Proceedings of the 1st International Conference on Learning Analytics and Knowledge

February 27–March 1, 2011, Banff, Alberta, Canada

Conference Chairs: Phillip Long, University of Queensland, Australia
George Siemens, Athabasca University, Canada

Program Chairs: Gráinne Conole, Open University, UK
Dragan Gašević, Athabasca University, Canada
Message from
the LAK 2011 General & Program Chairs

We are pleased to present the proceedings of the First International Conference on Learning Analytics and Knowledge (LAK 2011). The conference took place in Banff, Alberta, Canada in the period February 27 – March 1, 2011. The idea for establishing a special dedicated forum to researching learning analytics was motivated by several important indicators:

1. The growth of data surpasses the ability of organizations to make sense of it. This concern is particularly pronounced in relation to knowledge, teaching, and learning.
2. Learning institutions and corporations make little use of the data learners “throw off” in the process of accessing learning materials, interacting with educators and peers, and creating new content.
3. In an age where educational institutions are under growing pressure to reduce costs and increase efficiency, analytics promises to be an important lens through which to view and plan for change at course and institutions levels.

Universities, colleges, and corporations – or any other settings where people interact with information as part of knowledge work – face pressure for increased competitiveness and productivity, a challenge that requires important contributions in organizational capacity building from work place and informal learning. Learning analytics can highlight the development process of employees by analyzing their learning activities. In enterprise settings, information flow and social interactions can yield novel insights into organizational effectiveness and capacity to address new challenges or adapt rapidly when unanticipated events arise. Finally, as we witness the expansion of learning and knowledge work beyond formal institutional boundaries, a myriad of cloud platforms will host – and make available for analysis – the activity of individuals.

Advances in knowledge modeling and representation, the semantic web, data mining, analytics, and open data form a foundation for new models of knowledge development and analysis. The technical complexity of this nascent field is paralleled by a transition within the full spectrum of learning (education, work place learning, and informal learning) to social, networked learning. These technical, pedagogical, and social domains were brought into dialogue with each other during LAK 2011 to ensure that interventions and organizational systems serve the needs of all stakeholders. In particular, the organizers of the conference defined the following working definition of learning analytics: Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs.

The response to the call for papers for LAK 2011 was quite enthusiastic. Initially, we received 38 full submissions. From those 38 submissions, the Program Committee selected six full research papers, and seven vision/conceptual papers, and four tool demonstration papers, resulting in an acceptance rate of 44.7%. To ensure the quality of the accepted papers, submitted papers were reviewed by at least three
program committee members, with most papers being reviewed by four members. Each paper was discussed in detail during a week-long electronic PC meeting, as facilitated by EasyChair.

In addition, a session was organized during the conference in which Ideas and Innovations papers were presented. These papers detailed early stage ideas or innovative approaches to the use of learning and knowledge analytics. Overall, eight idea and innovation papers were presented at the conference. Of those, four were received through a separate call for idea and innovation papers. For these papers, we organized a lighter peer-review process involving one PC member. The other four idea and innovation papers were accepted from the original pool of submissions based on the recommendations for the Program Committee.

LAK 2011 had four renowned keynote speakers, representing four different countries: Tony Hirst (UK), Xavier Ochoa (Ecuador), Erik Duval (Belgium), and Caroline Haythornthwaite (Canada). Each keynote address provided an informative and engaging overview of key issues in the emerging field of learning analytics. Looking into the issues of pragmatic analytics, Tony Hirst’s talk explored ways of acquiring and analysis day, especially, in a visual way. Xavier Ochoa’s talk pointed out the weaknesses in evaluation of present work on technology-enhanced learning, and discussed the promises of learnometrics. Emphasizing the need for openness, Erik Duval’s talk covered issues of discovering patterns in attention metadata and visualizing and leveraging the discovered patterns in recommender systems. Caroline Haythornthwaite’s talk explored the analytics opportunities for online learning emerging from the structure and dynamics of learning networks, crowds, and communities. The conference also featured an invited talk by Phil Ice, who addressed the multilevel institutional application of analytics.

LAK 2011 would not have been possible without the significant contributions of many individuals and organizations. The LAK 2011 Organizing Committee and the Steering Committee provided invaluable assistance and guidance. We are very grateful to the conference sponsors: Technology-Enhanced Knowledge Research Institute (TEKRI) at Athabasca University and the Centre for Educational Innovation and Technology (CEIT) at the University of Queensland. We also need to express our strongest gratitude to the conference’s platinum sponsors: Bill & Melinda Gates Foundation, Desire2Learn Inc., and Kaplan Ventures. A special acknowledgement goes to EDUCAUSE for their partnership role in the conference organization. We also need to express our thankfulness to Frits Pannekoek, President of Athabasca University, his endorsement of the conference and opening words emphasizing the importance of learning analytics in shaping the future of education. We are also grateful to the PC members and additional reviewers for their dedication in reviewing the submitted papers. We also thank the authors for their efforts in preparing their papers. A special thanks is warranted for ACM Press for publishing the paper proceedings in the ACM Digital Library. We are grateful to the developers of EasyChair for providing an open conference management system. Finally, we wish to thank all the participants of LAK 2011 for the enthusiastic and insightful discussions that made such an educational and fun event.

October 2011
Gráinne Conole
Dragan Gašević
Phillip Long
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