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## Learning analytics use cases: UBC and beyond

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## Data griot...

*"Griots were the bard/spin-doctors of the African Continent, taking traditional histories and reworking them to satisfy the needs of the audiences they found..."*

*...sometimes people need paragraphs. My job is to humanise the numbers, to turn that huge quantity of data into stories..."*

Sheret, 2011



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## A quick outline

A brief introduction to grassroots analytics at UBC:

1. Understanding our students better
2. Exploring learner engagement
3. Unpacking learning in our MOOCs
4. Text analysis of feedback comments/evaluations
5. Exploring learner pathways
6. Supporting self-regulated learning

....and some examples of implementations elsewhere



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**SOLAR**  
SOCIETY for LEARNING  
ANALYTICS RESEARCH

## Learning Analytics:

*the measurement, collection, analysis and reporting of data about learners and their contexts for purposes of understanding and optimizing learning and the environments in which learning occurs.*

<http://www.solaresearch.org>





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## Possible LA goals

- Learner self-awareness
- Monitoring and tracking
- Reflection and research
- Evaluation and planning
- Reporting and communication

adapted from Kay (2013)




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## Learning analytics has the potential to....

- Empower students
- Offer instructors faster formative feedback
- Identify, earlier, students in need of support
- Illuminate curriculum connectivity
- Improve curriculum alignment
- Improve assessment of learning
- Improve evaluation of teaching




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## LA questions at UBC


- What can clickstream data tell us about how students learn?
- What does 'learner engagement' look like in virtual learning environments and how can we detect it?
- What are the most common themes in student feedback comments?
- What are the most common enrollment choices our learners make to complete their degrees? Do 'high achievers' make different choices than 'low achievers'?



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- Do students from different parts of the world show different activity levels/patterns in online courses? Does it matter?
- Which students are more likely to complete course evaluations, and does it matter?
- Have average grades changed over time, and how?
- Which students are most at risk of failure? (How early can we identify them and provide better support?)
- Who are our students? Where do they come from and how has that changed over time?





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Why IT Matters to Higher Education  
**EDUCAUSE**review

HOME COLUMNS EDITORS' PICKS **ARTICLES** BLOGS MULTIMEDIA

**Know Thy Students: Providing Aggregate Student Data to Instructors**

by Julie Teague and **Linda Shepard** Monday, March 30, 2015 Peer Reviewed

SHARE

**Key Takeaways**

- Learner-centered approaches to higher education require that instructors have **insight into their students' characteristics**, but instructors often prepare their courses long before they have an opportunity to meet the students.

Motz, B. A., Teague, J. A., & Shepard, L. L. (2015).  
<http://er.educause.edu/articles/2015/3/know-thy-students-providing-aggregate-student-data-to-instructors>

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**Gotta Teach 'em All**  
your **1st** year Poké-monsters & their habitat

Inspired by Pokemon Go -- a game your 1st year students will likely play while you lecture. Use the map to explore your

**HOW TO NAVIGATE**  
+ Grab the cursor to navigate or double-click to Zoom in/out of the map as you would on Google Maps.  
+ Clicking on a Pokemon reveals details about the make up of the student

How Over

Hi!  
My name is **Poliwhirl**.  
I'm your average 1st year **PDI** student!

I am often an 18 year sometimes pursuing my degree

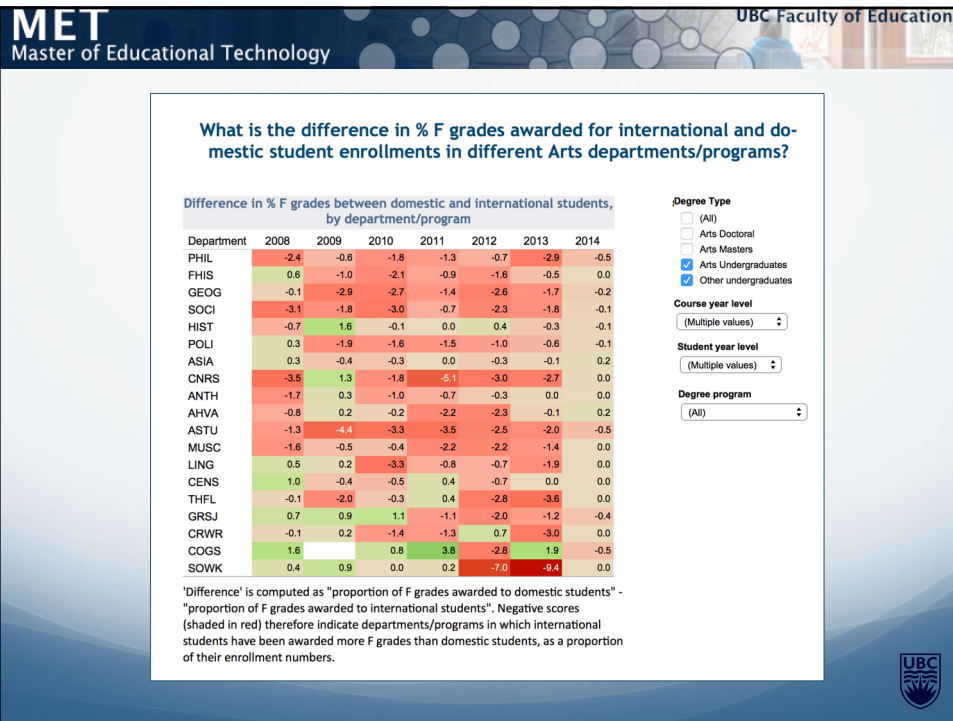
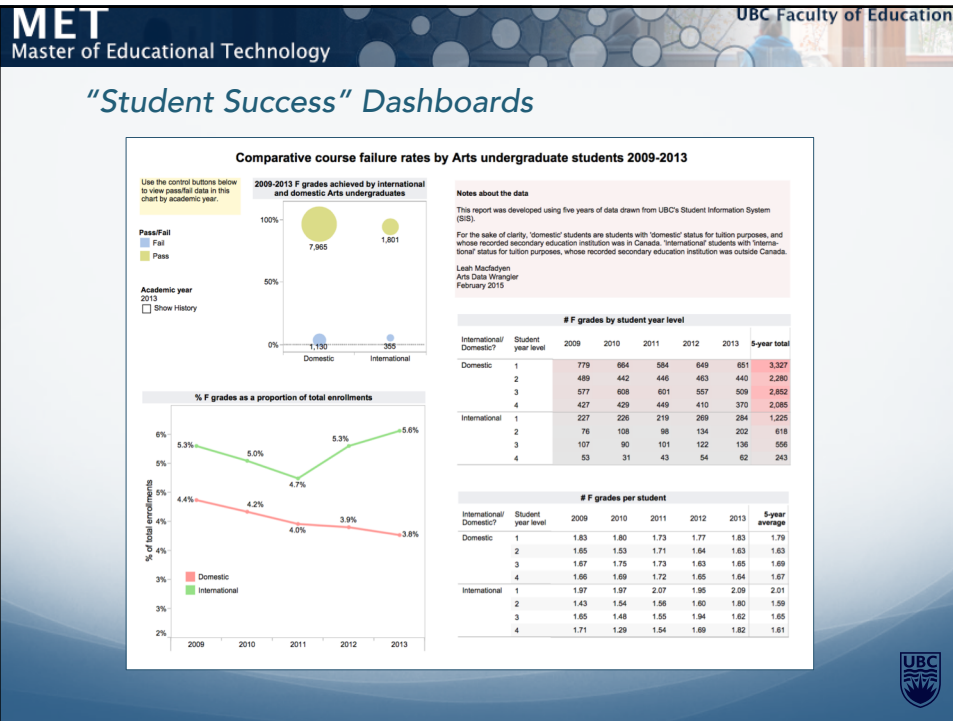
You can usually find me in CANADA, but I might be in one of these

