

Making social learning visible: some provocations for Connected Learning Analytics dashboard concepts

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To nurture skillful social learners (prev talk)...

**...invisible + ephemeral social processes need to
be made visible + persistent**

**...for which we need analytics to aggregate +
visualise data meaningfully**

as proxies for social + personal learning

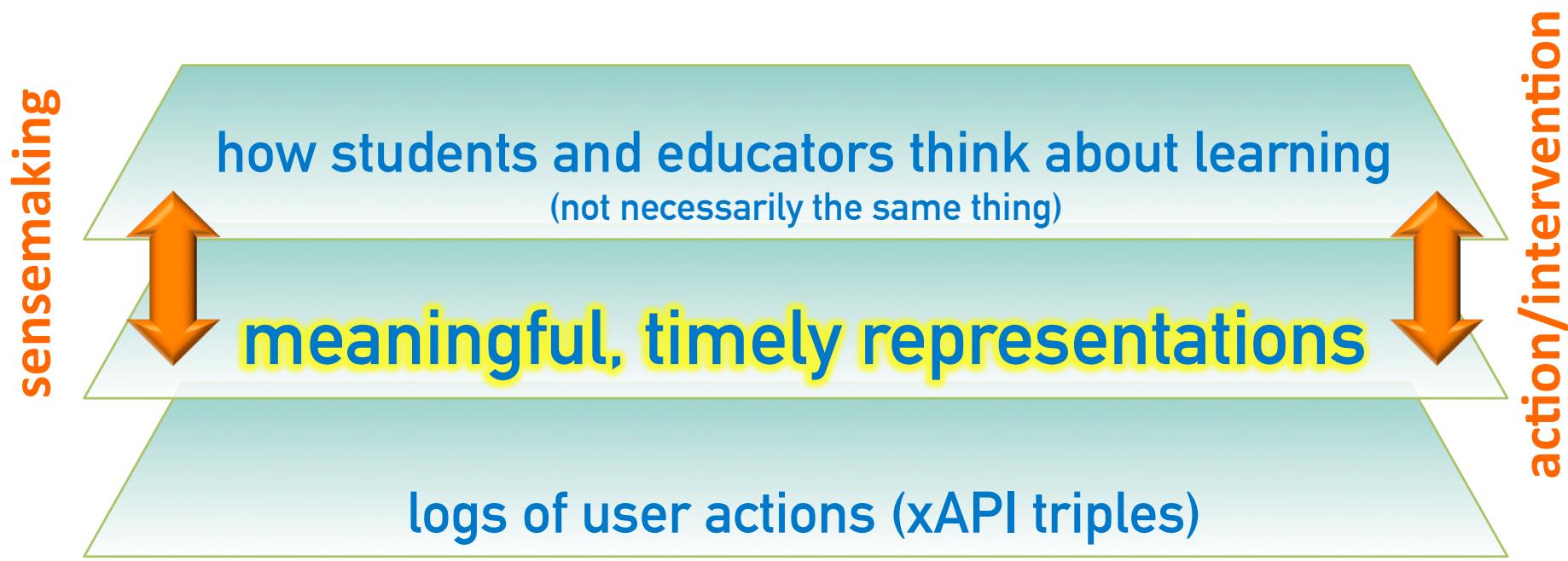
Bridging the data—meaning gulf

how students and educators think about learning
(not necessarily the same thing)

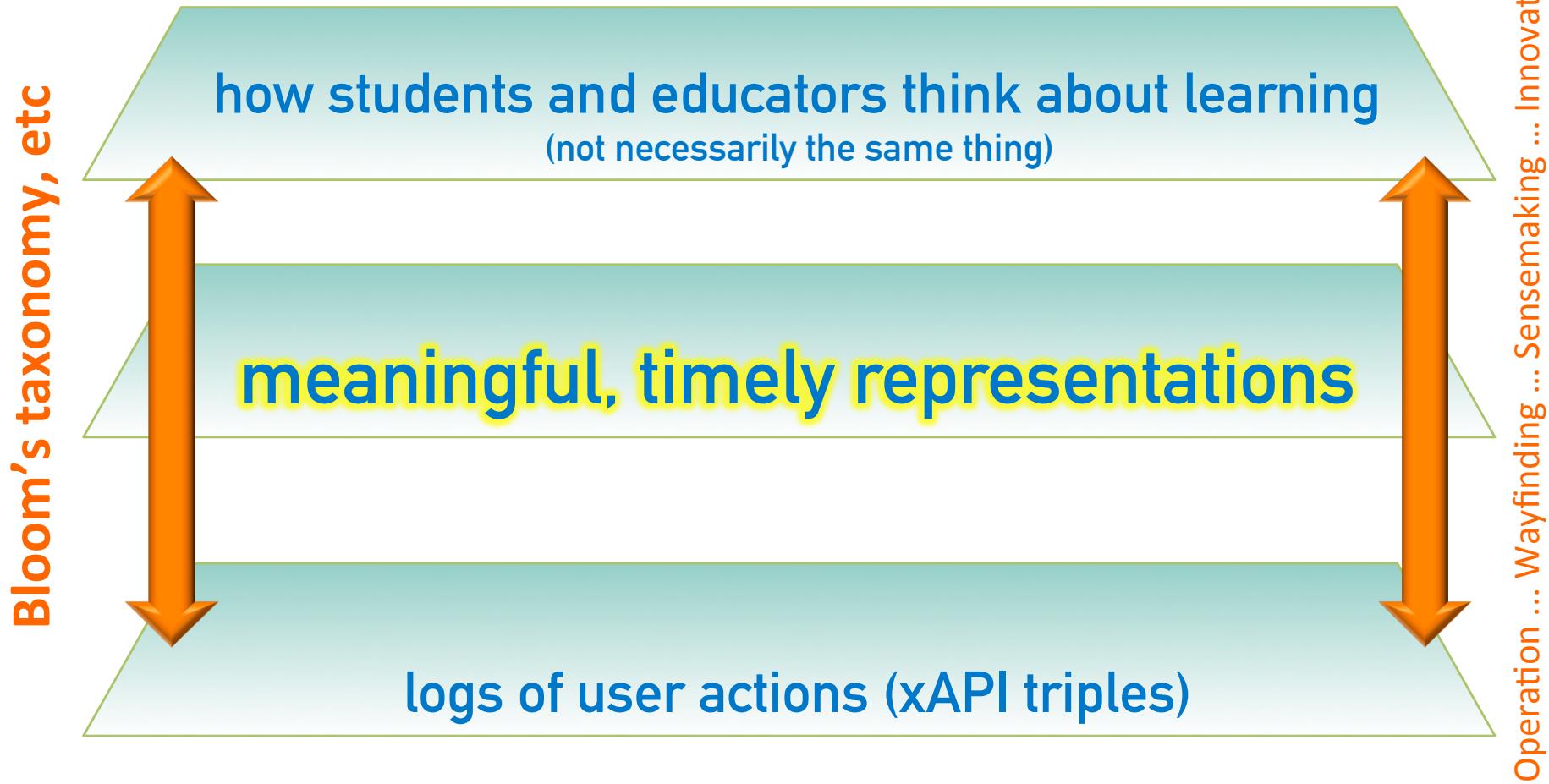
meaningful, timely representations

logs of user actions (xAPI triples)

Bridging the data—meaning gulf



Bridging the data—meaning gulf



All of the following are possible in
closed learning platforms

'Technically straightforward'
to apply to an xAPI LRS?

