



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**

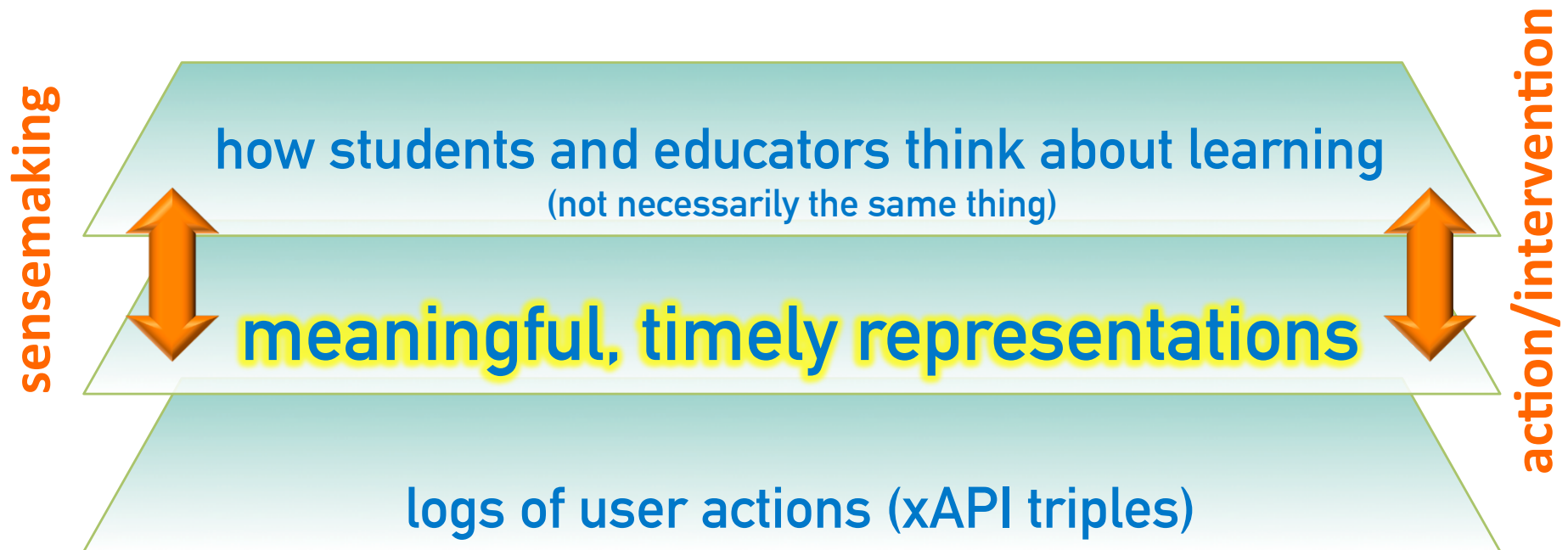
Bridging the data—meaning gulf

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

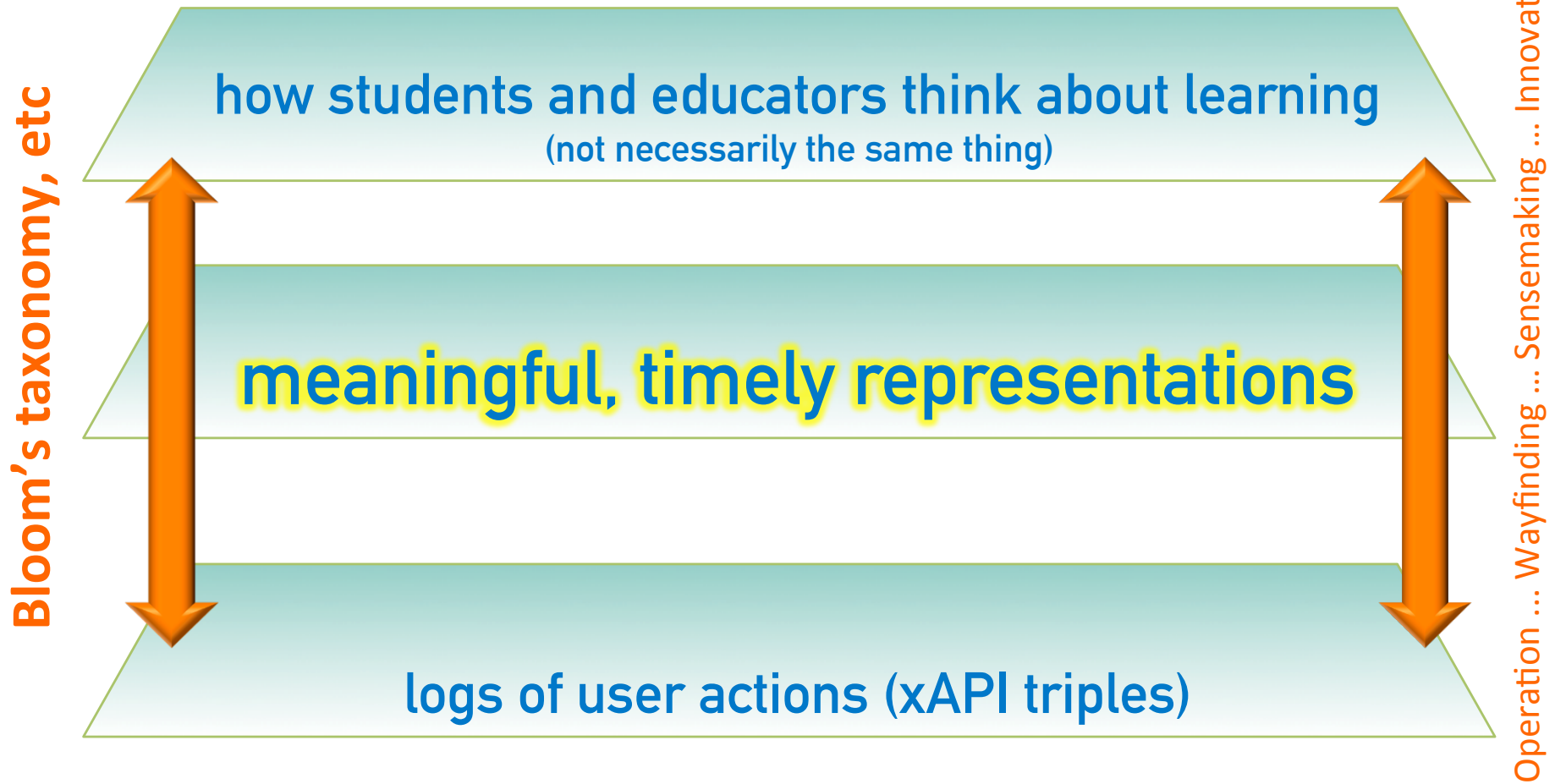
meaningful, timely representations

logs of user actions (xAPI triples)

