

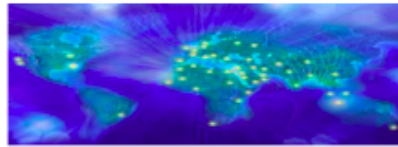
Learning Analytics Summer Institute (LASI)

Stanford University, July 1-5 2013



SOLAR
SOCIETY for LEARNING
ANALYTICS RESEARCH

Learning Analytics Summer Institutes (LASI-Local)



SOLAR
SOCIETY for LEARNING
ANALYTICS RESEARCH

LASI — Fri 5th July global feedback session

To all LASI participants — Stanford, LASI-Locals, and individuals online — we invite you to share your responses to the following questions. If you have technical difficulties with accessing this, or prefer to feed back via another route, then please email any of the organisers, or just register your blog on the [LASI news aggregator](#).

You can either paste answers into this document, or a link to your blog posts. Optionally append any contact details you wish, including your LASI locale if relevant.

[What were the key personal insights or lessons of the week?](#)

[What topics \(or even better, problem sets\) should this community focus on?](#)

[What activities have been or can be planned to carry the work forward in the year ahead?](#)

[What should we do to promote and track how participants can stay connected?](#)

[What other recommendations do we have to each other or the organizers for staying connected and advancing as a community?](#)

What were the key personal insights or lessons of the week?

- As an initial reaction to this question I would want to mention that at we conducted a hands on workshop where we provided people with a list of learning analytics references to use while solving a concrete problem. Some interesting dialogue started around the question: Is Learning Analytics a concrete framework for solving problems? While all of the examples were built from a pedagogical theory together they were a hodge-podge of theories. This made leveraging a variety of methods together to solve a specific problem difficult. There are a variety of reasons

this may have come up but I wonder if we need better classification of methods in learning analytics. [LASI-Local Boston]

- That you can do learning analytics without “small data.” We have questioned whether we actually have “big data.” [MOOSEketeers group]
- It’s difficult to navigate across the Computer Science and/or Learning Theory divides. 1) We need to translate between each others. 2a) We need to move beyond just code to think through problems we need to solve (learning theory perspective). 2b) We need big perspectives on new software/hardware tools that might help us rethink our problems. But neither of these should be too abstract. [MOOSEketeers group]
- There is a tension in the community between “making” products and “solving” problems. In particular, industry/VC and researchers don’t work together enough. Often industry says “this is what we want” rather than sharing their data with researchers. [TeamCanada]
- LASI focused more on researchers/industry talking about “these are our methods or products” rather than talking more broadly about the problems to be solved. “Discussion was technology driven not problem driven.” [TeamCanada]
- People in this community are highly unified by a passion for supporting learners (john behrens)
- Too much discussion of higher education, not enough of K-12. [TeamCanada]
- TeamCanada is very insightful and active -- John Behrens
- Need to engage disciplines like Education that remain suspicious or recalcitrant when it comes to the potential of learning analytics (and to assist them to move beyond their somewhat heavy focus on “theory and opinion” (Behrens, LASI13 :-)). (We also need the expertise and insights from Education). This probably means that we also need to modulate our message so as to not give the impression that we are exclusively focussed on automation and quantification.
- We still need more and better metrics for learning/ competence/performance (beyond grades).
- We’ve recognised what diversity there is in the group and sometimes there is difficulty in understanding different perspectives. Spending a week together is good to identify areas of convergence and divergence. Many of the issues have found their way into the topics below. The paradigmatic assumptions that are extant and influence the policy debate in education are present and being embedded and coded into the different learning analytic systems. Philosophy should be compulsory...for learning analytics and we should declare our biases. there’s a big gap between industry and research which we need to understand better. [Rebecca, Adam, Simon, Ruth, Chris, Rebecca, Caroline and Drew’s group outcomes can be seen together here... <http://ruthdeakincrick.com/2013/07/05/group-discussion-lasi-next-steps/> PS we did learning analytics on our learning design, process and outcomes btw. and now we are bored so we are stopping!]

What topics (or even better, problem sets) should this community focus on?

- there was great enthusiasm around skill building and people wanted to be a data scientist (primarily people from with technical backgrounds) that saw Learning Analytics as an entry point

into stimulating work. While we are planning on connecting people to resources for skill building again there might be a better way to coordinate this enthusiasm at a global scale through aggressive collaboration on the part of people already engaged in various research methods in the field.

