



# Measurable standards & actionable data: Learning analytics and online learning

Gregor Kennedy  
Pro Vice-Chancellor, Teaching & Learning



THE UNIVERSITY OF  
MELBOURNE

1.

**Measurable standards & actionable data:**

2.

**Learning analytics and online learning**

3.

4.

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

**Academic Analytics** is the improvement of organizational processes, workflows, resource allocation, and institutional measurement through the use of learner, academic, and institutional data.



Can Learning and Academic Analytics provide  
**Actionable Data** to assist with Online Learning?

**YES**

Can Learning and Academic Analytics provide **Actionable Data** to assist with Online Learning?

1. Program/Course/Subject/Unit Performance
2. Learning & Teaching Processes
3. Assessment Performance
4. Student Success
5. Student Experience



# 1. Program Performance

## UoM SALAR Project

Across the whole University, provide high level summary data to senior Faculty and course coordinators about program and course “performance”



## UoM SALAR Project



## UoM SALAR Project



### Loop Tool

“Complete the loop” by providing easily accessible, actionable data to teachers about their students’ interactions in digital learning environments



# 2. Learning & Teaching Process

### Loop - Learning Design Analytics

My Courses - Course: [ ]

Course Weekly Dashboard: Week 1 (July 27, 2015 - Aug. 2, 2015)

Week 1 [Change Week](#)

#### Pageviews

##### Daily Page Views

Legend: Content (blue), Communication (black), Assessment (green), Unique Pages (orange)

#### Week Metrics

- Unique Pageviews
- Students
- Sessions
- Avg. Session Duration (in mins)
- Avg. Pageviews Per Session

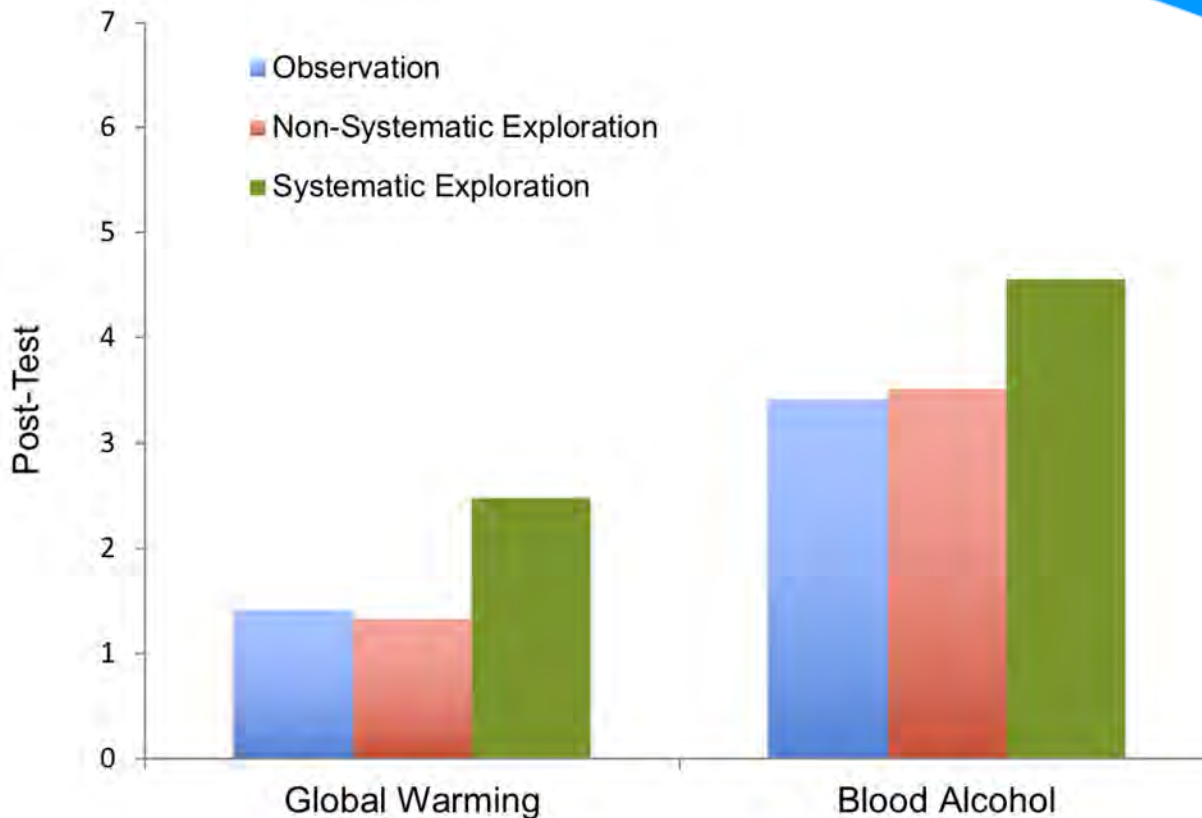
#### Student Pageviews Histogram

#### Top Accessed Content

Page	Type	Student Visits	Pageviews
Lecture 2	resource/x-bb-document	173	1182
Introduction lecture	resource/x-bb-file	172	1124
-TOP-	resource/x-bb-folder	171	1080
Lecture 4	resource/x-bb-document	170	1078