Bridging the data—meaning gulf



Bridging the data—meaning gulf



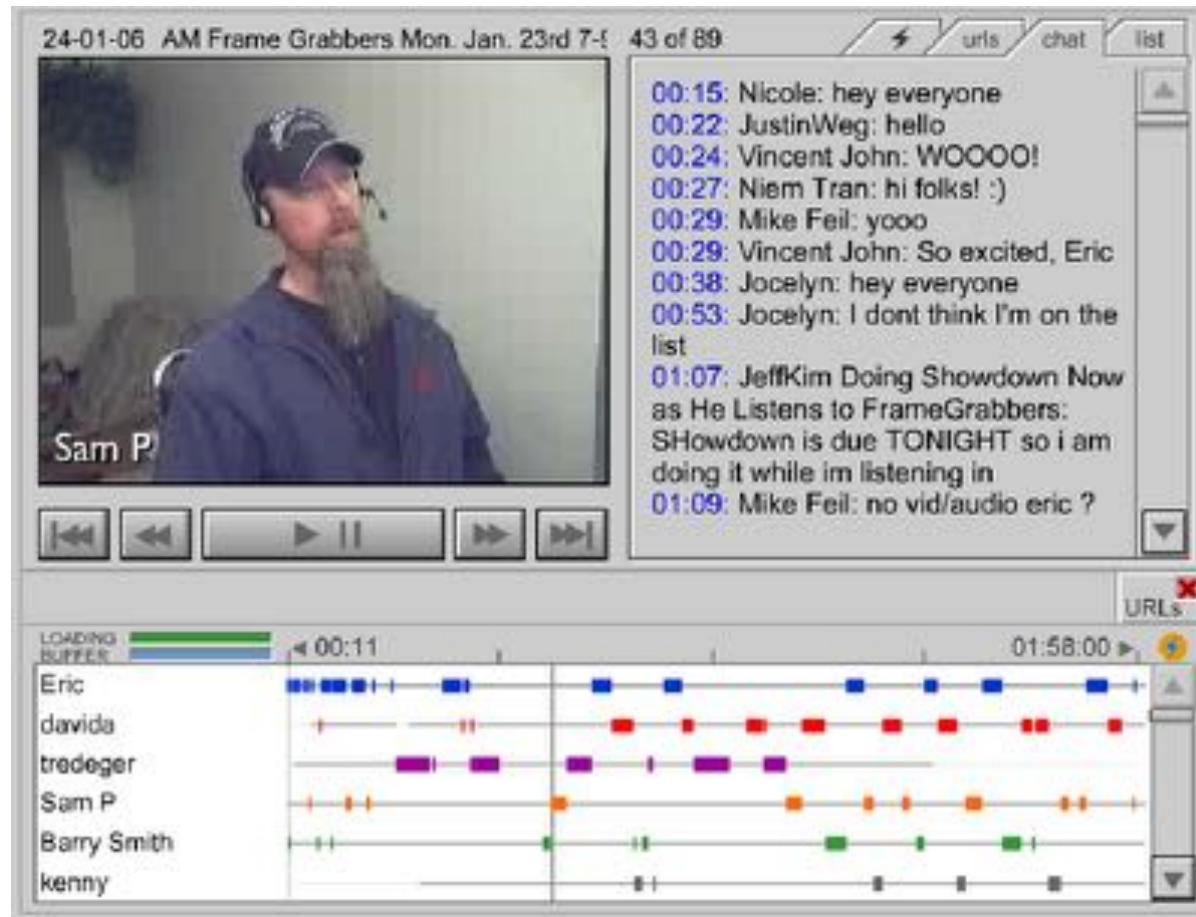
All of the following are possible in
closed learning platforms

‘Technically straightforward’
to apply to an xAPI LRS?

But which are of most interest?

textchat + videoconf
replay + analytics

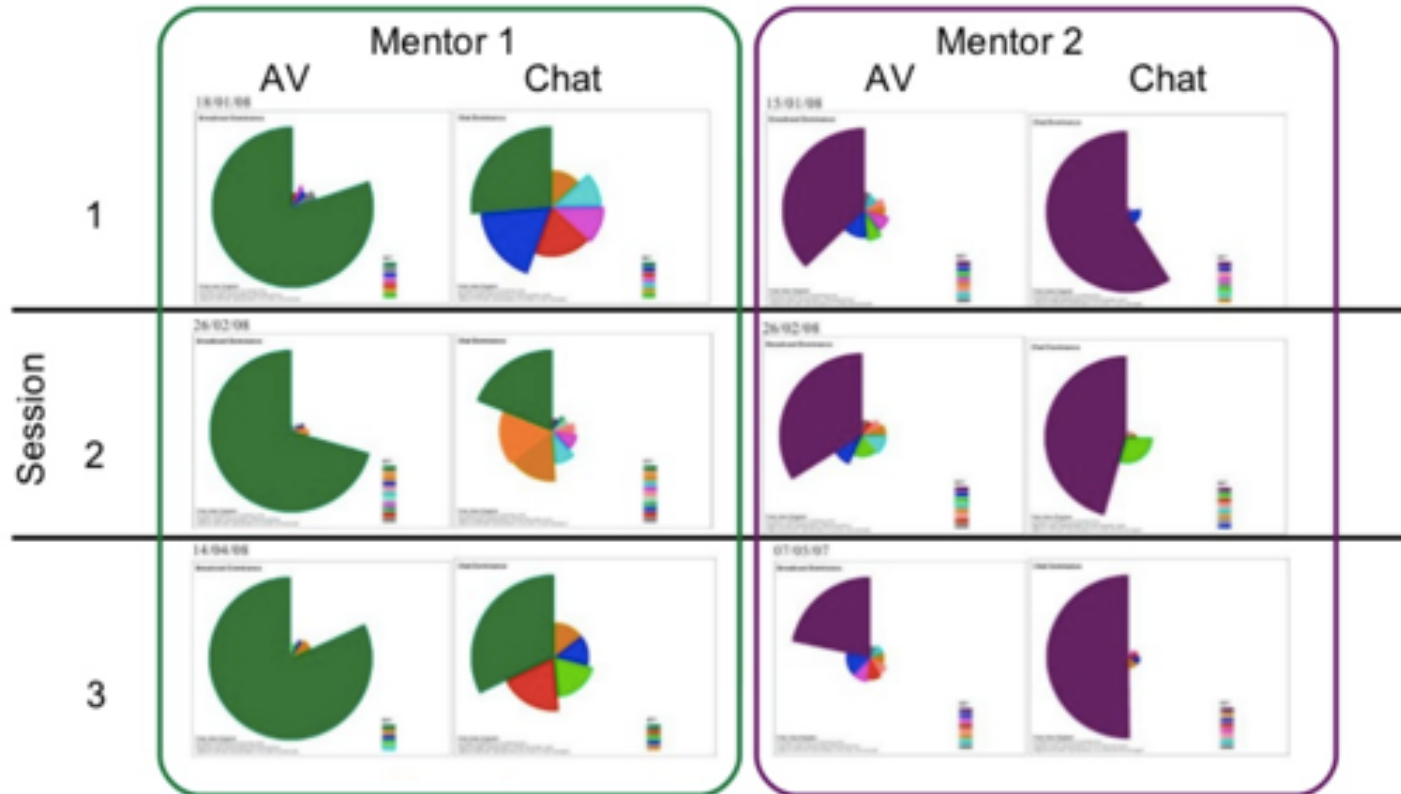
FlashMeeting (Open University's Knowledge Media Institute)



<http://flashmeeting.open.ac.uk>

FlashMeeting (Open University's Knowledge Media Institute)

