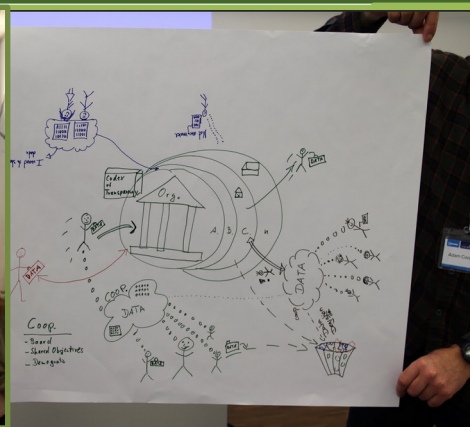LACE
learning analytics
community exchange

Learning Analytics Summer Institute (LASI) - ASIA 2016

Professor David (Dai) Griffiths
School of Education and Psychology University of Bolton

D.E.Griffiths@bolton.ac.uk

LA raises many open questions

- Data is generated in education, and analytic techniques are available
- Education researchers, institutions and governments are increasingly finding valuable things to do with it.
- But we don't know (for example)
  - What can be achieved, and for whose benefit
  - What support is needed from policy and standards
  - How institutions need to prepare and adapt, organisationally and technically
  - The systemic effects on institutions and communities
  - ...

- LACE supports and coordinates the LA community in looking at these questions

- Consulting practitioners, researchers and user groups

- Promoting open processes and knowledge sharing

- We have focused on themes such as

  - The future of LA

  - Interoparability

  - Ethics and privacy

  - Evidence

- This is an overview with some thoughts, my colleagues will give more details

Interoperability reports and studies

- Session tomorrow on using data APIs – xAPI and IMS Caliper. Kirsty Kitto and Stephen Vickers

- Specifications for learning analytics interoperability, and the infrastructure that support them, have a strong influence on infrastructure and practice

- LACE report this year into the interoperability landscape, and a recent LACE Review paper on Caliper and xAPI.

  – http://bit.ly/2bYwOoa

  – http://www.laceproject.eu/wp-content/uploads/2016/01/LACE_D7-4.pdf

Engaging in the specifications cycle

- Not just technical decisions
- Specifications are part of a cycle
  - Reflect a view how data can be used in education
  - Influence the way that infrastructure is built
  - The infrastructure determines how we see learning analytics, and what we can do
- Researchers, practitioners and policy makers should be represented

Open processes

- Contrast between xAPI and Caliper in their relationship to user groups and use cases.

- The open processes of xAPI have enabled the LACE community to engage with the specification

- Both specifications have strengths, could they be aligned or merged?

- The different licensing models are significant

Privacy and ethics studies

- Tore Hoel on 'Privacy: is it a show-stopper' after this presentation
- A theme throughout the project, and concern for many experts
- Regulations in this area will affect what we can and cannot do with analytics
- National and international policies are shifting, with potentially profound consequences
- The infrastructure being built around xAPI and Caliper will enable and constrain
- (Personal) Learning Record Stores
- Analysis and LACE checklist at http://bit.ly/lace-privacy

Visions of the Future

- Rebecca Furguson, later this afternoon

- Engaged with people active in the field of learning analytics.

- Strong evidence of both enthusiasm and doubt.

- Learning analytics could be wonderful
  - will it fulfill its potential?
  - does it have negative aspects?

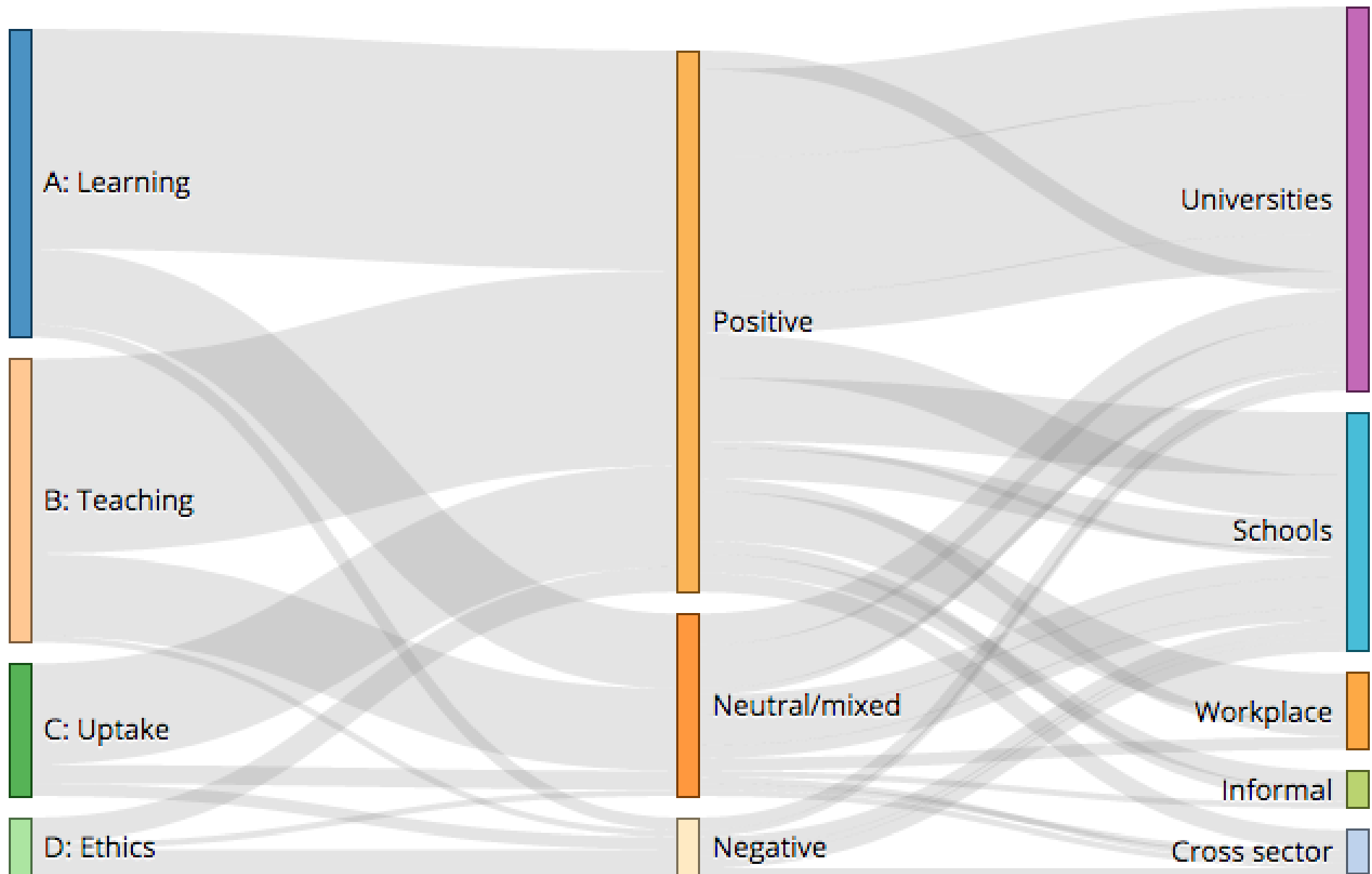- It is interesting to compare this with the LACE Evidence Hub

