

Social Learning Analytics

Rebecca Ferguson

Institute of Educational Technology The Open University, UK



Southern SoLAR Flare, Sydney

The Open University (UK)

- Supported distance education
- Quality open education at scale
- Over 250,000 current students



iTunes U > The Open University

World class learning any where

Music and Culture

The Open Jniversity



Family Values

Black British Jaz... 🖵 The Open University SUBSCRIBE F....

Writing family histor...

SUBSCRIBE F...

The Open University





SUBSCRIBE F...

Evolution and the hu...

SUBSCRIBE F ...

The Open University

Featured Sort By: Caring: a family affair - fo ...

The Open University SUBSCRIBE F...

Sort By: Featured

The Open University

Norma Waterson: E... 🖵

SUBSCRIBE E

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59,053,400 iTunes downloads

6,200,000 YouTube views

OpenLearn 11,000 hours of viewing material 400,000 unique visitors per month

Frozen Planet

Have you studied with us?





Online social learning



Why has someone sawn down half of the beautiful cedar tree outside my office window? I can't find this out from a book, and I don't know anyone with the precise knowledge that I am looking for. It is as I engage in conversations with different people that my understanding of what I see outside my window increases, and I learn more about the tree's history, health, ecosystem and future possibilities.



Sociallearn.open.ac.uk



Learning analytics



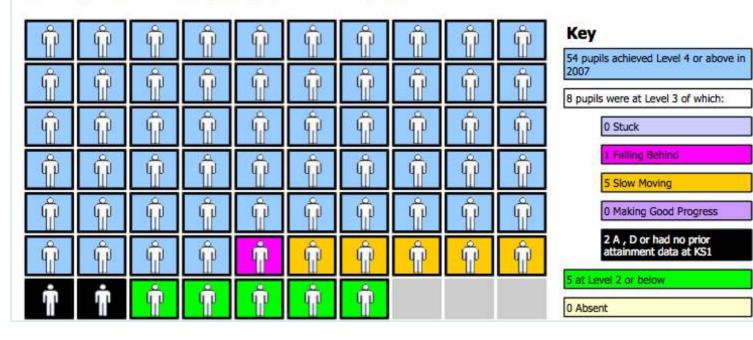
Developing new tools for learners and teachers drawing on experience from the learning sciences intention of understanding and optimizing not only learning but also the environments in which it takes place

Implementing analytics

Chart 2.1.22

For 2007 results, Mathematics (KS2)

The chart shows the proportion of pupils achieving level 4 or above in Key Stage 2 Mathematics (KS2) and for those who did not reach this threshold how they have progressed since Key Stage 1.



Aligned with clear aims

Department for

Education

- Huge and sustained effort
- Agreed proxies
 for learning
- Clear and standardised visualisation
 - Driving behaviour at every level

Individual assessment within cohort



Negative perspective: NAPLAN

There is massive pressure on schools and individual teachers to lift their school results. The logical consequence is to teach to the test ... It is not about the students but it is all about the school ... It does not reveal anything about the richness of your child's learning ... Why is the ability to work in teams not included...?



This is a nice little earner capitalising and exploiting the anxiety of students and parents. Schools aid and abet this by opting to purchase these materials.

4 Schools are as much to blame as ambitious parents who want bragging rights. **7**

But what is of deep concern and reflective of the flawed British experience of persistent testing is that standards in the classroom are not linked to NAPLAN. The information given to parents is of palpably little worth. It tells you that on a given day your child scored this or that. It does not reveal anything

Sydney Morning Herald 27 November 2012

Social learning analytics



Social learning analytics focus on how learners build knowledge together in their cultural and social settings.

In the context of online social learning, these analytics take into account both formal and informal educational environments, including networks and communities.





We are currently preparing students for jobs that don't yet exist

using technologies that haven't yet been invented ...

0

1:58 / 6:07

Shift Happens: Karl Fisch

1:54 / 6:07

Why social learning analytics? (2) Social media



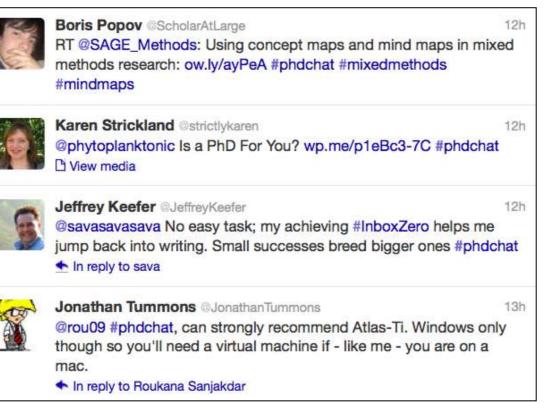
Support learning-related reflection on interpersonal relationships and interactions

Why social learning analytics?

Free and open content



Helpful info



Useful resources

Key hashtags

Support networks

Support the role of social networks in filtering and recommending resources





Learning skills for the knowledge age

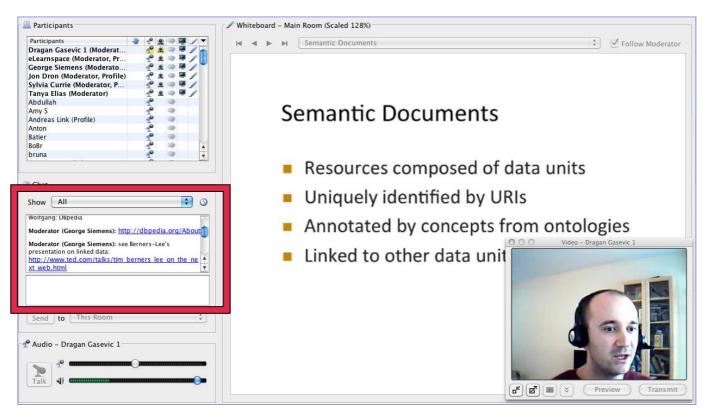
 Information and media literacy skills 	Creativity and intellectual curiosity
Communication skills	 Interpersonal and collaborative skills
 Critical thinking and systems thinking 	Self-direction
 Problem identification, formulation and 	 Accountability and adaptability
solution	Social responsibility

The 7Cs

Critical thinking-and-doing	Computing
Creativity	Career & Learning self-reliance
Communication	Collaboration
	Cross-cultural understanding

Support learners to assess their progress in terms of knowledge-age skills

Why social learning analytics? (4) Sociocultural understandings



Increase learner proficiency in the use of educational dialogue



Why social learning analytics? (5) Sociocultural understandings

Elluminate Live! - KEYNOTE 2 - Martin Bean		O Video - Server Support
Whiteboard - Main Room (Scaled 135%) M SOCIALLEARN SOCIALLEARN	Contraction Contraction	Coogle email Twitter Hom
Learning It's all about to change We be bring a weight for the same grang of the fact data data be bring and the bring about the bring abo	2009/Q3: closed beta 2009/Q4: open beta Blog Twitter Beta signup www.open.ac.uk/ sociallearn	Image: Section 2016 Section 2017 Sectin 2017 Sectin 2017 Sectin 2017 Section 2017 Section 2017 Section 2
	In session for 1 hour, 44 minutes.	/ne

Enable learners to engage proficiently with a range of tools and social settings

Translating TEDTalks Our progress with the translation! TED's Open Translation Project: 9,000+ translators, 88 languages, nearly 30,000 volunteer-contributed translations of TEDTalks. The video below tells Top translations: Learning to learn » Unit 1 Course overview you why they do it! You can also have a look at: http://www.ted.com /OpenTranslationProject Portuguese (Brazil) Why I translate TEDTalks English Spanish Greek idia Cámara de la Fu French inanish Trans Romanian Giobal Voices Lingua project Unread Translating Wikipedia Unread 0 20 40 60 80 100 OT PROJECTS FORUM (Unread posts) tx Transifex (Unread posts) Link to the online meeting with Paula Góes from Global Voices - 29th November (7pm UK time) Unread

Open Translation MOOC http://bit.ly/OTcgjD Learning Design MOOC http://www.olds.ac.uk/

Why social learning analytics? (6)

MOOCs



November 26th, Week 7: Researching and evaluating other OT tools and projects (1)

This week you will have to opportunity to explore other Open Translation projects, including the work of GlobalVoices, TEDTalks and Wikipedia.