## Task Level Analytics





## 2. Learning & Teaching Process



[Home](#)

[The Team](#)

[Scenarios](#)

[Case Studies](#)

[Tool](#)

[Institutional Adoption](#)

[Dissemination](#)

[News](#)

[Contact](#)

Providing personalised,  
timely support actions to  
large student cohorts.



# 3. Assessment Performance

LMS Tools



RASCH Analysis

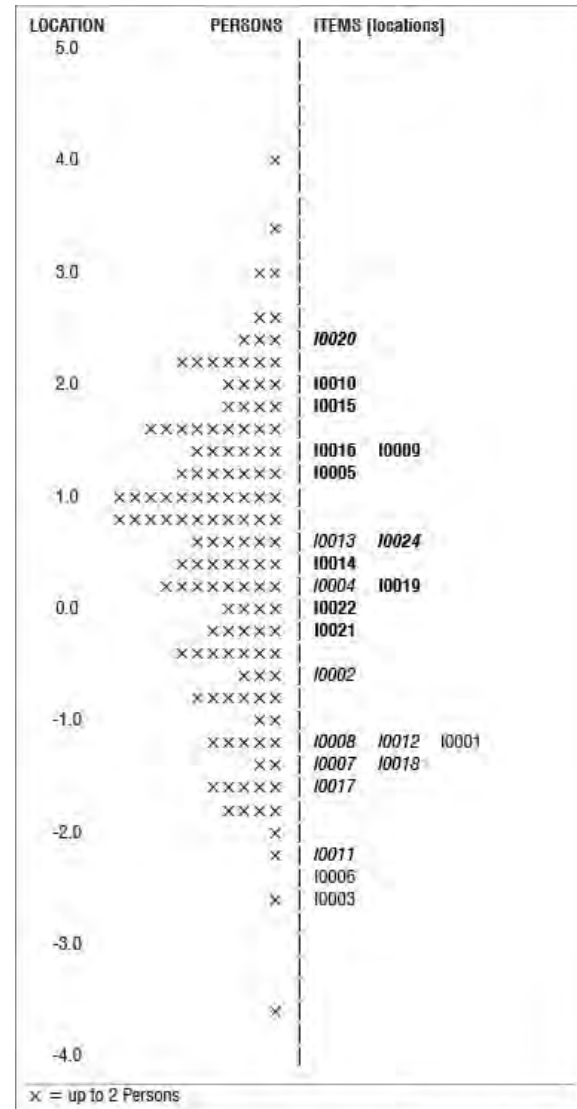


Figure 10: Person-item map approximating person proficiency and item difficulty on a common scale. Items classified at Level 1 are indicated in ordinary font, Level 2 in italics; Level 3 in bold and Level 4 in bold italics.