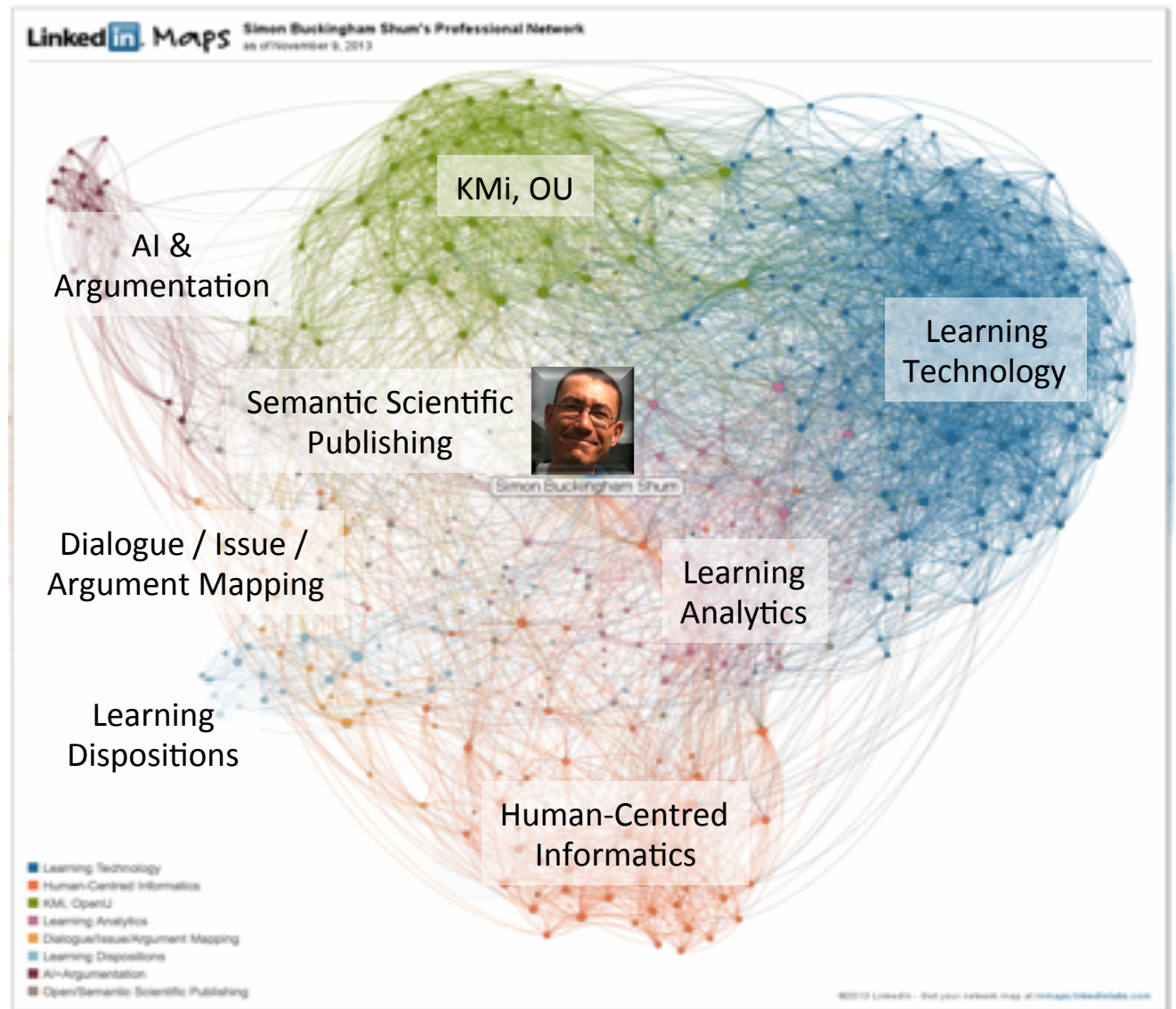
Flashmeeting video conference: spoken foreign language tutorials



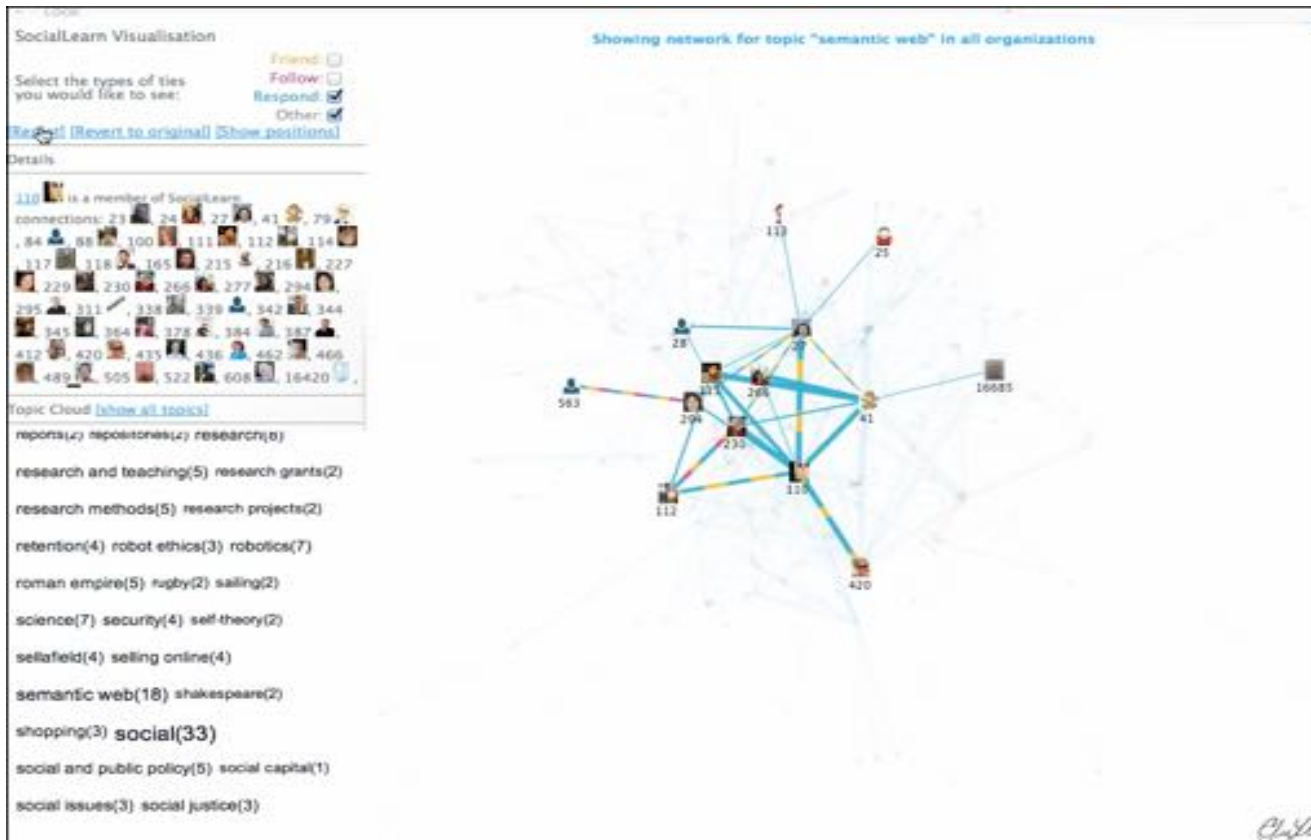
**social network
analytics**

Social learning analytics

— quantifying “professional identity”

