Rabellino

FROM CURRICULUM FOR ALL TO INCLUSIVE PRACTICE: INSIGHTS FROM A PILOT STUDY ON UDL-BASED PEDAGOGICAL TRANSFORMATION (F128)

Sara Cruz and Marisa Maia

STUDENT-CENTERED LEARNING AND PEDAGOGY IN THE AGE OF AI (S154)

Alexander Williams and Ngozi Harrison

INTELLIGENT TUTORING SYSTEMS MEET GENERATIVE-AI CHATBOTS TO CRAFT PERSONALIZED LEARNING PATHS: A PHENOMENOLOGICAL STUDY REVEALS 7 KEY DESIGN ISSUES (S020)

Michele Norscini, Lucio Monterubbiano and Chiara Moroni

16:45-18:55 Session 1.6

Technology, Learning And Expertise // Technology And Mental Models

(Room: Bragança)

Chair: Demetrios G. Sampson

THE SERGIO BLANCO STUDY: EVALUATING CREATIVE WORK THROUGH AI (F051)

Franco Ripa Di Meana, Andrea Guidi, Veronica Di Geronimo and Alberto Giretti

ADAPTIVE LEARNING WITH COGNITIVE AWARENESS: AN AI MODEL FROM THE ELSEI MASTER'S PROGRAM (F151)

Zakaria Tagdimi, Souhaib Aammou and Marina Sounoglou

DETECTING AI-ASSISTED CHEATING IN ONLINE EXAMS THROUGH BEHAVIOR ANALYTICS (S094)

Gökhan Akçapınar

EASING TECHNOSTRESS AMONG TEACHERS: WHAT FACTORS MAKE A DIFFERENCE? (S199)

Maria Grazia Diana, Pierpaolo Zivi, Gianluca Malatesta, Maria Lidia Mascia, Cristina Cabras, Alberto Di Domenico, Massimiliano Palmiero and Maria Pietronilla Penna

COMPUTATIONAL THINKING IN MATHEMATICS EDUCATION: BETWEEN CURRICULAR EXPECTATIONS AND TEACHING PRACTICES (R198)

Marcela de Seabra, António Domingos and Manuel Vara Pires

CAPTURING THE RESEARCH BASE: FRAMING A LITERATURE SEARCH ON DIGITAL COMPETENCES (R098)

Annika Wilmers, Carolin Keller, Pia Sander, Alexander Christ, Tanja Mayer and Katja Buntins

Sunday 2nd, November 2025

08:30-15:30 Welcome Desk (closes for lunch – 13:00-14:15)

(Room: Óbidos)

09:00-11:00 Session 2.1

Assessment Of Exploratory Learning Approaches

(Room: Guimarães)

Chair: Said Hadjerrouit

DIGITALLY SUPPORTED SCENARIO-BASED LEARNING FOR IMPROVING MATHEMATICS EDUCATION AND PERCEPTION IN SECURITY AND DEFENCE (F130)

Marina Marchisio Conte, Giulia Boetti, Fabio Roman, Enrico Spinello, Nikolaos V. Karadimas, Linko Nikolov, Paulina Owczarek and Andrada Livia Cirneanu

EFFECTIVENESS OF AI-BASED SUPPORT FOR VIDEO-BASED LEARNING FOR TEACHING EMPATHY (F178)

Antonija Mitrovic, Raul Vincent Lumapas, Matthias Galster and Sanna K. Malinen

INVESTIGATING THE DEVELOPMENT OF SOFT SKILLS THROUGH BLENDED INTENSIVE PROGRAMMES (F193)

Alice Barana, Antonino Cambria, Marina Marchisio Conte, Fabio Roman and Enrico Spinello

ANALYZING THE SUITABILITY OF COMPUTER ATTITUDE QUESTIONNAIRE FOR MEASURING STUDENTS' ATTITUDES TOWARDS TECHNOLOGY TOOLS USED IN MATHEMATICS EDUCATION (F057)

Jose Gamez, Oscar Villalobos, Youngjin Lee and Kinshuk

11:00-11:30 Coffee Break

11:30-12:50 Session 2.2

Technology, Learning And Expertise // Exploratory Technologies

(Room: Guimarães)

Chair: Andrea Guidi

DESIGNING AN INTEGRATED MULTI-DIMENSIONAL ASSESSMENT FRAMEWORK FOR AI-SUPPORTED ACADEMIC WRITING (F023)