Things to do this week

Social/ized analytics

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Social analytics

- social network analytics
- discourse analytics

Socialized analytics

- content analytics
- disposition analytics
- context analytics

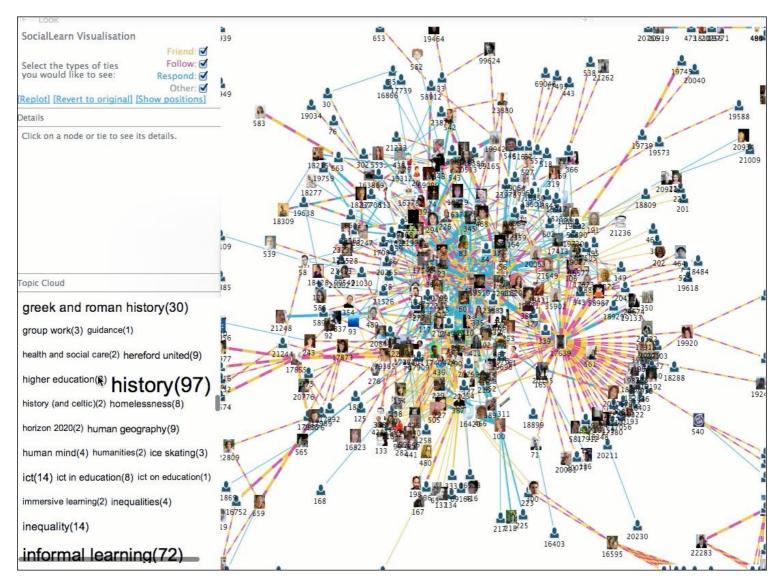
Social analytics: potential uses Network analytics



Identify individuals who support my learning Identify individuals with relevant interests Identify origins of conflicts

Identify groupings that could support learning Provide feedback to groups and group leaders

Network analytics

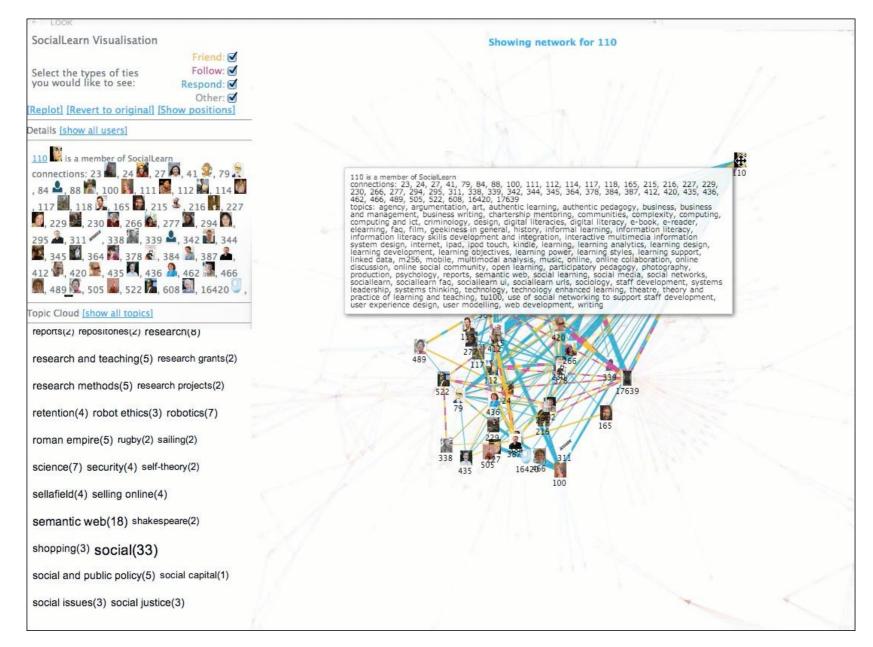


Visualising Social Learning in the SocialLearn Environment. *Bieke Schreurs and Maarten de Laat (Open University, NL), Chris Teplovs (Problemshift Inc. and University of Windsor), Rebecca Ferguson and Simon Buckingham Shum (The Open University, UK)*, SoLAR Storm webinar, The Open University, UK. <u>http://bit.ly/UaFhbL</u>