COUNTRY	%
CANADA	83.5%
USA	6.8%
KOREA	3.5%
CHINA	3.5%
HONGKONG	3.5%
INDIA	3.5%
PHILIPPINES	3.5%
UK	3.5%
SINGAPORE	3.5%

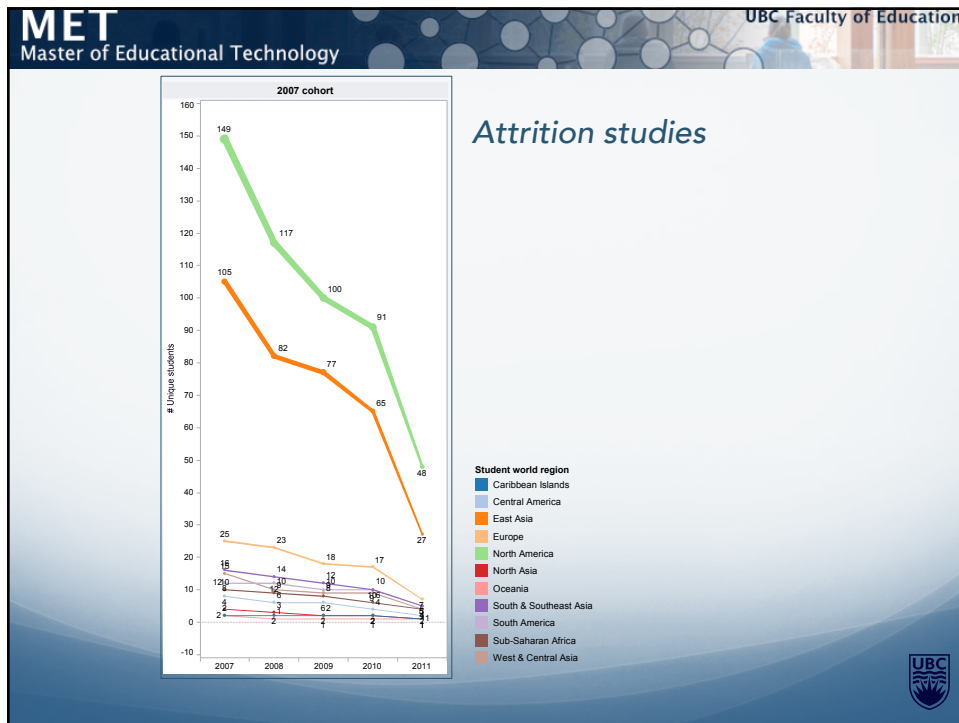
Maps

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## 2. Exploring learner engagement in VLEs

Expand All Collapse All

- Subject
  - Next meeting (June)
    - Re:Next meeting (June)
    - Re:Next meeting (June)
    - Re:Next meeting (June)
  - First Meeting Minutes
  - Lecturer Helper/Liason
    - Re:Lecturer Helper/Liason
    - Re:Lecturer Helper/Liason
    - Re:Lecturer Helper/Liason
  - New Feedback Team
    - Re:New Feedback Team
    - Re:New Feedback Team
  - Poem return
    - Re:Poem return

Forum 1

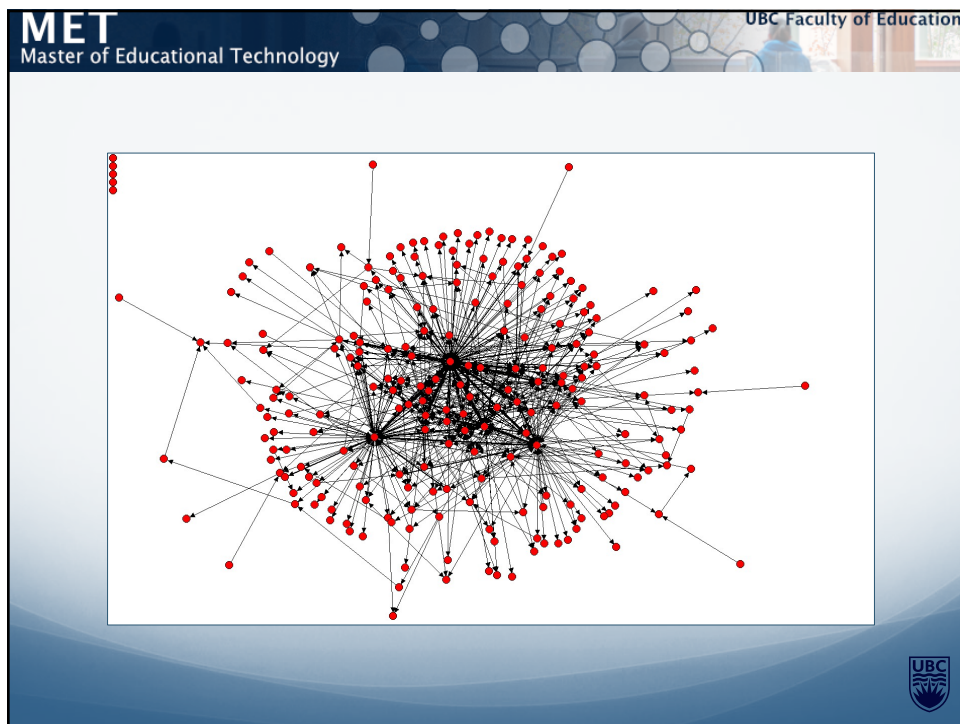
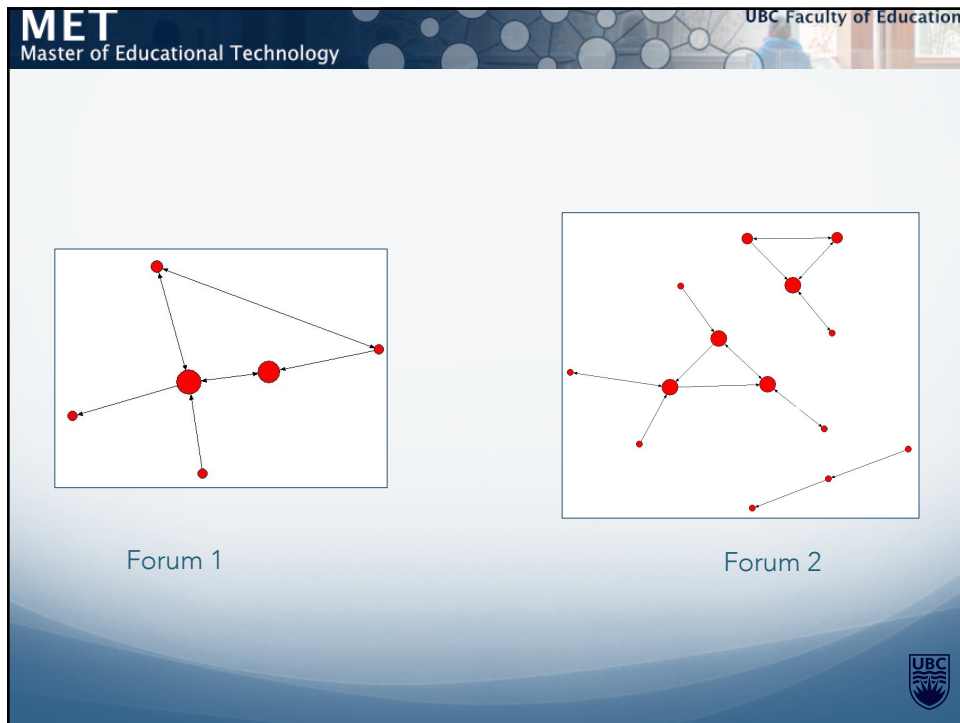
Expand All Collapse All

