Apereo Course analytics

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Is this interesting?

- Budget £0 – contribution from 4 staff

- Presented at annual University Learning Teaching Conference 2013 and gained immediate buy-in from all present including PVC Learning & Teaching

- Investment in retention analytics and support

- Analytics written throughout Curriculum Reform Programme

Introduction to Learning Analytics
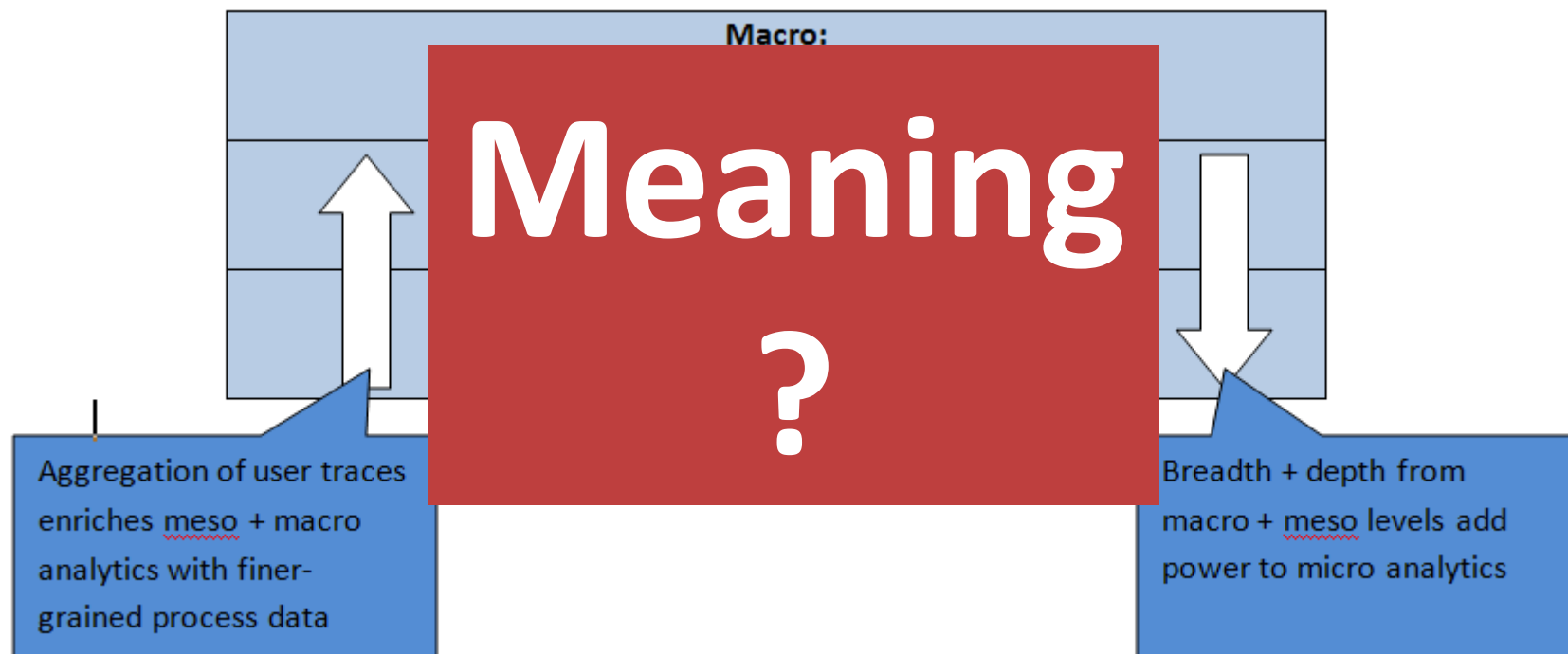
UNESCO IITE(2012) Policy Brief: Learning Analytics.

Course analytics?

- Analytics is the process of developing actionable insights through *problem definition* and the application of statistical models and analysis against existing and/or simulated future data (Cooper, 2012).

… at a course level

What were we investigating?

- Can (live!) analytics help staff and students teach and learn?

- Are dashboards useful? What should go on them?

- To what extent can we automate the process?

Methodology

- eBridge (Sakai), statistics tool

- Assumptions made that data is consistent and reliable
  - basic cross referencing suggests that it is
- Measurable activity periods
  - course broken down to reflect multi-week workshops
  - each workshop required certain interactions

What did we do?