The Evidence Hub

- Searchable and described evidence that learning analytics
  - improves learning outcomes
  - improves learning support and teaching
  - are taken up and used widely
  - are used in an ethical way
- 124 papers described, and growing

The evidence

Evidence flow - World

A: Learning
B: Teaching
C: Uptake
D: Ethics

Positive
Neutral/mixed
Negative

Universities
Schools
Workplace
Informal
Cross sector

Contrasting concerns revealed by LACE

- Reflecting the literature, the positive evidence in the Evidence Hub mainly relates to
  - Cognitive changes in learners (e.g. mastery of a particular topic)
  - Achievement of specific policy goals (e.g. retention)
- The concerns of experts in the Visions of the Future study mainly relate to changes in
  - relationships between those involved in education
  - educational practice and institutions
  - social issues related to data, and their impact on education
- Why should these concerns arise? Ethics and privacy are part of the answer, but not a major issue in the Hub.
- Data, institutional organisation, and established practice relate in complex ways which we need to understand

An illustrative analysis

- Learners generate more variety (loosely, 'information') than teachers can deal with

- Teachers generate more variety than head teachers can deal with

- Schools generate more variety than inspectors and curriculum writers can deal with

Competing explanations

- At each level there are different explanations for successful learning

- Because nobody really knows what is happening at another level,
  - The explanations are never contrasted or tested
  - Learners, teachers and schools have historically maintained some degree of flexibility to act independently

Learning analytics changes the variety equasion

- Learning Analytics can amplify the ability of higher levels to inspect processes at lower levels.
    - Have you been logged on to Moodle
    - Have you been following the prescribed teaching structure
    - Has the school been sticking to the priorities and activities set by policy makers
- Those whose ability to act independently is being lost are not happy, and this is reflected in the concerns of experts.
- In many cases this process is aligned with top down management of education through KPIs and a focus on financial viability.

If learners are being served better, why is this a problem?

- The solutions we provide for education are only as good as the model of education which we are using.

- Given the history of education, we have reason to doubt their perfection.

- Are we really confident that we know

  – What factors lead to learning?

  – How much of what has been learnt does an assessment capture?

  – That education leads to employment and growth (personal and social)?

- Reinforcing simplistic models with analytics will lead to wasted resources, and possibly negative impact on learners and the education system

Systemic impact of learning analytics

- Our research is not useful if we can't understand the impact on institutions and personal relationships

- LA needs input from social scientists, management theorists, pedagogic experts, and policy specialists.

- Similarly, LA provides insight into the education process
  – Reveal inconsistencies in models and understandings: personal and systemic

- Open processes and specifications are important artifacts to facilitate and focus these discussions

Keeping breadth of use cases

- The power of management-facing analytics is clear, but...
  - How can learner-facing analytics be best deployed?
  - What is the potential for 'closed-door' classroom analytics tools?
  - How do these approaches need to be implemented and supported?
  - What are the consequences for the relationships and processes in the institution. What is enabled and what is constrained?

Please visit www.laceproject.eu

- A set of Web resources.
  - Blog posts
  - videos on the LACE Youtube channel
  - presentations on the LACE Slideshare channel.
- The Evidence Hub.
- Reports and papers on
  - Visions of the Future of Learning Analytics
  - Learning Analytics Interoperability
  - a Framework of Quality Indicators
  - Privacy and Ethics;
  - Learning Analytics at the Workplace.

How you can participate in LACE

- Funding finished in Summer 2016, but LACE will continue to be a focus for information and debate on learning analytics.

- Evidence Hub will be maintained and expanded. Please contribute!

- The LACE community will continue within the Society of Learning Analytics Research.

  - for individuals to get information and exchange ideas

  - as a hub for the dissemination of projects (an urgent problem for many projects).

- The LACE partners will collaborate in events and activities

- Please feel free to contact us!

  d.e.griffiths@bolton.ac.uk