- Subject
  - formative quiz
    - Re:formative quiz
    - Re:formative quiz
  - ILIP
    - Re:ILIP
    - Re:ILIP
    - Re:ILIP
    - Re:ILIP
    - Re:ILIP
    - Re:ILIP
  - P-Drug Formulary
    - Re:P-Drug Formulary
    - Re:P-Drug Formulary

Forum 2

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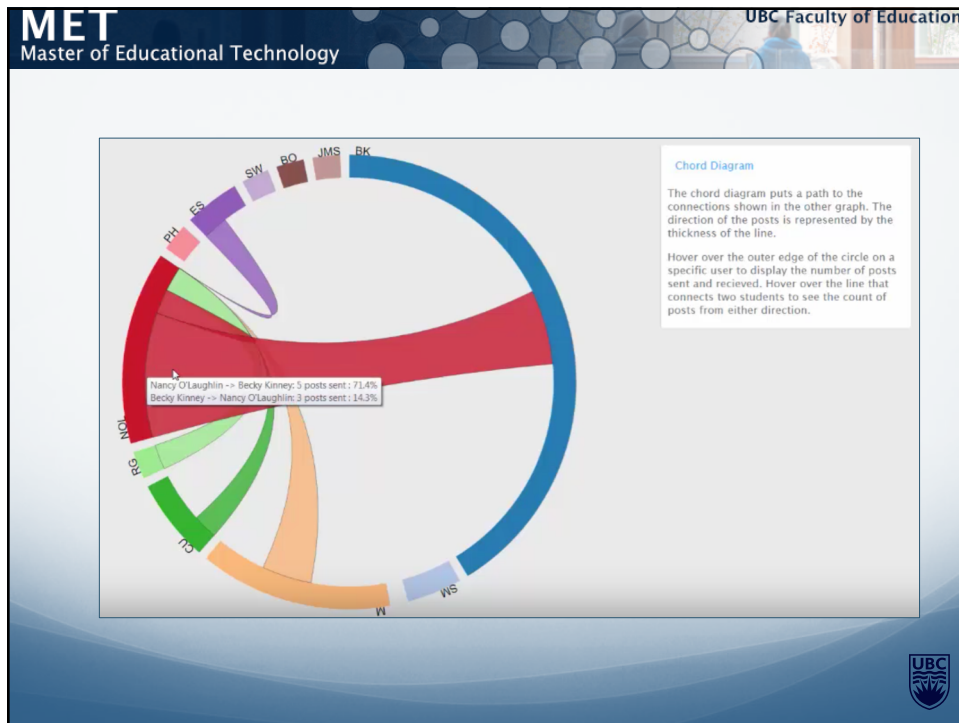
Introduction	Learning Outcomes	Technology Topic
22 posts 21 participants	53 posts 11 participants	78 posts 17 participants
Students were required to post an introduction	Students were required to post their own learning outcomes and comment on the learning outcomes of two of their peers	Students were asked to respond to two questions
Minimal moderation	Minimal Moderation	Moderated (Note: Red node is instructor)

Linda Corrin, University of Melbourne

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Threadz LTI for Canvas, Eastern Washington University  
<https://threadz.ewu.edu/>



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### 3. Unpacking learning in MOOCs

edX Courses • How It Works • Schools & Partners About • I want to learn about... Sign In Register

**UBCx**  
Back to schools and partners

**LEARN MORE**

**XSERIES PROGRAM**

**How to Code - Systematic Program Design**  
Learn a systematic program design method that will allow you to write.

UBCx  
Starting Soon

**Part 2**

UBCx  
China300.2v  
Chinese Thought: Ancient Wisdom Meets Modern Science- Part 2

