

PREFACE

A Decade of SLERD: Facts and Future Directions

This Special Issue (N. 67) collects a selection of contributions from the 10th International Conference on Smart Learning Ecosystem and Regional Development (SLERD 2025), held online on June 12–13, 2025, and organized by ASLERD under the theme “A Decade of SLERD: Facts and Future Directions”. After a first tour of Europe — from Timisoara to Aveiro, Aalborg, and Rome — two online editions, and a second tour through Bucharest, Tallinn, and Troyes, the tenth edition marked a significant milestone, namely an occasion to reflect on 10 years of research and collaboration that have accompanied the evolution of smart learning ecosystems, and to outline directions for the years ahead.

Since its inception, SLERD has served as a dedicated forum for academics, practitioners, and students, bringing together approaches to education that prioritize the human factor, social innovation, inclusivity, and accessibility. The research carried out within the SLERD community is grounded in a specific perspective of smartness — one that goes beyond technology adoption to encompass the well-being of learners and the development of the territories in which learning ecosystems are embedded. Technologies are mediators, not a prerequisite. Achieving the smartness of a learning ecosystem is a long-term process that demands multidisciplinary competencies and a commitment to people-centered education, social innovation, and territorial development.

In accordance with this framework, SLERD 2025 invited contributions organized around 3 overarching themes: places for smart education, people-in-place-centered design for smart education, and supportive technologies and tools for smart education. Through these perspectives, the conference addressed evolving models of institutional learning, the role of design and co-creation, the integration of AI and immersive technologies, and the ethical considerations essential to a sustainable educational future. The 11 papers collected in this Special Issue were selected through a rigorous double-blind review process, with a minimum of two reviewers per submission.

The article "The Death of Cognitive Conflict? AI, Learning, and the Case for Disruptive Pedagogy" [1] argues that current AI-driven learning platforms, by prioritizing efficiency and personalization, are progressively abandoning the cognitive conflict mechanisms that learning theories have long identified as central to deep learning. The author called for rethinking AI's role in education – from frictionless tutor to intentional disruptor – and raised broader questions about the ecological cost of AI and the risk that over-personalization may reduce learners' capacity to deal with unexpected challenges.

The article "AIs and Education: Do we really need to worry? Use and perceptions of university students – quasi-global feelings and behaviors" [2] presents the results of a survey on university students' use of and attitudes toward generative AI, based on data collected across 5 countries (Romania, Iraq, Italy, Argentina, and the Philippines). Adoption is high, with ChatGPT dominant and used on text-based academic tasks. Students developed AI literacy mainly through informal channels rather than institutional guidance. A causal network analysis identified trust in AI outputs and perceived personalization of learning as the main endpoints, both driven by perceived usefulness and ease of use. Concerns focused primarily on employment prospects, while broader ethical and social risks received little attention.

The article "Exploring the Relationship between Brain-based Learning and Thinking Skills through Smart Education: A Scoping Review on the Development of Study Material and its Effectiveness" [3] presents a scoping review of 36 studies published between 2013 and 2023, examining how Brain-based Learning (BBL) supports the development of thinking skills in smart education contexts. Using the TELoTS and smart pedagogy frameworks as reference points, the review found that BBL positively influences thinking skills across a range of educational levels and disciplines. The authors also identified methodological gaps, including limited validation of assessment instruments and small sample sizes, and call for greater standardization in the development of BBL instructional and evaluation tools.

The article "Designing a Gamification Analytics Module in the Context of Peer Assessment" [4] presents a gamification analytics module developed as an extension of the LearnEval peer assessment platform. Starting from a gap in the literature, namely that gamification analytics tools are scarce and none specifically target peer assessment contexts, their module provides a visualization of gamification data across three dimensions: individual learner level, whole class level, and temporal level. The module supports instructors in monitoring student engagement, identifying participation patterns, and making data-driven adjustments to the gamification design. The module also features various graphic elements to facilitate data analysis, whereas empirical validations are planned as future work.