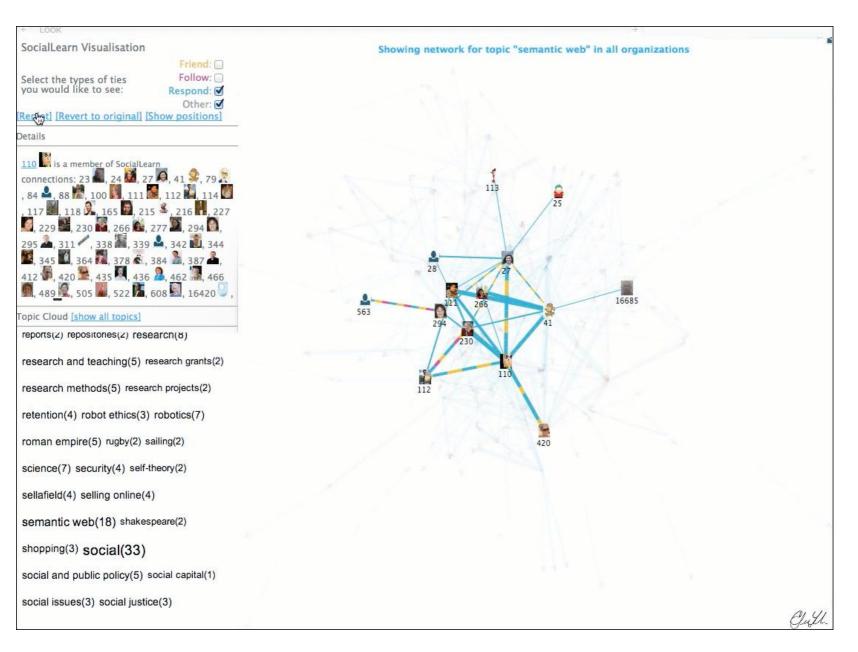
Visualising ties by topic and type





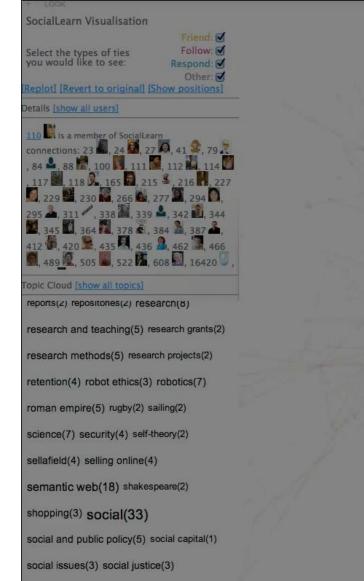
Visualising ties by topic

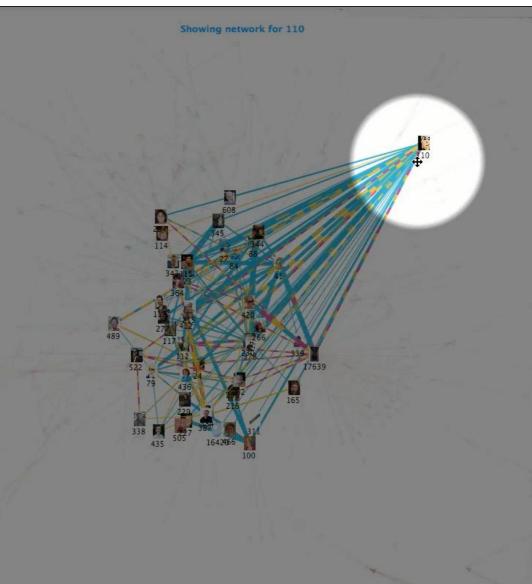




Visualising ties by individual







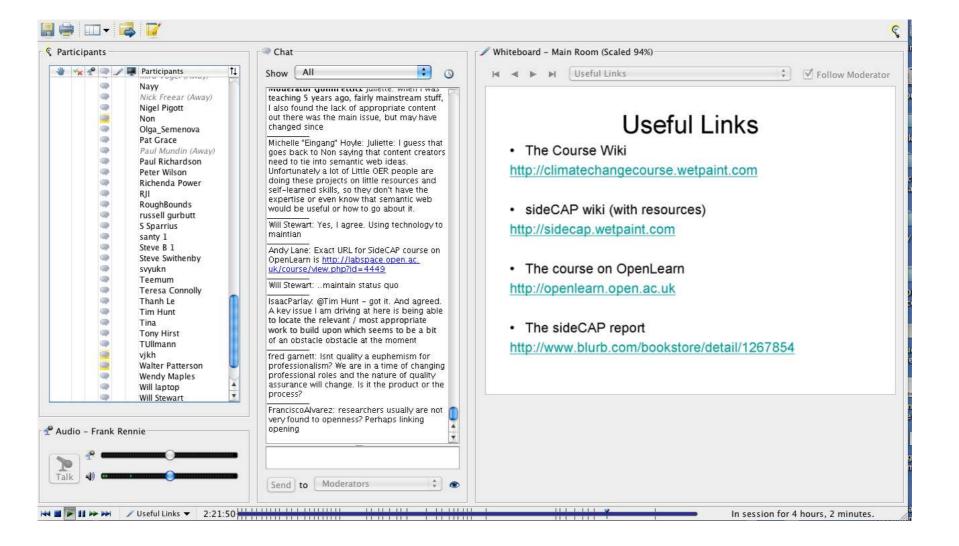
Social analytics: potential uses

Discourse analytics

The ways in which learners engage in dialogue indicate how they engage with the ideas of others, how they relate those ideas to their understanding and how they explain their own point of view.

- Disputational dialogue
- Cumulative dialogue
- Exploratory dialogue

Analysing synchronous chat



Extensions to: Ferguson, R. and Buckingham Shum, S. (2011). Learning Analytics to Identify Exploratory Dialogue within Synchronous Text Chat. *Proc. 1st International Conference Learning Analytics & Knowledge*. Feb. 27-Mar 1, 2011, Banff. ACM Press. Eprint: <u>http://oro.open.ac.uk/28955</u>

Identifying indicators



Category	Indicator
Challenge	But if, have to respond, my view
Critique	However, I'm not sure, maybe
Discussion of	Have you read, more links
resources	
Evaluation	Good example, good point
Explanation	Means that, our goals
Explicit reasoning	Next step, relates to, that's why
Justification	I mean, we learned, we observed
Reflections of perspectives of others	Agree, here is another, makes the point, take your point, your view

Identifying exploratory chat



Challenge: Locate the exploratory dialogue

Time	Contribution	
2:42 PM	I hate talking. :-P My question was whether "gadgets" were just basically widgets and we could embed them in various web sites, like Netvibes, Google Desktop, etc.	
2:42 PM	Thanks, that's great! I am sure I understood everything, but looks inspiring!	
2:43 PM	Yes why OU tools not generic tools?	

Time	Contribution
3:12 PM	LOL
3:12 PM	It's not looking good.
3:13 PM	Sorry, had to do that.
3:13 PM	jaaa
3:13 PM	Ouch!
3:13 PM	It was a vuvuzela.

Manual analysis identifies indicators

Category	Indicator
Challenge	But if, have to respond, my view
Critique	However, I'm not sure, maybe
Discussion of resources	Have you read, more links
Evaluation	Good example, good point
Explanation	Means that, our goals
Explicit reasoning	Next step, relates to, that's why
Justification	I mean, we learned, we observed
Reflection of perspectives of others	Agree, here is another, take your point

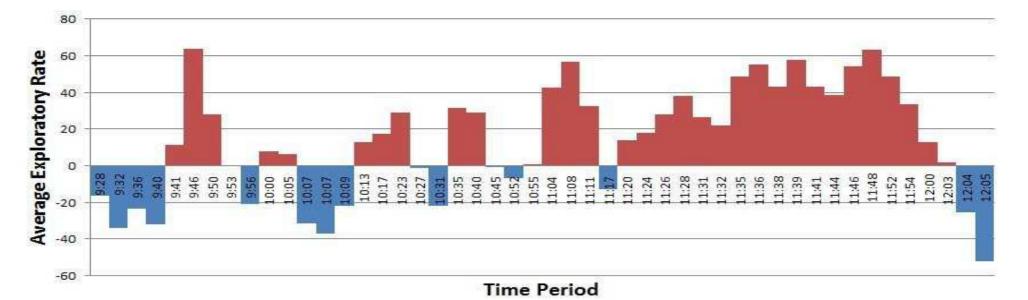
Self-training framework



- Framework uses cue phrases to make use of discourse features for classification
- Uses a k-nearest neighbours instance selection approach to draw on topical features