Starting Soon  
Starts: March 7, 2016

**Part 1**

UBCx  
SPD1x  
How to Code: Systematic Program Design- Part 1

Starting Soon  
Starts: March 15, 2016 - Self-Paced

**Part 2**

UBCx  
SPD2x  
How to Code: Systematic Program Design- Part 2

Starting Soon  
Starts: March 15, 2016 - Self-Paced

**Part 3**

UBCx  
SPD3x  
How to Code: Systematic Program Design- Part 3

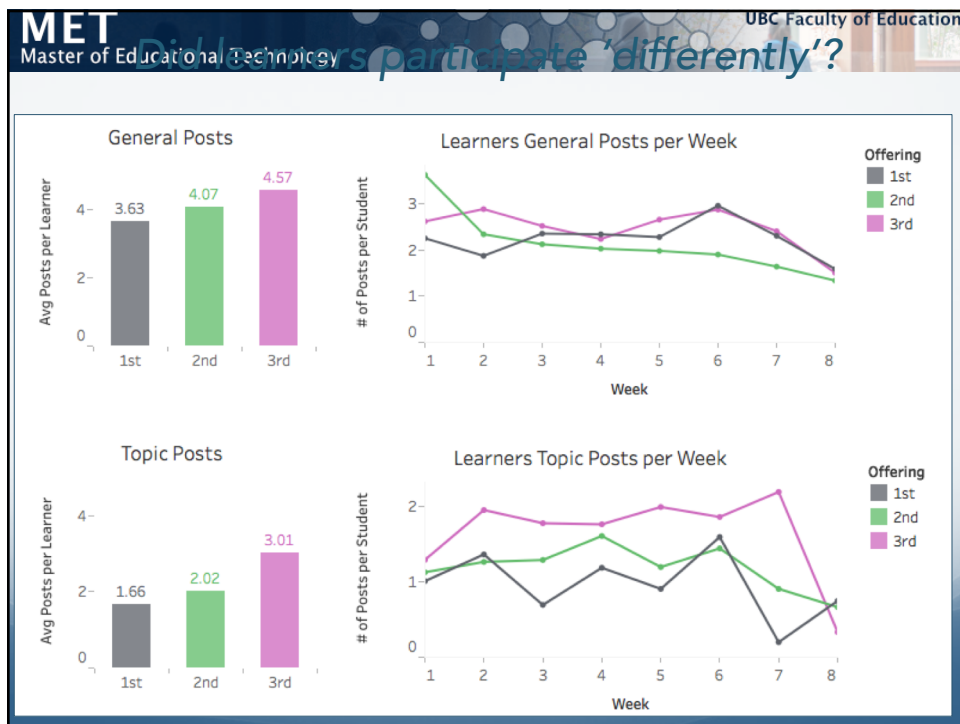
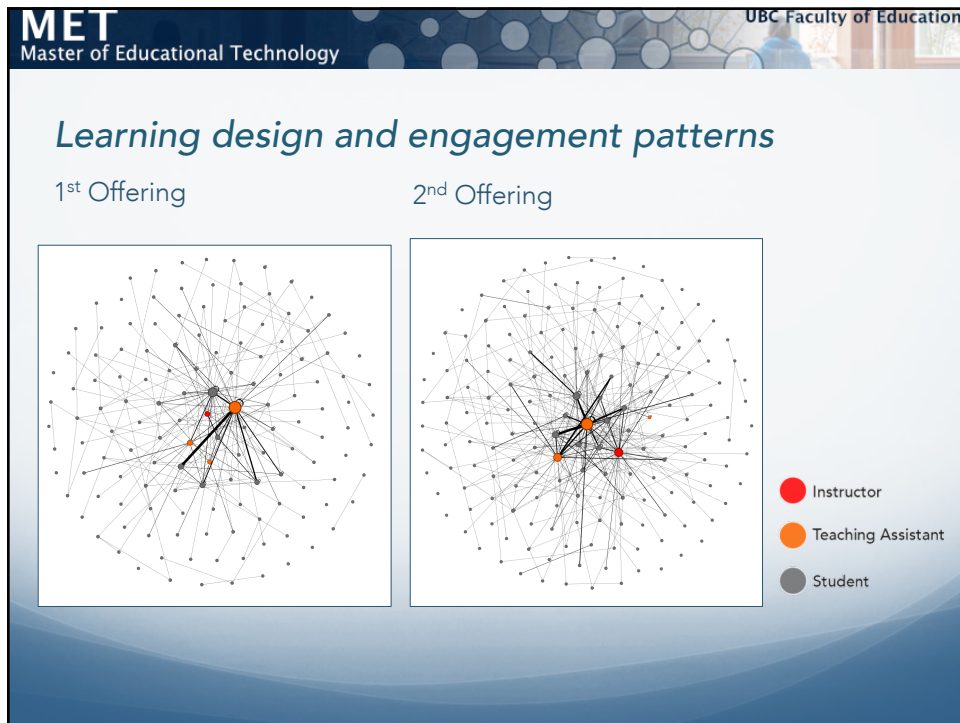
Starting Soon  
Starts: March 15, 2016 - Self-Paced

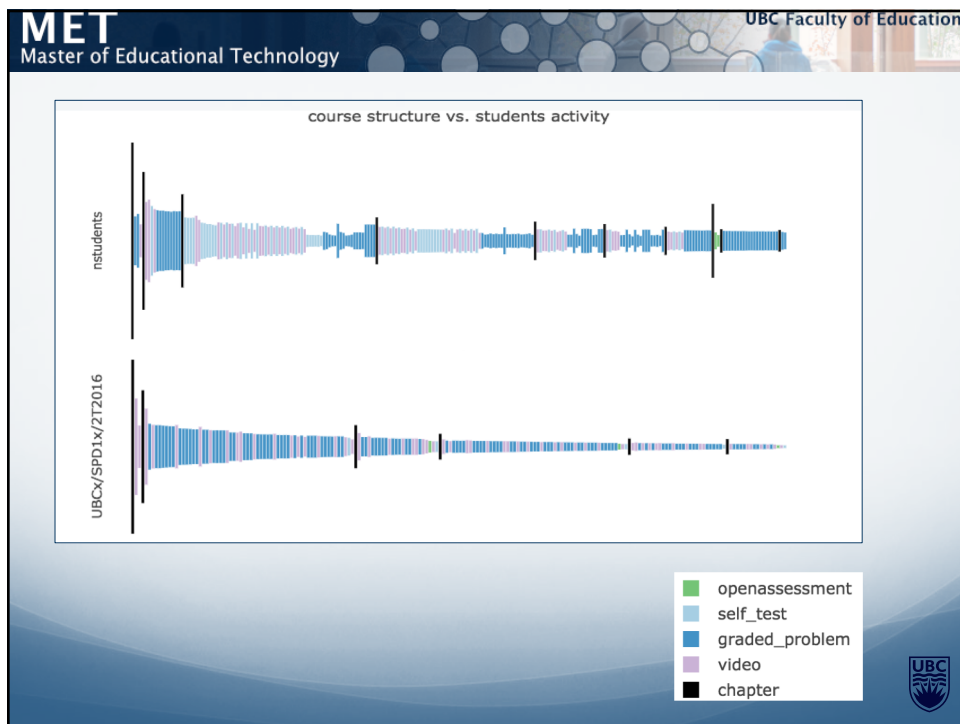
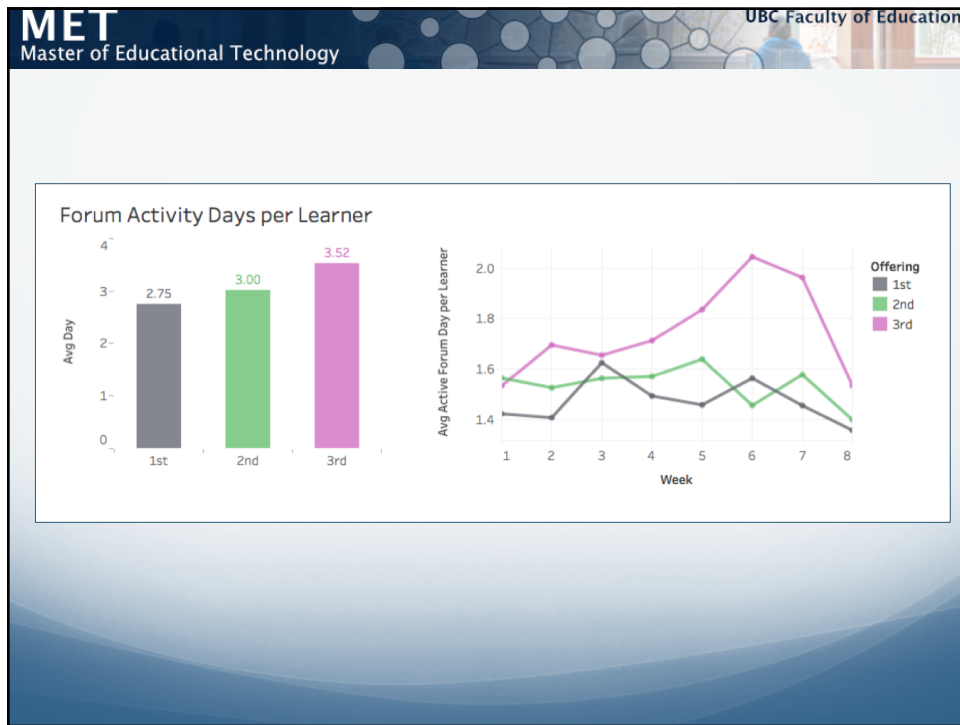
**PROFESSIONAL EDUCATION**