The article "Digital Educational Games to Promote Social Emotional Learning in Preschool-Aged Children: Trends and Challenges in Co-Design" [5] presents a systematic literature review of 18 studies published between 2020 and 2025, examining how digital educational games can support Social-Emotional Learning (SEL) in preschool education. Using the CASEL-5 framework, the review found that self-management is the most frequently targeted SEL competency, followed by responsible decision-making, while self-awareness remains largely underrepresented. Most commonly identified game design features include audiovisual support, reward mechanisms, scaffolding, and role-playing strategies.

The article "Evaluating Italian School Learning Ecosystem Through an Integrated Lens: Assessing Smartness, Well-being and E-maturity with Teachers', Principals'

and Parents' Perspectives" [6] introduces a benchmark for learning ecosystems that has been used to assess smartness, well-being, and e-maturity in the entire Italian school ecosystem. The study compared the perspectives of principals, teachers, and parents and found that parents and teachers have similar evaluations, while principals tend to provide significantly more positive assessments. Thus, a meaningful assessment of the learning ecosystem was achieved, offering valuable guidance for its improvement.

The article "Implementing e-Learning for Knowledge Dissemination in a geographically dispersed organization" [7] presents a study that applies the Design Science Research method to implement a data protection training course via digital platforms (LMS) and e-Learning. Their approach facilitated knowledge dissemination and employee self-assessment while facing challenges such as the speed of spreading knowledge due to its widespread locations, the diverse working hours, and the geographical constraints. The evaluation used microlearning and storytelling techniques in Moodle LMS to assess pedagogical and engagement aspects.

The article "*Selfit v2* – The evaluation of an Intelligent Tutoring System for Psychomotor Development" [8] presents *Selfit v2* as a custom-designed Intelligent Tutoring System (ITS) that aims to engage people in sports and improve the general health of the mass population. The study used two adaptive strategies for tutoring, and the results were promising for leveraging the interplay between AI in education and psychomotor training.

The article "Electroacoustic Music Learning Experience Through AI-based Digital Installations: ARTECOM, an ongoing Project dedicated to Teenagers" [9] presents ARTECOM, a project aimed to engage non-expert teenagers in electroacoustic music creation. The challenges regard the lack of dedicated learning paths and the limited accessibility, as current approaches are addressed only to experts. The proposed approach allowed non-expert teenagers to modify musical tracks, particularly electroacoustic music, which integrates both acoustic and electronic sounds.

The article "Systematic Review of Universal Design Applied to Wayfinding Signage Systems for a University Campus" [10] presents a systematic review of the literature referring to signage using a Universal Design (UD) approach. The study considered 19 articles as most relevant, and their key findings regard the following recommendations: prioritising centres of cultural gravity, emphasising convergence, providing flexible systems, using co-design from early stages, giving simple and relatable information presented according to user expectations, and the strategic placement of signage with progressive delivery of information to reduce cognitive load.

The article "Advancing Digital Empowerment: The Next Phase of the Capacid@de Digital Initiative" [11] presents the details regarding the strategic modifications implemented in the latest phase of the Capacid@de Digital initiative. Their approach considered the changes designed to enhance the initiative's impact on

digital inclusion among seniors and offers a replicable model for similar community-based programs aimed at reducing the digital divide. The key aspect consisted of shifting from an individualized, skills-based approach to a class-based system, which has strengthened peer-assisted learning, fostering a collaborative environment where experienced seniors support beginners.

The contributions in this Special Issue cover a wide range of methodologies, from literature reviews to platform design and empirical surveys, and address contexts from preschool to higher education, professional training, and digital inclusion for seniors. Overall, common themes were observed: grounding technology in pedagogy, involving all stakeholders in the design of learning environments, and ensuring that digital tools serve the well-being and growth of learners. These priorities have defined the SLERD community over the last decade, and the papers gathered in this special issue show how far this vision has come — and how much research still remains to be done.

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