But which are of most interest?

textchat + videoconf
replay + analytics

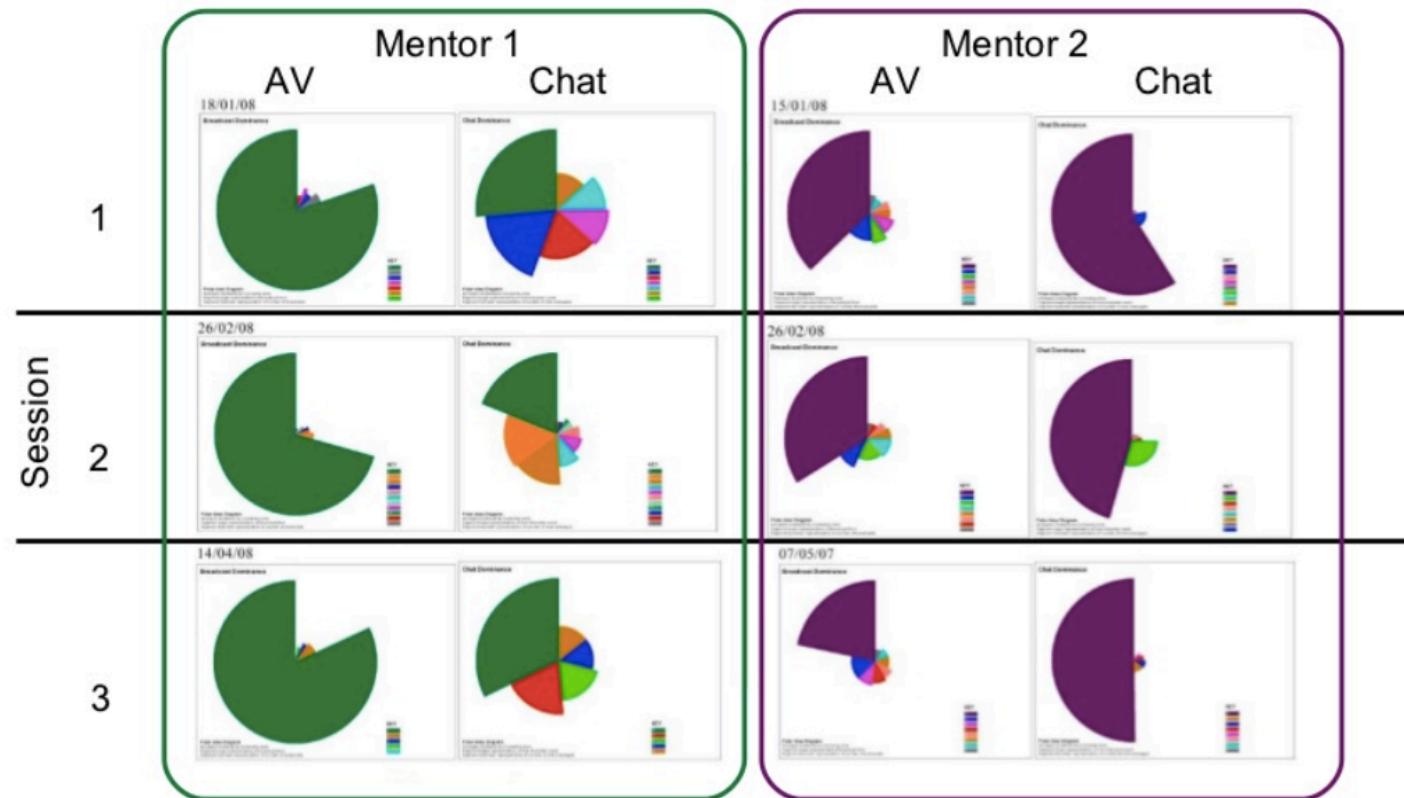
FlashMeeting (Open University's Knowledge Media Institute)

The screenshot shows a FlashMeeting interface with the following components:

- Video Player:** Displays a frame grab from a video of a person wearing a cap and headphones. The name "Sam P" is overlaid on the video.
- Control Buttons:** Below the video are standard media control buttons: back, forward, play, and pause.
- Transcript:** A list of messages from participants. The messages are:
 - 00:15: Nicole: hey everyone
 - 00:22: JustinWeg: hello
 - 00:24: Vincent John: WOOOO!
 - 00:27: Niem Tran: hi folks! :)
 - 00:29: Mike Feil: yooo
 - 00:29: Vincent John: So excited, Eric
 - 00:38: Jocelyn: hey everyone
 - 00:53: Jocelyn: I dont think I'm on the list
 - 01:07: JeffKim Doing Showdown Now as He Listens to FrameGrabbers: Showdown is due TONIGHT so i am doing it while im listening in
 - 01:09: Mike Feil: no vid/audio eric ?
- Timeline:** A horizontal timeline at the bottom showing the progress of the video. It includes a "LOADING BUFFER" bar, a timestamp of 00:11, and a total duration of 01:58:00. Above the timeline, participant names are listed with colored markers indicating their activity: Eric (blue), davida (red), tredeger (purple), Sam P (orange), Barry Smith (green), and kenny (black).

FlashMeeting (Open University's Knowledge Media Institute)

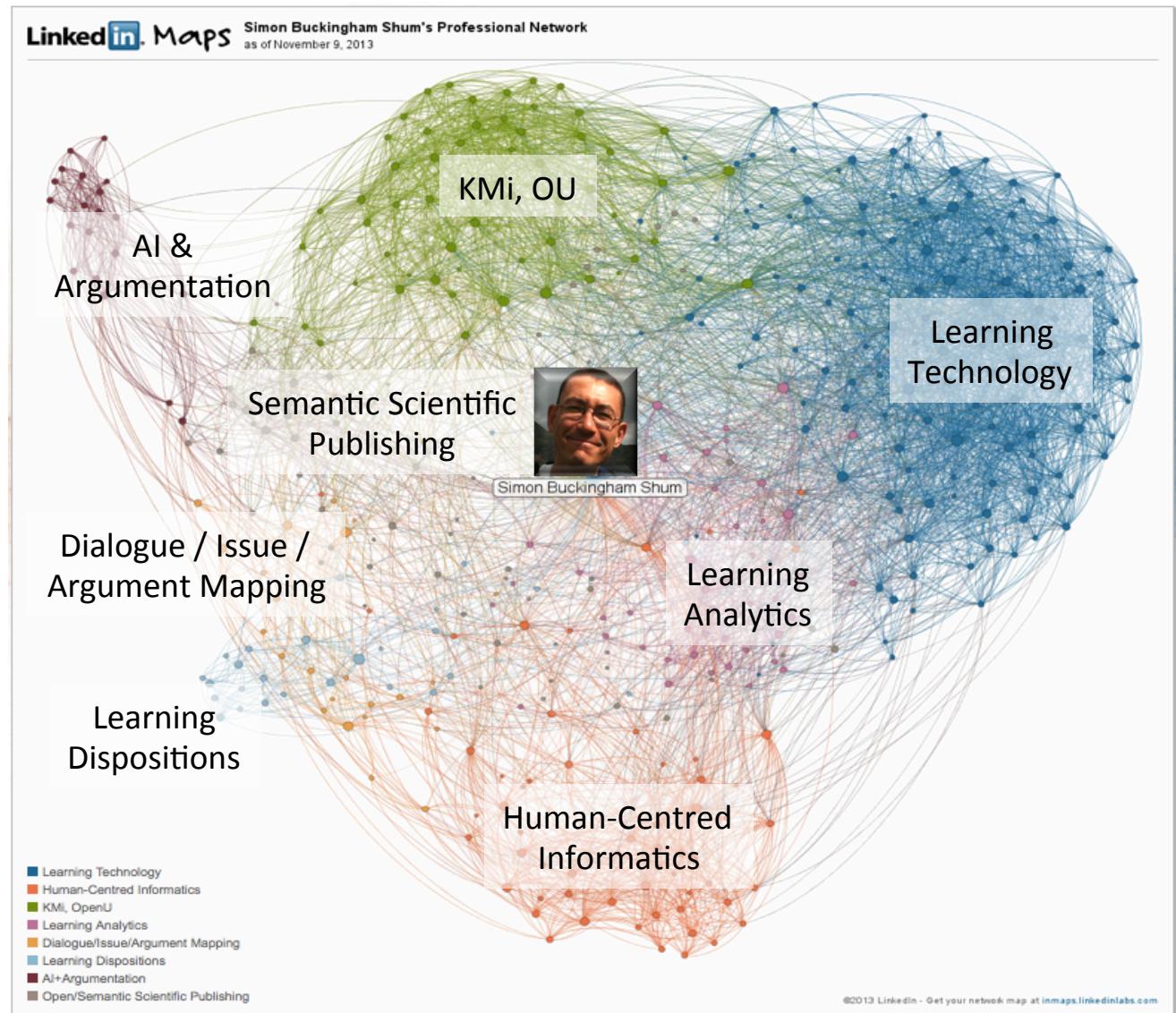
Flashmeeting video conference: spoken foreign language tutorials