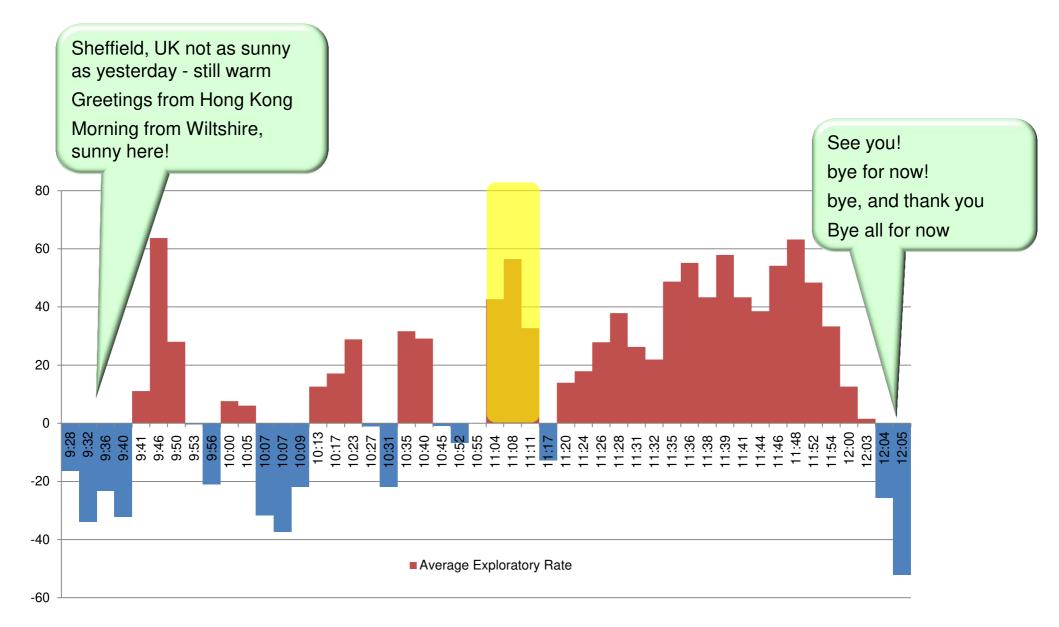
Exploratory features

	exploratory probability	non-exploratory probability
httpurl	exploratory:0.9999999998924732	non-exploratory:1.0752688169730606E-10
learning	exploratory:0.9999999998863637	non-exploratory:1.136363636105372E-10
i-think	exploratory:0.9999999997727272	non-exploratory:2.272727271694215E-10
Non-explo	oratory features	
	exploratory probability	non-exploratory probability
bye	exploratory:3.448275859690844E-10	non-exploratory:0.9999999996551724
sound	exploratory:4.999999995E-10	non-exploratory:0.9999999995
hi	exploratory:4.999999995E-10	non-exploratory:0.9999999995



Webinar chat analytics



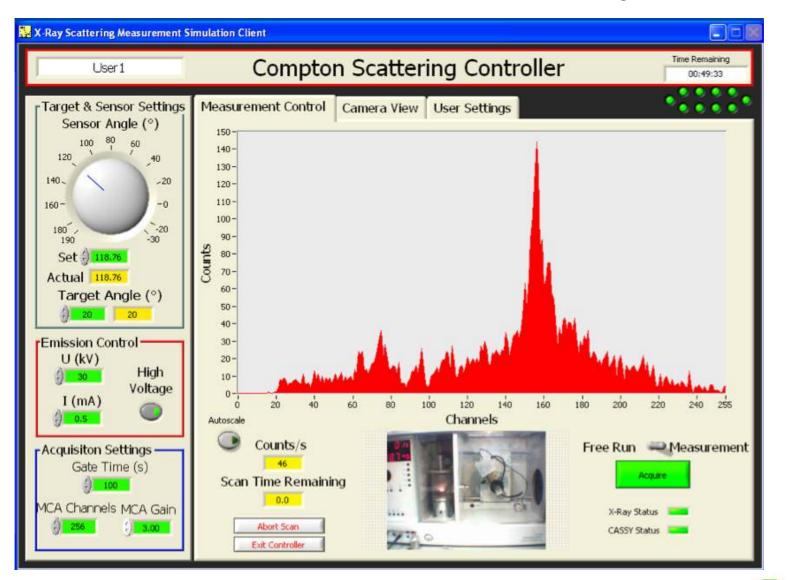


Webinar chat analytics



right	X X X X
l 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!	X X X X
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	Classified as
material. Yes - <mark>take your point.</mark>	"exploratory
would you like me to speak?	talk"
I'm just wondering, how 'team work' works when live authoring is used?	Lain
That's what I was looking for Tony - lovely, "Conversational" is the term	(more
<rt>@Tony Does the meaning of 'a course' change through the process? I.e.</rt>	substantive
there is effectively a different learning process (course) in the preparation of the	for learning)
actual course.	ion learning/
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.	
	"non-
The link to the artist who painted the image I used on one of my slides is Steve	exploratory"
Russell http://www.russellstudio.co.uk/russell_studio/steve_russell.html	X_X_X_X_

OpenScience Laboratory



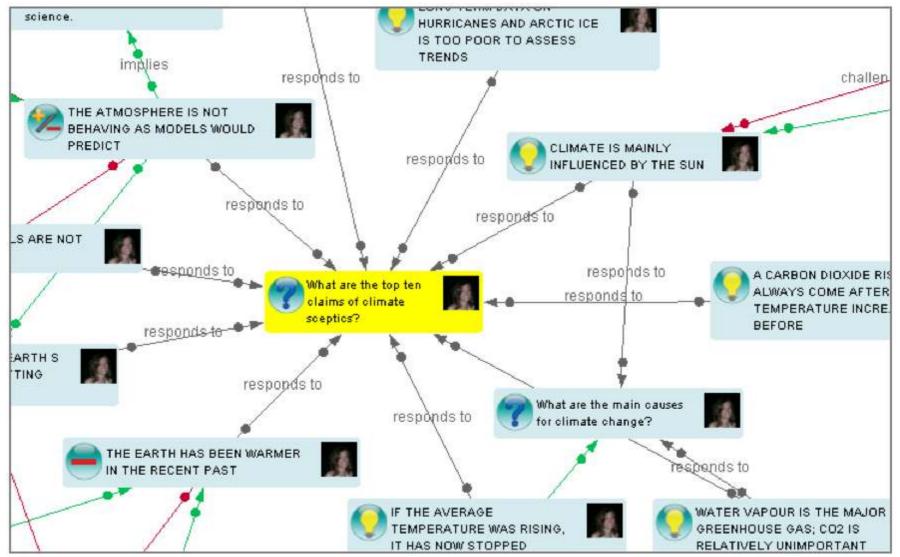
http://www.open.ac.uk/blogs/openscience





Cohere.open.ac.uk





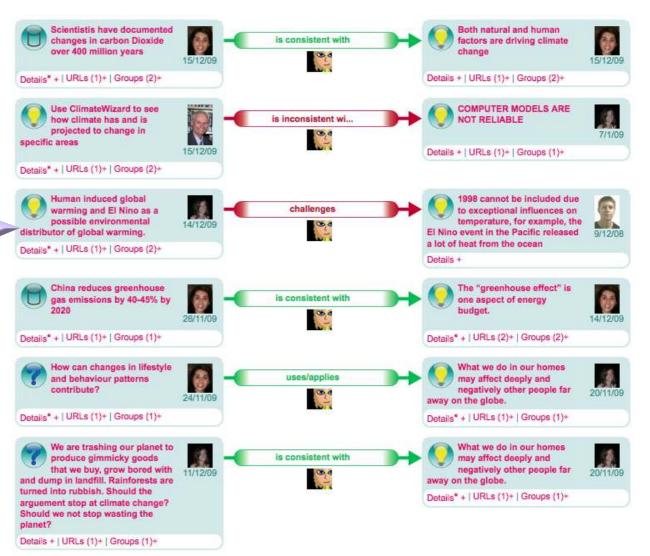
Weave webs of meaningful connections between ideas

Kmi's Cohere

Stats for Rebecca

Rebecca is playing the role of *broker*, connecting 2 peers' contributions in meaningful ways

web deliberation platform enabling semantic social network and discourse network analytics



