Learning Analytics: Looking Ahead

Preface by the editors

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Abstract

This volume contains the proceedings of the Learning Analytics Summer Institute Spain 2026 (LASI Spain 2026), held in Zamora, Spain, on 7–8 May 2026, under the theme *"Learning Analytics: Looking Ahead"*. It collects the short papers, Doctoral Consortium contributions and Projects and Initiatives Forum presentations selected by the Program Committee, together with this preface introducing the event, its programme and its institutional context, including the Spanish Thematic Network on Learning Analytics (SNOLA), which has supported the LASI Spain series since its inception.

Keywords

Learning Analytics, Artificial Intelligence in Education, Doctoral Consortium, SNOLA, LASI Spain

1. Introduction

The Learning Analytics Summer Institute Spain (LASI Spain) is the local, Spanish-speaking instantiation of the international LASI initiative promoted by the Society for Learning Analytics Research (SoLAR), and constitutes the main annual meeting point for the Spanish and Iberian Learning Analytics (LA) community. Since 2017, LASI Spain has brought together researchers, practitioners and doctoral students working on the application of data-driven methods to understand and improve teaching and learning processes, building a community that complements and feeds into the broader international LASI network.

The 2026 edition, LASI Spain 2026, was held in Zamora, Spain, on 7–8 May 2026, hosted by the University of Salamanca through its Zamora campus (https://lasi26.snola.es/). The event was organized under the theme *"Learning Analytics: Looking Ahead"*, with a Call for Papers framed around the question *"Envisioning the Next Decade of Learning Analytics"*. This theme reflects a deliberate effort to look beyond the consolidation of the field over the past decade and to anticipate how Learning Analytics will be reshaped by two major, interconnected forces: the increasing availability of multimodal evidence about learning, and the rapid integration of (Generative) Artificial Intelligence into educational tools, methods and practices.https://lasi26.snola.es/

The Call for Papers invited contributions on a broad range of topics, including the assessment of competences, self-regulated learning, adaptive and personalized learning, theoretical advances in LA, human-centred and trustworthy LA, ethical, legal and privacy issues, institutional adoption and governance models, multimodal LA, hybrid and immersive learning environments, discourse and social LA, data governance, the relationship between LA and learning design, LA in personal learning

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environments, and the relationship between Generative AI and LA, as well as the evaluation of the impact of LA interventions. Four forms of participation were offered: short papers (5–9 pages), Doctoral Consortium papers (5–9 pages), two-page summaries of relevant papers already published elsewhere, and two-page proposals for the Projects and Initiatives Forum (without an associated proceedings paper). A Best Paper Award was presented at the conference, and, in line with the inclusive spirit of the LASI initiative, no registration fee was charged to participants.

This volume gathers the contributions accepted for the proceedings: short papers, Doctoral Consortium papers, and the abstracts of the projects presented at the Projects and Initiatives Forum.

LASI Spain 2026 builds on nine previous editions of the event [1, 2, 3, 4, 5, 6, 7, 8, 9], which have progressively consolidated a community that, since 2017, is structurally supported by the Spanish Thematic Network on Learning Analytics (SNOLA, *Red Temática Española de Analítica del Aprendizaje*), as discussed in Section 3.

2. Overview of the Programme

The scientific programme of LASI Spain 2026 combined two invited keynote talks, a set of short papers organized around three thematic threads, a Doctoral Consortium session, and a Projects and Initiatives Forum.

2.1. Keynotes

The programme opened with two keynote talks that directly addressed the conference theme. **Xavier Ochoa** (New York University, USA) delivered the talk *"Learning Analytics: Looking Ahead"*, arguing that the future of the field will be defined by the consolidation of multimodal evidence of learning and by the growing role of Artificial Intelligence, and discussing the challenges this shift raises in terms of validity, fairness, ethics and the role of human judgement [10]. **Kshitij Sharma** (Norwegian University of Science and Technology, Norway) presented *"Seeing, Hearing, Helping: Multimodal AI and the Ethics of Learning Data"*, examining how multimodal data (eye-tracking, speech, gesture and facial expressions) combined with AI can support actionable feedback for learners, while highlighting the ethical implications of using such sensitive data [11].

2.2. Short Papers

The nine short papers accepted for LASI Spain 2026 can be organized around three thematic threads.

Predicting and supporting at-risk students from LMS trace data. Four papers addressed the use of Learning Management System (LMS) trace data to anticipate academic difficulties and support institutional decision-making. Antonio Balderas et al. presented an early prediction model for academic performance in a Database course based on Moodle interaction logs, comparing several classification algorithms over more than 180,000 log records. Ariel Ortiz-Beltrán and Davinia Hernández-Leo proposed a construct-oriented workflow for institutional analytics, transforming raw LMS indicators into course-level views organized around distributed learning, workload and active learning. Pedro Manuel Moreno-Marcos et al. examined sources of bias in student modelling and dropout prediction using edX MOOC data, discussing how common methodological choices can introduce unfair assumptions. Andrea Vázquez-Ingelmo et al. studied LMS-based early-warning indicators in a Software Engineering course operating under an explicit AI-usage policy, showing that risk can be flagged up to four weeks before a milestone deadline.