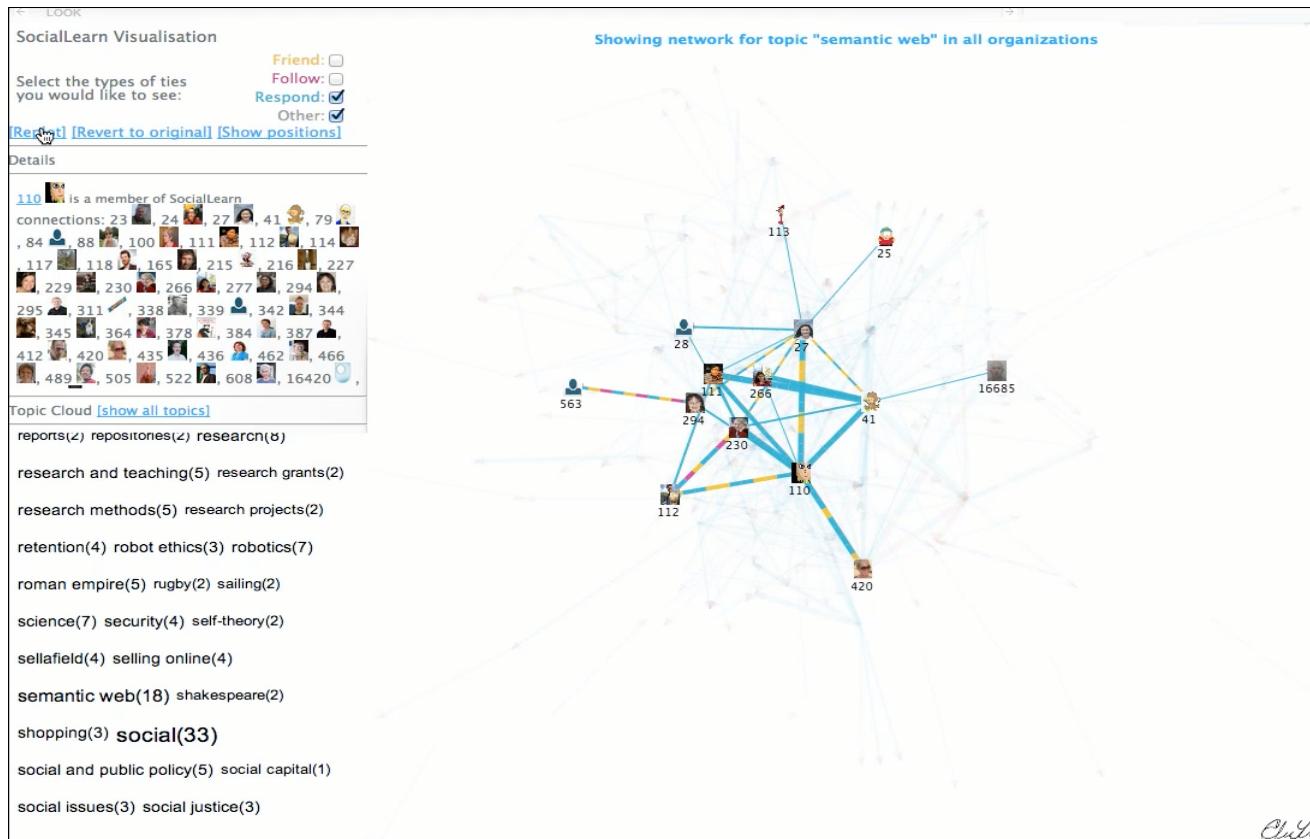
social network analytics

Social learning analytics

— quantifying
“professional
identity”

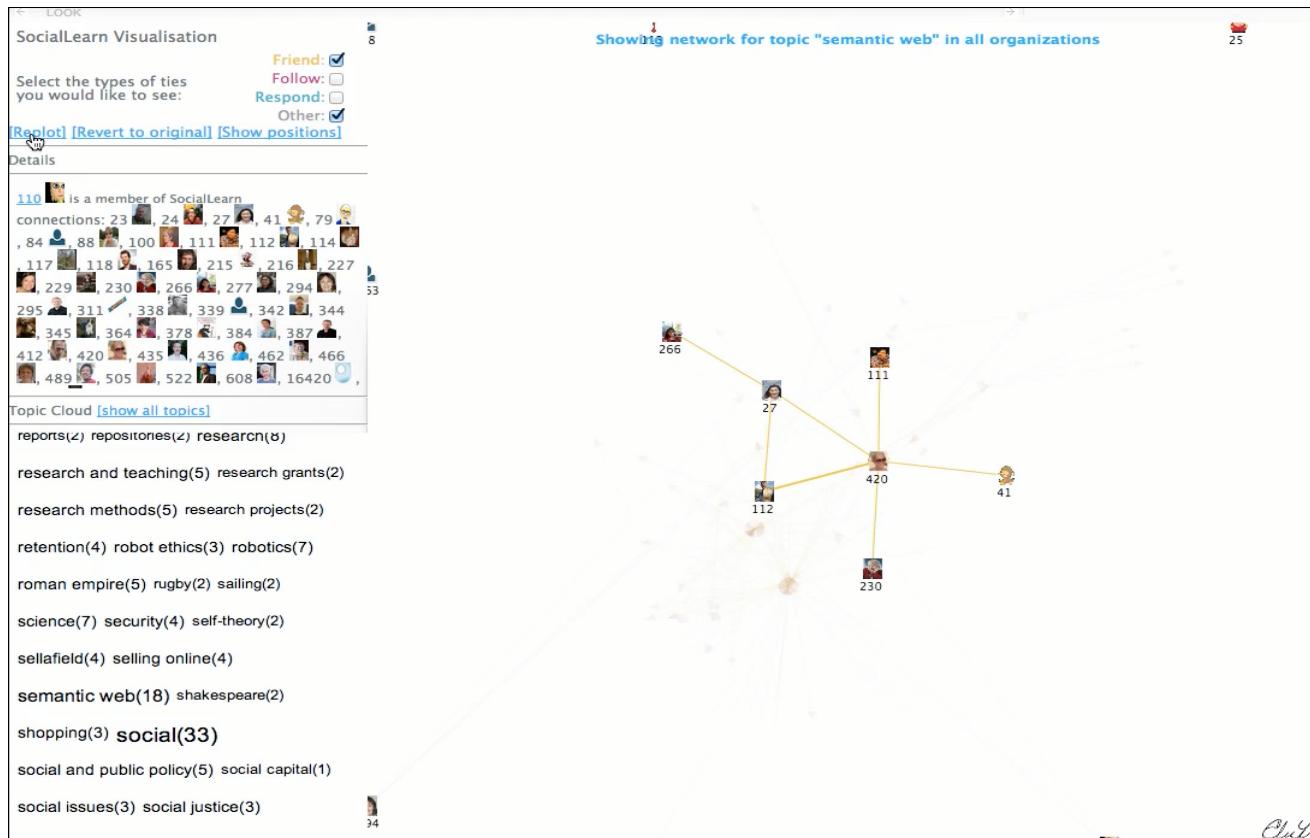


Adding topic and type of social tie to filter SN



Schreurs B, Teplovs C, Ferguson R, De Laat M and Buckingham Shum S. (2013) **Visualizing Social Learning Ties by Type and Topic: Rationale and Concept Demonstrator.** *Proc. 3rd International Conference on Learning Analytics & Knowledge.* Leuven, BE: ACM, 33-37. Open Access Eprint: <http://oro.open.ac.uk/36891>