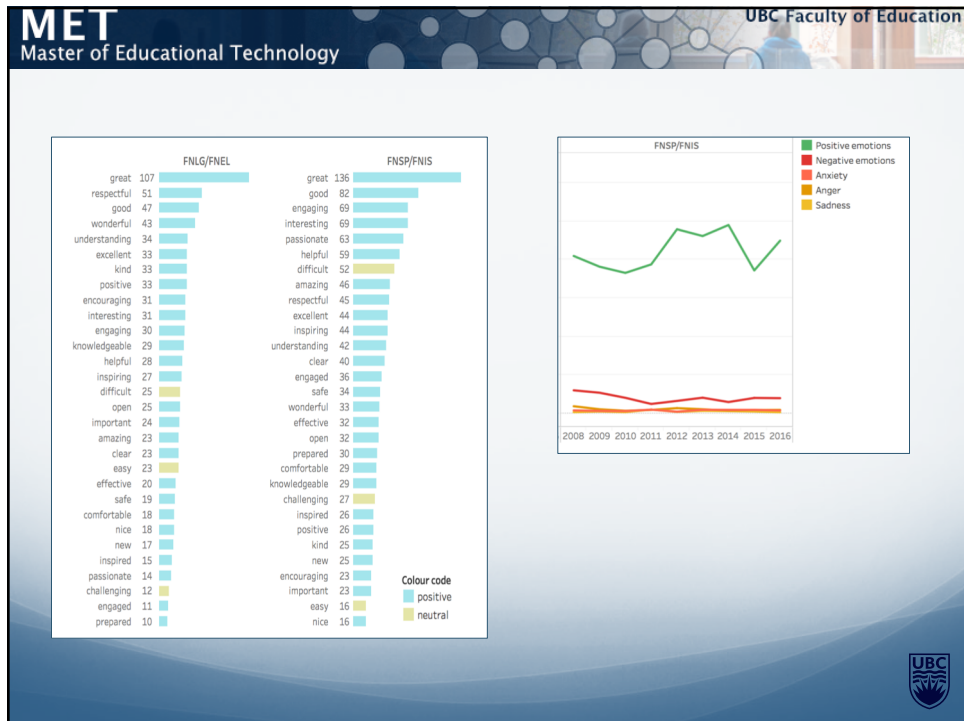
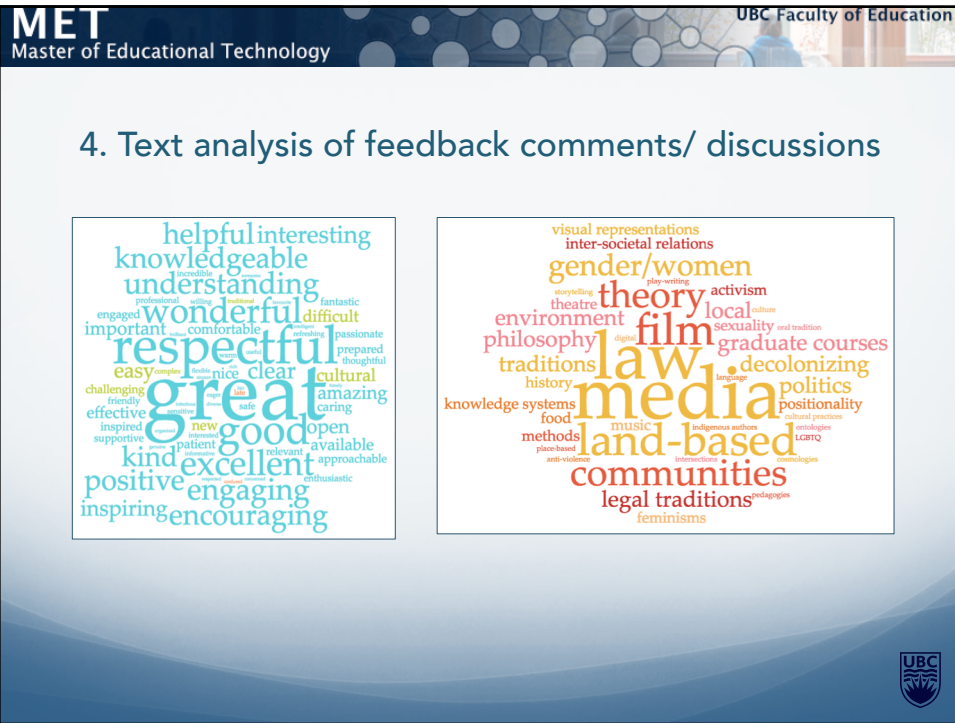
UBCx  
PhoT1x  
Silicon Photonics Design, Fabrication and Data Analysis

Starting Soon  
Starts: April 5, 2016

UBC









I also found the content in 220 to be more interesting and quirky. Much of the texts we read in 210 were

lengthy,

I was not motivated to come to this class at all. I did not enjoy most of the assigned readings. They were often

Sometimes can be a little

- Very nice and helpful professor, but I can't say I took too much away from this class, so that's a bummer. - Content was

dry

Patient and perceptive. The bulk of the course is grammar, and how to approach various very diverse languages. A huge amount of reading.