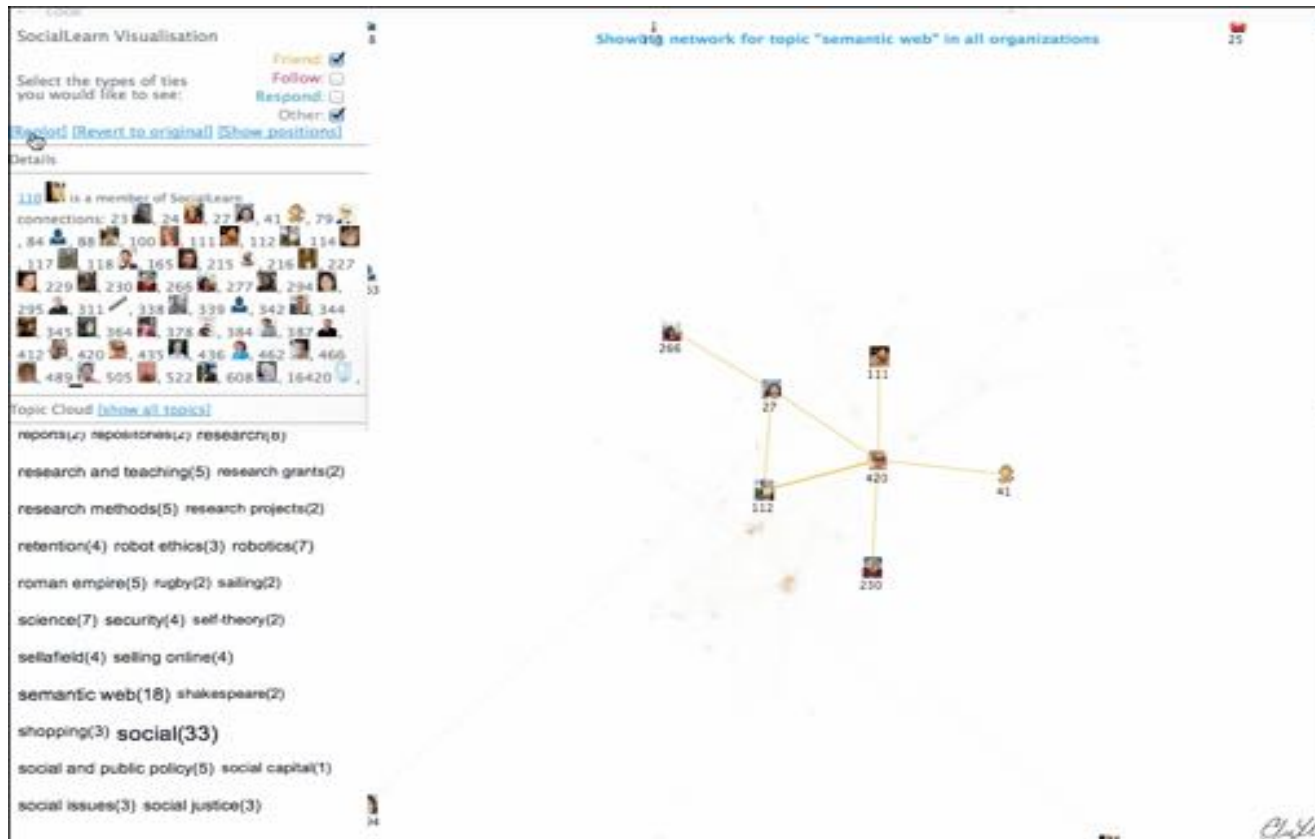


Adding topic and type of social tie to filter SN




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>

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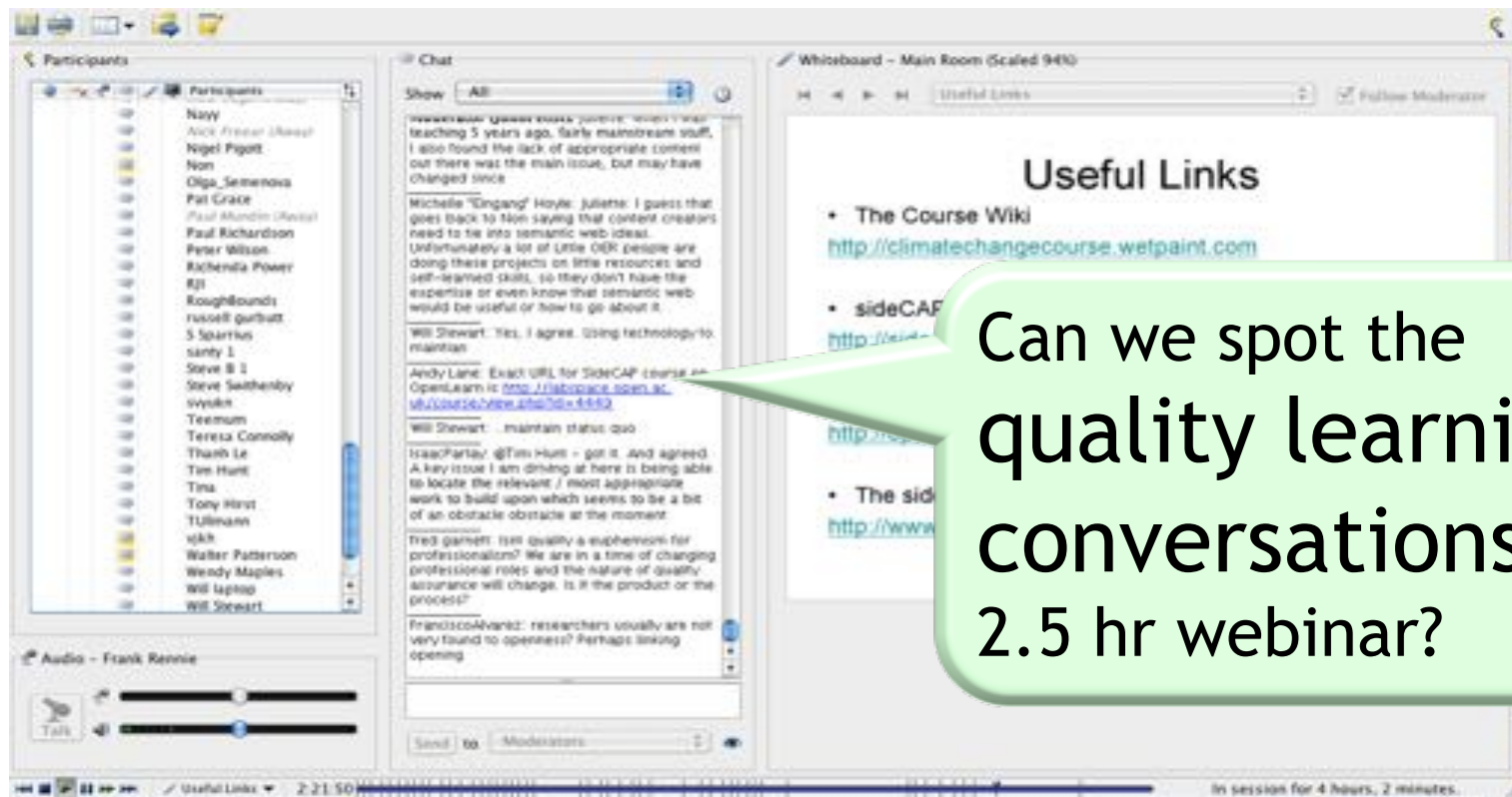
discourse analytics

A photograph of an iceberg in the ocean. The tip of the iceberg is visible above the water surface, while the much larger, submerged part is visible below. The sky is blue with some clouds, and the water is a deep blue. The text is overlaid on the right side of the image.

