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The *Journal of Learning Analytics*: Supporting and Promoting Learning Analytics Research

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ABSTRACT: The paper gives a brief overview of the main activities for the development of the emerging field of learning analytics led by the Society for Learning Analytics Research (SoLAR). The place of the *Journal of Learning Analytics* is identified. Analytics is the most significant new initiative of SoLAR.

KEYWORDS: learning analytics, learning, education, field development

Welcome to the inaugural issue of the *Journal of Learning Analytics*. Articles that address big data and analytics have an obligatory introduction: data is everywhere, the amount of accessible data is growing rapidly, new sources of data are accelerating the already overwhelming quantity, and so on. The message is clear: we live in a world of data and our future promises even greater emphasis on analytics to understand data.

Analytics have arrived later to education than to government, healthcare, and business. While the education field has deep roots in data and analysis (research, after all, is primarily an exercise in making sense of data), the systemic use of analytics for improving teaching and learning is still emerging.

In 2010, a small group of us (Dragan Gasevic, Shane Dawson, Simon Buckingham Shum, Caroline Haythornthwaite, and I) initiated a conversation around the need for a conference on learning analytics. We approached other colleagues and eventually formed the steering committee[1] for the 1st International Conference in Learning Analytics and Knowledge (LAK). We were motivated by the growing influence of data in decision-making processes in teaching and learning settings. While the data focus was welcomed, it raised questions about the transparency of analytics methods, data access and ownership, as well as how analytics approaches themselves were being researched and validated.

A second challenge was on the nature of analytics practices. Often, computer scientists, machine learning experts, statisticians, and mathematicians had the technical capacity to make sense of large data sets, but lacked grounding in education and learning theory and literature. In contrast, learning scientists, psychologists, and sociologists had the theoretical lens to evaluate the social power structures

[1] https://tekri.athabascau.ca/analytics/node/5

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and "soft domains" of learning, but lacked grounding in emerging data and analytics methods. We lamented this gap between groups:

> 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 must be brought into dialogue with each other to ensure that interventions and organizational systems serve the needs of all stakeholders.[2]

From this perspective, the first LAK conference steering committee began to shape a research space that included an eclectic, at times challenging, mix of researchers. The committee emphasized the need to play at the margins of knowledge domains. Learning analytics is a bricolage field, incorporating methods and techniques from a broad range of feeder fields: social network analysis, machine learning, statistics, intelligent tutors, learning sciences, and others.

Since the first LAK conference, it has become increasingly clear that learning analytics is a research and practitioner domain. Across the spectrum of learning — from primary school through to corporate learning — data is playing a growing role in how learning occurs and how educators and administrators make decisions. At state, provincial, and national levels, interest in data and analytics in education has resulted in numerous government-sponsored reports in order to make sense of what analytics contributes to the education process.

The growing focus on data and analytics in education, the involvement of funding agencies (both research boards and private foundations), and the growing interest from researchers, have confirmed the importance of big data and analytics in education. The last four years have been significant for the field of learning analytics. In 2011, the Society for Learning Analytics Research (SoLAR)[3] was formed and took ownership of the annual LAK conference. We engaged in a series of projects to advance the field:

- A distributed doctoral lab to allow students to connect with other students and receive feedback and guidance from researchers.
- Learning Analytics Summer Institute (LASI) to serve as a forum for developing the field and to introduce doctoral students and academics to learning analytics. The first event was held at Stanford University in July 2013.
- LASI-Locals, a series of global analytics workshops connected to the Stanford LASI event. Nearly 1,000 participants attended LASI-Local or online events.

[2] https://tekri.athabascau.ca/analytics/about
[3] http://www.solaresearch.org/

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- SoLAR founding universities — critical partners that provided support to develop SoLAR and the LAK conference. Founding members include: Stanford University, University of Michigan, Athabasca University, Open University UK, University of British Columbia, University of Hawaii, University of Texas at Arlington, University of South Australia, Marist College, University of Wisconsin-Madison, University of New England, University of Queensland, American Institutes for Research, and the University of Saskatchewan. These universities provided financial support to organize conferences, doctoral seminars, summer institutes, and numerous additional SoLAR initiatives.
- Open Learning Analytics (OLA). This project is based on a whitepaper[4] written by SoLAR members calling for an open architecture for learning analytics (an "Apache of analytics"). The project is ongoing and recent collaborations with the Apereo Foundation will move the concept to product in the near future.
- Learning Analytics Masters Program (LAMP). Many universities already offer a program in "big data and analytics." Few currently offer a learning analytics masters program or certificate. To facilitate the development of masters programs in learning analytics, SoLAR has initiated LAMP. LAMP will result in the creation of an open masters program that will be licensed for use and reuse by academic institutions.
- Affiliation and collaboration with our sister organization — International Educational Data Mining Society (IEDMS).[5] To improve research quality and collaboration with other organizations focused on data and analytics in education, SoLAR has engaged in several strategic partnerships with IEDMS, including LASI, OLA, and LAMP.

Finally, SoLAR's launch of the *Journal of Learning Analytics* is its most significant new initiative. Our vision for this journal is that it will serve as a critical node in the discourse around data and analytics in the learning process. As a scientific journal, we would like to reflect the messiness of science — a space where ideas and evidence are presented, challenged, verified, and refuted — a space where concepts of significance can grow and be extended by new researchers and researchers in related fields. Most importantly, the *Journal of Learning Analytics* is a space where the field can grow, where doctoral students can find inspiration, and where researchers can connect with peripheral domains.

The drivers of success of any academic journal lie behind the scenes: the editors, reviewers, and copy editors. Thank you for your stellar efforts.

[4] http://solaresearch.org/OpenLearningAnalytics.pdf
[5] http://www.educationaldatamining.org/