Ben provided a variety of guest speakers and showed videos to help the students engage with the subject matter-some of the readings were a bit

As a 3rd year student taking this course I could not imagine how a 1st year may feel entering this course. Some of the readings were very

I think this made the course flow a little confusing as it felt like we were 'unlearning' a bit. Loved some readings but others were



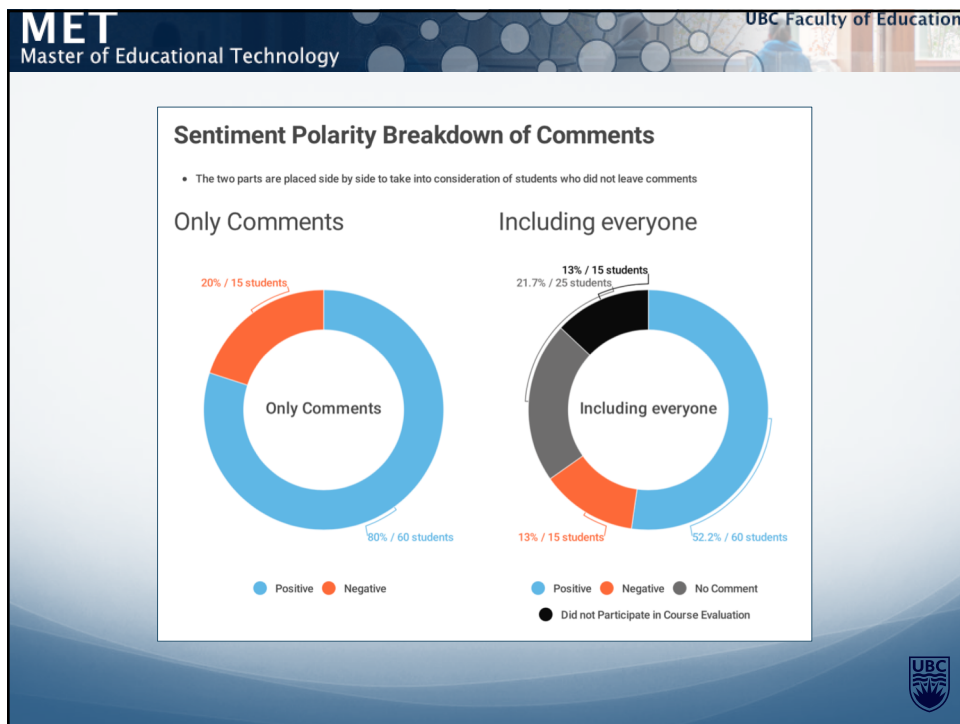
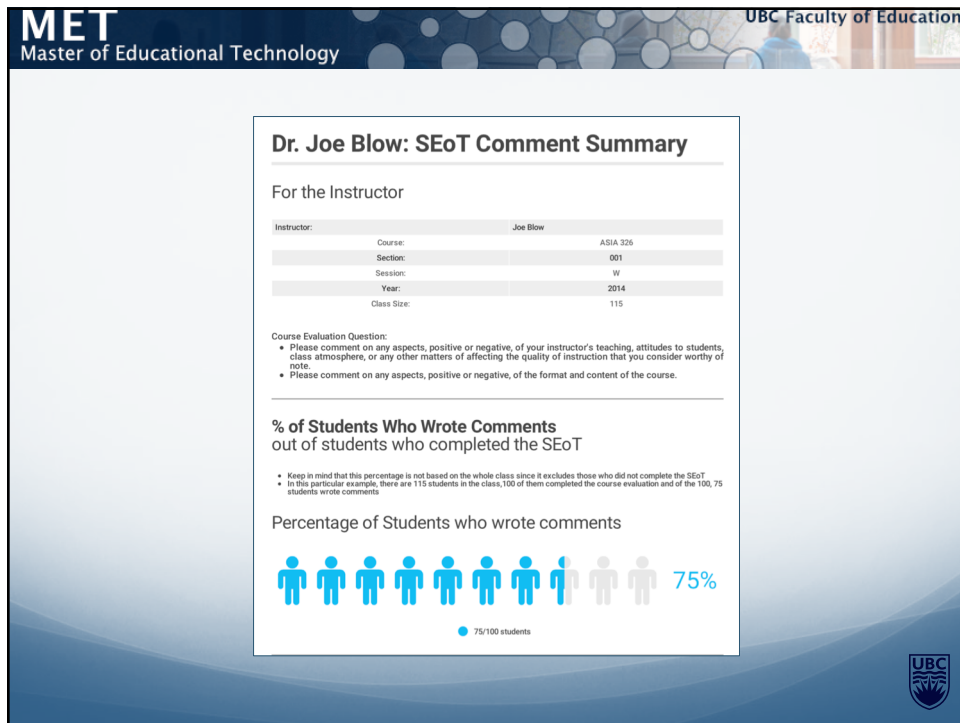
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The screenshot shows the Quantext website. At the top, there is a navigation bar with links: "Quantext", "Control panel", "Development", "Documentation", "Contact", "Logout", and "Leah Macfadyen". The main content area features the Quantext logo, which consists of a stylized blue 'Q' and the word "Quantext" in a dark blue serif font. Below the logo is the tagline "Analyse student responses in context". A prominent blue button with the text "Login with Google" and a Google logo is centered below the tagline. At the bottom of the page, there are three columns of content, each with an icon and a heading: "Why Quantext?" with a book icon, "Who is Quantext for?" with a person icon, and "Who is using Quantext?" with a network icon. Each column has a colored horizontal bar (orange, blue, and green respectively) at the bottom.