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

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

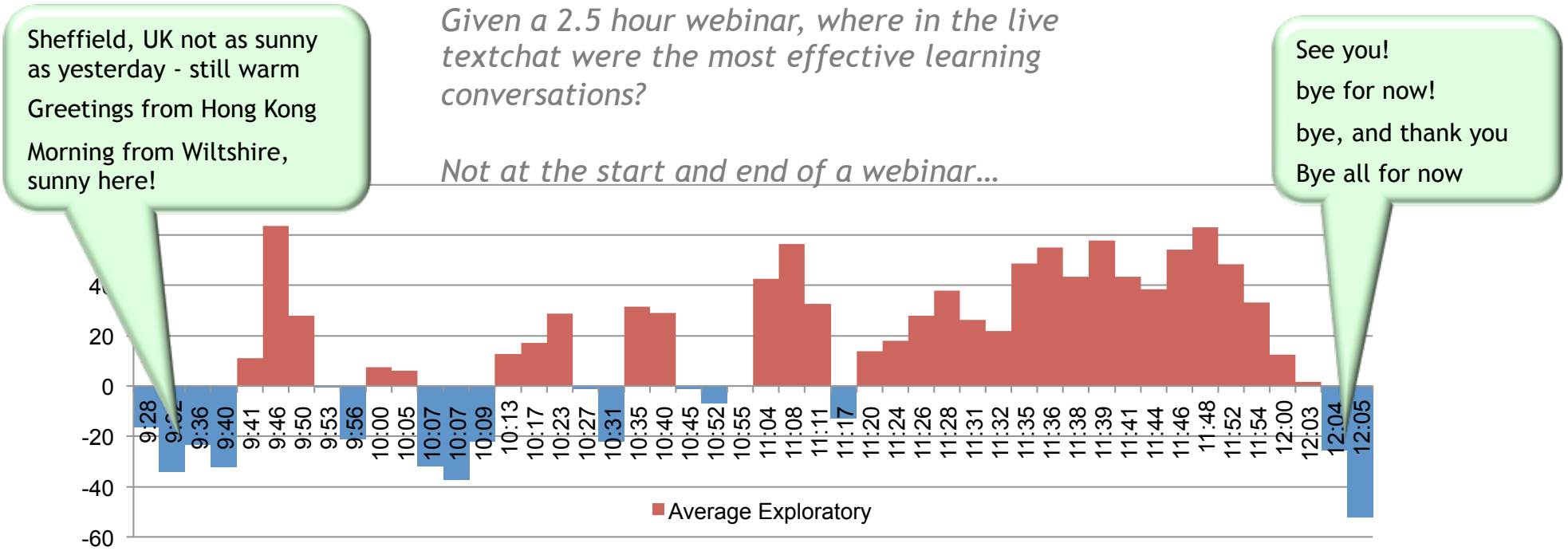
Discourse analytics on webinar textchat



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

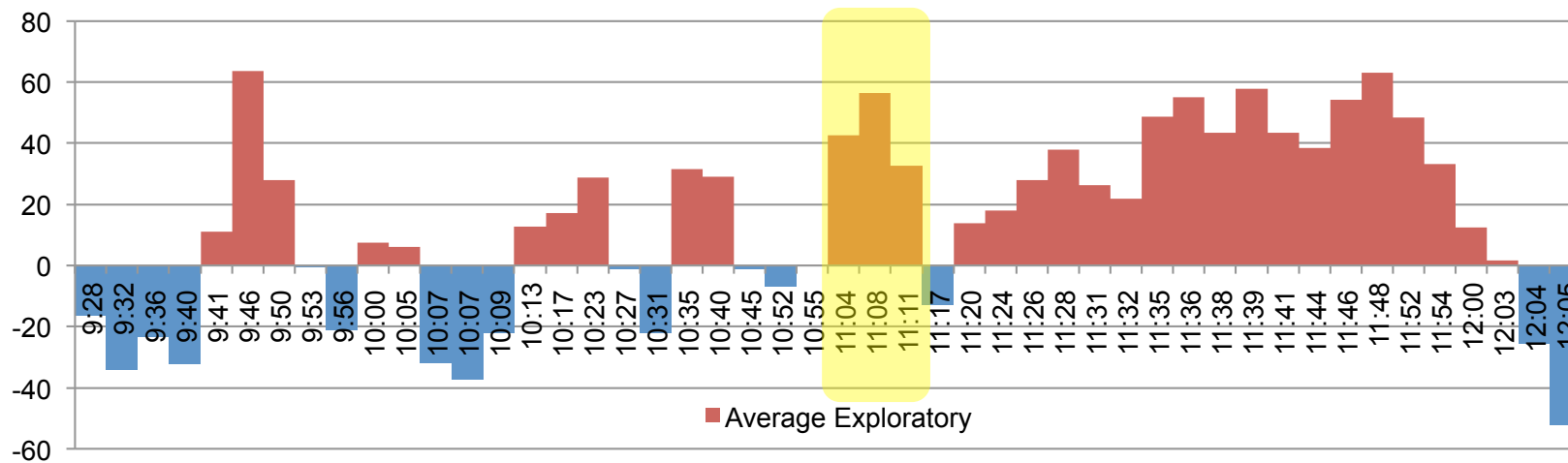


Ferguson, R., Wei, Z., He, Y. and Buckingham Shum, S., An Evaluation of Learning Analytics to Identify Exploratory Dialogue in Online Discussions. In: *Proc. 3rd International Conference on Learning Analytics & Knowledge* (Leuven, BE, 8-12 April, 2013). ACM. <http://oro.open.ac.uk/36664>

Discourse analytics on webinar textchat

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

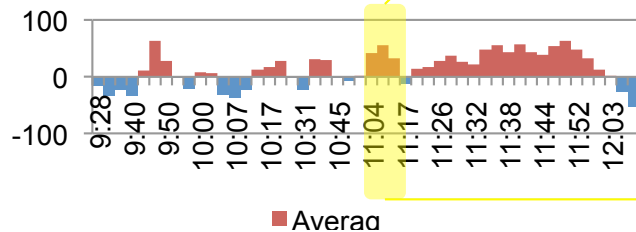
Not at the start and end of a webinar but if we zoom in on a peak...



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	
Is the authoring out loud model best suited for new, emerging fields? Introduction to Algebra might go be so ripe for this model -- 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.	Classified as "exploratory talk"
would you like me to speak?	
I'm just wondering: how 'team work' works when live authoring is used?	(more substantive for learning)
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>	
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.	
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	"non-exploratory"

writing analytics

Visualizations of writing cohesion

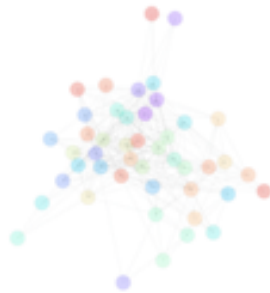


Figure 5. OU essay awarded low grade



Figure 4. OU essay awarded high grade

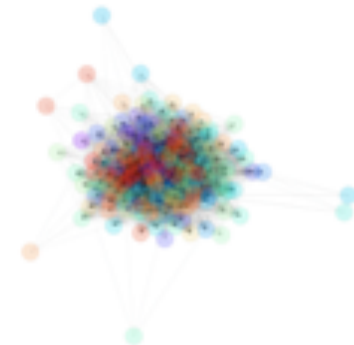


Figure 6. Stanford University Boothe Prize essay

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 ...

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

The recent discovery ... suggests intriguing roles

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 through the extensive articulation of data collection and the ethical need for an integrated **approach** to research.

CThis experience had also **highlighted** an **existing framework** which could be explored and hopefully resolved through the use of the tool.