Adding topic and type of social tie to filter SN



discourse analytics



Beyond number / size / frequency
of posts; 'hottest thread'

analytics that look beneath the
surface, and quantify linguistic
proxies for 'deeper learning'

Discourse analytics on webinar textchat

The screenshot shows a software interface for a webinar. On the left, the 'Participants' panel lists 27 attendees, including Nay, Nick Freear (Away), Nigel Pigott, Non, Olga_Semenova, Pat Grace, Paul Mundin (Away), Paul Richardson, Peter Wilson, Richenda Power, RJI, RoughBounds, russell gurbutt, S Sparrius, santy 1, Steve B 1, Steve Swithenby, syukhn, Teemum, Teresa Connolly, Thanh Le, Tim Hunt, Tina, Tony Hirst, TULLmann, vjkh, Walter Patterson, Wendy Maples, Will laptop, and Will Stewart. In the center, the 'Chat' window displays a conversation about semantic web ideas and quality assurance. On the right, the 'Whiteboard – Main Room (Scaled 94%)' shows a section titled 'Useful Links' with a bulleted list:

- The Course Wiki
<http://climatechangecourse.wetpaint.com>
- sideCAP
<http://sidecap.org/>
- The sideCAP course on OpenLearn
<http://laabspace.open.ac.uk/course/view.php?id=4449>

A green callout bubble points from the text in the whiteboard towards the central question.

Can we spot the quality learning conversations in a 2.5 hr webinar?

Ferguson, R. and Buckingham Shum, S., Learning analytics to identify exploratory dialogue within synchronous text chat. In: *1st International Conference on Learning Analytics and Knowledge* (Banff, Canada, 2011). ACM

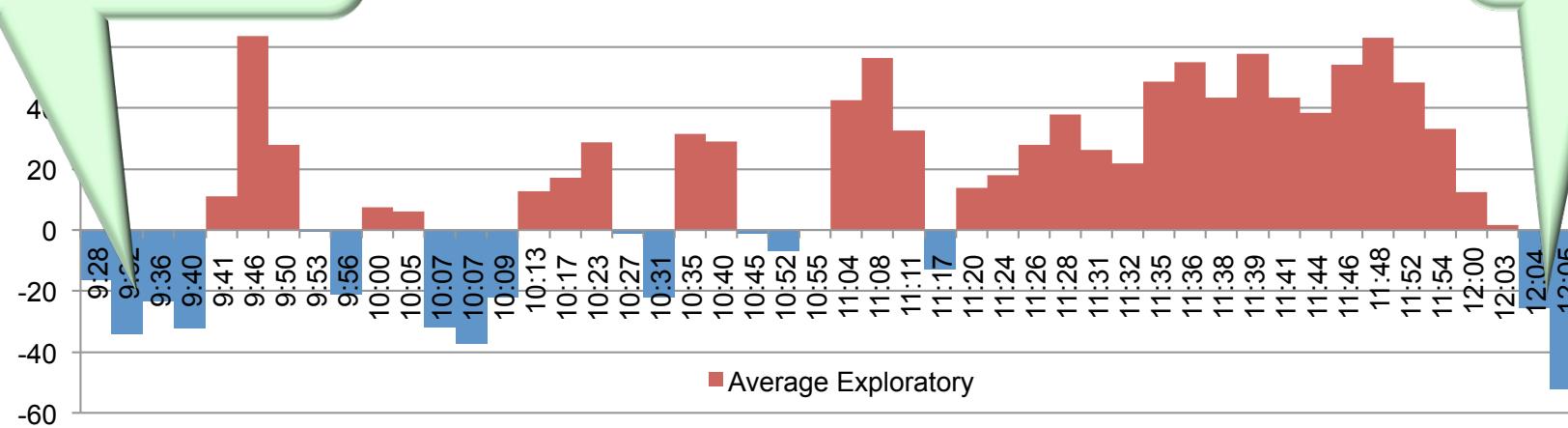
Discourse analytics on webinar textchat

Sheffield, UK not as sunny
as yesterday - still warm
Greetings from Hong Kong
Morning from Wiltshire,
sunny here!

Given a 2.5 hour webinar, where in the live textchat were the most effective learning conversations?

See you!
bye for now!
bye, and thank you
Bye all for now

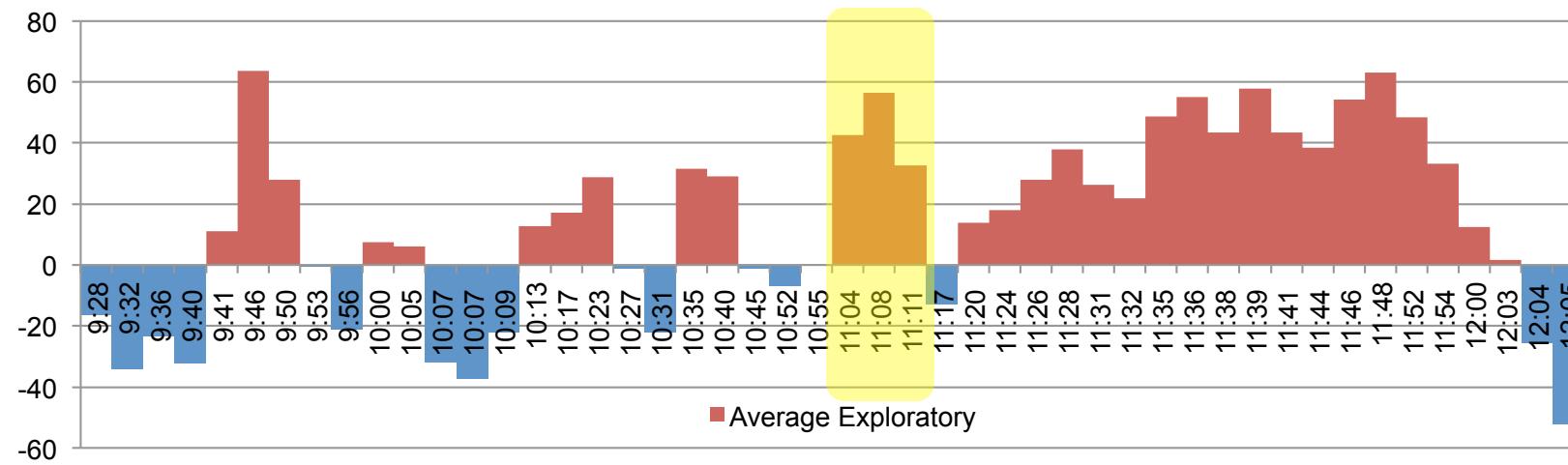
Not at the start and end of a webinar...



Discourse analytics on webinar textchat

Given a 2.5 hour webinar, where in the live textchat were the most effective learning conversations?

Not at the start and end of a webinar but if we zoom in on a peak...

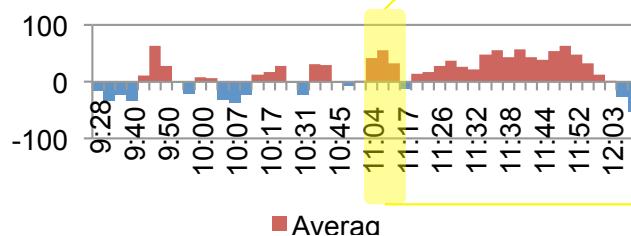


Ferguson, R., Wei, Z., He, Y. and Buckingham Shum, S., An Evaluation of Learning Analytics to Identify Exploratory Dialogue in Online Discussions. In: Proc. 3rd International Conference on Learning Analytics & Knowledge (Leuven, BE, 8-12 April, 2013). ACM. <http://oro.open.ac.uk/36664>

Discourse analytics on webinar textchat

Given a 2.5 hour webinar, where in the live textchat were the most effective learning conversations?

