



# Learning Analytics

*Supporting Student Engagement and Success*



## The planning and implementation of Learning Analytics at James Cook University

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Learning, Teaching and Student Engagement

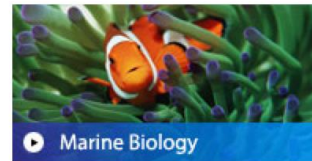


# James Cook University *at a glance*



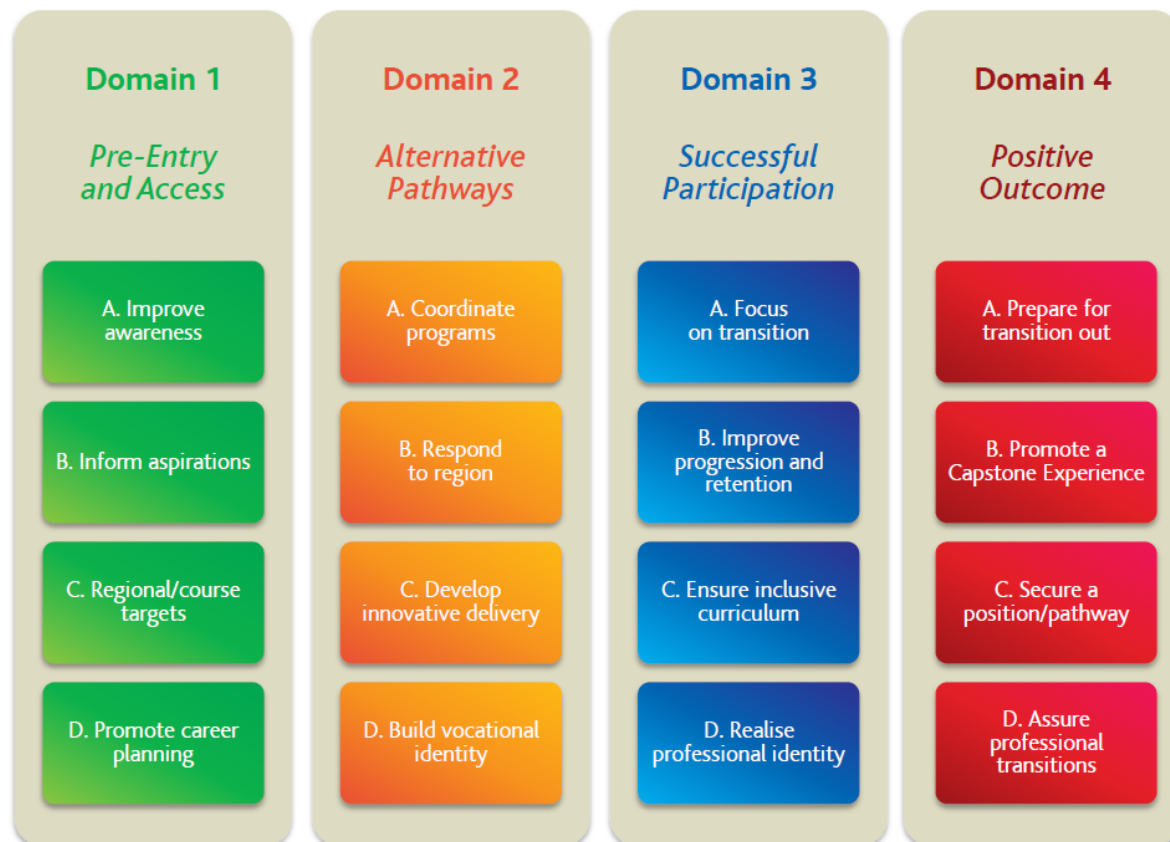
Main campuses in Cairns, Singapore and Townsville

- Approx. 20 000 students
- 72% undergraduate students
- 65% of students are first in family
- 24% are low SES
- 5% of students are Aboriginal and or Torres Strait Islander Students
- 4.5% of students have a disability
- 24% of students come from rural or remote areas