Modelling learning processes and self-regulation. Two papers focused on the temporal and self-regulatory dimensions of learning. Ángel Hernández-García et al. proposed a theory-grounded approach that moves from interaction categories to temporal learning processes, aiming to improve the explanatory power of LMS interaction data with respect to academic performance. Inma Haba-Ortuño

et al. combined trace data and self-reported measures to inform a model of self-regulated learning, bridging practice-oriented analytics and established SRL theory.

AI-based feedback, assessment and inclusion. Three papers explored how Generative AI can be embedded in feedback and assessment processes while keeping educators and diverse learners at the centre. Tharife Nabil Al-Khuffash et al. presented a multi-profile approach towards inclusive Learning Analytics for serious games, addressing the understandability and acceptance of game-based analytics for different stakeholders. Alvaro Becerra et al. introduced AICoFe, an AI-based collaborative feedback system that orchestrates a multi-LLM pipeline under a teacher-in-the-loop workflow to provide actionable peer-feedback in higher education. Alvaro Becerra et al. also presented AISSA, a complementary tool that combines large language models and Learning Analytics dashboards to provide automated, rubric-based feedback on students' oral presentation slides.

2.3. Doctoral Consortium

The Doctoral Consortium gave four PhD students the opportunity to present their ongoing research and receive feedback from the community. Clara Gándara-González presented research on the orchestration of agile teaching-learning processes through the combination of Learning Analytics and Generative AI, addressing the workload and planning challenges that agile approaches pose for instructors. Nina Yarovenko Kuzminykh presented a proposal to use Generative AI conversational agents as empathetic "virtual companions" to humanize self-regulated learning support for first-year students at risk of dropout. Alvaro Becerra presented doctoral work on the integration of Multimodal Learning Analytics, Machine Learning and Generative AI to provide adaptive and scalable feedback in online and face-to-face contexts. Finally, Noelia Lopez-Duran presented research on integrating variability models (expressed in the Universal Variability Language) and ontologies as a shared knowledge base for LLM-based multi-agent systems in academic domains.

2.4. Projects and Initiatives Forum

The Projects and Initiatives Forum showcased three ongoing projects related to Learning Analytics. Miguel Á. Conde presented ISILA (https://blogs.uef.fi/isila/), a project that combines multimodal Learning Analytics with early-intervention strategies to improve the quality and sustainability of learning by supporting at-risk students. Pedro Manuel Moreno-Marcos presented PALABRIA (https://palabria.uc3m.es/), an interdisciplinary project that uses Generative AI and Learning Analytics to support students in improving their writing skills. Cecilia Saint-Pierre and Alejandra Martínez-Monés presented QUALAS (https:/www.qualas.store/en/), an Erasmus+ project that supports school leaders and teachers in using data and Learning Analytics tools for school self-evaluation and quality assurance.

3. SNOLA: A Network Looking Ahead

LASI Spain has, since its inception, been closely linked to the consolidation of a national community around Learning Analytics. Since 2017, this community has been structurally supported by SNOLA, the Spanish Thematic Network on Learning Analytics (*Red Temática Española de Analítica del Aprendizaje*).

The current SNOLA project is now coming to an end, having fulfilled its role of consolidating the network behind the LASI Spain series and strengthening the links between Spanish research groups and the international LA community represented by SoLAR. Building on this foundation, members of the network are currently preparing a new SNOLA project that will extend the scope of the network to explicitly cover the intersection of Learning Analytics and Artificial Intelligence, the very theme that animated LASI Spain 2026. This new initiative aims to ensure the continuity of the network's activities, including the organization of future editions of LASI Spain, and to position the Spanish LA community at the forefront of the AI-driven transformation of the field anticipated by this year's keynote speakers.

4. Committees

4.1. Program Chairs

- Antonio Balderas (University of Cádiz)
- Ruth Cobos (Universidad Autónoma de Madrid)
- Yannis Dimitriadis (University of Valladolid)
- Miguel Ángel Conde (University of Salamanca)
- Ángel Hernández-García (Universidad Politécnica de Madrid)
- Alejandra Martínez Monés (University of Valladolid)

4.2. Program Committee

- Ainhoa Álvarez (University of the Basque Country UPV/EHU)
- Rebeca Cerezo (University of Oviedo)
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4.3. Local Organizing Committee

- Miguel Ángel Conde (University of Salamanca)
- María Luisa Pérez Delgado (University of Salamanca)
- Jesús Ángel Román Gallego (University of Salamanca)
- Andrea Vázquez-Ingelmo (University of Salamanca)

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