De Liddo, A., Buckingham Shum, S., Quinto, I., Bachler, M. and Cannavacciuolo, L. Discourse-centric learning analytics. *1st International Conference on Learning Analytics & Knowledge* (Banff, 27 Mar-1 Apr, 2011) <u>http://oro.open.ac.uk/25829</u>



Evidence-hub.net

0

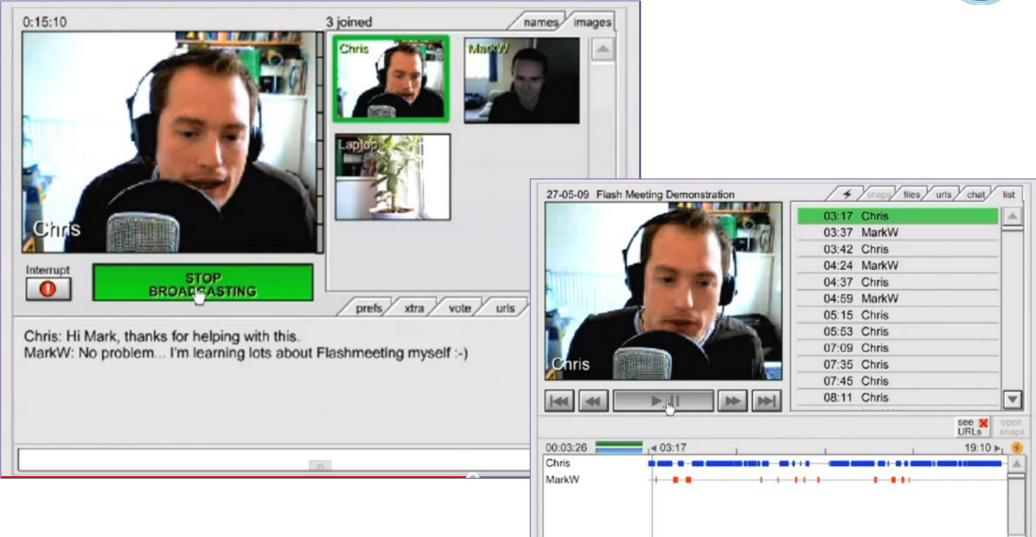
Educational Futures Alpha

Organizations/Projects with this Theme (5) Add	3	Co Theme: Assessment	Research Claims with this Theme (1) Add	3
GL Assessment GL Assessment Communication Control on Sciences (ECLS) Neurosette Key Challenges with this Theme (2) Add	8	Added on: 23/3/11 Added by: System Admin	Delayed comprehension is a key indicator of whether children between the age of two to three years are likely to go on to have language difficulties or whether they are just a 'late bloomer'	
What constitutes effective educational dia- logue and how can this be supported?			Evidence with this Theme (9) Add	3
 How do we see see language in a multiout 			Dialogues in e-assessment	8
Issues with this Theme (7) Add	3		a new paper by the Department of health has conducted a relevant study	
? How can we support the identification and diagnosis of impairments for children with	0		The Multilingual Toolkit of the NRDLS pro-	
diagnosis of impairments for children with English as an additional language (EAL)?			Resources with this Theme (11) Add	3
Potential Solutions with this Theme (8) Add	3	Comments about this Theme (0)	Developmental Language Scales	
sessing a child's speech and language develop-		Add	(2) Assessing the comprehension and produc- tion of language in young children: an account	Ĩ
ment	8	Followers of this Theme (0)	of the Reynell Developmental Language Scales	

Simon Buckingham Shum, Anna De Liddo & Michelle Bachler

Flashmeeting.e2bn.net



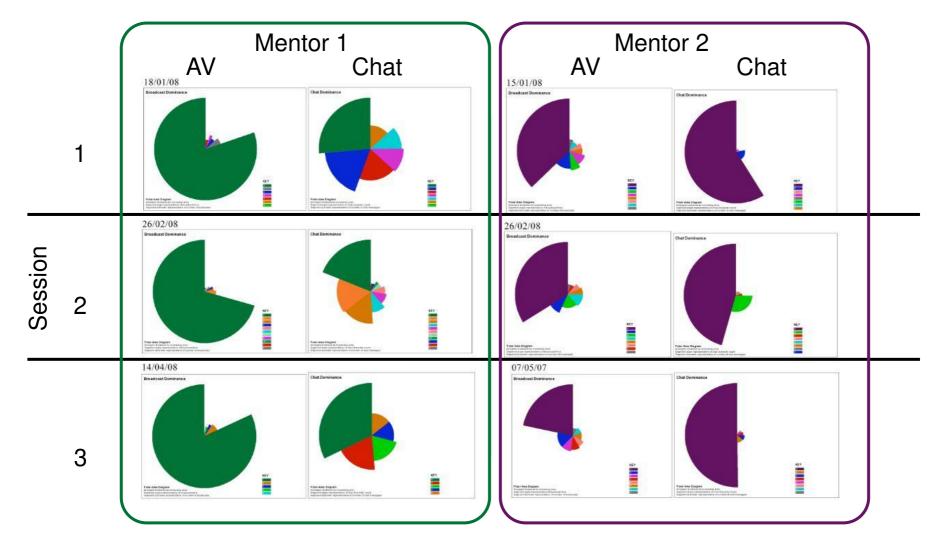


http://flashmeeting.open.ac.uk/research/shapes.html

Videoconferencing analytics

0

Flashmeeting video conference: spoken foreign language tutorials



Social<u>ized</u> analytics: potential uses Disposition analytics



Dispositions can be used to render visible the complex mixture of experience, motivation and intelligences that make up an individual's capacity for lifelong learning and influence responses to learning opportunities



Buckingham Shum, S., & Deakin Crick, R. (2012). *Learning dispositions and transferable competencies: pedagogy, modelling, and learning analytics.* Paper presented at the 2nd International Conference on Learning Analytics & Knowledge.

ELLI Profile

Home » Topics » ELLI Adult Version 2.0 » ELLI Adult Version 2.0

ELLI Adult Version 2.0

	No not at all like me	A little bit like me	Quite a lot like me	Yes very much like me
 Talking things through with my colleagues helps me to learn. 	0	0	0	0
2. I enjoy discussing difficult problems with my friends.	0	0	0	0
3. I often look back and think about what I have learned.	0	0	0	0
4. I always approach learning in the same way.	0	0	0	0
5. There is at least one person in my community/social network who is an important guide for me in my learning.	0	0	Ø	0

Web questionnaire 72 items (children and adult versions: used in schools, universities and workplace)







Dimensions of learning power

Resilience

Definition

Resilient learners like a challenge. They accept that everyone can find learning hard sometimes and are not frightened by finding something difficult. They have a high degree of 'stickability'. They are not fragile and can tolerate the feelings of anger, fear, frustration and anxiety that sometimes accompany learning.

