

# Guest Editorial

## Learning Analytics in IberoAmerica

**Abstract**—Learning analytics is a key knowledge area for the improvement of education that proposes the use of educational data to improve decision making. In the last years, the Iberoamerican region has made a lot of efforts to introduce learning analytics and take advantage of its advantages. In this special issue, a set of proposals of learning analytics in this region are presented. The special issue includes four articles that cover a wide range of topics of this area, including adoption at the institutional level, analytics applied to academic improvement, video analysis or visual analytics in learning management systems.

**Index Terms**—Learning analytics, educational data mining, IberoAmerica, adoption, tools, pilots.

### I. INTRODUCTION

IN the last years, learning analytics has become one of the knowledge areas with more impact for education. The collection of educational data, their transformation, analysis or visualization can help the different stakeholders of the educational environment for the decision making, and thus providing important benefits at different levels.

Learning analytics is a knowledge area that is developed all over the world, but in some Iberoamerican regions, specially in Latin America, their development has been lower. With the aim to bridge those differences, the LALA (Building capacity to use learning analytics to improve higher education in Latin America) project emerged, funded by the European Commission. This project had as objective to improve the adoption of learning analytics in Latin America. Some results of this project were for example the LALA framework to help for the adoption of learning analytics solutions in Latin America, the adaptation and pilots of learning analytics tools for prediction and academic counselling.

This special issue includes some articles about learning analytics initiatives developed in Iberoamerican regions, but that could be applied in others.

The special issue is composed of a total of four papers that cover a wide range of topics related to learning analytics. The first paper [A1] is entitled "Building Institutional Capacity for Learning Analytics: Top-Down & Bottom-up initiatives" and presents two case studies at Pontificia Universidad Católica de Chile (PUC) about the adoption of learning analytics tools at institutional level, following different approaches depending on whether the initiative comes promoted by the university managers or by university researchers.

The second paper [A2], entitled "Exploring Risk of Delay in Academic Trajectories in Two Undergraduate Programs" is part of the topic of academic analytics. Specifically, the article

analyzes the trajectories that students follow in some of the degrees of Universidad Austral de Chile (UACH) to explore what can make an influence on the delay of students to get graduated.

The third [A3] and fourth [A4] articles are more focused on the analysis of student behavior on learning platforms. The third article, entitled "Student satisfaction pilot experience with synchronous classroom live streaming styles during the COVID-19 pandemic", analyzes different types of videos at the University of Cauca, in Colombia, to check which is the most effective for students. Finally, the fourth article, entitled "Activity and Dropout Tracking in Moodle using UBUMonitor application", presents a set of visualizations on the Moodle platform that represent student behavior on that platform.

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### APPENDIX: RELATED ARTICLES

- [A1] M. Pérez-Sanagustín, I. Hilliger, J. Maldonado-Mahauad, R. Pérez-Álvarez, "Building Institutional Capacity for Learning Analytics: Top-Down & Bottom-up initiatives," IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, vol. 17, no. 3, pp. xx-xx, August 2022.
- [A2] R. Boegeholz, J. Guerra, E. Scheihing, "Exploring Risk of Delay in Academic Trajectories in Two Undergraduate Programs," IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, vol. 17, no. 3, pp. xx-xx, August 2022.
- [A3] J. Florez, "Student satisfaction pilot experience with synchronous classroom live streaming styles during the COVID-19," IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, vol. 17, no. 3, pp. xx-xx, August 2022.
- [A4] J. Y. Peng, R. Marticorena-Sánchez, C. Pardo-Aguilar, C. López-Nozal, M. Juez-Gil, "Activity and Dropout Tracking in Moodle using UBUMonitor application," IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, vol. 17, no. 3, pp. xx-xx, August 2022.

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**Pedro J. Muñoz-Merino** (Senior Member, IEEE) was born in Cuenca, Spain, in 1979. He received the Telecommunications Engineering degree from the Universidad Politécnica de Valencia, Spain, in 2003, and the Ph.D. degree in telematics engineering from the Universidad Carlos III de Madrid, Spain, in 2009. His skills and experience include research and development in learning analytics, educational data mining, the evaluation of learning experiences, user studies, gamification, or intelligent tutoring systems. He is a Full Professor with the Universidad Carlos III de Madrid. He has been the Coordinator of the LALA project supported by the European Commission for the adoption of learning analytics in Latin America. He has participated in more than 50 research projects at international and national levels, including also several contracts with companies, being the Principal Investigator of several of them related with learning analytics, educational data mining, and adaptive systems. He is author of more than 150 scientific publications including more than 50 in journals indexed in the JCR. He has also coordinated the development and deployment of different learning analytics tools.

**Mar Pérez-Sanagustín** is an Associate Professor at the University of Toulouse and the IRIT Laboratory. She worked at the Universidad Carlos III de Madrid (UC3M) on a postdoctoral fellowship, at the Stanford Research Institute on a Fulbright grant and at the Universidad Católica de Chile as an Associate Professor. She holds a PhD in Information and Communication Technologies since 2011 from Pompeu Fabra University, obtaining the qualification of cum laude with European Mention. She has participated as a researcher and principal investigator in several research projects (LALA, ANR LASER, PROF-XXI, MOOC Maker...). Her current research work focuses on the study of SRL using Learning Analytics techniques in online and blended learning environments and, supporting teaching and learning competencies.

**Miguel Zuniga-Prieto**, was born in Cuenca, Ecuador, in 1972. He received the Systems Engineering degree from the Universidad de Cuenca, Ecuador, in 1998, and the Ph.D. degree in Informatics from the Universidad Politécnica de Valencia, Spain, in 2017. His professional activity is focused on the field of information technology both in industry and academia. In the industry he has managed software development and deployment projects both in Ecuador and in other Latin American countries. In the academic field, he is a teacher and researcher at the Faculty of Engineering of the University of Cuenca; being also Director of the Department of Computer Science. He is currently coordinating research projects both locally and in association with European universities. In the field of research he works in the domains of Learning Analytics, Model-Based Software Engineering / Development, and Software Architectures.