Student Id	Logged in	Read Pathway	Read Resources	Made a Forum post
Student 1	1	0	0	0
Student 2	55	29	3	11
Student 3	59	69	14	7
Student 4	0	0	0	0
Student 5	3	0	0	0
Student 6	117	145	19	8
Student 7	3	0	0	0
Student 8	146	70	7	19
Student 9	84	68	9	18
Student 10	58	69	8	5

Coding the data

Student Id	Logged in	Read Pathway	Read Resources	Made a Forum post	Total activities
Student 1	1	0	0	0	1
Student 2	1	1	1	1	4
Student 3	1	1	1	1	4
Student 4	0	0	0	0	0
Student 5	1	0	0	0	1
Student 6	1	1	1	1	4
Student 7	1	0	0	0	1
Student 8	1	1	1	1	4
Student 9	1	1	1	1	4
Student 10	1	1	1	1	4

Behaviour	Code/colour
No access	0
Login	1
Login + Pathway	2
Login + Pathway + Resources	3
Login + Pathway + Resources + Forum	4

Student Id	Total activities
Student 1	1
Student 2	4
Student 3	4
Student 4	0
Student 5	1
Student 6	4
Student 7	1
Student 8	4
Student 9	4
Student 10	4

Student Id	30/09/11 to 13/10/11	14/10/11 to 03/11/11	04/11/ to 07/11/11	08/11/11 to 17/11/11	18/11/11 to 08/12/11	09/12/11 to 22/12/11
Student 1						
Student 2						
Student 3						
Student 4						
Student 5						
Student 6						
Student 7						
Student 8						
Student 9						
Student 10						

	C	D	E	F	G	H	I	J	K	L
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
			2	2	0	2				
	5	3	5	3	4	4				
	2	5	5	4	4	4				
	5	5	4	5	4	5				
	5	5	5	5	4	2				
	5	5	4	5	4	5				
	5	5	5	0	5	4				
	5	5	4	5	5	2				
	5	5	5	3	0	0				
	5	5	3	5	5	5				
	2	5	5	5	5	4				
	5	5	5	5	5	4				
	4	5	5	0	0	0				
	5	5	5	5	5	4				
	5	5	4	5	5	5				
	2	5	4	5	4	5				
	5	5	5	5	5	5				
	5	5	5	5	0	3				
	5	5	5	3	5	3				
	5	5	5	4	4	5				
	5	5	4	5	5	4				
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	5	5	4	5	4	5				
	5	5	4	5	5	4				
	5	5	5	5	5	4				
	5	3	5	5	4	5				
	5	4	5	5	4	4				
	5	5	5	5	5	5				
	5	5	5	4	5	4				
	5	2	0	4	0	0				
	5	5	2	5	5	0				
	5	5	5	5	4	5				
	5	5	5	0	5	2				
	5	5	3	5	5	5				
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	5	5	4	5	4	5				
	5	5	5	5	4	5				
	5	2	5	0	5	2				

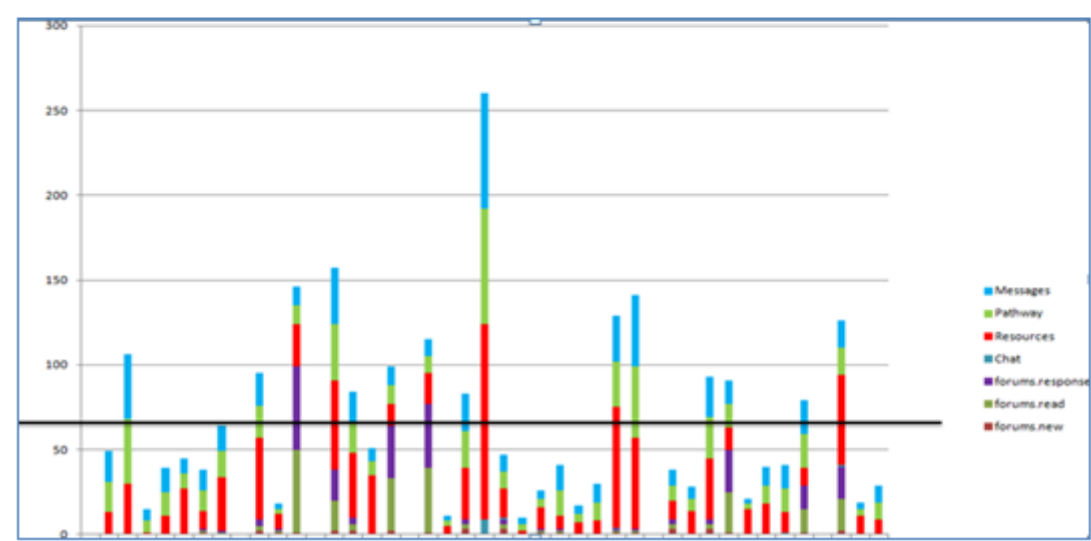|	
0	Inactive
1	Active
2	Login
3	Login & Pathway
4	Login & Pathway & Resource
5	Login & Pathway & Resource & Forum post