# Access, Participation and Success Plan 2015-2017

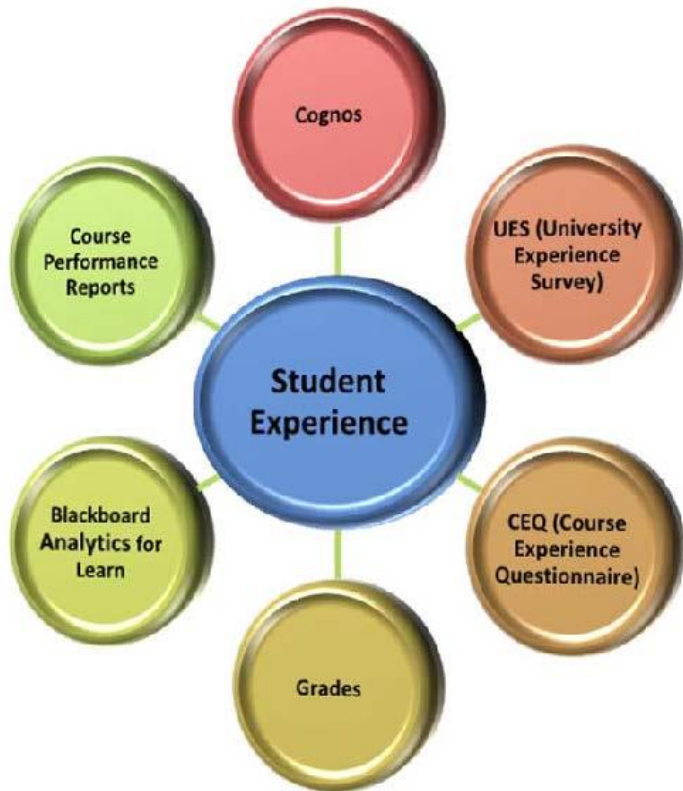
Figure 3: Domains of Activity to ensure access, participation and success.



# A sample of the initiatives

Enhancing learning and teaching	Enhancing the student experience
Embed English Language and Numeracy	Transition programs eg UniStart, Orientation
<b>Improve intentional Blended Learning design</b>	<b>Employ College Student Support Officers</b>
Develop engaging and scaffolded assessment	<b>Build a coordinated pathways program</b>
<b>Utilise data to target and improve subjects</b>	Deploy scholarships to support participation
Embed Career Development opportunities	Promote Peer Assisted Study Sessions (PASS)
<b>Engage learning leaders around the University eg: ADTL's, FYEC</b>	Expand Career Development Learning and Student Mentor program

# JCU: Data driven reform....



- Course Retention
- University Retention
- Student Achievement (Subject Success Rate)

Data access = role + security level

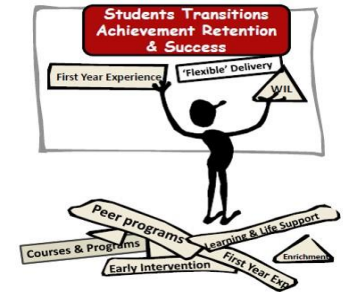
# How does Learning Analytics fit in?

*Kift's (2008) "harness the curriculum as the academic and social 'organising device' to do serious transition and retention work"*

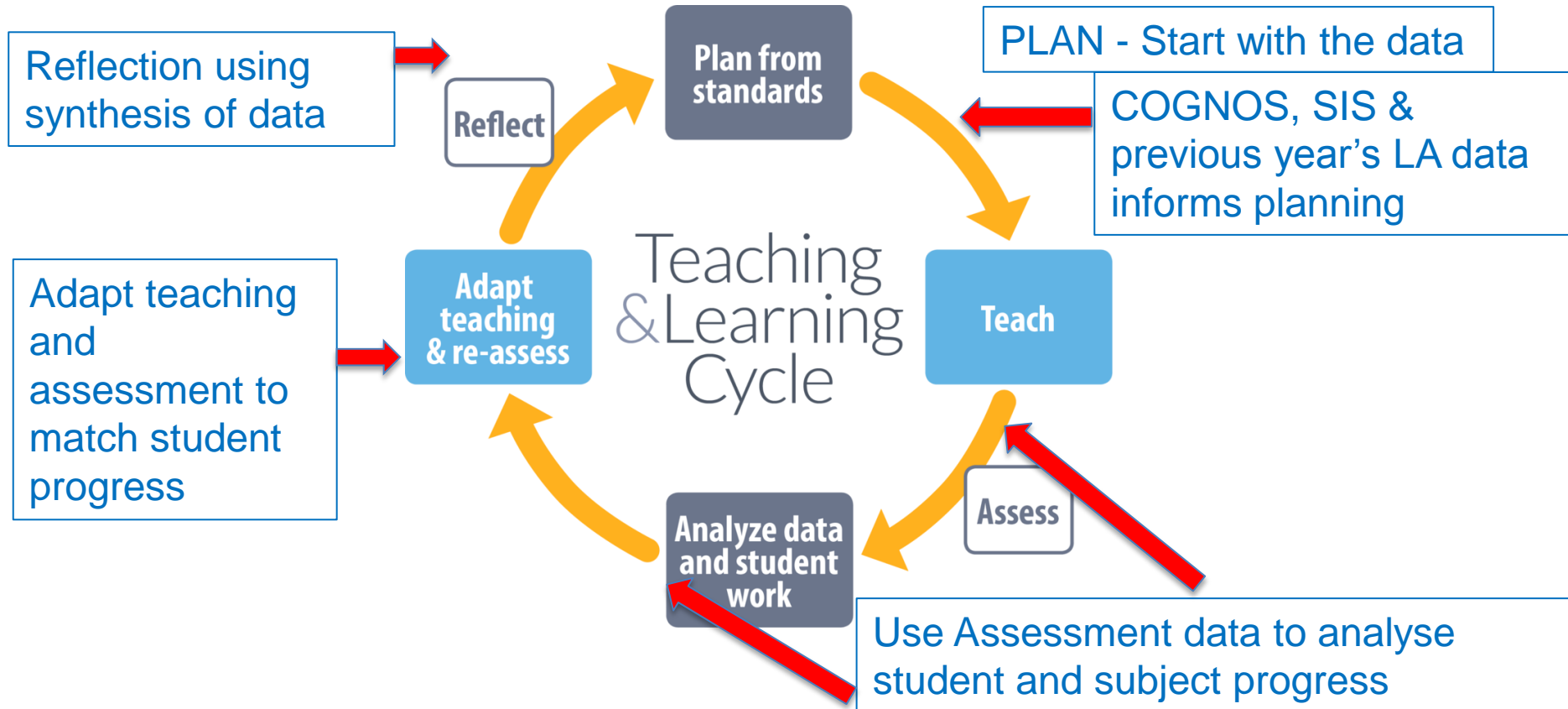
We have taken a dual pronged approach:

1/ Whole of Institution Student Support Strategy

2/ Interrogate data to enable the redesign of curriculum to meet the needs of today's Learner



# Why Learning Analytics?





# Timeline

2013 Project Planning



2014 - Data integration and preparation  
Collaboration with Stakeholders



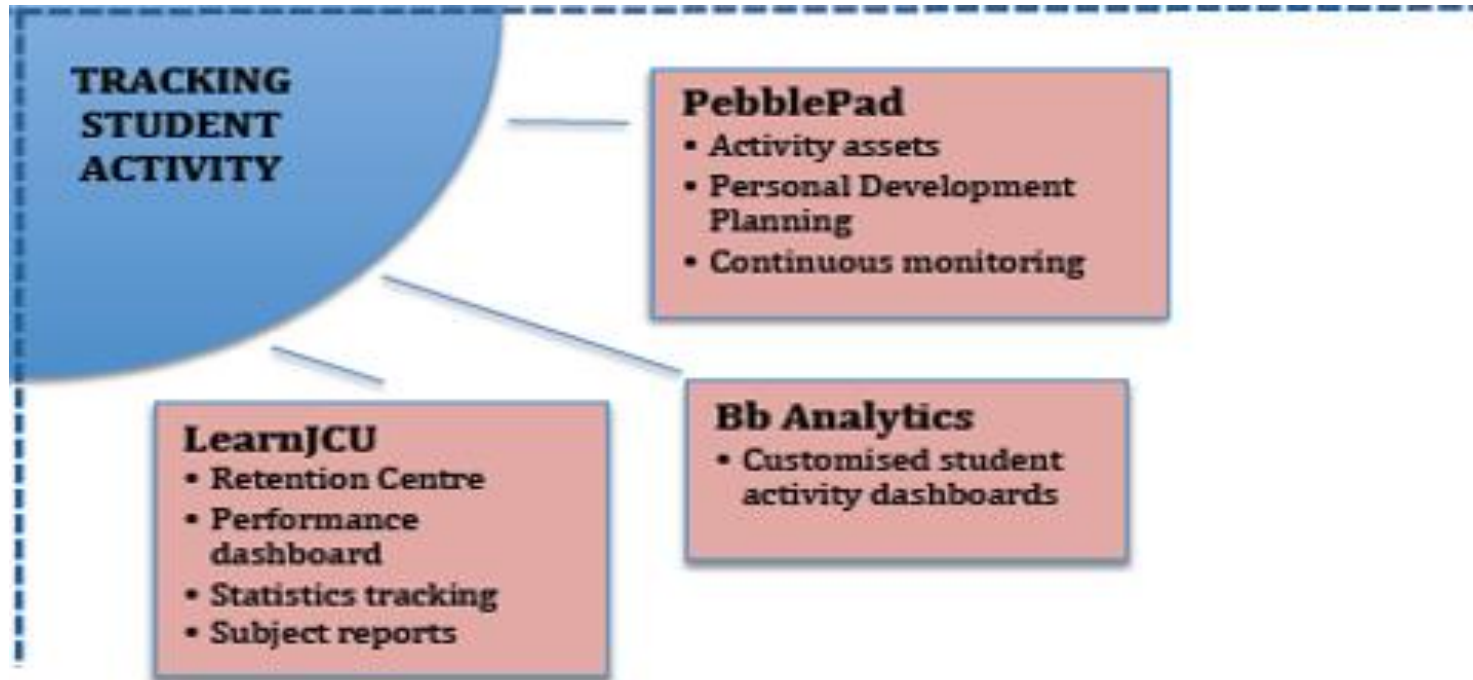
2016 - Framework for a *Whole of Institution Student Support Strategy*  
Introduction of Push Reports  
Ad-hoc Data requests  
Curriculum redesign