CTAn 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

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

AWA: Academic Writing Analytics tool

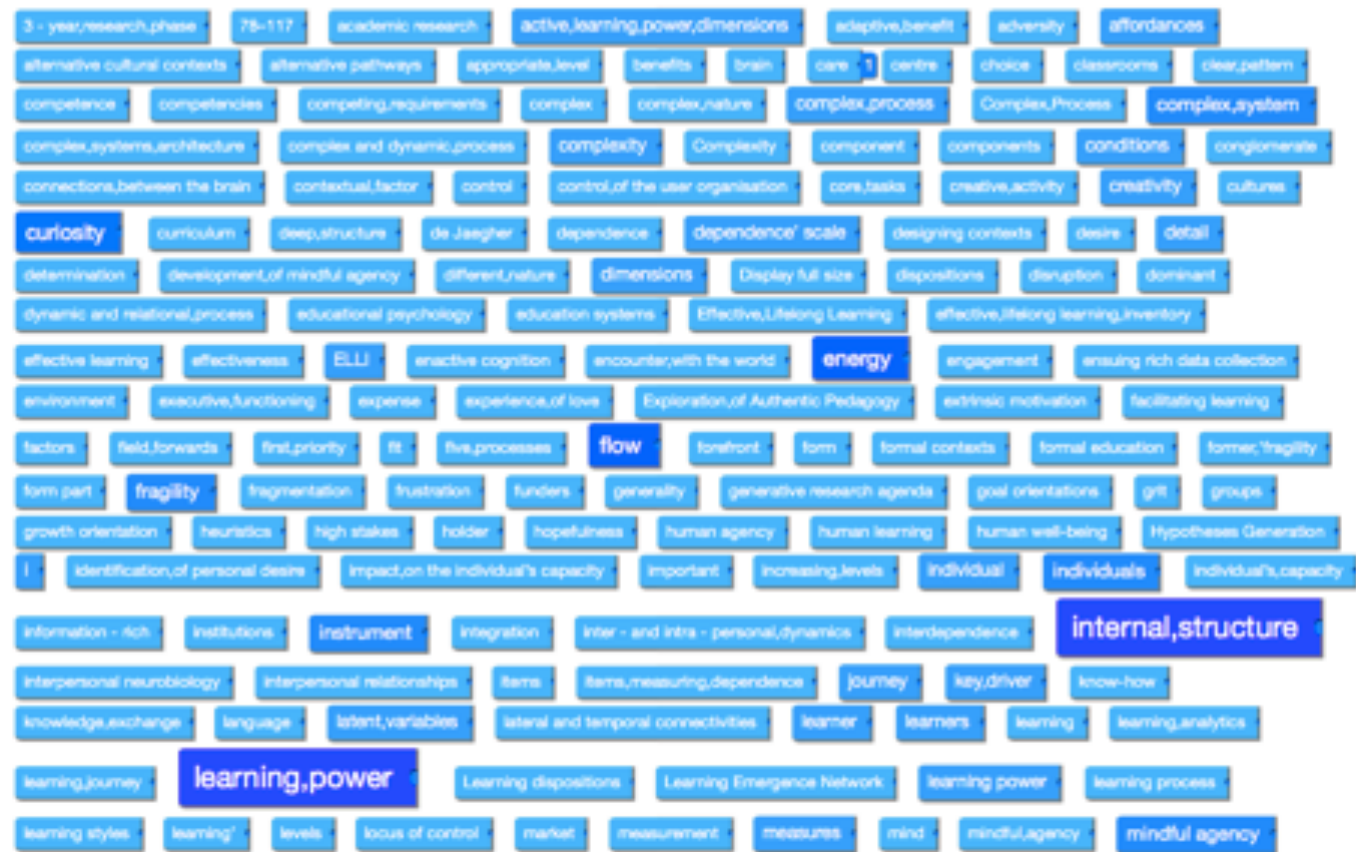
Summary

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

<http://youtu.be/kayzkma1TIM>

MMHS website: <http://www.mmhs.co.uk/learning>

— Learning Futures channel: <http://bit.ly/lfmovies>

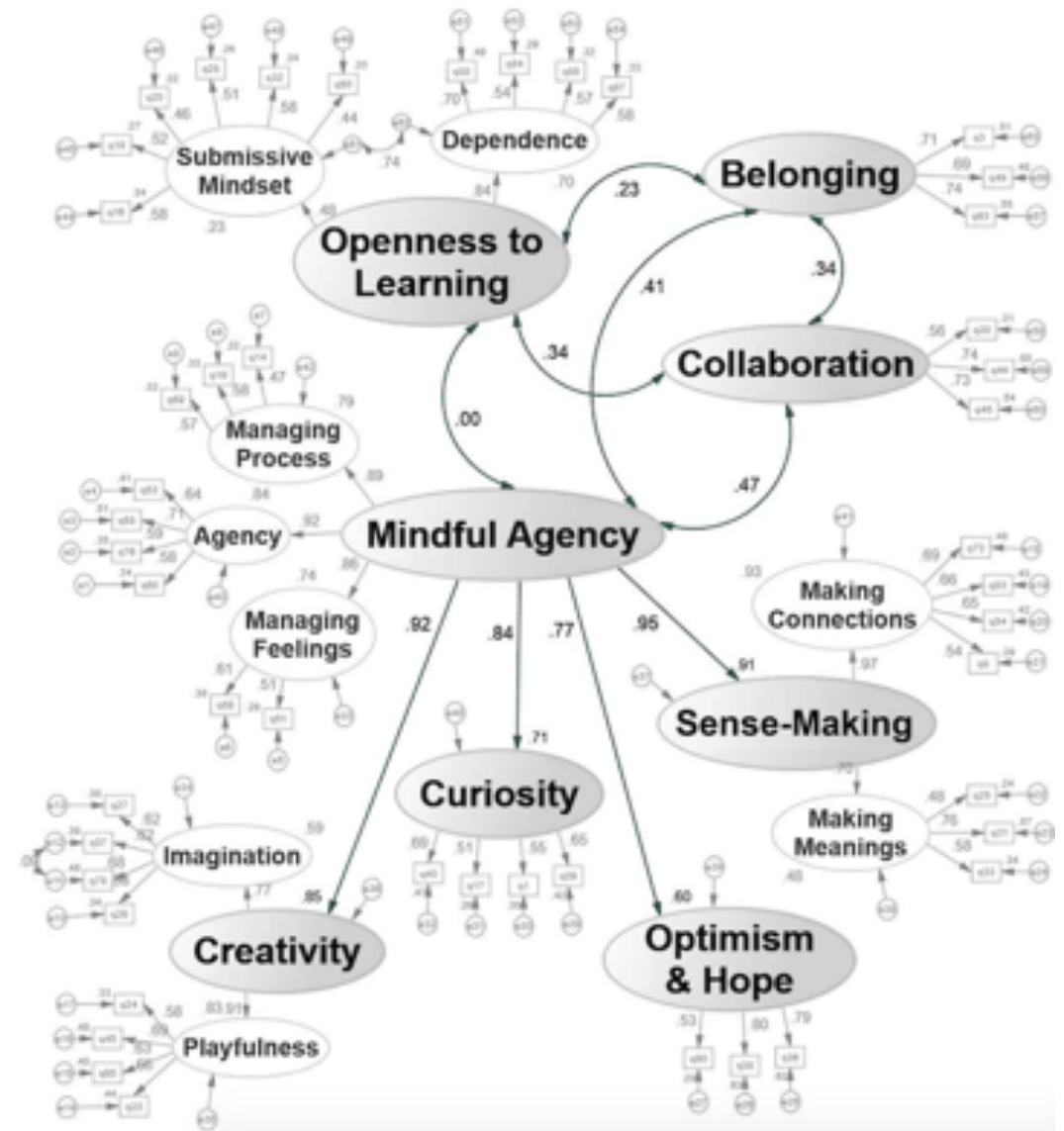
Evidencing learning dispositions: CLARA survey

(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"/>

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>

Structural Equation Model underpinning CLARA

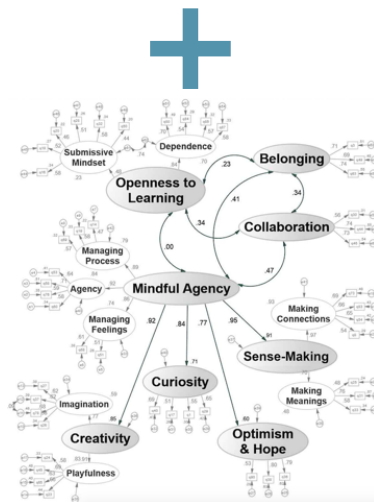


Deakin Crick, R., S. Huang, A. Ahmed Shafi and C. Goldspink (2015).
Developing Resilient Agency in Learning: The Internal Structure of Learning Power. *British Journal of Educational Studies*. Published online: 24 Mar 2015.
<http://dx.doi.org/10.1080/00071005.2015.1006574>

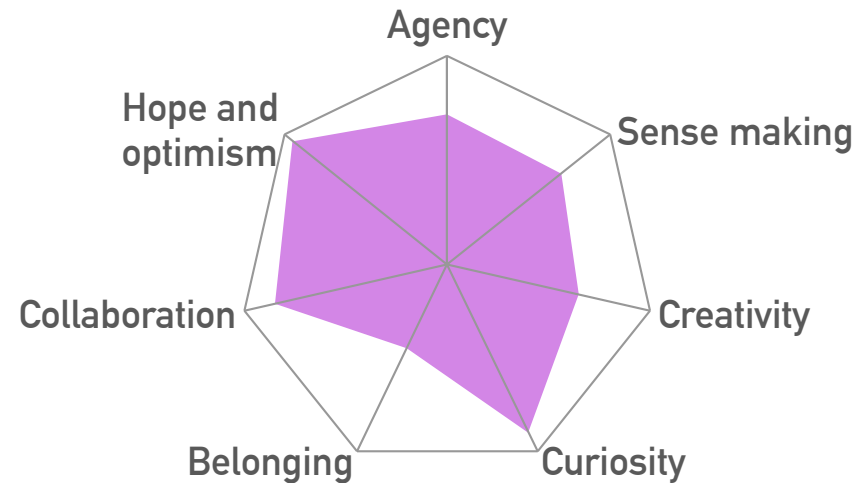
Immediate visual analytic generated by CLARA