- How can we develop LA technology that can serve non-traditional student. [LASI-Local Boston]
- We need to use insights from this field to disrupt typical teaching/education. Also, we want to thoughtfully find ways to listen to teachers/educators on how we can develop technology that meets needs/practices. This idea comes from the insight that we are often focused on simply fine-tuning education and making it more efficient. But fine-tuning only works if what is happening is already quite good. Rather there is an opportunity for transformation. Paul Cholmsky might have insight on this. :) [MOOSEketeers group]
- More on the process of developing learning analytics. Mostly we've gotten final products or finding, and less on processes that might otherwise be invisible. [MOOSEketeers group]
- KEY IDEA: Invite someone who is an expert in teachers' use of data in practice to give a keynote. Or form a panel. {Provocative thought: sports teams probably use more analytics than other practitioners.} [MOOSEketeers group]
- Evangelism: LASI participants should take their key takeaways back to their specific communities. Academics, educators, etc need to be brought into the discussion. Eg, educators should inform other educators about what LA means for them. [TeamCanada]
- Let's start talking about solving the dropout rate! [TeamCanada]
- We need current teachers and administrators in the room. (+1 from another group) Let's start including current educators (not college level) in the discussion. Let's make sure that LA is taught/introduced to future teachers in undergrad education coursework. Eg have some teachers talk to us (in the morning session?) about their experience using inBloom or other LA/edtech tools. Do we need to talk to the professional development (PD) community? [TeamCanada]
- A problem for education generally: We suck the creativity out of students. A talented teacher giving attentive, differentiated feedback is great. But not all can do that without some assistance. And that's the challenge for LA. It's not just the tools. Pedagogy is foundational to constructing the technology and the analysis. The contextualisation is key, and removing that is what drives out creativity. (Buuuut ... not everybody sees this as the big problem, and would perhaps prefer to emphasise e.g. improved learning of key subjects.)
- Learning analytics has an image problem. Administrators want analytics to evaluate teachers' performance. Less seen as a system for empowering teachers. Same thing for students - is Johnny doing well or badly, rather than how can we help him do better. So teachers perceive analytics as using data to punish you, rather than using data to empower you. Students too. So focus on empowerment of educators.
- Focus on getting learning analytics feedback to students themselves. It's hard to self-assess. We can help. Chance for large-scale improvements in learning here. Two sides - direct feedback, but also differentiation in getting them personalised content, that piques their interest, appropriately targeted to interest/passions. (This one and the one about the image problem and educator empowerment are entangled.)
- Resources from our community to educate other communities about what we do.

- Ambitious idea: A large operationalisable, collaborative database of research insights, a bit like the What Works Clearinghouse (<http://ies.ed.gov/ncee/wwc/>) but lower-level and machine-query-able by learning analytics systems and platforms, so research findings can be brought right in to individual contexts as appropriate (based on all that lovely data we know about), at a very micro-level. Could be a direction of travel for the SoLAR Evidence Hub <http://solar.evidence-hub.net/>.
- Supporting funders directing resources into the right spots. Learning analytics could really help. Lack of evidence of what worked out of all of this investment. The amount of resource devoted to evaluation is there and increasing, but it's very often formative (not a bad thing) but lacks the summative impact, and very rarely tracks impact after the funding stream finishes, never mind long-term impact.
- Need to think broadly about who gets to see what data. Can teachers see their own effectiveness ratings? Students? [TeamCanada]
- Is there a creepy factor about LA? Are teachers overloaded with new technological tools and so will ignore LA tools? Are teachers afraid that LA might become part of their pay? [TeamCanada]
- Need to have a session on how to pitch products to schools. What kind of training needs to come with LA products? Are schools unlikely to buy products from startups? [TeamCanada]
- problem sets should the community focus on
 - Dispositions
 - non-cognitive
 - discrete data
 - measuring the things that we haven't been able to
 - domain of pedagogy with statistics and design
 - Cross domain, intelligent tutor sys models to MOOCs? etc?
 - Agreement on what to measure
 - Startups need to have things they can use, can't afford to have something not work out
 - Who wasn't here at the conference? What are you look at the keys under the streetlight, because that is where the light is.
- Get a real problem, focused. get all the different people to contribute
- Larry Wasserman - All of statistics, all of nonparametric statistics
- Is there a way to analyze data, access to it, and apply methods to it, and participate
 - Here are two representation of data, here are some killer tools, and
 - Having a work that is giving the community, rather than just owned by one entity, it allows iteration.
 - what are we even optimizing for?
- Getting together to see if we have the same problems
- What does analytics mean in the context of rapidly changing and highly dynamic learning. How do we theorise and scaffold and feedback relevant data to learners at multiple levels of complex systems, when the 'outcome is not known in advance' (Zygmunt Bauman 2001)? How do we work in the area of equivocality space (wicked problem space) as well as uncertainty...how do we even identify what the problems are.
- If learning is about measuring outcomes, how do we measure learning when we don't know

what the outcome is, or there are multiple stakeholder views about what the outcomes should be?