Not at the start and end of a webinar but if we zoom in on a peak...



right I wonder if it also changes from introspective feel of some (of our) materials to more of an open dialogue? Course teams (not necessarily OU) can become incredibly blinkered during the period of writing a course and an additional external view is valuable	x x x x
Is the authoring out loud model best suited for new, emerging fields? Introduction to Algebra might go be so ripe for this modei -- unless there was a novel dimension to it, eg. a new way of teaching it, or for s niche audience hello Helen! OK i take your point - I think there are points when it could really help. Eg. inviting ALs and students in to comment on course outlines or particularly tricky chunks of material. Yes - take your point. would you like me to speak? I'm just wondering how 'team work' works when live authoring is used? That's what I was looking for Tony - lovely, "Conversational" is the term <RT>@Tony Does the meaning of 'a course' change through the process? I.e. there is effectively a different learning process (course) in the preparation of the actual course.</RT>	x x x x
I'd also like to point out that this particular model is more agile, not just in initial development but in ongoing development. "Traditional" OU courses are written and pretty much well fixed in stone for extended periods of time.	x x x x
The link to the artist who painted the image I used on one of my slides is Steve Russell http://www.russellstudio.co.uk/russell_studio/steve_russell.html	x x x x

Ferguson, R., Wei, Z., He, Y. and Buckingham Shum, S., An Evaluation of Learning Analytics to Identify Exploratory Dialogue in Online Discussions. In: Proc. 3rd International Conference on Learning Analytics & Knowledge (Leuven, BE, 8-12 April, 2013). ACM. <http://oro.open.ac.uk/36664>

writing analytics

Visualizations of writing cohesion

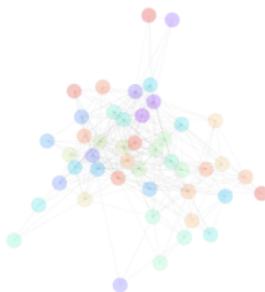


Figure 5. OU essay awarded low grade

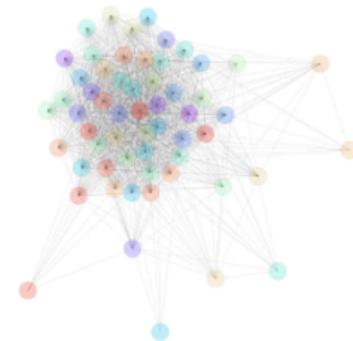


Figure 4. OU essay awarded high grade



Figure 6. Stanford University Boothe Prize essay

Whitelock, D., D. Field, J. T. E. Richardson, N. V. Labeke and S. Pulman (2014). Designing and Testing Visual Representations of Draft Essays for Higher Education Students. *2nd International Workshop on Discourse-Centric Learning Analytics*, Fourth International Conference on Learning Analytics and Knowledge, Indianapolis, Indiana, USA. https://dcla14.files.wordpress.com/2014/03/dcla14_whitelock_etal.pdf

Rhetorical functions of metadiscourse

identified by the Xerox Incremental Parser (XIP)



Xerox Research Centre Europe

BACKGROUND KNOWLEDGE

Recent studies indicate ...
... the previously proposed ...
... is universally accepted ...

SUMMARIZING

The goal of this study ...
Here, we show ...
Altogether, our results ... indicate

GENERALIZING

... emerging as a promising approach
Our understanding ... has grown exponentially ...
... growing recognition of the importance ... The recent discovery ... suggests intriguing roles

NOVELTY

... new insights provide direct evidence ...
... we suggest a new ... approach ...
... results define a novel role ...

SIGNIFICANCE

studies ... have provided important advances
Knowledge ... is crucial for ... understanding valuable information ... from studies

SURPRISE

We have recently observed ... surprisingly
We have identified ... unusual

OPEN QUESTION

... little is known ...
... role ... has been elusive
Current data is insufficient ...

CONTRASTING IDEAS

... unorthodox view resolves ... paradoxes ...
In contrast with previous hypotheses ...
... inconsistent with past findings ...

AWA: Academic Writing Analytics tool

Summary Full Text Tag Clouds

Highlighted sentences are colour-coded according to their broad type

Understanding students' learning dispositions has been a focus for research in education for many years. A range of alternative approaches to conceptualising and measuring this broad construct have been developed. Traditional psychometric measures aim to produce scales that satisfy the requirements for research; however, such measures have an additional use – to provide formative feedback to the learner. In this article we reanalyse 15 years of data derived from the Effective Lifelong Learning Inventory. We explore patterns and relationships within its practical measures and generate a more robust, parsimonious measurement model, strengthening its research attributes and its practical value. We show how the constructs included in the model link to relevant research and how it serves to integrate a number of ideas that have hitherto been treated as separate. The new model suggests a view of learning that is an embodied and relational process through which we regulate the flow of energy and information over time in order to achieve a particular purpose. Learning dispositions reflect the ways in which we develop resilient agency in learning by regulating this flow of energy and information in order to engage with challenge, risk and uncertainty and to adapt and change positively.

Sentences with Function Keys have more precise functions (e.g. Novelty)

Summary
Important
Imp Sum
Attitude
Background
Contrast
Emphasis
Novelty
Question
Surprise
Trend

AWA: Academic Writing Analytics tool

internal structure of learning power to support the development and assessment of research skills and for an integrated **approach** to research.

C This experience had also highlighted the need to explore and hopefully resolved through the use of the ELLI tool.

CT An early unpublished **study** in prisons **gave** cause for **concern** about the **concept** of resilience as **represented** in the original ELLI structure (Deakin Crick and Salway, 2006) with an **emerging hypothesis** that to become resilient a person **needed** to utilise all the learning power dimensions over time.

CONTRAST: Disagreement, tension, options, inconsistency

TREND: A trend, growth, pattern or tendency

which data collection and the ethical needs of the researcher and the stakeholder value.

existing framework which could be used to analyse the data.