2015 - Customisations, testing, staged release to defined role groups  
Level 1 and 2 Reports and Dashboards  
Security Matrix finalized  
Staff access and training  
Self serve help resources prepared



# Teaching with Technology



# Levels of report access

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LEVEL 1      Subject Coordinators & Teaching Staff

LEVEL 2      Student Support Staff

Dashboards      Student Support Staff

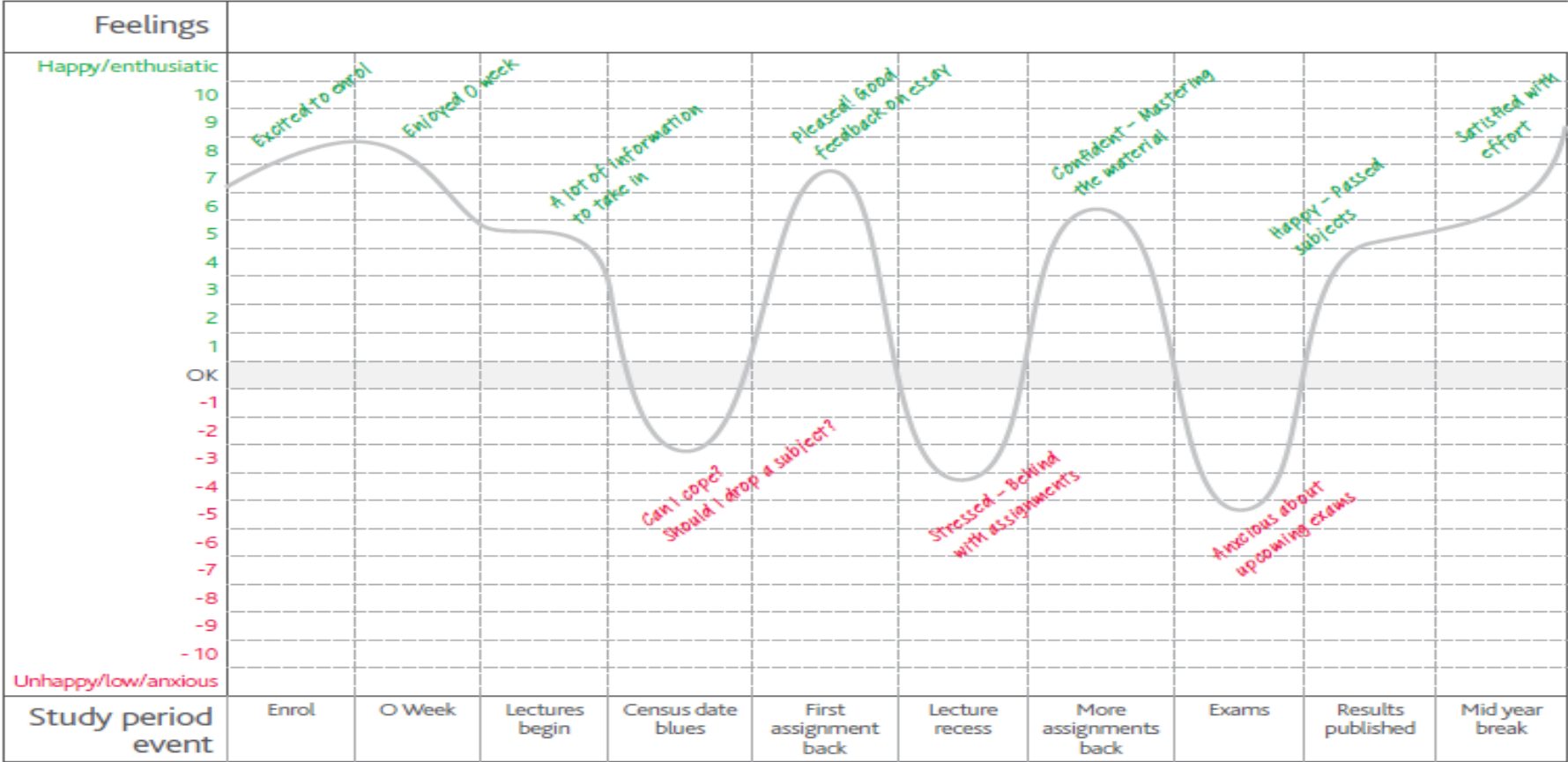
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# College Support Officers use case for Learning Analytics

## – based on the ‘Student Life Cycle’



Emotional highs and lows for new students in their first study period



This table was developed in consultation with JCU's Student and Academic Services and Counselling Service.