University of BRISTOL VITAL Partnerships

Critical curiosity Meaning making Creativity Resilience Strategic awareness Learning relationships Changing and learning

Strategic awareness

Definition

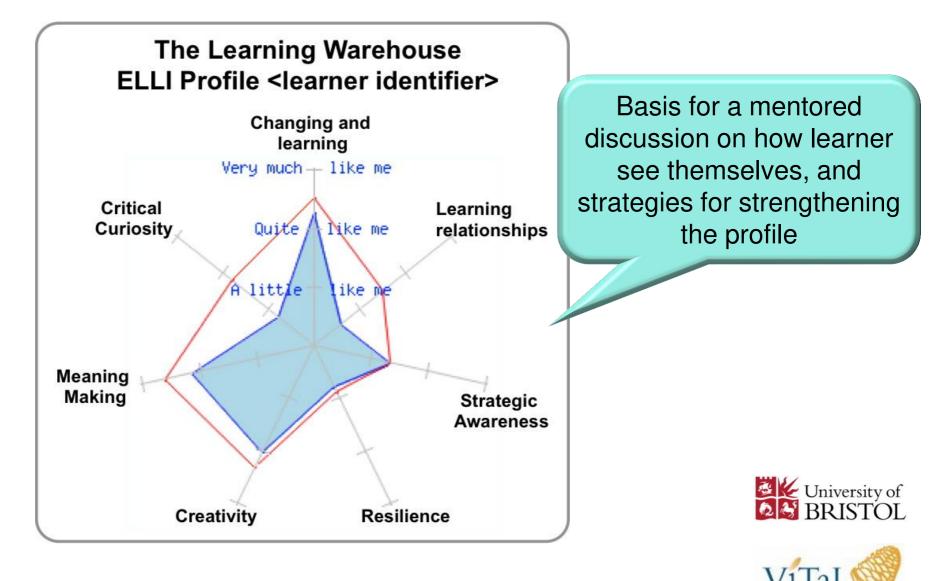
Strategic learners think about how they learn. They talk about how they will go about something and consider the habits, preferences, strengths and weaknesses they bring to the task. They are aware of their own feelings about learning and know how to manage them. They can talk about personal learning preferences.



A 'visual learning analytic'



Partnersh





Connecting with learner identity



SIngleton High School (ratified by the Wonnaruah elders)

willy wagtail: didijiri emu: kungkurung snake: ta nipa tang eagle: ka-wul echidna: kuntji kukan platypus: pikan ants: yunrring





Connecting with learner identity

Gappuwiyak School N. Territory

Changing & Learning: Drongo - Guwak



Learning Relationships: Cockatoo - Ngerrk



Creativity: Bower Bird - Djurwirr

Strategic Awareness: Emu - Wurrpan



http://bit.ly/srUSHE

Meaning Making: Pigeon - Nabalawal

Critical Curiosity: Sea Eagle - Djert



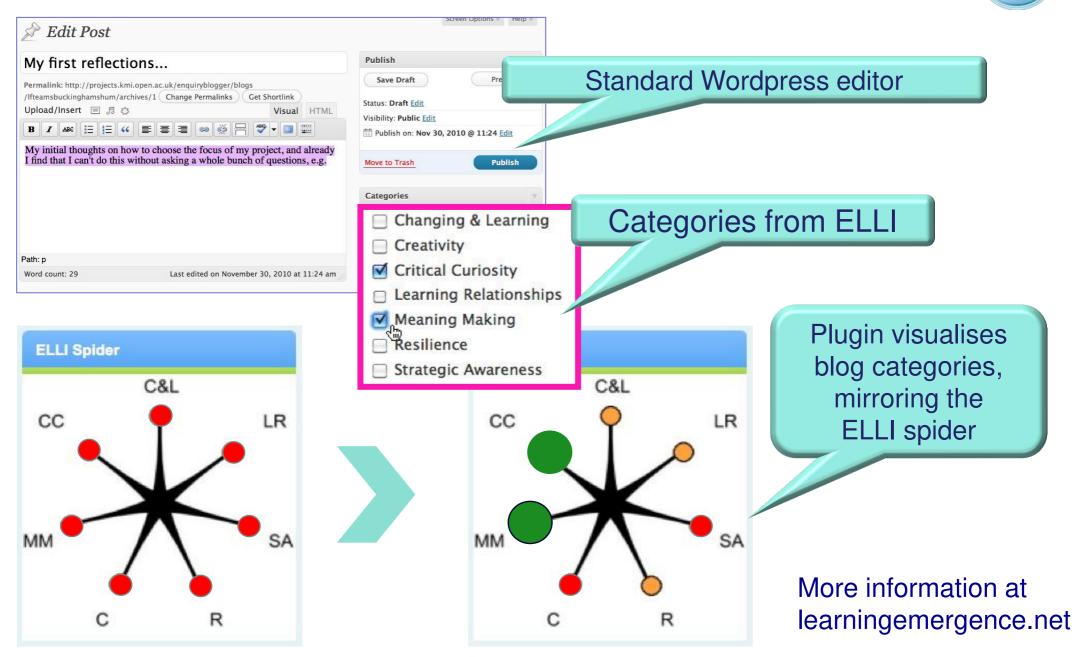
Resilience: Brolga - Gudurrku







EnquiryBlogger



Secondary school bloggers



num Khan's blog	THIS IS MY ENQUIRY PROJECT
s × Categories ×	(Search Q
	Archives Links Meta Recent Comments
last terms story!	1 July 2011
1. Choosing, 2. Observing, 3. Questioning, 4. Narrating, 6. Connecting, 9. Applying, Changing & Learning, Creativity, Critical Curiceity, Learning Relationships, Meaning Making, Resilience, Strategic Awareness	 June 2011 May 2011 April 2011
last term review is when i was interduced to enquiryblogger and this post is based on v i felt and what the first thing i did on enquiryblogger.	March 2011
r reit and what the first thing i did on enquiryblogger.	Enquiry Spiral ELLI Spider
w i felt when i was interduced to enquitryblogger: when i found out that year sevens at	Enquiry Spiral ELLI Spider
thew mose high school had there own website called enquiryblogger and the fact that	CC LR
ar sevens at matthew more high school were the first students to try enquiryblogger.	
basicly i felt shocked and really suprised.	
first post i wrote: the first time i used enquiryblogger in the first post i wrote all about my world lesson with miss Hey and mr Moorhouse .	
as on the 2.o3.2011 i wrot this in my pukkah pad and it was the 7.o3.2011 i wrote it on	
uiryblogger i wrote that it was the start of another individual learning project and it	Mood View
up to me to choose between 2 really good topics animal awarness and food they	
e on islands around the pacific.	30 <u>8</u> 01
	3)
vever i just couldn't decide so i thought of asking a freind so i asked Rebeccia because was in front of me and she said to do animal awarness in the pacific so thats what i	
and look at me now i've succeded and i am proud also i couldn't have done it with elli.	A
	set and the set of the
	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Mar 16 Apr 1 Apr 16 May 1 May 16 Jun 1 Jun 16 Jul 1 My mood is :- (It's a disaster

Primary school bloggers

Creativity Meaning making Strategic awareness



23 Da

Day 3: Answering and conclusion

Creativity, Meaning Making, Strategic Awareness

No Responses »

Today, we were looking at our questions in detail, adding and removing question we thought needed to be. We also spent sometime sitting on the carpet and descussing our ideas for our finished product for the project. We have also tried to answer most of our questions as well.

Elli dimensions:

I used my meaning making dimension because we have been trying to make links with our questions in order to answer them. We have also used our Creativity dimension, because we have been looking through our questions, and rivising to make them seem better. And finally, we have used our strategic dimention, because we have been planning out what we are going to do for our project, and how we are going to do it.

