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Orchestrating Learning Analytics: Learning Analytics Adoption at the Classroom Level

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ABSTRACT: The adoption of LA proposals in everyday learning and teaching practice is still slow, and requires effective identification and communication between different stakeholder communities (including researchers, teachers, students and technology developers). To complement high-level institutional, policy-oriented frameworks to promote LA adoption, this workshop proposes to look at how LA innovations impact, or are conditioned by, everyday practice at the classroom level (what some authors call "classroom orchestration"). In this half-day collaborative knowledge building event, participants from these different stakeholder communities bring examples of LA adoption efforts, discuss them through the lens of such classroom orchestration, and further develop frameworks and guidance on what issues should be effectively discussed (and how this communication can be supported).

Keywords: Orchestration, Learning Analytics Adoption, Inter-Stakeholder Communication.

1   BACKGROUND: ORCHESTRATION AND LEARNING ANALYTICS

Despite the recent explosion of research in the field of learning analytics (LA), the adoption of its proposals in everyday classroom practice is still quite limited, and progresses slowly (Ali, Asadi, Gašević, Jovanović, & Hatala, 2013). Multiple researchers, indeed, have looked at the problem of large-scale LA adoption, especially considering how institutions can drive such adoption or develop strategies to favor it (Ferguson et al., 2014; Macfadyen, Dawson, Pardo, & Gaševic, 2014). Many high-level LA adoption frameworks, often aimed at higher education institutions, recognize the need for stakeholder identification and communication with such stakeholders in order to meet their specific needs (Macfadyen et al., 2014). They do not provide, however, concrete guidelines or support for such communication, or what topics should most urgently be addressed by it.

Yet, the problem of slow adoption is not specific to learning analytics, but rather is a manifestation of the more general gap between research and practice that plagues different areas of educational research. Research on systemic and large-scale innovations have noted that success in these endeavors entails a holistic approach that not only considers strategic policy, but also the impact on classroom-level practice (Looi, So, Toh, & Chen, 2011). Especially crucial in this regard is the role of teachers/practitioners as major gatekeepers for the technological and practice innovations that reach the classrooms. The need for proposals that take into account the often-dire contextual constraints of classroom practice have led to the notion of designing for classroom orchestration (defined as "the process of productively coordinating supportive interventions across multiple learning activities occurring at multiple social levels" (Dillenbourg, Järvela & Fischer, 2009, p. 12).

Recent reviews of technology-enhanced learning (TEL) and LA literature [anonymized] have mapped LA-specific issues and frameworks with this general concern about the impact on classroom-level

practice, focusing on the knowledge gaps that arise between the different stakeholders (e.g., teachers, students, researchers and technology providers) during the adoption of an LA tool (Figure 1). In this workshop, such mapping serves as a starting point (or a 'boundary object', Star & Griesemer, 1989) for the dialogue among stakeholders about what issues need to be shared and understood, and how to support more effective inter-stakeholder communication in this process of adoption.
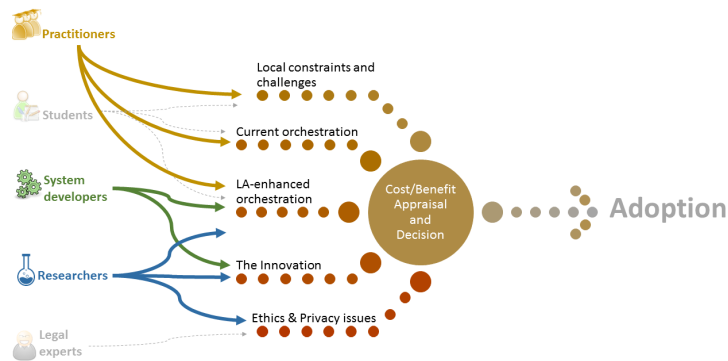

Figure 1: A framework for LA adoption at the classroom level

This workshop builds upon *previous events* that brought together different stakeholders groups to discuss classroom-level factors and how they condition adoption, both in the case of LA[1], and in other fields of educational technology research[2]. As such, this workshop serves as a complement to policy-oriented LA adoption workshops held in previous LAK conferences (Tsai, Gašević, Muñoz-Merino, & Dawson, 2017).

2 GOALS AND OUTCOMES

The present workshop aims at engaging the LA research community in a dialogue with other stakeholders (practitioners, technology developers), to share concrete adoption experiences and discuss about what factors influence a successful adoption of LA solutions, by looking at the classroom level, rather than a more institutional viewpoint.