# Level 1 reports accessible in all LearnJCU Subject sites

SUBJECT MANAGEMENT

- ▼ Control Panel
- ▶ Subject files >
- ▶ Subject Tools >

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▼ Student Tracking >

- Performance Dashboard
- Retention Centre
- Subject Analytics ←
- Subject Reports

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- ▶ Grade Centre >
- ▶ Users and Groups >
- ▶ Customisation >
- ▶ Packages and Utilities >
- ▶ Help

## Subject Analytics



### LearnJCU Subject At-a-Glance

This report compares this LearnJCU subject against other LearnJCU subjects in the same College.

› Last Run: Wednesday, 20 April 2016 1:36:50 PM EST



### Activity and Grade Scatter Plot

This report plots the distribution of student activity against their grades in this LearnJCU subject.

› Last Run: Wednesday, 20 April 2016 1:41:08 PM EST



### Activity Matrix

This report shows a visual representation of student activity in the LearnJCU subject.

› Last Run: Wednesday, 30 March 2016 2:43:46 PM EST



### LearnJCU Subject Submission Summary

Summary of User Submissions for this LearnJCU Subject.

› Last Run: Friday, 15 April 2016 12:59:51 PM EST

# Level 2 report accessible via a portal in Staff Resources



## Level 2 Reports

[Access your individual Analytics for Learn reports](#)  
(Blackboard Login and password required)

[Manage your Analytics account](#) (Self Service portal)

[Guide to managing your Analytics account](#) (PDF)

All users  
require a  
separate  
login and  
password  
from  
Blackboard



## Pyramid Dashboards

[View your allocated data Dashboard](#) (Blackboard Login  
and password required\*)

Login:  
bbpr\jblogs

*\*Remember to add bbpr\ to the beginning of your login*

# Level 2 reports



Activity and Grade Scatter Plot JCU



Grade Centre Exception Report JCU



Instructor At A Glance JCU



Items Accessed By Student



LearnJCU Activity Matrix



LearnJCU Subject At A Glance



LearnJCU Use Across University



Login Exception Report JCU



Student Activity By Instructor JCU



Student At A Glance JCU



Subject Submission Summary



Submission Exception Report JCU

Role groups as  
per the  
Security Matrix

JCU LA/LS

JCU LTSE

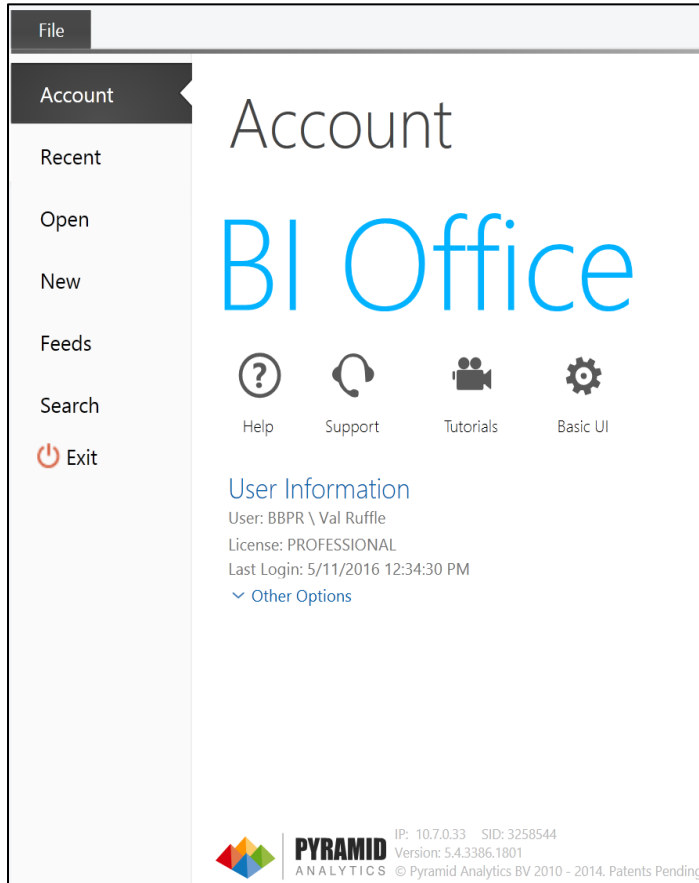
JCU SSO

JCU CC

JCU FYEC

JCU ADTL/DVC

# Dashboards built using Pyramid BI



The screenshot shows the 'Account' dashboard in Pyramid BI. On the left is a sidebar menu with options: File, Account (selected), Recent, Open, New, Feeds, Search, and Exit. The main content area is titled 'Account' and 'BI Office'. It features four icons: Help (question mark), Support (headset), Tutorials (video camera), and Basic UI (gear). Below these is 'User Information' for user 'BBPR \ Val Ruffie', with license 'PROFESSIONAL' and last login '5/11/2016 12:34:30 PM'. At the bottom, it shows the Pyramid Analytics logo, IP address '10.7.0.33', SID '3258544', version '5.4.3386.1801', and copyright '© Pyramid Analytics BV 2010 - 2014, Patents Pending'.