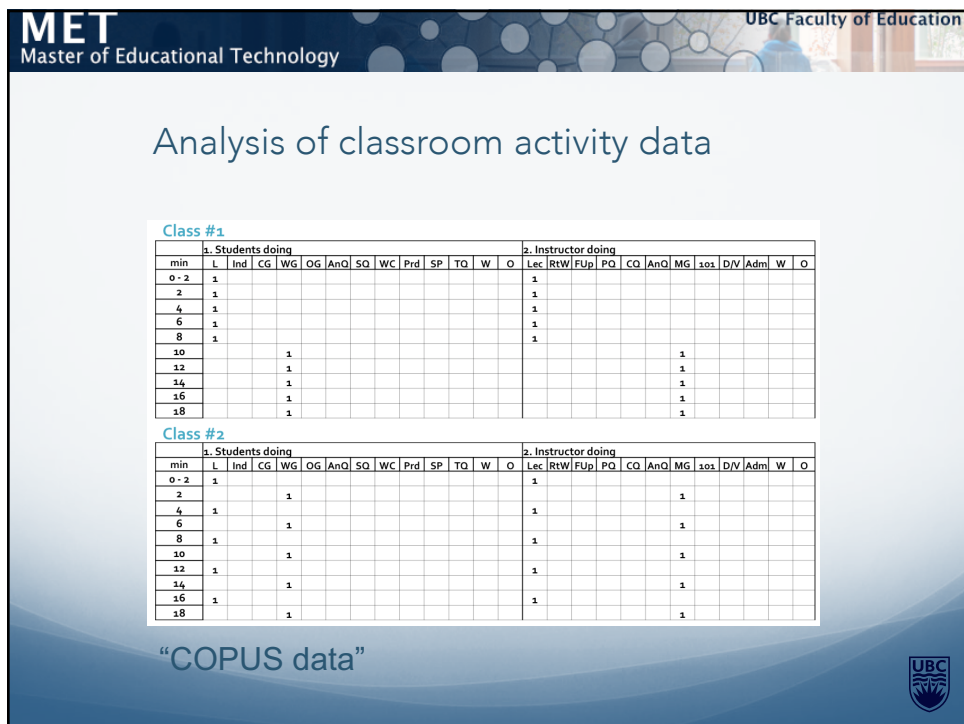
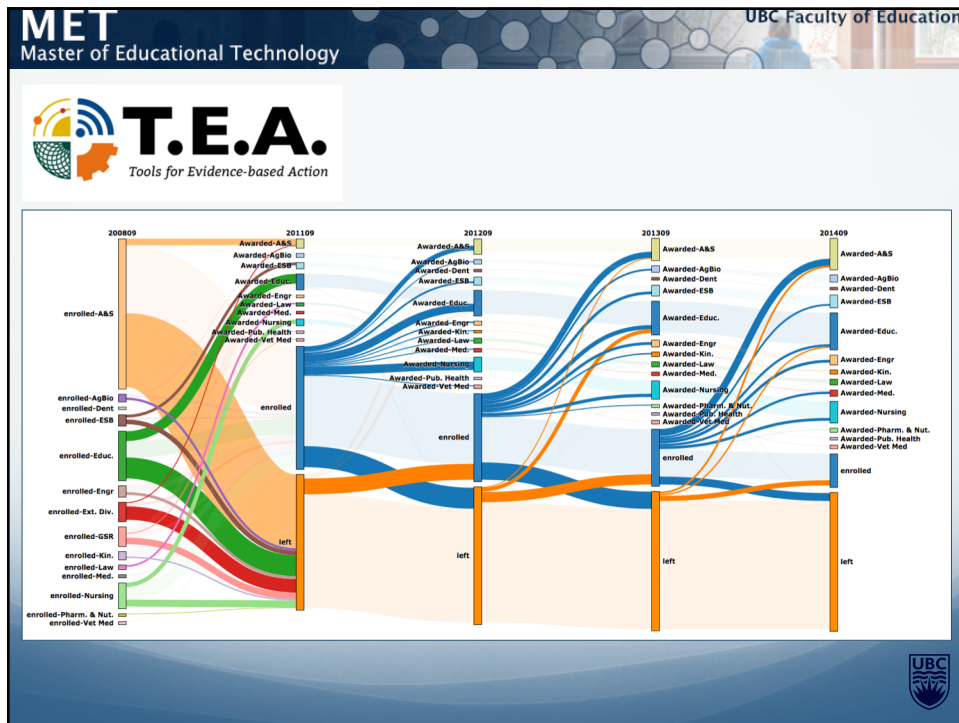
<https://www.quantext.org/index>

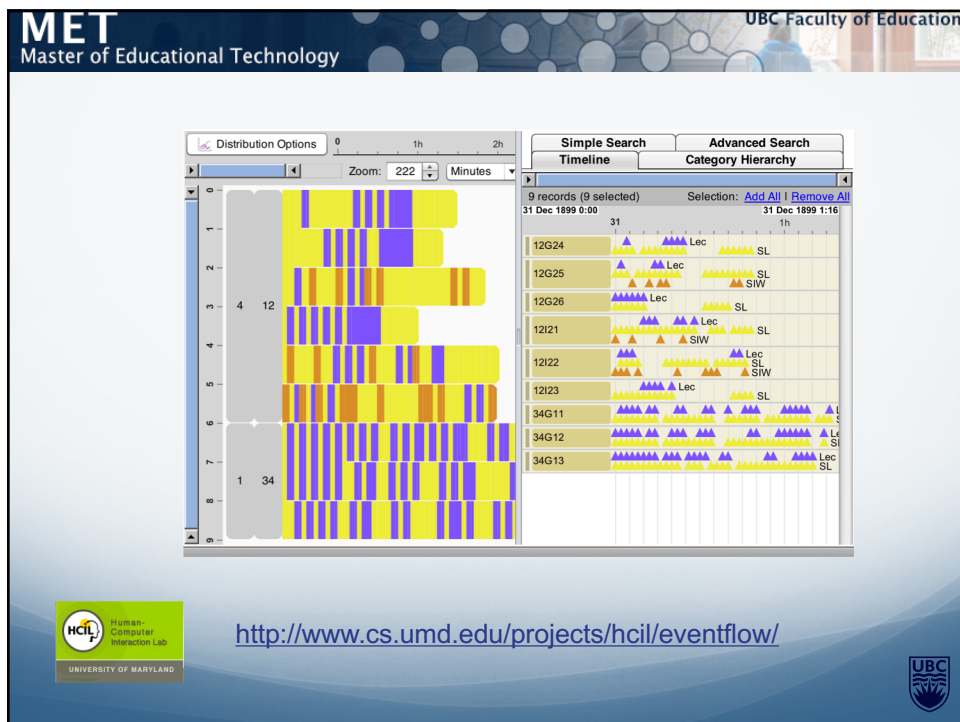
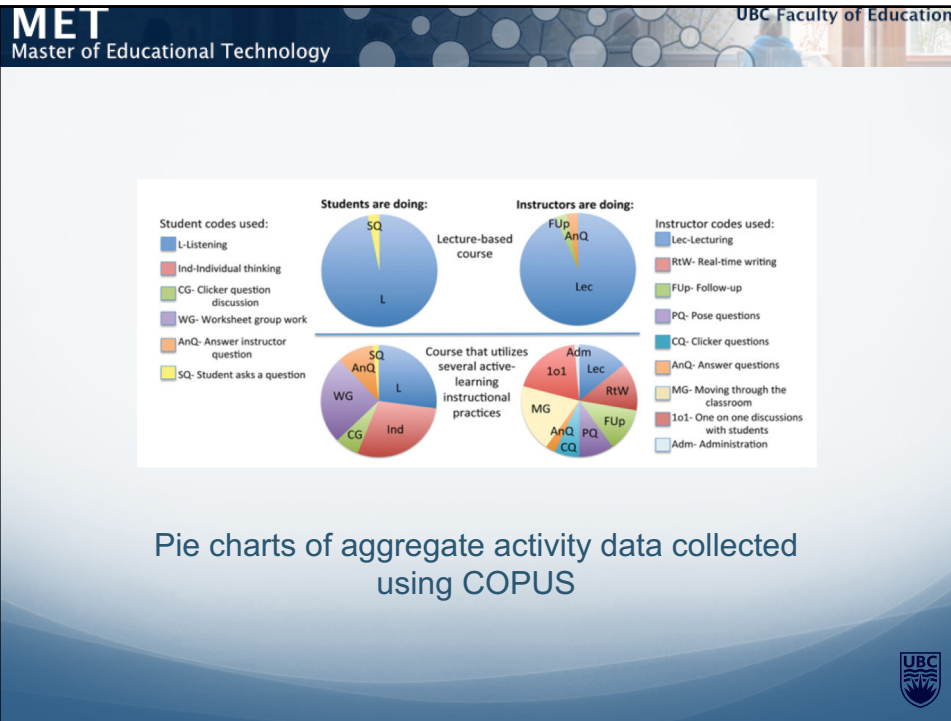






