CALL FOR PAPERS

for a Special Issue of the Journal of Computer Assisted Learning (JCAL) on

Learning Analytics in Massively Multiuser Games, Virtual Environments and Courses

UPDATE (14 September 2013): Some text has been added to this Call to clarify the scope of the special issue, and the deadline for proposal submissions has been extended by one week. The changes made since the original version are marked in red.

There has been much interest of late in ‘big data’ and the role it can play in decision making in diverse areas of business, science and entertainment. By employing a combination of modern artificial intelligence, machine learning and statistics techniques, extremely large and complex data sets can be ‘mined’ in a variety of ways to reveal relationships, patterns and insights not easily discoverable through standard database management tools and data processing applications. In the field of education, data mining approaches have been applied to the analysis of electronic ‘stores’ or repositories of student data for a number of years now (see Romero & Ventura 2005), but this has been occurring largely at the institutional or sector level. Such applications, which are sometimes referred to as ‘academic analytics’ (Campbell, DeBlois & Oblinger 2007; Goldstein & Katz 2005), have not become mainstream, being relevant mainly to governments, funding agencies and institutional administrators rather than students and teachers (Siemens et al. 2011).

More recently, a new area of scholarship known as learning analytics (Long & Siemens 2011; Siemens et al. 2011) has emerged that seeks to generate knowledge ‘about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs’ (Siemens 2011, para. 5). This knowledge can be employed for a variety of purposes, among which are to allow learners to reflect on their activity and progress in relation to that of others as well as to assist teachers and support staff in predicting, identifying and supporting learners who may require additional attention and intervention (Powell & MacNeill 2012).

Occurring in parallel is the burgeoning trend towards the delivery of education and learning at a ‘massive’ scale. The last decade has seen an explosion of activity in the use of massively multiplayer online games (e.g. World of Warcraft) and virtual worlds (e.g. Second Life) for both formal and informal learning (see Childress & Braswell 2006; Dalgaro & Lee 2010). These massively multiuser virtual environments (MMVEs) are rife with opportunities for exploiting learning analytics methods to produce enhanced outcomes and experiences for students. At the same time, we have been witnessing a movement in which many universities and colleges, including some of the most prestigious institutions of higher learning in the world (e.g. Harvard, Stanford, MIT and the Universities of Melbourne, Toronto and Edinburgh, to name a few), are ‘opening up’ their course offerings to massive numbers of participants on the Internet (see, for example, Brown 2013; Daniel 2012; McAuley, Stewart, Siemens & Cormier 2013; Siemens, Irvine & Code 2013). In such massive open online courses (MOOCs), the involvement of hundreds, thousands or even tens of thousands of students creates a heightened imperative to devise alternative strategies for feedback and assessment that are less reliant on individual teachers. Learning analytics have the potential to be used in MOOCs to facilitate new models of self and peer assessment as well as to make possible the implementation of a range of automated mechanisms to support and augment students’ self-regulated learning goals and processes.

In recognition of the current interest in both learning analytics and massively multiuser environments and courses, contributions are being solicited for a special issue of JCAL addressing the intersection of these domains. It is clear that dialogue and exchange are needed to bring together the various
contributory bodies of knowledge encompassed by the two domains, and one of the aims of the special issue will be to help encourage this. To this end, in addition to manuscripts reporting empirical investigations on the application of learning analytics to learning, teaching and assessment in MMVEs and MOOCs, those with a theoretical or conceptual focus will also be considered, with interdisciplinary studies and perspectives particularly sought after and welcomed. However, manuscripts whose content is largely or entirely technical with little or no coverage of the pedagogical and/or instructional design-related aspects are unlikely to be included in the special issue. Moreover, case studies that are purely descriptive and do not contain substantive evaluation data, along with those that appear to promote particular products or platforms, will not be accepted.

**How Massive is Massive?**

The special issue is intended to be about the use of learning analytics with massive numbers of students. While the term ‘massive’ is used loosely here to refer to large quantity – possibly hundreds, thousands or tens of thousands – Downes (2013) suggests that ‘Dunbar’s number’ of 150 active participants be used as the cut-off point for determining if a course is massive. This said, submissions from authors reporting on studies involving fewer numbers of participants are likely to be considered for the special issue if those authors are able to demonstrate how what they are reporting or proposing might be scaled to accommodate a ‘massive’ situation. This is especially the case with studies involving immersive simulation, gaming and virtual world environments, which have not been widely used in massive courses to date.

**Suggested Topics**

Possible topics include but are not limited to the following:

- Learning analytics for adaptation and personalisation in massively multiuser virtual environments and courses;
- Learning analytics for visualisation and recommendation in massively multiuser virtual environments and courses;
- Predictive modelling and forecasting of learner behaviour and/or achievement in massively multiuser virtual environments and courses;
- Design of intelligent tutoring systems specifically for use in massively multiuser virtual environments and courses;
- Dynamic scaffolding of learner activity (e.g. provision of diagnostic/formative assessment feedback) in massively multiuser virtual environments and courses;
- Enhancing motivational and other affective outcomes for students through learning analytics in massively multiuser virtual environments and courses;
- Using learning analytics to support cooperation, collaboration and/or competition among learners in massively multiuser virtual environments and courses;
- Application of social network analysis techniques to optimise learner interactions in massively multiuser virtual environments and courses;
- Strategies for analysing crowdsourced assessment and evaluation data in massively multiuser virtual environments and courses;
- Certification and credentialling (e.g. open badges) based on learning analytics in massively multiuser virtual environments and courses.

**Key Dates**

- Proposal submission deadline: **30 September 2013** 7 October 2013
- Notification of proposal acceptance: 28 October 2013
- Full manuscript submission deadline: 27 January 2014
- Notification of full manuscript acceptance: 26 May 2014
- Final manuscripts due: 21 July 2014
- Expected publication date: Late 2014

**Submission and Review Process**

Prospective authors intending to submit manuscripts for the special issue are asked to supply a 500-word extended abstract outlining the content and aims of the proposed article, plus a list of 7 to 10
References


Siemens G. (2011) *Call for Papers for the First International Conference on Learning Analytics and Knowledge (LAK’11)*. Available at: https://tekri.athabascau.ca/analytics/