## Applications



New bioXL  
Analysis



New bioPoint  
Dashboard



New bioWriter  
Publication

- Activity
- Course Design
- Outcomes
- Course Activity
- Course Item Activity
- Course Items
- Course Summary
- Forum Submissions
- Grade Center
- Session Activity
- Student Course Summary
- Submissions



# 2015 Purpose built Dashboards

## – to inform? to support?

Summary of days since subjects accessed in current Study Period Average Grade in current Study Period Average Activity in current Study Period

This table shows the current login history for the subjects each student studies in the current Study

too early in the  
implementation phase

assumed users would  
embrace the new

First Year Experience  
Coordinators Dashboard

buy in was not evident

Time  
poor

overwhelmed by the  
data volume

Support  
ard

	Subject Accesses	Subject Item Accesses	Subject Item Interactions	% of Items Accessed per Student
Abbey, Matthew (jc321002)	33	26	43	9.3%
Adams, Dinity (jc324355)	9	36	84	2.3%
Adams, Rhys (jc321544)	1			.0%
Adams, Tarris (jc313469)	20	21	25	1.6%
Ainslie, Rebekah (jc265302)	12	31	54	8.3%
Aitken, Lani (jc313425)	18	52	60	4.9%
Altadonna, Brianna (jc320198)				.0%
Altzar, Ellnor (jc324480)	8			.0%
Amarille, Joshua (jc320493)	7			.0%
Amin, Innocent (jc306309)	12	32	38	2.6%
Amos, Sarah (jc220955)	2	4	9	.2%
Andersen, Jessica (jc298992)	11	20	31	2.4%
Andersen, Sherwin (jc317664)	26	12	15	4.9%
Anderson, Breanne (jc300526)	31	65	83	9.1%
Andrew, Amy (jc321109)	14	16	16	8.6%

evement - credit points

Current achievement in Grade Centre

Extra login and password!

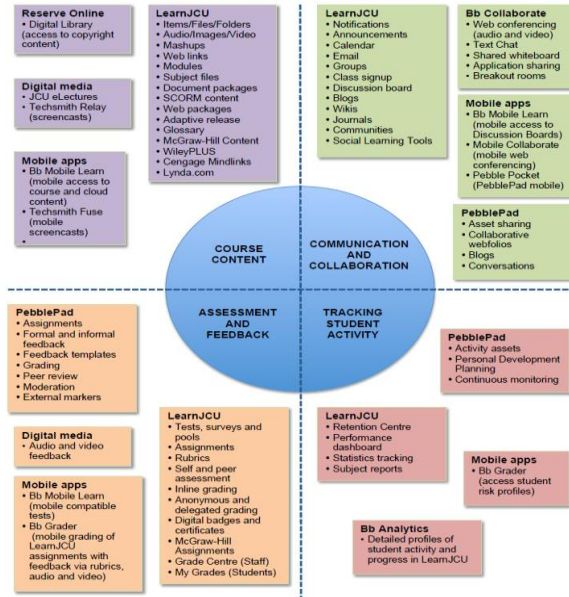
	0% - 47%	WF (Standard with Supps)	X (Standard with Supps)
Singleton, Cherie (jc227077)			.0
Yorkston, Ruth (jc221831)	.0		.0

Barry, Janaya (jc321325)	11.7
Doult, Georgia (jc319549)	14.7
Venter, Elan (jc325052)	15.6
Ennis, Aleisha (jc320397)	18.1

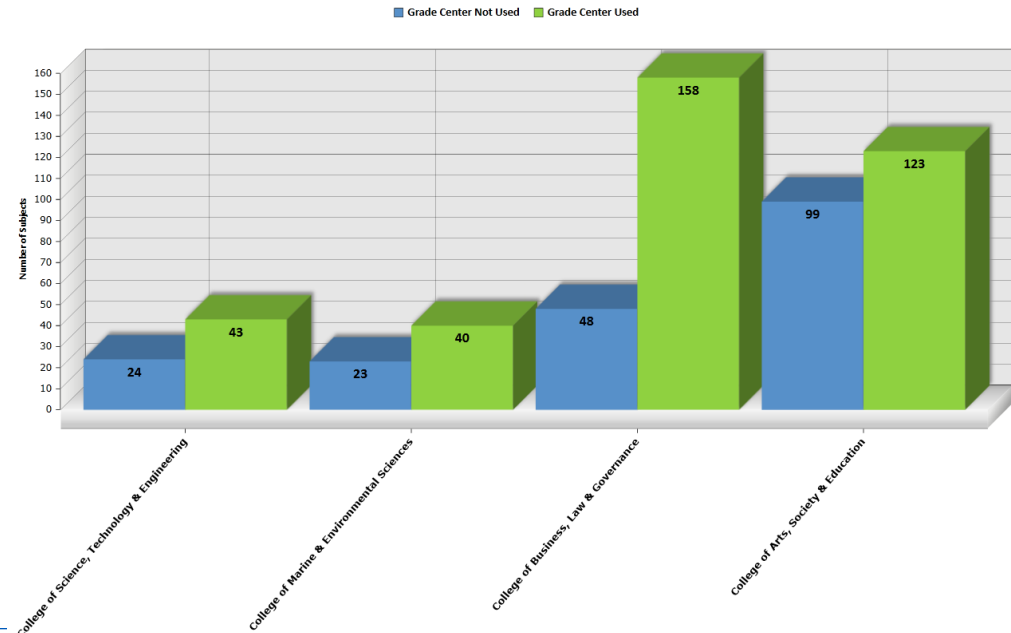
# 2015 - Intentional Blended Learning design