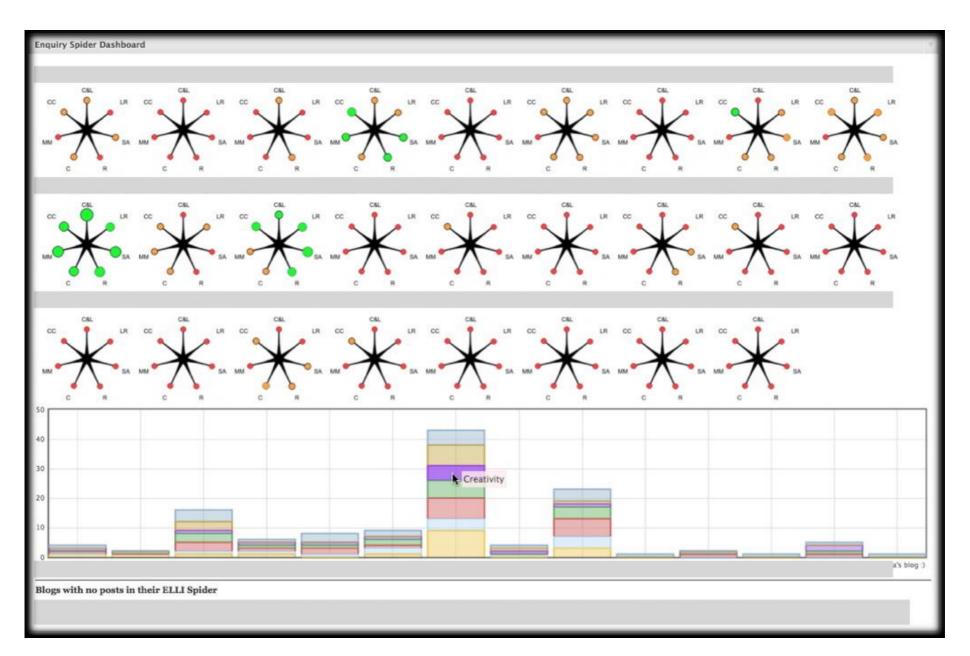
Also, could you try to email Evelyn Glennie, so I can maybe get an answer from her, about how she felt about music as a child. Don't worry if you can't, because it doesn't matter if she can't get back to me, because it doesnt affect my plan. It would be extremely helpful if you could. So please could you try, I would be most grateful.

Please get back to me as soon as you are able. Thank you,



EnquiryBlogger: blogging for Learning Power & Authentic Enquiry http://learningemergence.net/2012/06/20/enquiryblogger-for-learning-power-authentic-enquiry

EnquiryBlogger dashboard



New possibilities



ELLI works from what learners say they do

Home » Topics » ELLI Adult Version 2.0 » ELLI Adult Version 2.0

ELLI Adult Version 2.0

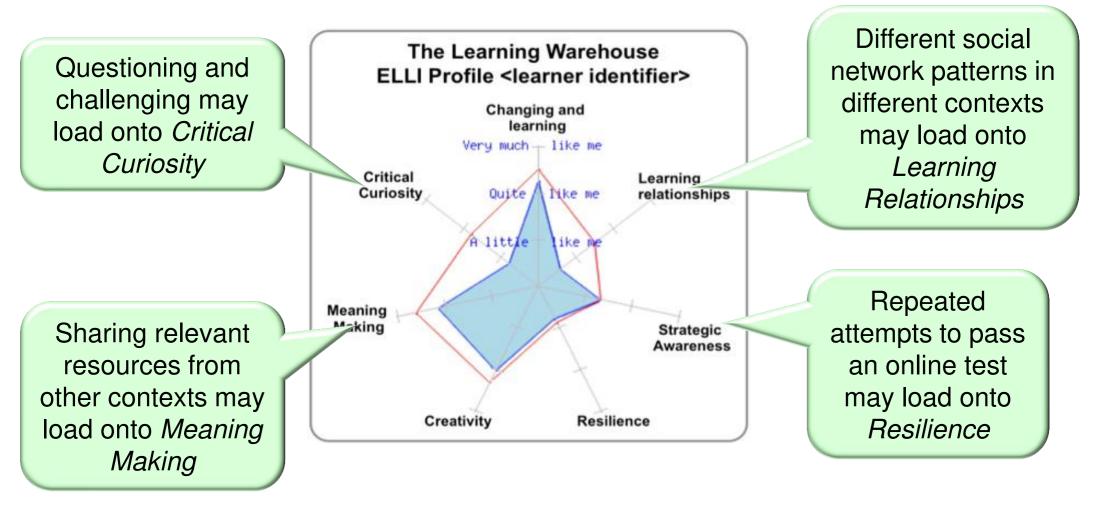
	No not at all like me	A little bit like me	Quite a lot like me	Yes very much like me
 Talking things through with my colleagues helps me to learn. 	0	0	0	0
2. I enjoy discussing difficult problems with my friends.	0	0	0	0
3. I often look back and think about what I have learned.	0	0	0	0
4. I always approach learning in the same way.	0	0	0	0
5. There is at least one person in my community/social network who is an important guide for me in my learning.	0	0	0	0

Now we can observe what they actually do...

Social	Lear	n 🔪		
Me 🖛 Exp	plore 🔻	Create -		
Path Participatory Pedago	gy			(0 0)
Manage Path/Steps	and the second s	naofuHuang ath summary		
 Add or arrange steps Manage sharing Path content 	I will pull t		oughts about participatory	Bookmark
Path summary (Edit) Participatory Knowledge				₽#Tag
View (Edit) Try to include a video (Edit)	Mon 18 Jur	n 2012 15:06	***	lr 🛊 Rate
 Try putting in a podcast link (Edit) 	1 comment	t ShaofuHuang	1 months	

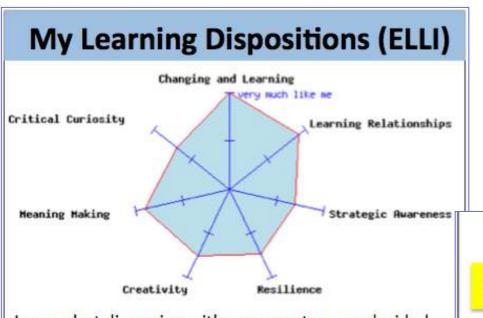
Could a platform generate an ELLI profile from user traces?



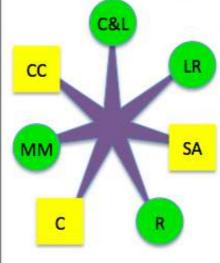


Shaofu Huang: Prototyping Learning Power Modelling in SocialLearn http://www.open.ac.uk/blogs/SocialLearnResearch/2012/06/20/social-learning-analytics-symposium

Possible future implementation Disposition analytics



In your last discussion with your mentor, you decided that you would work on your **resilience** by taking on more learning challenges



Your ELLI Spider shows that you are doing well at working on your **resilience** (R), and that you are also beginning to work on your **creativity** (C) – which you identified with your mentor as another area that you wanted to develop during the next three months.



Socialized analytics: potential uses Content analytics



Various automated methods used to examine, index and filter online media assets for learners.