## SRES

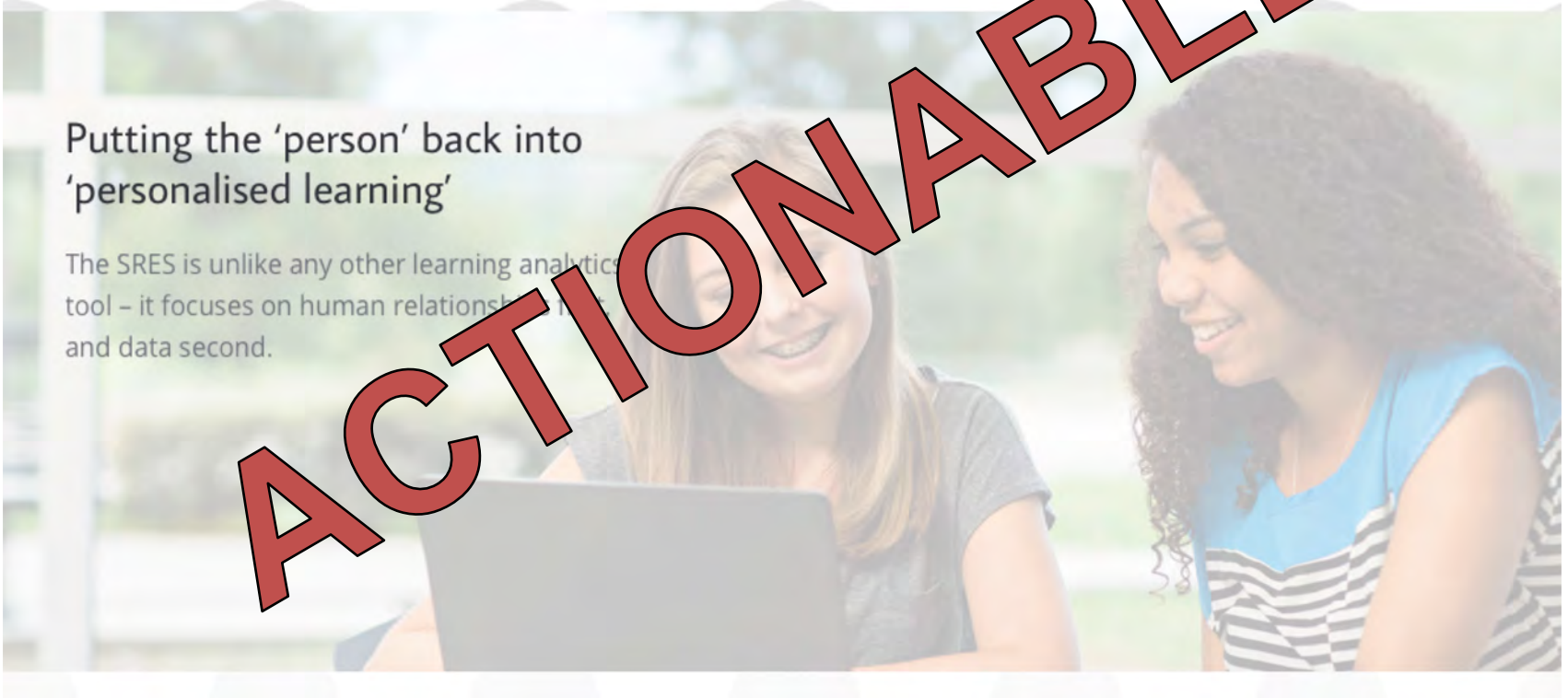
### The Student Relationship Engagement System

HOME WHAT IS IT? GET IN TOUCH MELBURNE TEAM TRY IT OUT

Putting the 'person' back into  
'personalised learning'

The SRES is unlike any other learning analytics  
tool - it focuses on human relationships first,  
and data second.

**ACTIONABLE**





# 4. Student Success

## BB Predict

Students My Students (313)

313 Results Terms: Current Term ±2 [Clear filters](#)

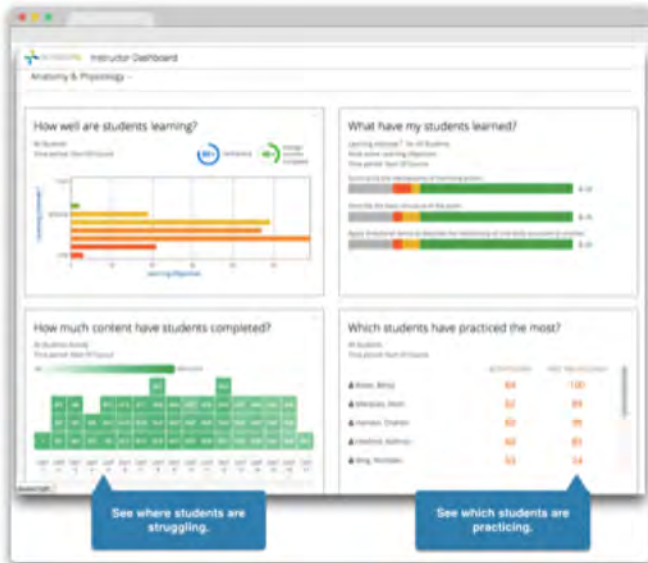
Student	Probability of Passing	Courses	Cumulative GPA
Anthony J. M. Quinn 10920559	83 %	CMSC205 ↑  CMSC206C ↓	2.79
Diana Randall 10668196	81 %	CMSC205 ↑  CMSC206C ↑	2.69
Katherine Alsop 10799053	78 %	CMSC206C ↓  CMSC205 ↑	2.84
Mary Peake 10431326	76 %	CMSC205 ↓  CMSC206C ↑	2.34
Yvonne Reid 10623609	66 %	FREN0101 ↓  HIST0101 ↓  CMSC205 ↑ <span>+1</span>	2.87
Richard May 10330743	66 %	FREN0101 ↑  HIST0101 ↓  CMSC205 ↑ <span>+1</span>	2.74
Claire Karagory 10462794	65 %	GERM0101 ↓  CMSC205 ↑  CMSC206C ↓	3.46
Connie Chu 10692730	64 %	GERM0101 ↓  CMSC206C ↑  CMSC205 ↑	2.15
Gavin Taylor 10112562	64 %	GERM0101 ↓  CMSC205 ↓  CMSC206C ↑	2.74