The *outcomes* of the workshop may thus consist of an enriched framework and instruments to support communication about the adoption of LA (from the perspective of orchestration). These products, together with the rest of workshop-generated materials will be shared in the workshop website and social media, and eventually provide the basis for a SoLAR sub-community around this topic. Other future steps towards the establishment of this community will also be discussed during the workshop, including a journal special issue, a follow-up workshop in the frame of LAK'19 or other related conferences, or the creation of a virtual community to share experiences and refined/contextualized boundary objects around inter-stakeholder communication for LA adoption. As such, the workshop is strongly aligned with the LAK'18 theme, with respect to LA innovation and

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[1] In the LASI Spain 2016 event: http://lprisan.wixsite.com/orla2016

[2] In CSCL2015 (https://sites.google.com/site/occw15/), or ICLS2012 (https://www.isls.org/icls/2012/program/#workshops)

adoption in authentic "classroom-level" contexts, promoting stakeholder engagement and communication, accountability, and co-design of effective LA tools.

3   WORKSHOP ORGANIZATION

3.1   General organizational details

- **Type of event and proposed duration**: Half-day workshop.
- **Type of participation**: Mixed participation. Both participants with a paper submission (following an open call) and other members of the LAK community.
- **Expected participants**: We expect 15-20 participants from the main abovementioned stakeholder groups (including 5-8 participants presenting brief papers with LA adoption cases): LA researchers, practitioners, as well as learning analytics developers/providers. Special care will be taken prior to the workshop to recruit and involve at least these three groups, so that their perspectives could be directly be taken into account during the workshop activities and in the community to emerge from the workshop. *Researcher* participants will be recruited using the scientific networks in which the organizers are directly involved: mailing lists and groups such as EATEL, Kaleidoscope, AIED, EDM, ISLS, and of course the SoLAR mailing lists and Facebook groups. Additional special attention will be paid to the social networks established through previous workshops organized by the authors in related topics, in the ICLS, CSCL, EC-TEL and LAK conferences. Local *teachers* and other educational practitioners will be addressed through associations such as ATEA, APTA and AEU. Additionally, local educational *technology developers/providers* and other *practitioners* will be recruited from Sydney-based universities and enterprises, with which the organizers are in contact.
- **Required equipment**: The workshop will require Internet connectivity, a projector (for the presentations by organizers, authors of accepted papers, and spokespersons of the groups that intervene in the workshop), a whiteboard (optional), as well as flipchart paper and markers (for the collaborative activities). Flexible room layout (e.g., movable chairs) and clean walls (to hang flipchart paper or put post-its) are also highly recommended.

3.2   Specific workshop activities

The half-day workshop schedule aims to provide an intense, balanced and flexible context in which participants will be actively engaged. Also, it aims to create the best conditions for the creation of a sustained community involving researchers, teachers and other stakeholders regarding adoption of learning analytics. Thus, the workshop will be structured in three parts (A-C) (indicative durations are included below, allowing for variations or delays, depending on the group dynamics). Breaks will serve to reinforce the workshop group cohesion, to allow for informal continuation of discussions, and to offer a working slot for the organizers to generate a refined framework proposal, to be discussed during the last part of the workshop.

- **A.1 Warm up (20 minutes)**: Sharing the workshop objectives with participants, letting them know each other, and creating the initial conditions for an engaging work in groups (also serving to account for eventual initial delays).
- **A.2 Initial framework proposals (20 minutes)**: The organizers will present the [anonymized] framework, as a starting point for the discussion, together with other alternative classroom-level frameworks/schemes for LA adoption. This activity builds on existing materials to be

shared (before the workshop) through the workshop website and the call for contributions. These frameworks aim to reinforce a shared understanding of the problem, as well as provide a common structure to submitted proposals, and of the underlying issues.

- **A.3 Pecha Kucha-like presentations of accepted contributions (40 minutes)**: Authors of the 5-8 accepted contributions will make short presentations. In these presentations, they may focus on specific features of the [anonymized] conceptual frameworks, map concrete case studies and findings to them, show the need and feasibility of boundary objects that align stakeholders, or even propose alternative formulations of the framework or other artifacts to scaffold inter-stakeholder communication.

- **B.1 Discussion in small groups (30 minutes)**: The participants split to small groups in order to discuss the framework proposals, assuming their perspective as different stakeholders (teacher, technology designer, researcher), and looking for the most suitable boundary objects that may support their communication needs towards a decision on LA adoption.

- **B.2 Reporting back and whole group discussion (30 minutes)**: Using a jigsaw scheme, the expert groups that reflect the views of the stakeholders report back to the whole workshop, followed by discussion in terms of the main issues and proposals.

- **C.1 Synthesis and further steps (30 minutes)**: The organizers will provide a synthesis of the output of the workshop through a shared document, allowing for the integration of new proposals and comments by the participants in real time. The future steps towards the establishment of a community will also be discussed, which may include a journal special issue, a follow-up workshop in the frame of LAK19 or other related conferences, or the creation of a virtual community to share experiences and refined boundary objects around inter-stakeholder communication for LA adoption.

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