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

	No not at all like me	A little bit like me	Quite a bit 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"/>

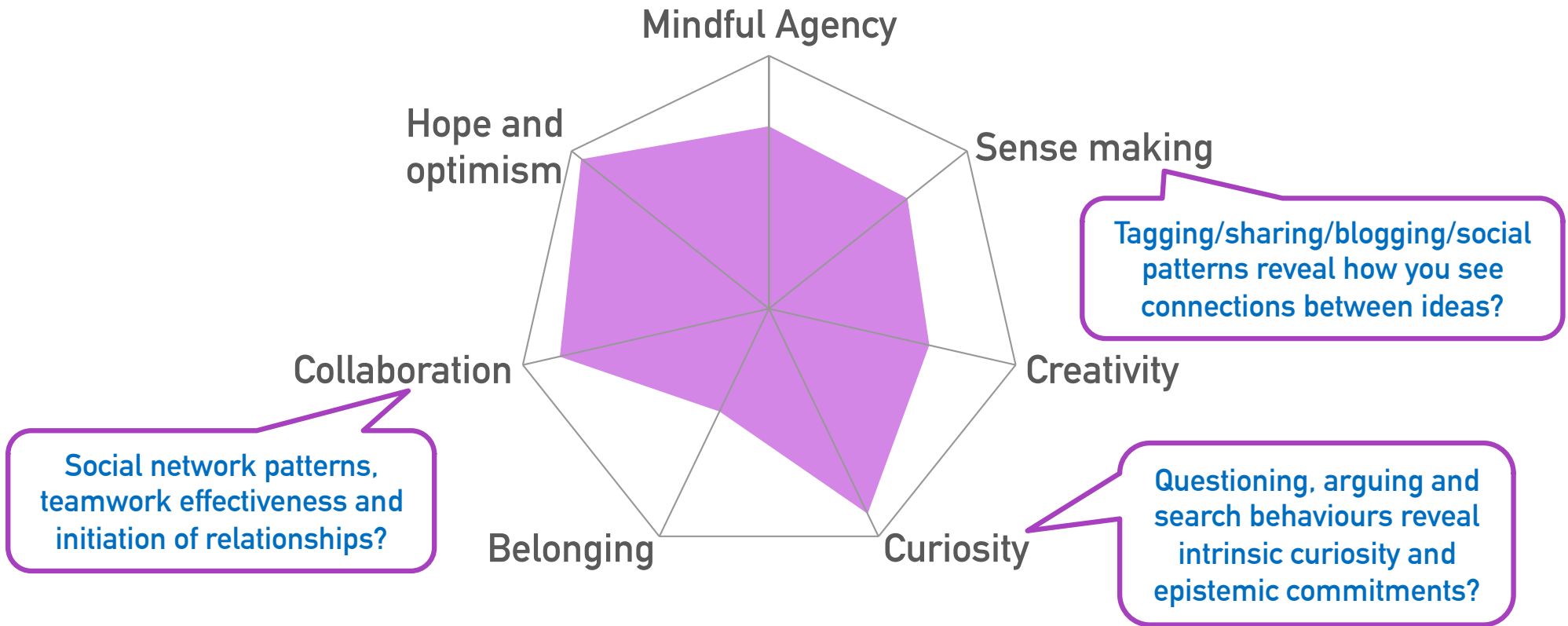


Rapid Visual Feedback to Stimulate Self-Directed Change

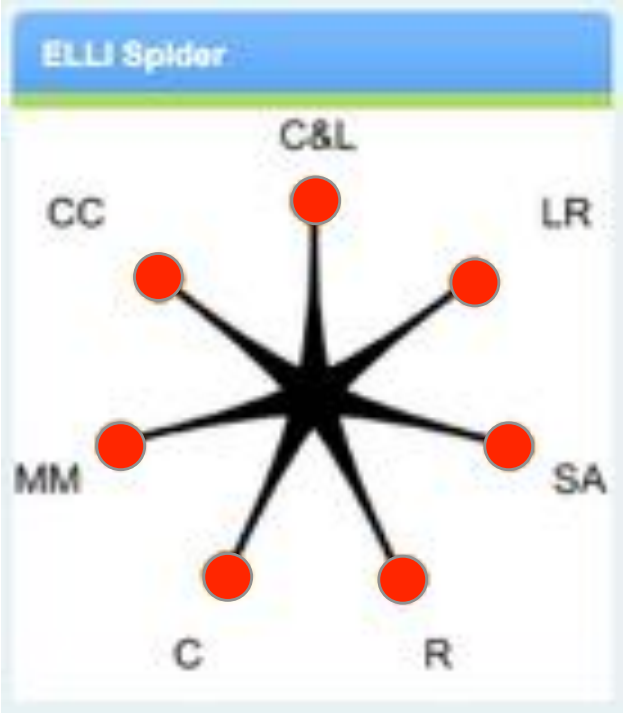


A framework for a coaching conversation

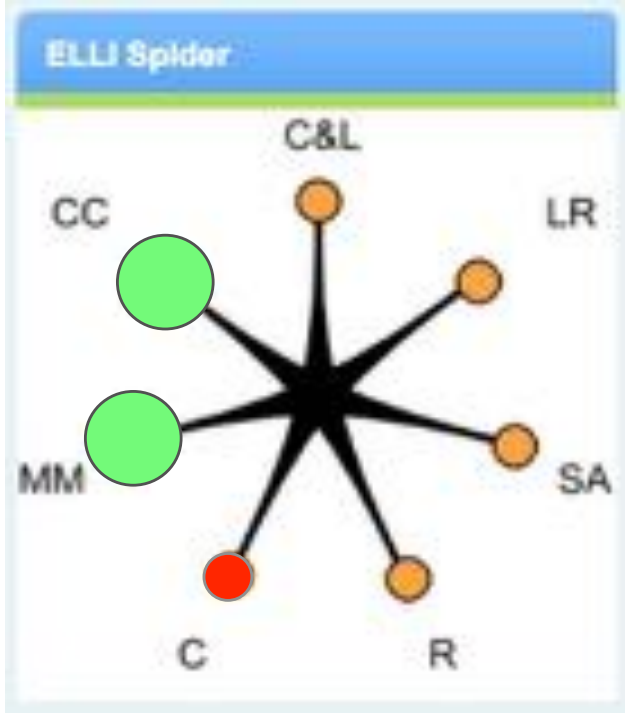
Behavioural analytics for learning dispositions?



From blog feeds (to xAPI?)



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

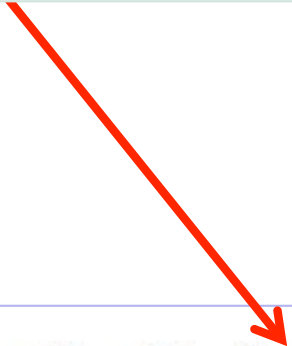


Mood View widget



I feel my enquiry is...