Results

- Staff

  – Interesting insight
  – Quick access
  – Further opportunities
  – Tool capabilities
  – Retention activity
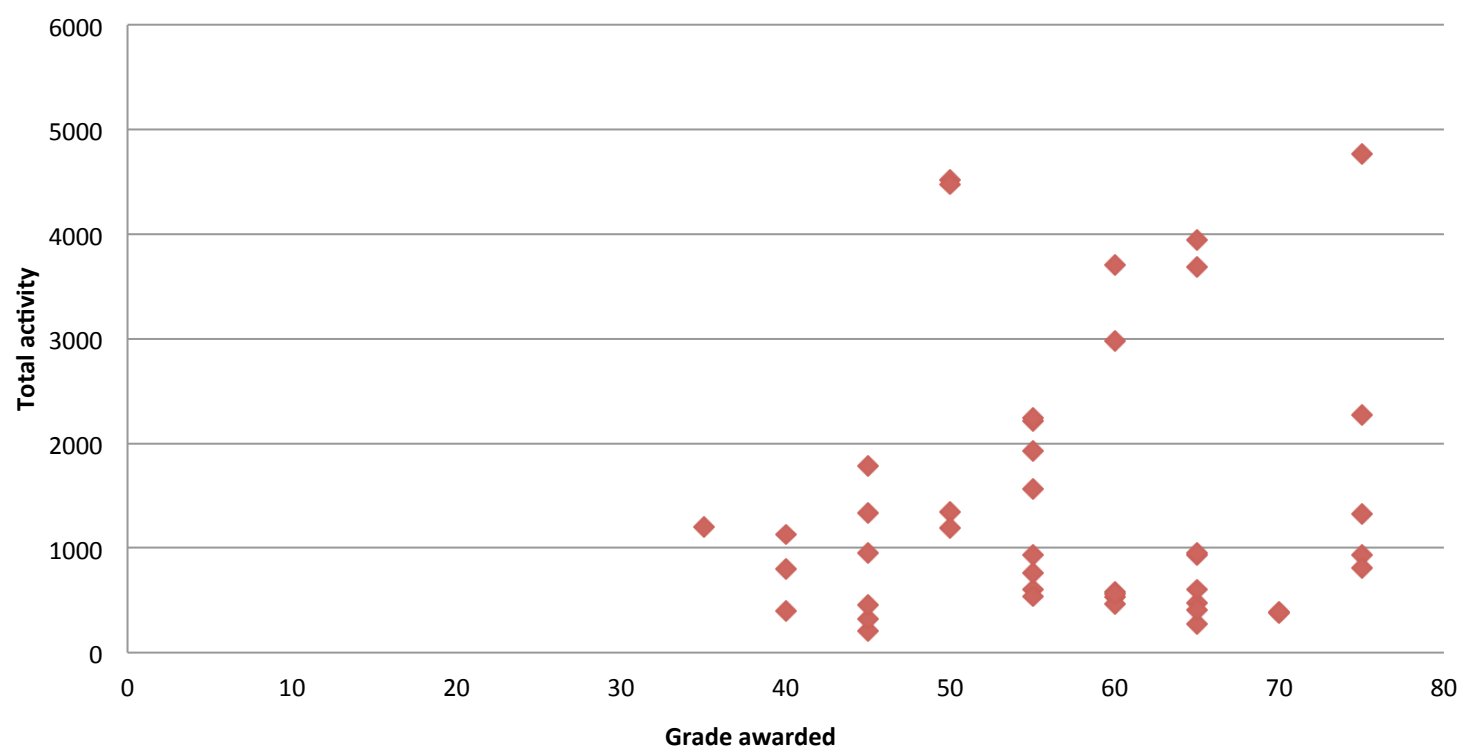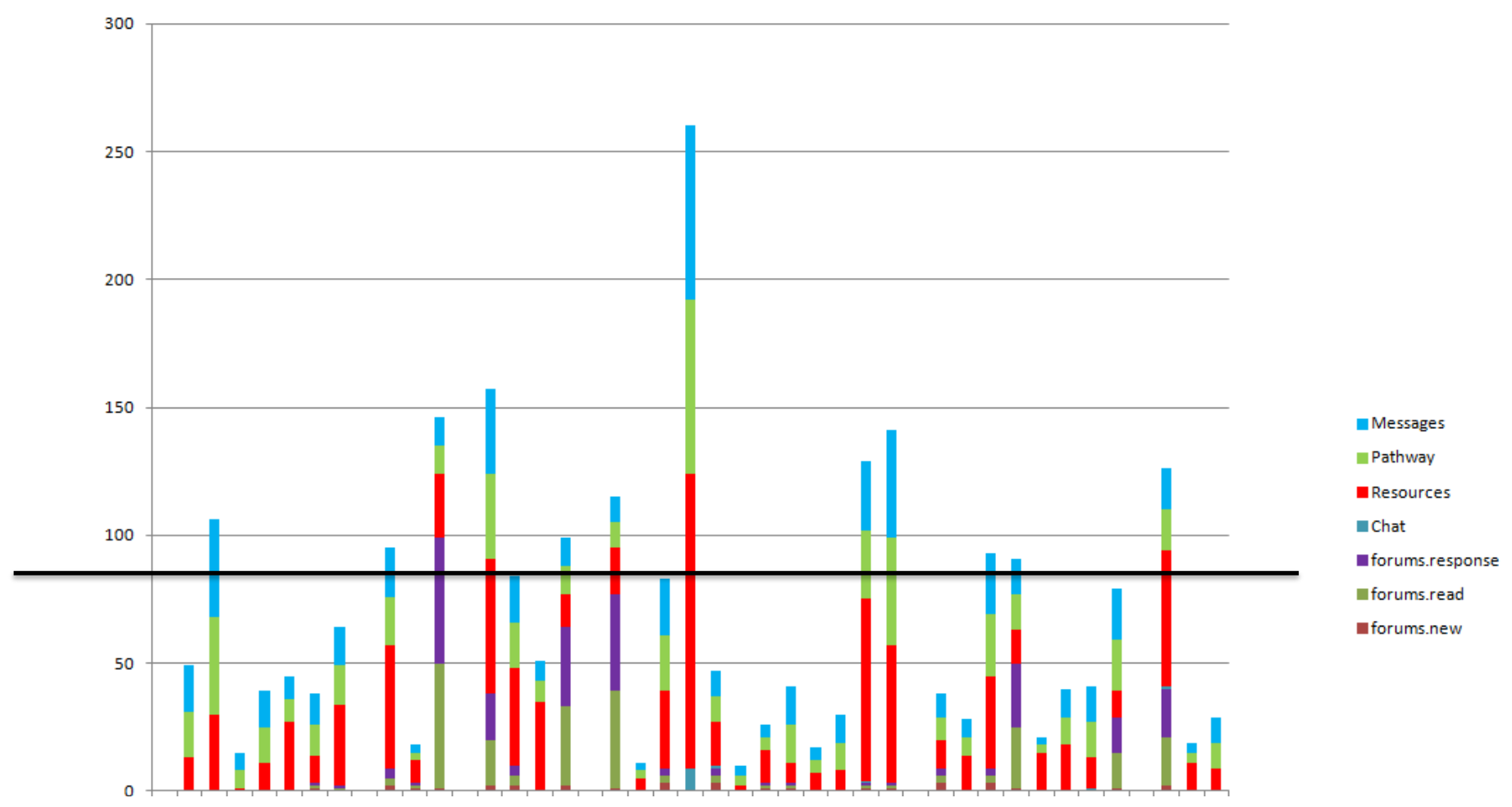 – When & how available