- Where does learning analytics fit in the transformation of society? Are messy problems ones which we should use data for because of the problems of identifying what we value.
- If we see learning analytics as the only way to look at the problem we would counsel against using it as a 'silver bullet' but if it is one tool in our toolbox of tools for addressing complex problems then it's useful. Especially since the cultural power of 'data' to influence public policy is so ubiquitous. For example the UK EEF is obsessed with RCTs as 'salvation' for a sick education system. How can learning analytics subvert this discourse.
- Learning Analytics transgresses all traditional boundaries of social science research – how can we integrate, synthesise and develop approaches to research which retain rigour and are useful.
- How can we build much more rapidly configurable systems to solve particular problems? There are debates in Big Data in this area – Boyd and Crawford is a good summary.
- We need to learn better how to be interdisciplinary – learning analytics is intrinsically interdisciplinary and inter-domain.
- Ethics of power around analytics – is it used to build agency or to remove it? Who owns the outcomes of the data – how do we undermine the 'voice of God' approach to feedback. i.e. I CAN SEE YOU AND YOU'RE BAD!
- Governance of inter-disciplinary and inter-domain engagement in the world...how do we create governance architectures which maintain the integrity of the ongoing research, and hold the tension between research, commercial imperatives, policy impact and practitioner improvement imperatives. Perhaps we need a code of conduct and professional standards for engagement. Also – what are the limitations of learning analytics?

What activities have been or can be planned to carry the work forward in the year ahead?

- Hakathon
- have data prepared for people download, instructions at beginning of week on installing and using tools
- Brevity, a speed dating, short poster session
- un-conference, pitch, get votes, lots of diversity
- We will continue to have events every 2 months. Please reach out to us through <http://www.meetup.com/Learning-Analytics-Boston/> if you plan on being in the Boston area and would like to engage with the community either as a participant or as a speaker. [LASI-Local Boston]
- I had a great preliminary conversation with April G. about the idea of co-editing a book that could bring some of these ideas and issues to the psychometric community.
- Conversation started about research collaboration between Sweet San Pedro and Erica Snow [TeamCanada]
- Found an advisor for a research proposal (Sidney d'Mello) to apply for an NSF grant. Working on research collaboration to compare data on games with Nicole Velasquez. Suggested a research

proposal to Ryan and John Stamper (CMU) to design an intelligent tutor to teach LA. Using the multi-modal techniques in a game environment.[Elizabeth Rowe from TeamCanada]

- We could adopt the model used by 'School of Data' (<http://www.schoolofdata.org>), as discussed by Tony Hirst) which periodically hosts hands-on 'data expeditions' or 'analytics expeditions' that the member community can sign up for. These can be F2F or online. Could address exploration of particular data sets, analytics challenges, problem-solving or consider localized scenarios. SOLAR members can put forward their own problems to be worked on - expeditions can be learning opportunities in multiple ways. +1
- 'Data Expeditions' could start with a practical problem embedded within a discipline (i.e. What analytics would a learning scientist want? vs. What would a teacher need?) [Yes! Specific and applied challenges, more than presentations or general discussion!]
- Code of conduct / ethics for learning analytics - Janet Corral organising here, please contribute: <https://docs.google.com/file/d/0B4jK4sS8AznveFdpclNZeUl3NzQ/edit>
- NEXT YEAR: Have lightning talks. And/or lightning talks/posters. +1
- NEXT YEAR: A demo session would be nice!
- would be good to hear from a Provost - what language/ projects interest them?
- Vancouver contingent here are going to set up a LA reading and work group which meets once per month over the next year.
- Oxford University, OU and UoBristol are going to do joint workshops.
- Chris and Ruth, Simon and Nelson are exploring the creation of Learning Warehouse 3.0.
- Adam and Rebecca have an FP7 EU bid to work in Europe.
- LASI is a way of integrating diverse activities that already have their own lifecycle and governance...we should position and communicate as members of SoLaR – how can we self organise and retain our brand?
- Ruth and Simon are going to publish a paper;
- Handbook of E-Learning Research (2nd ed, in progress) is going to have chapters on LA in it.
- we are going to set up a work group on 'governance'

What should we do to promote and track how participants can stay connected?

- I would love to have a global organizers debrief. We held one after our event and set out our plans for moving forward locally though it would be nice to chat with people. While this document is a good start it might be nice if SOLAR could take this document and put together a brief discussion together based on common themes and high impact leverage points where we can learn from each other and push the work forward. [LASI-Local Boston]
- LinkedIn group? Facebook group? [TeamCanada]
- Possible special interest groups within LA community may form and meet up sooner (virtual meetups) rather than at one-year intervals [TeamCanada]

- Make the SOLAR website more of a nexus / online community; or a google group?
 - Try also: Learning Analytics Workgroup: <http://learninganalyticsworkinggroup.ideascale.com>
 - Could grad students populate/contribute to this especially?
- A list serve is the best way to keep in touch and communication and tracking.
- Listserve is best for announcements with links to other places
- Learning Analytics Work Groups – if they should happen they will.
- IdeasScale

What other recommendations do we have to each other or the organizers for staying connected and advancing as a community?