- How are academics using the array of learning technologies?
- How do students make use of these resources/tools?
- How does activity correlate with student success and engagement?

## TEACHING WITH TECHNOLOGY @ JCU



Grade Center use by College - Study Period 1 2016



# Security Matrix and Role groups

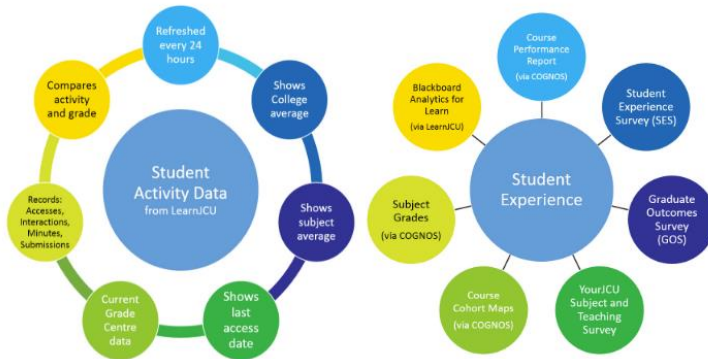
	LEVEL 1	LEVEL 2											LEVEL 3					
Stakeholder Groups	Integrated Reports	At A Glance reports				Activity						Exception			Dashboard	Push Reports		
		University	Subject	Instructor	Student	Items Accessed by Student	Matrix	and Grade Scatter Plot	by Instructor	Items accessed by Student	Subject Submission Summary	Login	Submission	Grade				
			X		X	X	X	X		X	X	X	X	X			A	X
			X		X	X	X	X		X	X	X	X	X				X
					X													X
			X		X	X	X	X		X	X	X	X	X				X
					X													
					X													X
				X		X	X	X		X							A	X
		X																
				X		X		X	X								B	X
			X															
		X	X		X													
	X	X	X	X				X						C	X			
		X	X	X	X				X									

A At Risk Students in a College  
 B Activity/Design in Subjects in a Course  
 C College progress

# Self-serve HELP



## Using activity data to inform teaching and learning



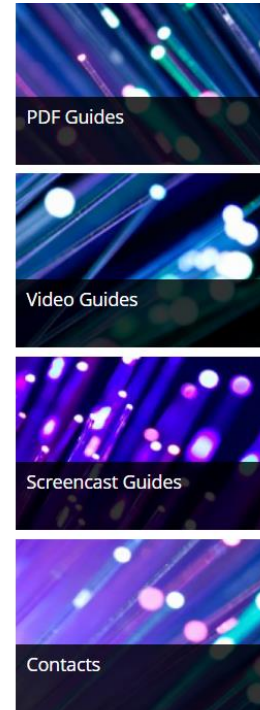
*Learning Analytics data will enable you to monitor engagement.*

*Learning Analytics is a valuable data source in the Review Cycle.*

Blackboard Analytics for Learn™ is a software program that extracts and integrates staff, student and organisational data from Blackboard LearnJCU and existing JCU information systems to create a series of new reports for academic staff with a focus on real-time learning, teaching and student engagement.

Learning Analytics can be used to review and improve the use of content and learning activities. It can be used proactively to identify students in need of support to enable resources to be provided as appropriate.