Sabine Seufert and Niklas Eulitz

CONTEXTUALIZED LEARNING VIA ASPECTS OF NARRATIVE DIDACTICS IN DIGITAL LEARNING ENVIRONMENTS FOR MATHEMATICS EDUCATION (F141)

Matthias Brandl

ENGAGEMENT ANALYTICS: FIRST RESULTS OF A SYSTEMATIC LITERATURE REVIEW (S100)

Prosper Sanou, Eric Bittar and Bart Lamiroy

11:30-13:00 Session 2.3

Virtual University // Learning Communities & Web Service Technologies

(Room: Bragança)

Chair: Bram Bruggeman

CLASSROOM REGISTRATION VIA THE INTERNET OF THINGS (F135)

Zhelyazko Terziyski, Daniela Orozova, Nadezhda Angelova and Margarita Terziyska

LECTURE AS CODE: A DEVOPS-DRIVEN TEACHING APPROACH FOR AI-SUPPORTED LEARNING (F016)

Nane Kratzke

LEVERAGING SOCIAL MEDIA TO REALISE THE MODE 3 UNIVERSITY (S140)

Amy Zidulka

13:00-14:15 Lunch Break

14:15-15:15 Session 2.4

Educational Psychology

(Room: Guimarães)

Chair: Elizabeth Lapon

EXPLORING THE LINK BETWEEN TEACHERS' ATTITUDES AND THE EFFECTIVE INTEGRATION OF DIGITAL TECHNOLOGIES IN THE ITALIAN EDUCATION SYSTEM: THE MODERATING ROLE OF CONTEXTUAL DIVERSITY (F068)

Noemi Papotti, Lorenzo Muscella and Sabrina Panesi

ACCELERATING ACOUSTICS: A LEARNING PARADIGM WITH PYTHON AND PROMPT ENGINEERING (F163)

Mari Ueda, Katsuhiro Kanamori, Katsumi Takahashi, Shogo Kiryu and Tetsuo Tanaka

14:15-15:10 Session 2.5

Assessing Progress Of Learning In Complex Domains

(Room: Bragança)

Chair: Aleksandrs Gorbunovs

UNDERSTANDING WHAT STUDENTS LEARN FROM AUTHENTIC SCIENCE AND ENGINEERING PRACTICES (S079)

Nancy Butler Songer, Julia Calabrese, Holly Cordner and Daniel Aina

DESIGNING CHATBOT-RESISTANT INTERACTIVE QUESTIONS FOR COMPUTER SCIENCE ASSESSMENT (S093)

Johannes Knaut, Michael Wiehl and Mike Altieri

INCREMENTAL EXPERTISE: THE CONTINUUM OF EXPERTISE IN ELECTRICAL ENGINEERING GRID DESIGN THROUGH THE LENS OF EPISTEMIC FRAMES (F188)

Amit Paikrao, Jyoti Shaha, Ramkumar Rajendran and Ritayan Mitra

15:30 – Social Event (meeting point at the hotel lobby)

Monday 3rd, November 2025

08:30-13:05 Welcome Desk
(Room: Óbidos)

09:00-11:00 Session 3.1
Technology, Learning And Expertise // Collaborative Learning
(Room: Guimarães)
Chair: Joan Swanson

A GENERATIVE MODEL FOR NEXT-STEP CODE PREDICTION TOWARD PROACTIVE SUPPORT (F148)
Daiki Matsumoto, Atsushi Shimada and Yuta Taniguchi
INTEGRATION OF CHATGPT IN THE PROBLEM-BASED LEARNING MODEL (F132)
Daniela Orozova and Nadezhda Angelova
AGE-RELATED VARIATIONS IN COMPUTATIONAL THINKING DEVELOPMENT THROUGH PEER TUTORING IN EDUCATIONAL ROBOTICS (F136)
Vaso Anastasiou and Charoula Angeli
USE OF CHUNKING STRATEGY DURING COLLABORATIVE DEBUGGING (F104)
Afaf A. Baabdullah and ChanMin Kim

08:50-11:00 Session 3.2
Cognition In Education
(Room: Bragança)
Chair: Wen-Yu Lee

