

Learning Analytics Summer Institute Spain 2017: Advances in Learning Analytics

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Learning Analytics Summer Institute Spain 2017: Advances in Learning Analytics

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Preface to the Conference Proceedings

The fifth¹ edition of the Learning Analytics Summer Institute Spain, LASI Spain 17² was held in Madrid on July 4th and 5th, 2017. Under the main theme of “Advances in Learning Analytics”, the conference was organized by Universidad Carlos III de Madrid, Universidad Nacional de Educación a Distancia, Universidad Politécnica de Madrid, in collaboration with the SNOLA (Spanish Network of Learning Analytics) research network of excellence in a joint venue with the *VII Jornadas eMadrid: Education in Exponential Times*. The LASI worldwide events, sponsored by SoLAR (Society for Learning Analytics Research), have become in the past years an awareness-raising, capacity-building, international network of events, where researchers and practitioners can meet and share their work, and envision the future of learning analytics. The programme of LASI Spain 17 comprised a great variety of activities that gathered representatives of academia and industry, including keynotes by international experts on learning analytics in Europe, academic paper presentation sessions, discussion panels and workshops.

¹ The previous editions of LASI Spain, as LASI-local event, include the following:

- LASI Spain 2013 in Madrid: <http://www.emadridnet.org/index.php/es/eventos2/312-seminario-emadrid-learning-analytics-summer-institut>
- LASI Spain 2014 in Madrid: <https://canal.uned.es/serial/index/id/1303>
- LASI Spain 2015 in Bilbao: <https://blogs.deusto.es/lasi2015Bilbao>
- LASI Spain 2016 in Bilbao: <http://lasi16.snola.es>

² <https://lasi17.snola.es>

The different activities gave attendants the opportunity to review the state of learning analytics in a global context, and also to showcase innovative pieces of research on the field that contribute new advances and knowledge to this field, mainly—but not only—from Spanish research groups.

The keynotes of LASI Spain 17 provided a broad but comprehensive overview of trending topics on learning analytics from the discussion of frameworks to advance the development of learning analytics to dashboards applications. More precisely, the keynotes of the conference were as follows:

- In “*Maturing the learning analytics framework for applied learning analytics*”, Hendrik Drachsler (Open Universiteit Nederland) reviewed his research on learning analytics frameworks.
- In “*Student-facing learning dashboards*”, Katrien Verbert (Katholieke Universiteit Leuven) provided an overview the use of dashboards as tools to improve learning.
- In “*Coding as a playground: young children, robots and kittens*”, Marina Umaschi Bers (Tufts University) discussed the role of learning analytics in the context of computational thinking and children.
- Finally, in “*Supporting higher education in integrating learning analytics*”, Dragan Gasevic (University of Edinburgh) provided a very detailed analysis about the issues affecting the adoption of learning analytics in Higher Education institutions.

In addition to the academic keynotes, LASI Spain 17 also had room for invited lectures from industrial partners. For instance, Ramiro Regó Álvarez (IBM Universidades España), reviewed the wide range of solutions and resources available at IBM to support the development of learning analytics in “*Uso de IBM Analytics para aprender a tomar mejores decisiones*”, while Miguel Pellicer (Entornos de Formación–Fundación APEREO), explained in “*Open analytics in an open source ecosystem*” a perspective on how open source providers are facing the challenges posed by advances on the field.

The different views on the current state and future advances in learning analytics were also discussed in a discussion panel that included key representatives of five public Universities of Madrid: Baltasar Fernández Manjón (Universidad Complutense de Madrid), Ruth Cobos Pérez (Universidad Autónoma de Madrid), Salvador Ros Muñoz (Universidad Nacional de Educación a Distancia), Pedro Muñoz Merino (Universidad Carlos III de Madrid) and Edmundo Tovar Caro (Universidad Politécnica de Madrid). The discussion was followed the next day in a workshop directed by Dragan Gasevic under the theme “Key steps to creating and implementing a learning analytics policy”, which involved results and ongoing research within the SHEILA project focusing on the development of policy-related issues in learning analytics.

Finally, the academic community present in LASI Spain 17 had the opportunity to describe and discuss recent scholar developments in the field, in three sessions that included selected research studies from the open call for papers for the conference. These proceedings include the 12 selected contributions. The selection process involved the participation of an international Programme Committee that gathered 53 scholars from 16 different nations.

The first session showcased different and innovative approaches to learning analytics: *“What information do teachers demand from a computerized classroom? An exploratory analysis”* analyzes key issues and needs of instructors for a successful application of learning analytics; *“Learning analytics implementation in a multidomain computer-based learning environment”* proposes a new concept of environment based on interconnection of applications that allow performing learning analytics; and *“On-going research about the use of commercial-off-the-shelf wrist wearables in educational contexts”* introduces wearables as a new data source to support and complement learning analytics and discusses how this new technology may provide additional information about learners and their contexts related to emotional states.

The second session covered the broad theme of predictive learning analytics and recommendation systems for educational resources, focusing on project-based learning and teamwork activities. *“Predicting peer-review participation at large scale using an ensemble learning method”* proposes a system aiming to predict student participation in peer-review activities; *“Study of the flexibility of learning analytics tool to evaluate teamwork competence acquisition in different contexts”* and *“Proposal of a system of indicators to assess teamwork using log-based learning analytics”* seek to help monitoring and assessment of group activities in project-based learning; and *“Using Kibana and ElasticSearch for the recommendation of job offers to students”* describes how to apply learning analytics techniques to guide last year’s students when they face their entry to the labor market.

The third session presented examples of use of learning analytics techniques on real educational contexts: *“Instructional perspective using learning analytics in computer science education”* describes an experience using different popular applications to perform learning analytics in a computer science course; *“A data collection experience with Canvas LMS as a learning platform”* explains and analyzes how to extract low level data from Canvas LMS; *“Studying students’ behaviour in UNED-COMA MOOCs”* shows the results of a study on relationships between indicators from massive open online courses at Universidad Nacional de Educación a Distancia and different student behaviors; finally, *“RaMon, a rating monitoring system for educational environments”* proposes a system aiming to monitor ratings and improve assessment.

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