Resources
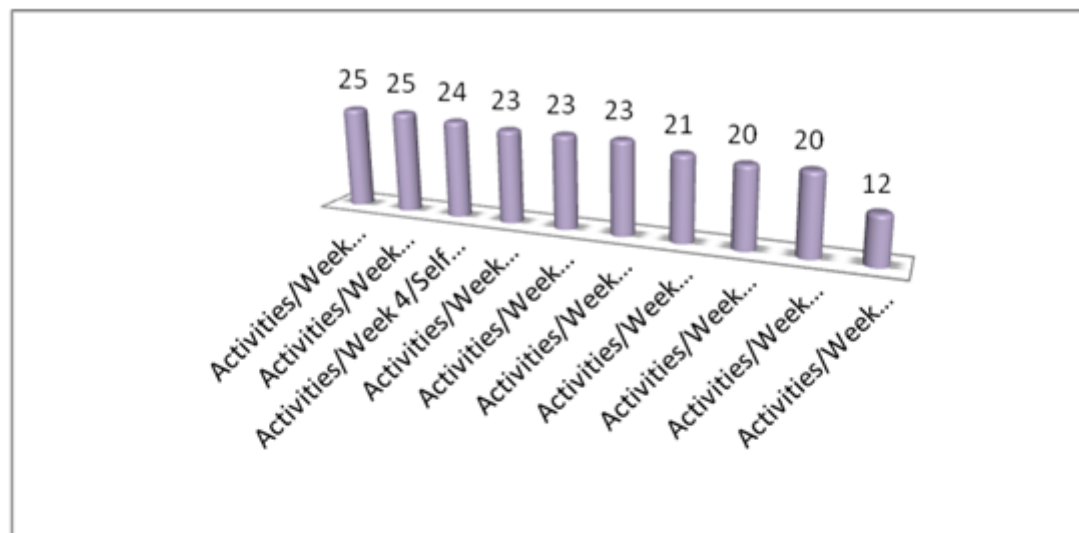
Most Popular Class Resources this week