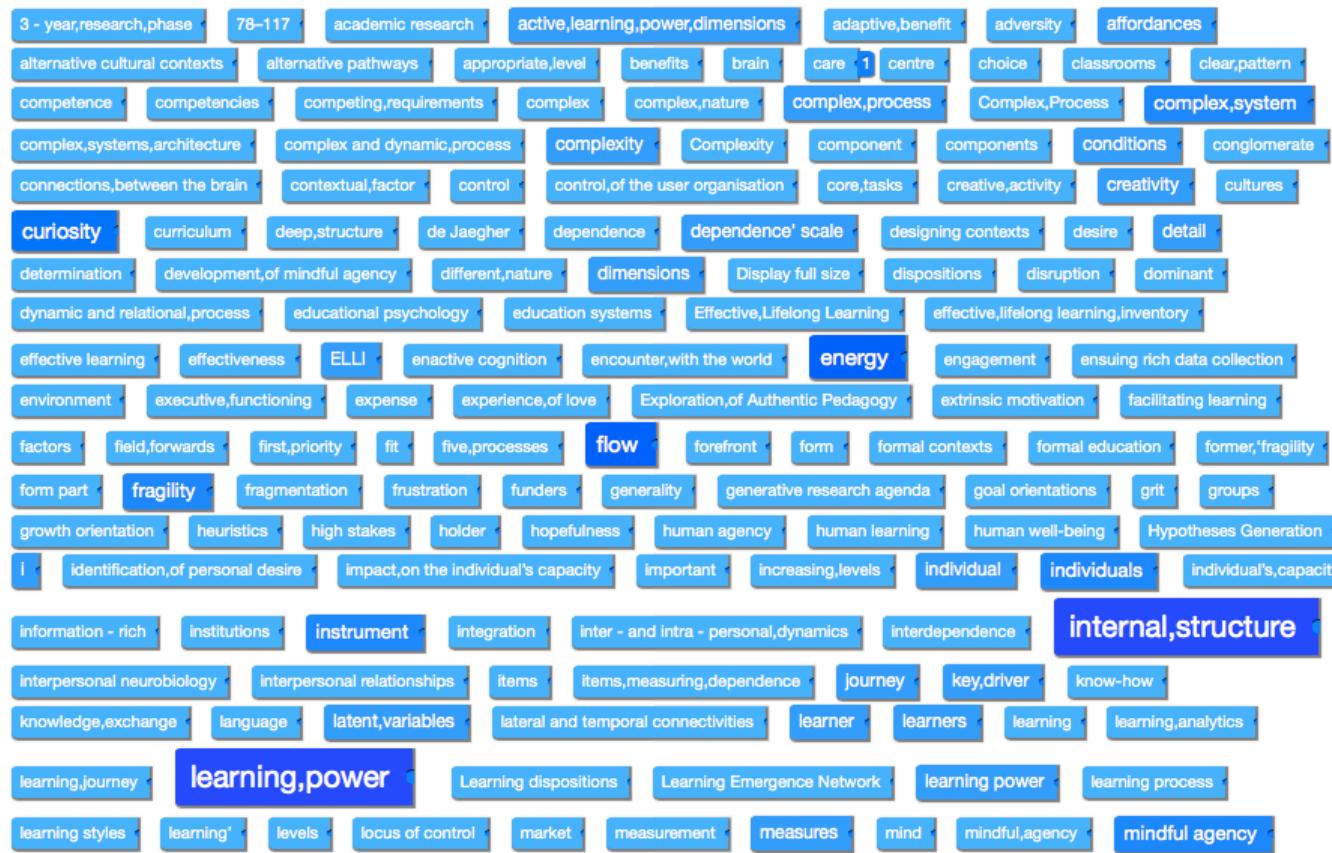
Roll over sentences with Fkeys for a popup reminding you of their meaning

AWA: Academic Writing Analytics tool

Summary Full Text Tag Clouds

Concepts

Here are the most dominant concepts you mention — do these look right?

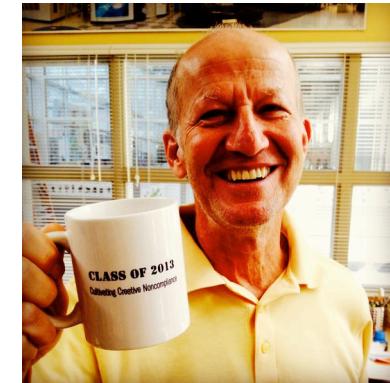


dispositional analytics

making dispositions visible, quantifiable, and improvable

Knowledge, Skills & Dispositions

“It’s more than knowledge and skills. For the innovation economy, **dispositions** come into play:
readiness to collaborate;
attention to multiple perspectives;
initiative;
persistence;
curiosity.”



Larry Rosenstock
High Tech High
San Diego
hightechhigh.org

LearningREimagined project: <http://learning-reimagined.com>

Larry Rosenstock: <http://audioboo.fm/boos/1669375-50-seconds-of-larry-rosenstock-ceo-of-hightechhigh-on-how-he-would-re-imagine-learning>

Measuring learning to learn

“It’s vital to know that … **focusing on learning is not smoke and mirrors.** It’s not just some clever idea among the intelligentsia. It’s really important.

And it’s **really, really** important that we can measure it, demonstrate it, and develop a language for it.”



Mark Moorhouse
Matthew Moss High School,
Rochdale, UK

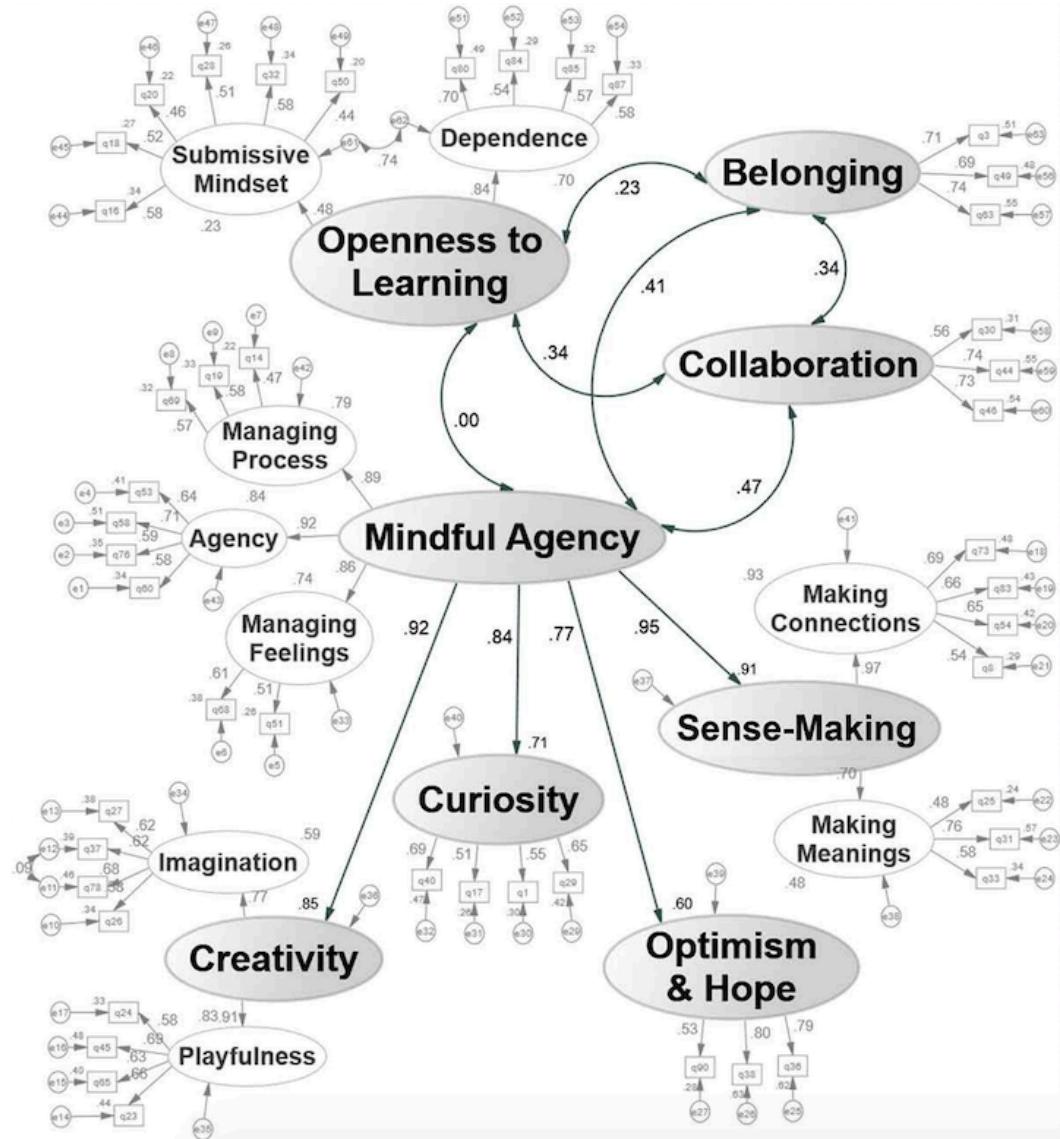
Evidencing learning dispositions: CLARA survey

(Ruth Deakin Crick, UTS)

	No, not at all like me	A little bit like me	Quite a lot like me	Yes, very much like me
I make connections between what I am learning and what I have learned before.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy trying out new ways of learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know I can find a way of solving a problem if I have enough time to think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes good ideas just come into my head.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remembering what I already know often helps me to learn something new.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a sense of myself getting better at learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I find something really hard to learn, I usually think it's because I'm not very clever.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Structural Equation Model underpinning CLARA