These analytics may be used to provide recommendations of resources tailored to the needs of an individual or a group of learners.

iSpot.org.uk





Identification

Speckled Bush-cricket (Leptophyes punctatissima) by bobthebirder	Iikely ID
🕑 🛞 at 9:51 pm 23/09/10	
Confidence: It's likely to be this, but I can't be certain.	
Notes: Long antennae identify this as a bush-cricket. Bright green	
body covered in tiny brown speckles mean that it must be this species.	
Lack of wings makes it a juvenile.	
⇒ I agree!	
and the second	
ID agreements (): 3 people agree with this identification.	
Bearch Encyclopedia of Life for Leptophyes punctatissima	

Speckled bush cricket male (Leptophyes punctatissima) by djr7 % % at 9:14 am 24/09/10 Confidence: I'm as sure as I can be. Notes: This is an adult male. Leptophyes is a flightless bush cricket.

🍐 I agree!

ID agreements (): 2 people agree with this identification.

- Search Encyclopedia of Life for Leptophyes punctatissima
- View NBN map for Leptophyes punctatissima

Speckled Bush-cricket

24 September 2010 - 6:45am — Michael Skelton 🕱 🕱 🕱

This is an adult male. The wings are reduced to the stridulatory apparatus, the brown area just behind the pronotum. Bush-crickets use their wings to stridulate, while grasshoppers use their legs.

reply Report content as inappropriate







Reputation

Sport Your place to share nature



Social Points (2484) 😭 😭 😭 🏠

778 Observations added

1262 Identifications made, which have received 1222 🍰

1775 눩 given by this user

Member since 1st Oct 2008

Fish ۹

- 4 Observations added
- 2 Identifications made, which have received 2 🍰

Fungi and Lichens 🕐

- 235 Observations added
- 531 Identifications made, which have received 314 à
- 704 눩 given by this user

Plants 1

121 Observations added
269 Identifications made, which have received 270 ⇒
510 ⇒ given by this user

Social Network Status

Domain Expert Reputation

iSp()t Your place to share nature

Profile of Jonathan

User points

Points

982 - View, Adjust

Reputation

Social Points (982) (S) (S) (S) (S)

221 Observations added
283 Identifications made, which have received 325
333 given by you

Member since 29th Sep 2008

Fish
1 Observation added
1 Ident

Fungi and Lichens 🌳 🌳

18 Observations added
20 Identifications made, which have received 11
20
given by you

Mammals 😽

VU VU VU

4 Observations added
5 Identifications made, which have received 4 →
7 → given by you

Other organisms

4 Observations added
7 Identifications made, which has received 1 → 3 → given by you

Birds 🥒 🌒 🥒

22 Observations added 27 Identifications made, which have received 35 🍌 47 🍌 given by you



Socialized analytics: potential uses Context analytics



Analytic tools that expose, make use of or seek to understand learners' contexts. These analytics may be used alone, or may be employed as higher-level tools, pulling together data produced by other analytics.

Context as a dynamic process – a mobile device can present content, options and resources that support learning activities in this location at this time.

Virtual field trip

Mandatory Optional

Hiking boots Hand lens Grain-size chart Waterproof clothing Sun hat Sunscreen Sunglasses Compass

COMPASS

BOOTS

GLASSES

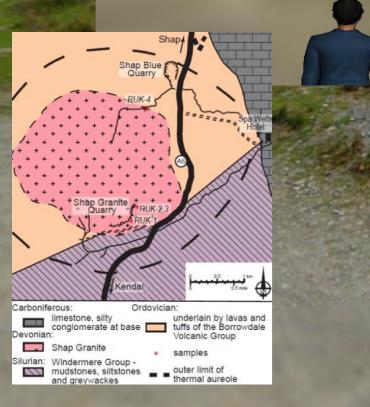
Project led by Shailey Minocha

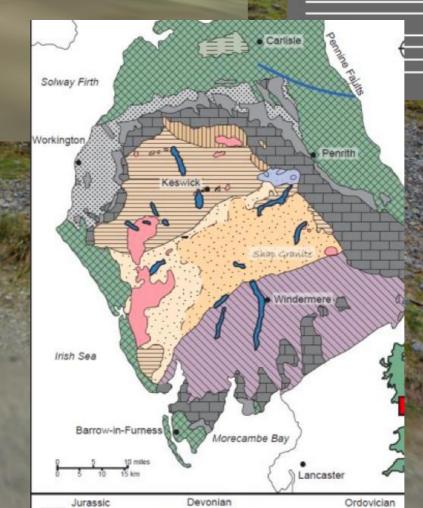
HAT

13°C

Inventory

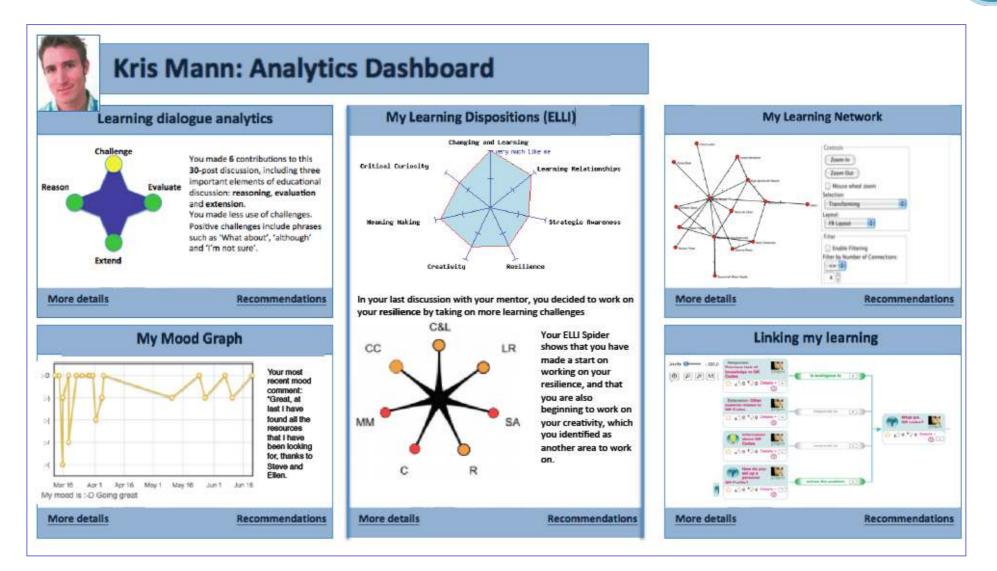
Virtual field trip





Do learners engage with all the tasks? What are the differences between novice and expert practice?

Implementing analytics



Customisable dashboards for learners and educators

Implementing analytics

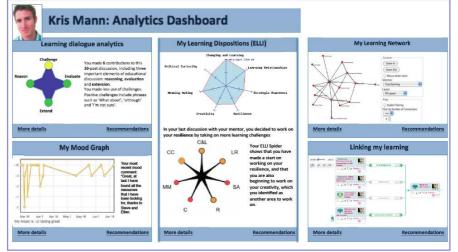
Can we achieve this?

- Aligned with clear aims
- Huge and sustained effort
- Agreed proxies for learning
- Clear and standardised visualisation
- Driving behaviour at every level

Can we avoid this?

- Instructivist approach
- Stressed, unhappy learners
- Analytics with little value for learners or teachers
- Omission of key areas, such as collaboration











Rebecca Ferguson

@R3beccaF

Research fellow at the Open University, focused on educational futures, learning analytics, new literacies and online social learning. Milton Keynes, UK · http://r3beccaf.wordpress.com/

For more from the OU, see http://www.open.ac.uk/blogs/innovating/