Cumulative Volume of Activity
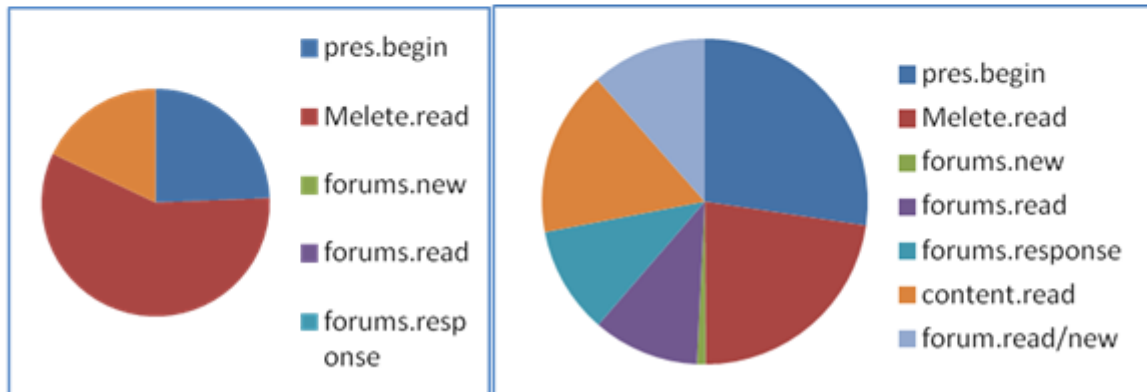
Total Activity versus Final Grade

Results for students

Attendance

Warning Indicator

Your Online Engagement
Attendance 50%

Physical Attendance
30%

Other Information

Assignments

Assignment title	Due date	Grade
Draft 2,500 word essay	27/03/13	64
Final Essay	03/05/13	

Online Activity

pres.begin
Melete.read
forums.new
forums.read
forums.response

Your activity

pres.begin
Melete.read
forums.new
forums.read
forums.response
content.read
forum.read/new

Class Activity

Language?

Results for students

- Focus group

  - interesting group of loud dislikes and quiet likes who approached us later
  - loud students knew everything already and didn't need telling
  - telling them what everyone else is doing may cause more stress
  - useful reminder: we all work different, 'I like to print everything out so only visit a resource once.'
  - Quieter – in cafe afterwards – 'this would be really useful'
  - 'Wish we had this earlier'

Conclusion

- Confidence eBridge statistical data

- Can analyse & present data mechanically

- Has meaning for tutor without need for all background data

- Analysis provided opportunity intelligence that cannot obtain lecture

- Some the challenges for staff engaging this data could be removed

- "Little data" is big! Over 555,000 events course log 160 students

How can we use this?

Results

- Institutional

  – Expansion within Faculty of Health
  – Discovered and connected other business intelligence operations
  – Institutional awareness and hunger
  – Analytics written through our CR programme
  – Student retention project underpinned by analytics

Next

- At the sharp end

  – SNA (SNAPP – thanks Josh Baron)
  – Students discourse analysis
  – Students involved with dashboard from start
  – Staff using dashboard in class
  – Students required to reflect on their learning in a more structured way
  – More automation
  – Student generated visualisations
  – Ethics versus analytics

- Institutionally

  – Predication analytics, AI solution supporting retention signals
  – Embedded within Curriculum Reform and TEL Vision and Roadmap

Challenges

- Business intelligence versus learning analytics

- Maintaining curiosity over 'problem definition'

- Automation, but we don't necessarily know what questions we have, so great enquiry tools needed

- Sense is best made by those who understand what is meant to be happening

Thank you

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