[illegible]





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## 6. Supporting self-regulated learning

*The Purdue Signals Project*  
<http://www.itap.purdue.edu/studio//signals/>



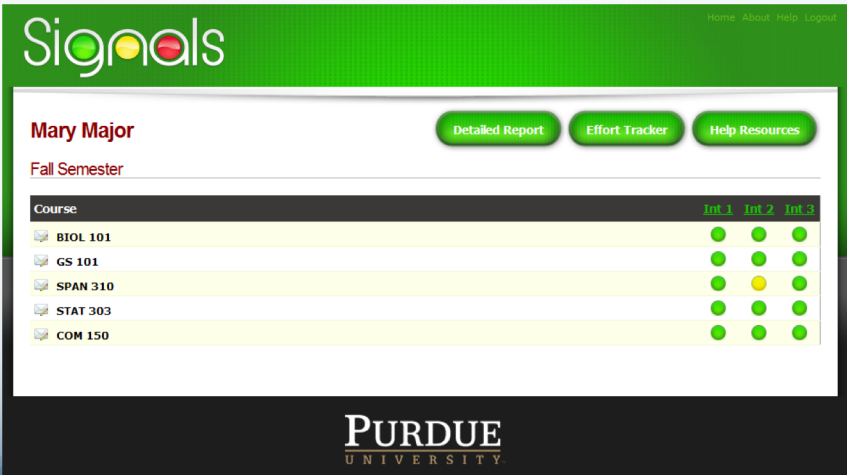
*"The premise behind CS is fairly simple: utilize the wealth of data found at an educational institution, including the data collected by instructional tools, to determine in real time which students might be at risk, partially indicated by their effort within a course."*


Arnold & Pistilli, 2012



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### 'Check my Activity' at UMBC (USA)

**Blackboard »**  
Your courses and activity inside of Blackboard.

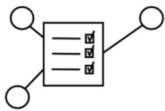
Courses*	Rank	Activity (?)	Below	Average	Above	Grade Report
<b>Fall 2010</b>						
CMPE 321	20	<div style="width: 100%; height: 10px; background: linear-gradient(to right, yellow, orange, red);"></div>				Yes
LLC 644	2	<div style="width: 100%; height: 10px; background: linear-gradient(to right, blue, cyan, green);"></div>				No
SCI 100Y	19	<div style="width: 100%; height: 10px; background: linear-gradient(to right, yellow, orange, red);"></div>				Yes
<b>Spring 2010</b>						
LLC 600	2	<div style="width: 100%; height: 10px; background: linear-gradient(to right, blue, cyan, green);"></div>				No

Dashboards gives LMS (Blackboard) metrics to show students measures of their activity in a course site versus their peers' activity levels. Where the grade book is implemented, the tool also offers learners a summary of activity levels of peers who earned lower or high grades.

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### The Learning Analytics Report Card (LARC), University of Edinburgh



Choose the areas you'd like the report to cover:

☒ Attendance

☐ Performance

☐ Engagement


☒ Personal

☒ Social Interaction

Ok, report on me!

The 'Learning Analytics Report Card' (LARC) captures data from an individual student's course-related activity, and presents a summary of their academic progress in textual and visual form. However, rather than manifesting through hidden and inaccessible institutional data aggregation and analysis, the LARC offers students an opportunity to play with their data; to choose what is included or excluded, when the report is generated, and how it might be presented.

<http://www.de.ed.ac.uk/project/learning-analytics-report-card>





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### Your Report...

Your attendance has been satisfactory. You log in to the course most weeks, and view appropriate weekly course content. There was at least one week where your attendance was unusually low, however you maintained good presence throughout.

You have been a 'lurker' in the discussion forums, often readings the posts of other but not necessarily contributing to threads yourself. You enjoy listening to discussions, and gain a lot from this experience, however this might be extended if you engage your peers in conversation. While you mostly lurked in the discussion forum, in week 3 you seemed to be a lot more engaged and contributed a number of threads.

You were not very engaged with the course content. But in week 3 you seemed really interested in the topic. You need to engage with the content more each week in order to build your understanding of the course themes.

You have not worked very hard on your personal presentation to others, and prefer to maintain a low profile throughout the course. Feedback from the group has been quite low priority for you, and you prefer to work independently.

In terms of your overall performance, you are in the top quarter of students. Your attendance is better than most students, however you socialise with your peers a bit less than the others.

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Learning Analytics Community Exchange  
**EVIDENCE HUB.**

LACE

HOME PROPOSITIONS ▾ EVIDENCE ▾ PROJECTS ▾ CONTRIBUTE ▾

Are you interested in learning analytics? Export

The LACE Evidence Hub can help you make evidence-based decisions about learning and teaching, whether you are a teacher, a manager, a researcher or a policymaker.

The Evidence Hub is organised around four key propositions. These are that learning analytics:

- A. [Improve learning outcomes.](#)
- B. [Improve learning support and teaching,](#) including retention, completion and progression.
- C. [Are taken up and used widely,](#) including deployment at scale.
- D. [Are used in an ethical way.](#)

Use our search and filter options to find and visualise evidence for and against these claims, and to locate projects that are exploring these issues.

Search by keyword

Filter by type  
All types ▾

Tag  
All Tags ▾

Sector  
All Sectors ▾

Polarity  
Any Polarity ▾

<http://evidence.laceproject.eu/>



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Ferguson, R., Macfadyen, L. P., Clow, D., Tynan, B., Alexander, S., & Dawson, S. (2014). Setting Learning Analytics in Context: Overcoming the Barriers to Large-Scale Adoption. *Journal of Learning Analytics*, 1(3), 120-144. Retrieved from <http://epress.lib.uts.edu.au/journals/index.php/JLA/article/view/4077/4421>