

Preface of the Learning Analytics Summer Institute Spain 2023 (LASI Spain 2023) *

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1. Introduction

The Learning Analytics Summer Institute Spain 2023 (LASI Spain 2023) took place in Madrid and was organised by SNOLA (the Spanish Learning Analytics Network) and hosted by the Universidad Nacional de Educación a Distancia (UNED). LASI Spain is an integral part of the global LASI network (<https://www.solaresearch.org/events/lasi/>), designed as a platform to bring together educators, technologists, researchers, businesses and policy makers to collaboratively shape the next generation of learning infrastructures. This collaborative effort aims to truly address the evolving needs of the education sector.

The eleventh edition of the LASI Spain 2023 was held under the theme “Learning Analytics and Artificial Intelligence: Balancing Risks and Opportunities.” During the event, eight papers were presented and selected for inclusion in the proceedings. In addition, seven other relevant published papers related to learning analytics and artificial intelligence were presented during the event. All these contributions make this conference a reference point in Europe in this field.

2. An Overview to LASI Spain 2023 Programme

LASI Spain 23 programme included a keynote, several thematic sessions, and a doctoral consortium.

2.1. Keynote

The keynote *Learning Analytics for games in the AI revolution* by Baltasar Fernández Manjón, who described recent advances in research related to serious games and Learning Analytics


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(LA), and shared his reflections on the impact of new formats of Artificial Intelligence (AI) on education. The keynote was engaging and successful in promoting a lively and deep discussion among the participants in the event.

2.2. Thematic Sessions

Each thematic session was designed to explore key issues in the field of LA and AI. The *Teachers' Supporting Tools* session focused on tools and strategies that support teachers in improving teaching and learning, highlighting the importance of technology in the classroom. The *LA Adoption* session focused on the adoption of LA and how educational institutions can effectively implement it to benefit students and educators. *AI and Implications for LA* explored the impact of AI in LA, highlighting its potential to transform educational decision-making. The session *LA and Collaborative Learning* focused on the role of LA in collaborative learning, highlighting how analytics tools can enhance collaboration between learners. Finally, *MOOCs and LA* explored data analytics in massive open online courses, highlighting how learning analytics can improve the effectiveness of these large-scale learning environments. These sessions provided a comprehensive overview of current trends and challenges in learning analytics and artificial intelligence.

The doctoral consortium allowed two Ph.D. students to present the advances on their thesis projects.

2.2.1. Contributions Accepted in the Proceedings

The contributions accepted for inclusion in the proceedings are summarised below.

Selecting the best approach for predicting student dropout in full online private higher education. This paper, authored by Jose Manuel Porras, Antonio Porras, Jose Alberto Fernández, Cristobal Romero and Sebastián Ventura, presents work aimed at developing an early dropout prediction system for fully online private higher education. The study used a classic cross-industry standard Process for data mining development methodology, analysing anonymised data from over 16,000 students in 517 online courses to determine the optimal approach for data grouping and selection of classification algorithms.

ChatGPT and Generative AI in Higher Education: user-centered perspectives and implications for learning analytics. This paper, authored by Davinia Hernández-Leo, focuses on exploring the potential and challenges of integrating AI tools into learning scenarios, with a particular emphasis on the human-centred perspective. The study examines the views of both professors and students who participated in a training programme on 'Generative AI for Learning' at a public university in Spain.

Examining Game Mechanics and Extrinsic Motivation in a Group Awareness Tool for Collaborative Learning. In this research, René Lobo and Davinia Hernández-Leo investigate the interaction between game mechanics and extrinsic motivation within a Group Awareness

Tool (GAT) in the context of Computer Supported Collaborative Learning (CSCL). Using Self-Determination Theory (SDT) and the Learning Mechanics-Game Mechanics (LM-GM) model, they analyse the dynamics of a GAT integrated into a PyramidApp activity.

Impact of assessment characteristics in course withdrawal: a survival analysis approach. This paper, authored by Juan Antonio Martínez-Carrascal and Teresa Sancho Vinuesa, examines the influence of assessment characteristics on course withdrawal, a critical aspect of student performance that is often overlooked in research. Using survival analysis as a statistical method, the study examines an open dataset from a prominent online university to analyse how assessment parameters affect course withdrawal.