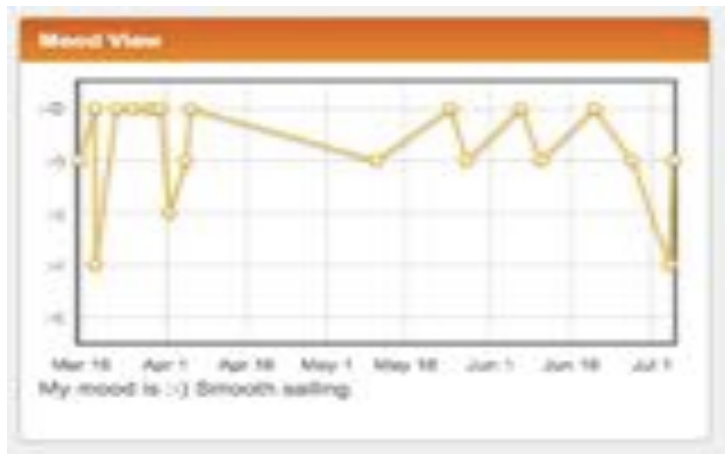
- :-) Smooth sailing
- :-D Going great
- :-) Smooth sailing
- :-| Feeling challenged
- :-/ I'm stuck
- :-(It's a disaster



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 10:01 I'm changing my mood to :-| Feeling challenged
B. Connecting, Critical Curiosity 1 Response

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

Posted by [redacted] at 9:00 am

Apr 30 10:30 I'm changing my mood to :-D Going great
Changing & Learning, Critical Curiosity 5 Responses

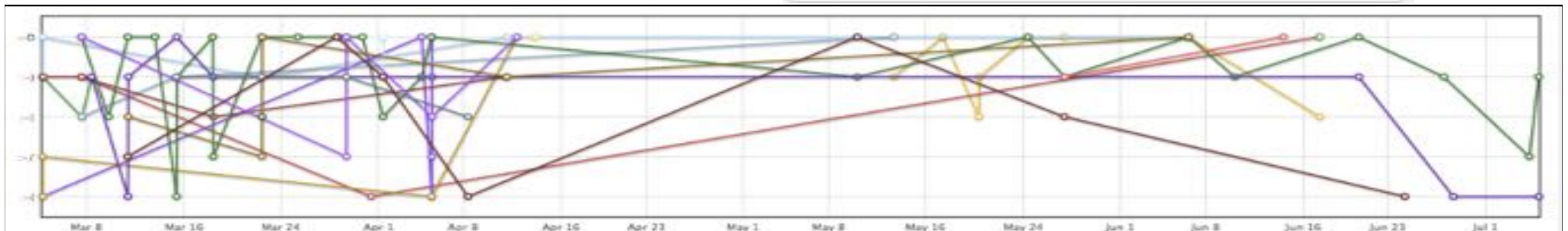
finally finished all of my work... viva tomorrow so nervous 😊

Posted by [redacted] at 4:37 pm

Apr 30 10:30 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 displays the Teacher's dashboard for EnquiryBlogger, which is organized into two main sections: "Enquiry Spiral Dashboard" and "Enquiry Spider Dashboard".

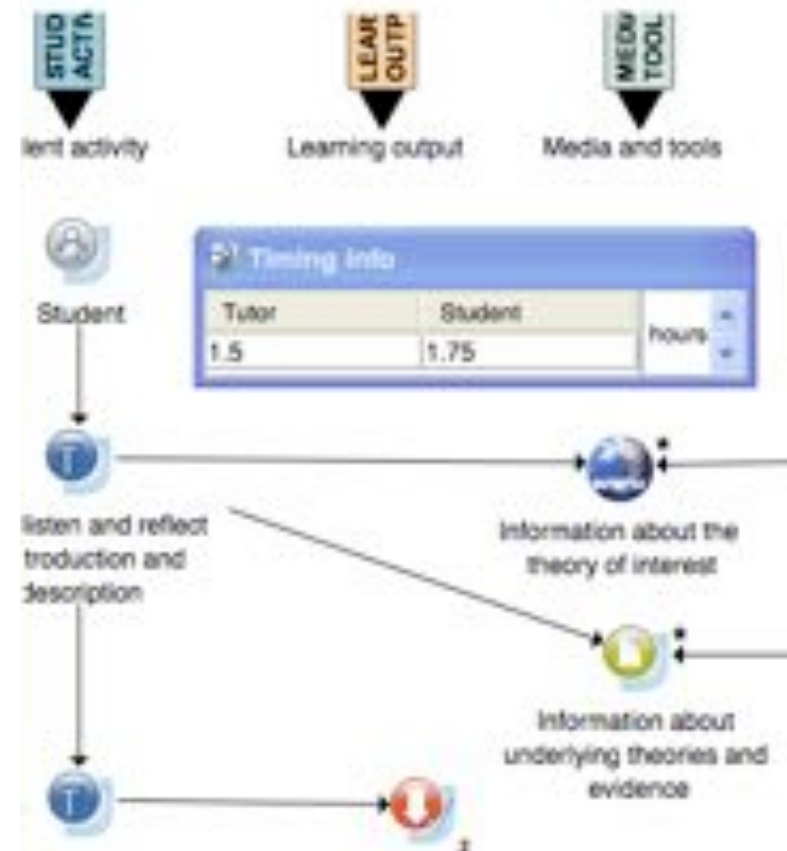
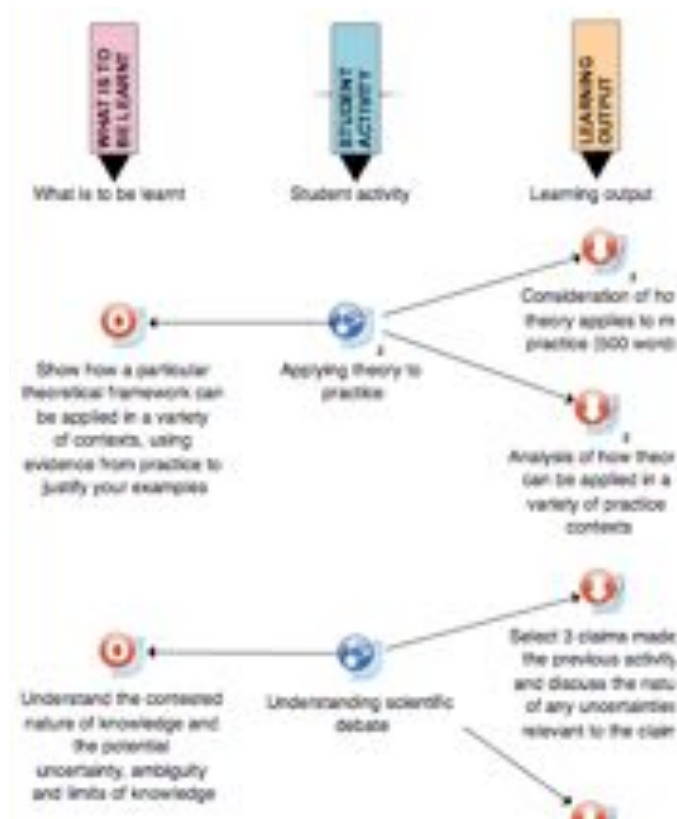
Enquiry Spiral Dashboard: This section contains a 4x3 grid of spiral diagrams. Each diagram is a cross-section of a nautilus shell, with a central blue core and yellow outer layers. Small colored dots (red, green, blue) are placed at various points within the spiral, representing data points or stages of an enquiry process.

Enquiry Spider Dashboard: This section contains a 4x3 grid of spider diagrams. Each diagram is a central black dot with eight lines radiating outwards to other colored dots (red, green, blue, orange). The lines and dots are arranged in a spider-like pattern, representing a network or flow of information.

The dashboard is titled "Dashboard" at the top left. On the left side, there is a vertical sidebar containing a grid of small icons, a line graph, and a bar chart. An orange dashed line highlights the top portion of this sidebar, indicating its connection to the main dashboard content.

a learning design
patterns tool?

CompendiumLD: for OU Learning Design



OU LDI Project led by Grainne Conole: <http://compendiumld.open.ac.uk>