- Need more resources for participants to learn about the field (intelligent tutor system for LA?). Eg for grad students in statistics, online resources for education, psychology, etc. For non-programmers, introduction to data science. [TeamCanada]
- Tools specifically for EDM (particularly multilevel data). [TeamCanada]
- Should talk to Teach For America (are there relevant international organizations as well?). Should include LA in teacher training for TFA. TFA teachers can become an evangelizing force as they fan out across the country. [TeamCanada]
- Think more about direct-to-consumer models. Rather than selling to schools/institutions/states, let's make products that students and parents can use themselves. This could lead to faster adoptions and less bureaucracy for LA companies. [TeamCanada]
- SoLAR newsletter targeted to teachers/administrators that makes the LA field easier to understand/keep track of. [TeamCanada]
- See proposal about 'data expeditions' or 'analytics expeditions', above.
- Remember the Learning Analytics Workgroup, add papers, add bios, put up ideas. Set up by Roy Pea: <http://learninganalyticsworkinggroup.ideascale.com> [MOOSEketeers]
- As with LASI, social discussion spaces are important, too (not just announcement/big idea spaces) would be great to have a social network presence and/or to push announcements out from ideascale.
 - <http://lasionline.ning.com/forum> didn't get used - maybe it should have been something more like <http://www.crowdvine.com> which connects with f-f participants as well as remote (simon bs)
- Faculty/student mentors outside of disciplines (i.e. Faculty from learning science with a student from comp sci etc.)
- Woot! Keep it up :O) <http://learninganalyticsinstitutes.net>
- Missing connection to Assessment community (AERA / NCME); need to find a way (i.e. Lori Breslow); Missing connection to ADL CoLab; Missing connections to statistics community
- Connections to Educational Psychology community in areas like: Motivation (what is it that people notice and pay attention to eg field of Phenomenography (a la Ference Marton et al); SRL and metacognition (Jonathan Dunlosky, Phil Winne);
- David Pritchard - 'deep' student learning models in physics
- Have streams in LAK and/or LASI that center around specific stakeholder groups / uses of LA:

Administrative/institutional use, teacher/faculty/instructor use, student use; and identification of types of constructs measured (as identified above: motivation, affect, srl, metacognition etc.)

- People should make plans to be at LAK14: <http://lak14indy.wordpress.com/>
- A list of names, contacts and photographs – a facebook type connection.
- Plan for the next UK government.....
- SOLAR should publish a WHITE PAPER about Learning Analytics and Big Data and get Pearson to fund it!
- Edit the wikipedia page

Ian Witten, Amal Zouaq, Sharon, Elvira Popescu, Maria-Jesus, Judy Kay, Vitomir Kovanovic, Srecko Joksimovic, Eliana

Question 1 and 2

- We need more topics on knowledge extraction process, content analysis, etc.
- More people from learning sciences (teachers and students) involved.
- Focused on the stakeholders, students who interact with the LMSs. Provide more insight on their perspective.
- Consider development of LA tools for mobile platforms, multimodal (student's input).
- Define several important topics and rotate them during the next few years,
- Provide list (categories) of tools for learning analytics. Develop portal which would present these tools,
- Student's and instructor's insight into MOOCs. Their experiences,
- Define more concrete goals. Organize workshops to discuss on ideas,
- More discussion on privacy issues,
- More people from Europe
- International perspective on funding (Europe-US/Canada),
- What factors contribute to adoption of learning analytics (teachers, schools, districts)?
- Summary of the day
- Create the list of acronyms for the people outside the community, or not familiar with certain topics,
- Surnames big, on both sides. University below the name. Colored tags for few main communities

Question 3

- Promotion of learning analytics among teachers, present them different tools that they can use
- PhD workshop
- "Team building" activities (sports, sightseeing, walking, fireworks during the first day)
- Demo for different tools

Question 4

- "Local" distributed research lab. Everyone can join Lab, but it is hard to attend because of time differences,
- Try to include younger researchers into discussions in order to create collaborative research. Give everyone the chance. Finding opportunities to collaborate with others.
- Make the proposals submitted to LASI available to everyone
- Poster sessions for researchers
- Create profiles for participants with keywords (clusters) prior to the event

Question 5

- Forum, mailing list within Distributed research lab (discuss on publications, research, different problems)

Create LinkedIn and/or Facebook groups