Expectations about Learning Analytics after the COVID-19 pandemic: A Study of 7 Spanish Universities. This paper, authored by Osmel Bordiés, Alejandra Martínez-Monés, Pedro José Muñoz-Merino, Yannis Dimitriadis, Davinia Hernández-Leo, Ainhoa Álvarez, Manuel Caerio-Rodríguez, Ruth Cobos, Salvador Ros and Teresa Sancho Vinuesa, presents a study that examines the anticipated and ideal expectations of academic staff regarding the implementation of learning analytics. The study focuses on academic staff from seven Spanish universities.

Combining similarity metrics with abstract syntax trees to gain insights into how students program. This paper, written by Manuel Freire, aims to improve the efficiency of understanding how students face programming exercises by using abstract syntax trees and robust similarity detection. A prototype has been developed to label differences between answers submitted to an online grading system, which excels in detecting minor changes such as code corrections and updates.

Triggers of teacher-perceived stressful moments when orchestrating collaborative learning with technology. This paper, authored by Eyad Hakami, Lubna Hakami, Ishari Amarasinghe and Davinia Hernández-Leo, presents a comprehensive analysis of the factors that trigger teachers' perceived stressful moments when orchestrating collaborative learning activities with technology. A blended approach is used to explore these triggers in face-to-face and online classrooms.

Cross-lingual transfer in Generative AI-Based Educational Platforms for Equitable and Personalized Learning. This dissertation, written by Nastaran and submitted to the doctoral consortium, focuses on the integration of Generative AI, in particular Large Language Models (LLM) and diffusion models, into educational platforms.

2.2.2. Relevant Papers Already Published

Finally, LASI Spain 2023 featured a number of highly relevant already published papers covering a wide range of important topics in the field of LA and AI. The following is a brief overview of these works.

- The paper presented in [1] addressed the issue of cheating in online exams by presenting an automated process model for detecting evidence of fraudulent collaboration between students based on logs of the learning environment. The results provided promising insights into the detection of this problem.
- The research presented in [2] explored how LA can generate simple metrics related to student self-regulation. It offered self-regulation profiles to identify students' strengths and weaknesses, with the potential to improve their learning habits.
- The work presented in [3] focused on predicting the performance of university students using multiple multi-modal data sources from an intelligent tutoring system. The results highlighted the usefulness of using ensembles and attribute selection to improve predictions.
- Also presented was the KoopaML platform [4], a platform designed to help healthcare professionals build machine learning pipelines, which can be instrumental in applying AI algorithms in the medical field, even for those without programming experience.
- The article [5] presented the M2LADS system, which integrates and visualises multi-modal data from learning sessions in MOOCs in the form of web dashboards. This enables a deeper understanding of the learner experience and improves LA models.
- The article presented in [6] focused on instructor-led feedback mediated by LA tools in MOOCs. It highlights the need to systematise and evaluate LA-based feedback in order to improve pedagogical practice in MOOCs.
- Finally, [7] presented a study that analysed several factors that influence the prediction of student performance. These factors included variables related to academic history, forum variables, click-through data, course duration and assignment type, and provided valuable insights into how to improve prediction accuracy.

3. LASI Spain 2023 committees

The following subsections list the Programme Chairs and the Programme committee.

3.1. Programme Chairs

- Salvador Ros (UNED)
- Antonio Balderas (University of Cádiz)
- Juan Manuel Dodero (University of Cádiz)
- Alejandra Martínez Monés (University of Valladolid)

3.2. Programme Committee

- Ángel Hernández García (Polytechnic University of Madrid)
- Ainhoa Álvarez Arana (UPV/EHU)
- Davinia Hernandez-Leo (Universitat Pompeu Fabra)
- David Griffiths (UNIR-iTED)
- Juan I. Asensio-Pérez (University of Valladolid)

- Luis P. Prieto (University of Valladolid)
- Manuel Caeiro Rodríguez (University of Vigo)
- Manuel Freire Morán (Complutense University of Madrid)
- María J. Rodríguez Triana (Tallin University)
- Martín Liz Domínguez (University of Vigo)
- Osmel Bordiés (University of Valladolid)
- Pedro Manuel Moreno-Marcos (University Carlos III of Madrid)
- Rebecca Ferguson (The Open University)
- Ruth Cobos (Autonomous University of Madrid)
- Santiago Iglesias (Polytechnic University of Madrid)
- Tobias Ley (University for Continuing Education Krems)
- Yannis Dimitriadis (University of Valladolid)

3.3. Doctoral Consortium Chair

- Yannis Dimitriadis (University of Valladolid)

3.4. Website Chair

- Andrea Vázquez Ingelmo (University of Salamanca)

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