## Acrobatiq



Our Platform and Services [Evidence](#) [About Us](#) [Blog](#) 



### 1 Discover New Insights About Your Students' Learning

*Acrobatiq's data collection and modeling capabilities go beyond typical "engagement" analytics.*

Most learning analytic systems *Track* what students do, *Record* which questions students get right or wrong, and *Summarize* student performance.

The Learning Dashboard goes significantly beyond tracking, recording and summarizing student data by:

- **Revealing** what students did/did not learn
- **Quantifying** how well students have learned each skill
- **Identifying** consequential patterns in students' learning behaviors
- **Measuring** effectiveness of instructional and design choices



## 4. Student Success

In Real Time:

*[Belinda Tynan ... ASCILITE Keynote ... OU UK ... RMIT]*

25-30 Success variables

Real time

Program Level Analytics

80 Courses

“79% of courses had uplift”  
[in retention]

Some had 20-25% [uplift]



# 5. Student Experience

Enquiries by Category





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Can Learning and Academic Analytics assist with  
**Measurable Standards** for Online Learning?

MAYBE



Are these our standards? Standards of what?

- Online learning **quality**
- Institutional **maturity** in online
- Institutional **capability** benchmarks in online

**Is this what Michael  
was thinking of ?**





The screenshot shows the QILT website interface. At the top, there is a navigation bar with links for 'About this site', 'For institutions', 'For students', 'Glossary', 'Feedback', and 'Contact us'. Below this is a main header area with the QILT logo and a 'Help me get started' section. The main content area features a search bar with the text 'Find a study area or institution' and a 'GO' button. A red circle highlights a section titled 'Where does this data come from?' which lists four data sources: 'Student Experience', 'Graduate Employment', 'Graduate Satisfaction', and 'Employer Satisfaction', each with a right-pointing arrow.

qilt.edu.au

EHS Sign In HR Library Service Desk Themis Service Portal Google Scholar Contact direc... of Melbourne

QILT - Quality Indicators for Learning and Teaching

About this site | For institutions | For students | Glossary | Feedback | Contact us | f |

**QILT**  
quality indicators for learning and teaching

Choose a university or higher education institution that is best for you.

Compare undergraduate and postgraduate coursework student experience and graduate employment.

Help me get started

View transcript

Home Study Areas Institutions **★ My Shortlist** 0 ↓

**Compare student experience and graduate employment**

Find a study area or institution

**Thinking about higher education institutions and study areas? Wish you could ask someone about their experience?**

With QILT, you can do side by side comparisons of the quality of the higher education institutions and the study areas that you're interested in.

You can trust QILT results, because they are based on thousands of surveys completed by students across Australia. The results are up to date, because the surveys are completed every year.

**Where does this data come from?**

- Student Experience →
- Graduate Employment →
- Graduate Satisfaction →
- Employer Satisfaction →



## Satisfaction and Experience

- Student Experience Survey (SES)

??

What

**What are the  
Risks Here ?**

... (self report ... SES,

but Analytics???)





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# The Literal Standards



Australian Government

Tertiary Education Quality and Standards Agency

TEQSA

## *Higher Education Standards Framework (Threshold Standards) 2015 – TEQSA*



# The Literal Standards





# The Literal Standards

Everyone pull out their HESF and look for standards where analytics could assist, inform, support ...



Here's one ...

## 5.3.7

*The results of regular interim monitoring, comprehensive reviews, external referencing and student feedback are used to mitigate future risks to the quality of education provided and to guide and evaluate improvements, including the use of data on student progress and success to inform admission criteria and approaches to course design, teaching, supervision, learning and academic support.*

Here's one ...

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- Learning and academic analytics from online learning environments can be used by institutions and individuals to generate actionable data.
  - ✓ What is the focus (question)?
  - ✓ What is the granularity (level of analysis)?
  - ✓ Does it scale? University? Sector?

- It is less clear – to me ! – how learning and academic analytics from online learning environments can be used to inform, support and add value to measurable “standards”.
- But it does depend on whose and which standards we are talking about.
- QILT – we need to identify and I expect advocate about the interpretative risks associated with this application of analytics.
- HESF – we need to sift and think clearly about scalable, useable sector-wide implementation.





**Thank you ...**