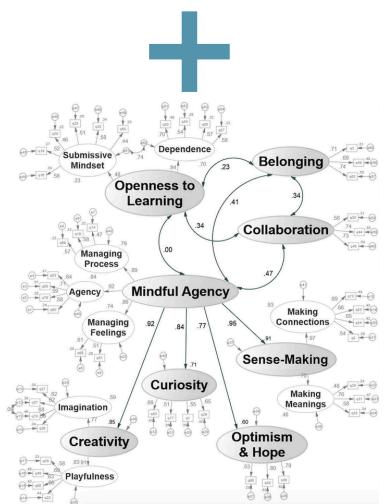
Deakin Crick, R., S. Huang, A. Ahmed Shafi and C. Goldspink (2015). **Developing Resilient Agency in Learning: The Internal Structure of Learning Power.** *British Journal of Educational Studies*: Published online: 24 Mar 2015. <http://dx.doi.org/10.1080/00071005.2015.1006574>



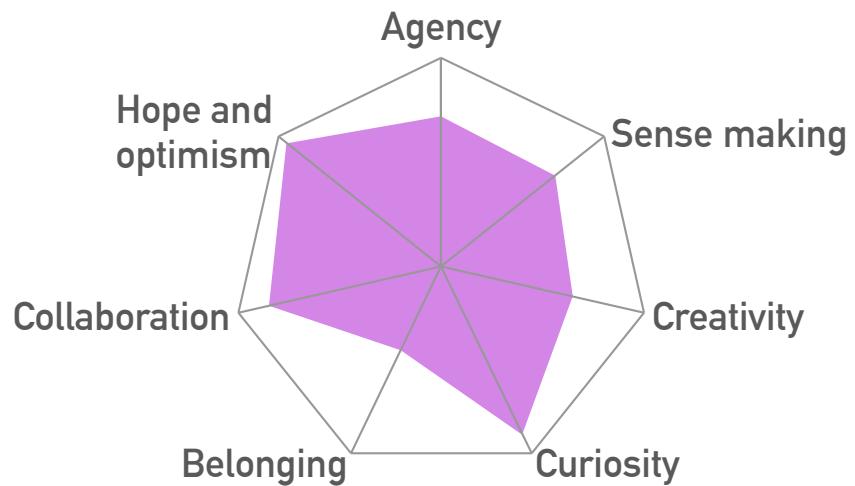
Immediate visual analytic generated by CLARA

(Individual and cohort profiles + detailed reports + spreadsheets enabling further analysis)

	No not at all like me	A little bit like me	Quite a lot like me	Yes very much like me
1. Talking things through with my colleagues helps me to learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I enjoy discussing difficult problems with my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I often look back and think about what I have learned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I always approach learning in the same way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. There is at least one person in my community/social network who is an important guide for me in my	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