QUANTITATIVE EVALUATION OF THE EFFECTS OF READING ALOUD AND SUBVOCALIZATION ON PROGRAM CODE DEBUGGING TASKS (F166)
Tetsuo Tanaka and Mari Ueda
THE EMOTIONAL DIMENSION OF FLOW (F201)
Ehm Kannegieser and Robert Külpmann
EXAMINING THE ROLE OF METACOGNITIVE PROMPTS ON LEARNING BEHAVIOR DURING CIRCUIT ANALYSIS PROBLEM-SOLVING IN CBLE: AN EPISTEMIC NETWORK ANALYSIS APPROACH (F191)
Jyoti Shaha, Amit Paikrao and Ramkumar Rajendran
UNLOCKING METACOGNITION THROUGH COMPUTATIONAL THINKING (S032)
Giulia Paludo
NEUROSCIENCE AND NEURO-PEDAGOGICAL INSIGHTS: ENHANCING ENGLISH LANGUAGE LEARNING THROUGH MULTIPLE INTELLIGENCES AND AI-SUPPORTED DIAGNOSTIC MODELS (S099)
Jessica Vanessa Balderas Villafranca, Olga Laura Rosas Sánchez and Hugo Ernesto Vargas Rodríguez

11:00-11:30 Coffee Break

11:30-12:50 Session 3.3
Exploratory Technologies
(Room: Guimarães)
Chair: Nancy Songer

STUDY ON AUTOMATIC GENERATION OF LECTURE VIDEOS BASED ON CONTENT ANALYSIS OF LECTURE SLIDES (S026)
Kota Mizukami, Daisuke Deguchi, Tomoki Toda, Hiroshi Murase, Haruya Kyutoku and Tsubasa Minematsu
DIGITAL INNOVATIONS IN EDUCATIONAL TEXTBOOKS (S060)
Joan Ann Swanson
INVESTIGATING THE IMPACT OF META-COGNITIVE DESIGN OF IMMERSIVE VIRTUAL REALITY ON STUDENTS' LEARNING AGENCY (S080)
Silvia Wen-Yu Lee and Tai-Sheng Hung
TREASURE: A CUSTOMISABLE SERIOUS GAME FRAMEWORK FOR SCHOOL CULTURE LEARNING (S131)
Ziliang Wang and Jingyun Wang

12:55 Best Paper Awards Ceremony and Closing Session
(Room: Guimarães)

Profs. Demetrios G. Sampson and Pedro Isaias

You are invited to check the virtual presentations below.

Video Presentations

Online: Youtube

[A REVIEW OF TRAVEL RECOMMENDATION SYSTEM: APPROACHES, CHALLENGES AND FUTURE DIRECTIONS](#) (AC – R031)

Madhuri Debnath and Ashis Kumer Biswas

[MID-LEVEL TRANSFORMER FUSION OF LOCAL AND GLOBAL FEATURES FOR REMOTE SENSING SCENE CLASSIFICATION](#) (AC – F047)

Vian Abdulmajeed, Khaled Jouini and Ouajdi Korbaa

[FAKE NEWS DETECTION: GAN-BASED DATA AUGMENTATION APPROACH](#) (AC – F064)

Eya Maazoun, Amal Rekik and Salma Jamoussi

[AI-POWERED CROWDSOURCING FOR INCLUSIVE PUBLIC TRANSPORT ACCESSIBILITY IN PORTUGAL](#) (AC – S072)

Kirill Tatarnikov and Firmino Oliveira da Silva

[A COMPARATIVE STUDY OF METAHEURISTIC OPTIMIZATION FOR RESOURCE ALLOCATION IN A HEALTHCARE SYSTEM USING DISCRETE-EVENT SIMULATION](#) (AC – F081)

Thouraya Menyaoui, Soulef Khalfallah and Sonia Ayachi Ghannouchi

[PERFORMANCE COMPARISON BETWEEN SLURM BARE METAL AND SLURM ON KUBERNETES IN HPC WORKLOADS](#) (AC – F082)

Lucas Borges, Wellington Oliveira, Tafarel Souza, Phillip Furtado and Erick Bezerra

[USABILITY OF GEOSPATIAL DATA VISUALIZATION IN VIRTUAL REALITY](#) (AC – R083)

Hossain Samar Qorbani and Indratmo Indratmo

[A SECURE BLOCKCHAIN DATABASE FOR STANDALONE OR INTEGRATED USE IN CLINICAL INFORMATION SYSTEMS: THE CASE OF ANTIMICROBIAL PRESCRIPTION](#) (ICWI – F029)

Savina Mariettou, Constantinos Koutsojannis and Vassilis Triantafyllou

[ARTIFICIAL INTELLIGENCE FOR STUDENTS WITH ADHD IN HIGHER EDUCATION: A SYSTEMATIC REVIEW](#) (ICWI – R048)

João Guedes, Daiana M. de Oliveira, Sergio Santos Silva Filho and Marcos Augusto Francisco Borges