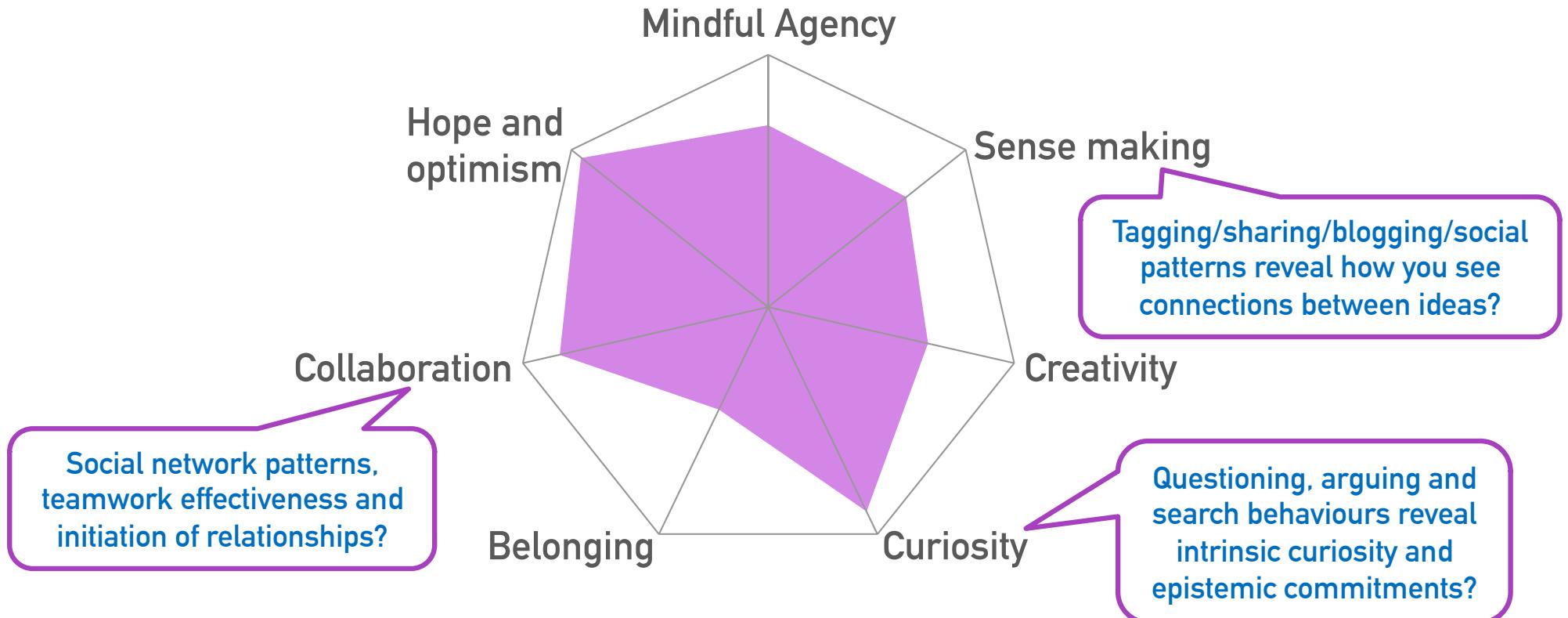


Rapid Visual Feedback to Stimulate Self-Directed Change

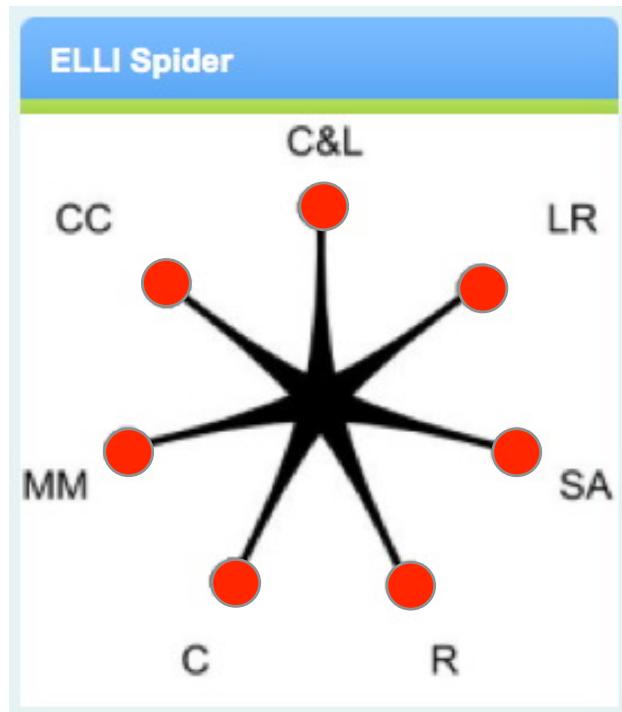


A framework for a coaching conversation

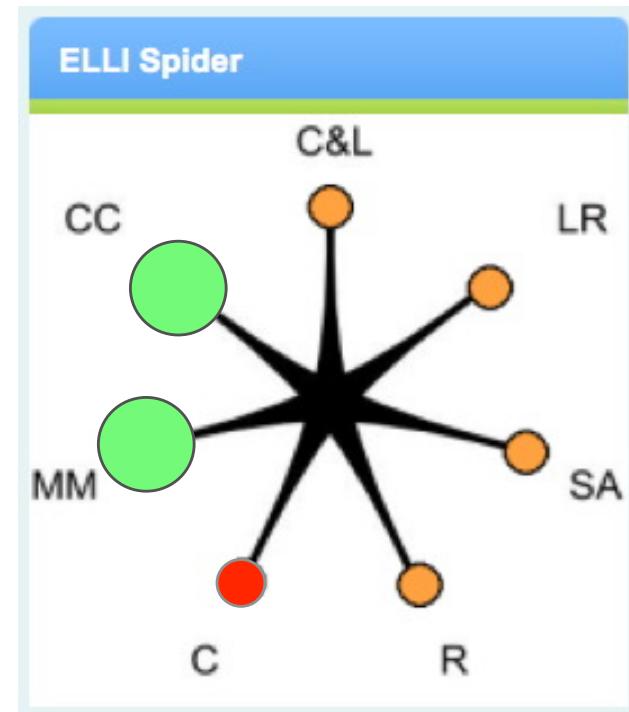
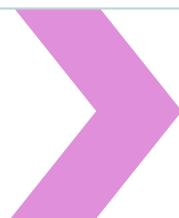
Behavioural analytics for learning dispositions?



From blog feeds (to xAPI?)

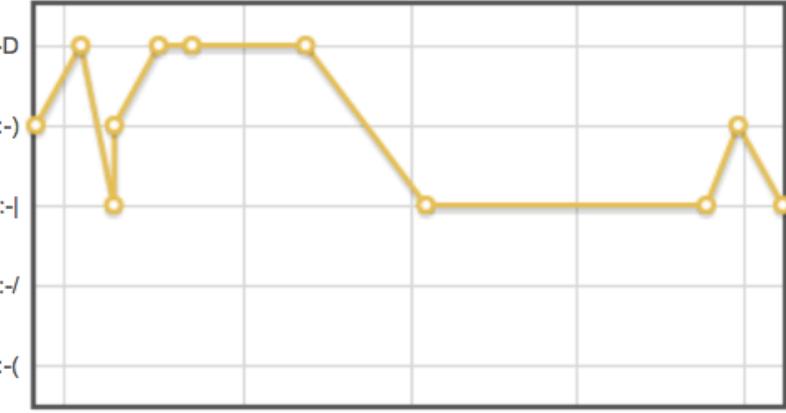


- Changing & Learning
- Creativity
- Critical Curiosity
- Learning Relationships
- Meaning Making
- Resilience
- Strategic Awareness



Mood View widget

Mood View



The chart displays mood scores over time. The y-axis ranges from ':-(It's a disaster' at the bottom to ':D Smooth sailing' at the top. The x-axis shows dates: May 16, Jun 1, Jun 16, and Jul 1. The mood score starts at ':D', drops to ':-' on May 16, rises to ':D' on May 21, falls to ':-' on June 1, rises to ':D' on June 6, stays at ':D' through June 16, falls to ':-' on June 21, stays at ':-' through July 1, and rises to ':D' on July 16.

My mood is :-(Feeling challenged

I feel my enquiry is...

- :D Smooth sailing
- :D Going great
- :D Smooth sailing**
- :-| Feeling challenged
- :-/ I'm stuck
- :-(| It's a disaster

Jul 12 2011

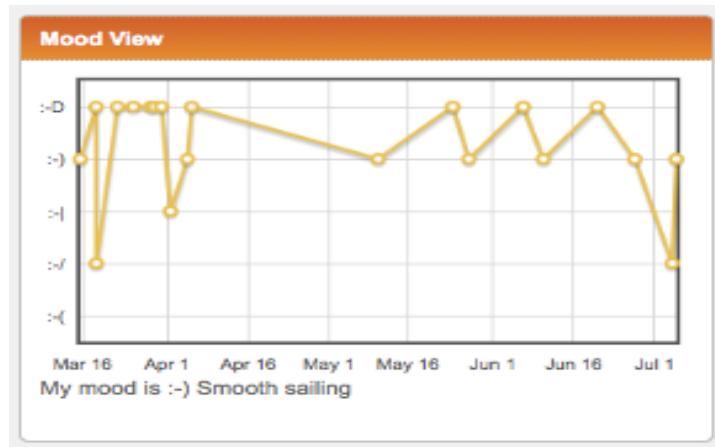
I'm changing my mood to :-(Feeling challenged

Uncategorized

No Responses »

we've only got until thursday till we record ourselves, reviewing what we've learnt (by talking only!). On friday we play our recorded piece of work to the class and they will tell us what was interesting and what we could improve and work on... Confused but Confident????

Dashboard view



Apr 01 2011 I'm changing my mood to :-| Feeling challenged

6. Connecting, Critical Curiosity

1 Response »

really feeling challanged dont know where to start from (like what to do now?)

Posted by [redacted] at 9:02 am

Mar 30 2011 I'm changing my mood to :-D Going great

Changing & Learning, Critical Curiosity

5 Responses »

finally finished all of my work... viva tommorow so nervous 😊

Posted by [redacted] at 4:37 pm

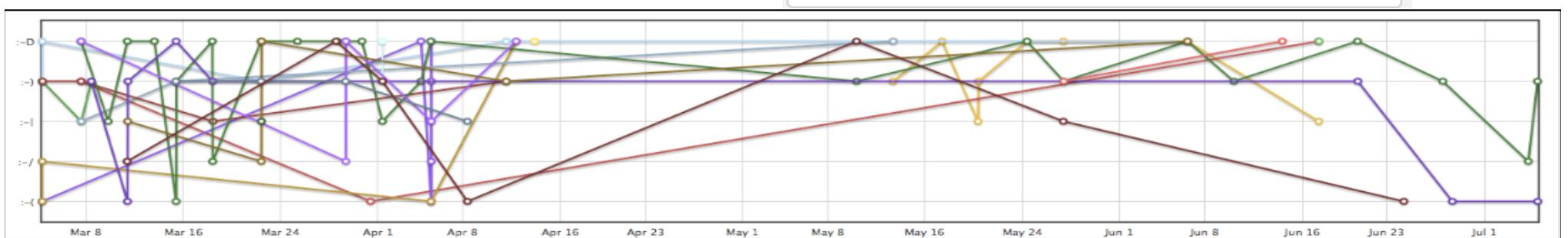
Mar 30 2011 my learning

Critical Curiosity

1 Response »

i have done all of my learning so i am happy but i hope it is enough for my viva on thursday soo nervous 😊 i am using my critical curiosity to think positive. 😊

Posted by [redacted] at 4:31 pm



Teacher's dashboard for EnquiryBlogger

The image shows a teacher's dashboard interface for EnquiryBlogger. On the left, there is a large grid of small thumbnail images, likely representing student work or progress. A portion of this grid is highlighted with an orange border and a dashed orange line extends from it towards the main dashboard area. The main dashboard is titled "Dashboard" and contains two sections: "Enquiry Spiral Dashboard" and "Enquiry Spider Dashboard".

Enquiry Spiral Dashboard: This section displays a 4x3 grid of images. Each image shows a nautilus shell with colored dots (red, green, blue) placed on its spiral arms. The dots are positioned at various points along the spiral, indicating specific data points or stages of an experiment.

Enquiry Spider Dashboard: This section displays a 4x3 grid of spider web diagrams. Each diagram has a central black star with eight radiating lines. The lines are labeled with abbreviations: CC, C&L, LR, SA, MM, C, R, and S. Colored dots (red, green, blue) are placed on these lines, corresponding to the data points shown in the spiral images. The arrangement of dots on the spider webs suggests a more complex multi-dimensional data visualization compared to the spiral images.

a learning design
patterns tool?

CompendiumLD: for OU Learning Design