- Information for Staff
- Information available to students via LearnJCU
- Frequently Asked Questions
- Reports and Dashboards
- Glossary



Resources  
to suit all  
Learners

# 2015 - How?

## informing subject planning and monitoring

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### Diploma of Higher Education (new course 2015)

- Identify Support needs
  - Weekly monitoring
  - Early identification
  - Case management
- Curriculum reflection
  - Consideration of access
  - Online resources
  - review and tracking
  - feedback for site design
  - Data for planning and Professional development



# 2015 - Proof?

## Data to learning design

College	Total LearnJCU Subjects	LearnJCU Subject w/ Students	Active LearnJCU Subjects	LearnJCU Subjects Using Grade Centre	LearnJCU Subjects Currently Available
Learning, Teaching & Student Engagement	19	19 (100%)	19 (100%)	8 (42%)	19 (100%)

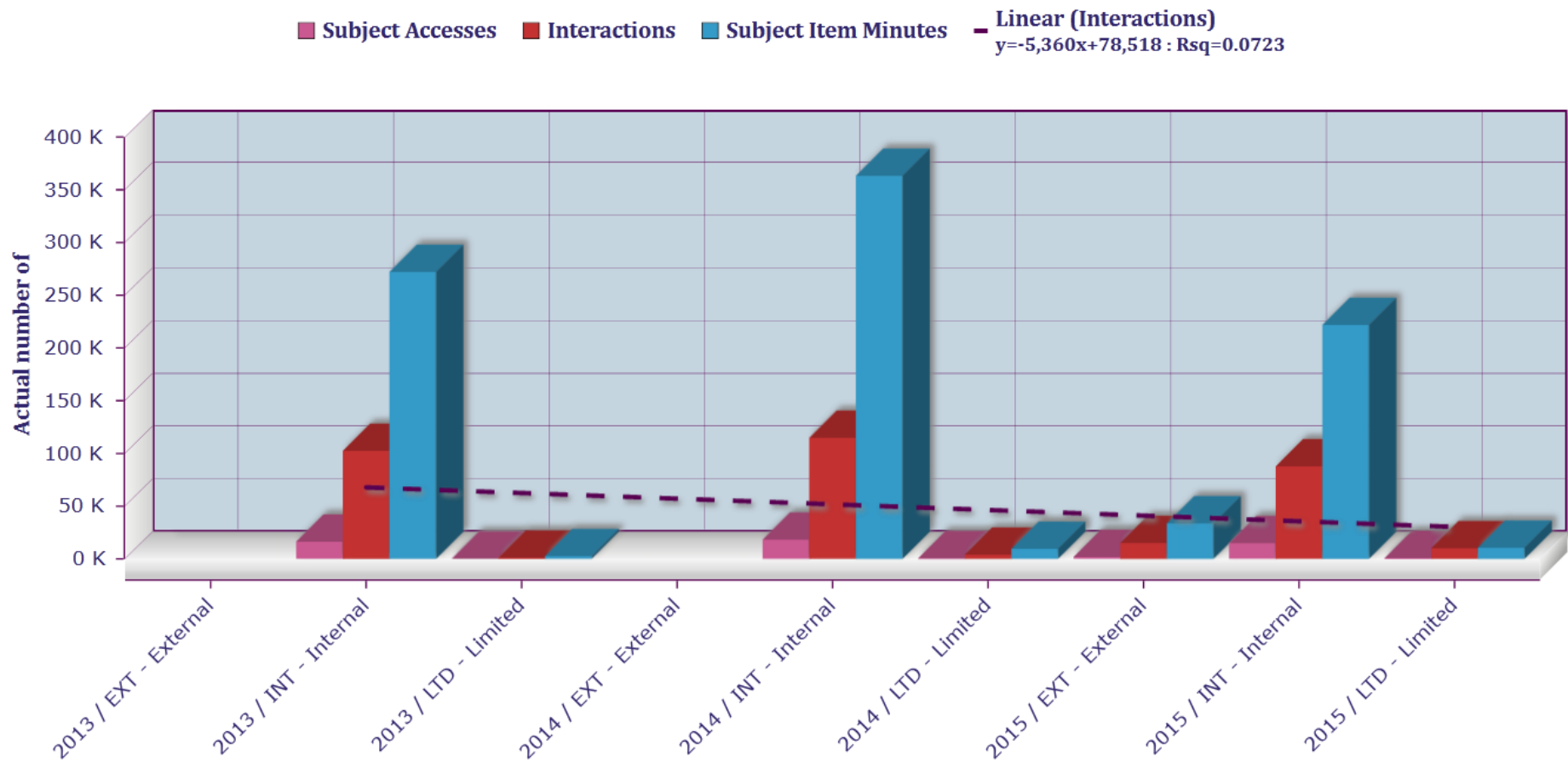
Avg. Accesses Per Student	Avg. Interactions per Student	Avg. Minutes per Student	Avg. Submissions per Student
60.9	603.0	1205.9	16.8

College	Total LearnJCU Subjects	LearnJCU Subject w/ Students	Active LearnJCU Subjects	LearnJCU Subjects Using Grade Centre	LearnJCU Subjects Currently Available
College of Healthcare Sciences	204	129 (63%)	109 (53%)	65 (32%)	129 (63%)

Avg. Accesses Per Student	Avg. Interactions per Student	Avg. Minutes per Student	Avg. Submissions per Student
53.5	372.8	915.9	4.8

# 2015 - What?

## Data to support curriculum redesign

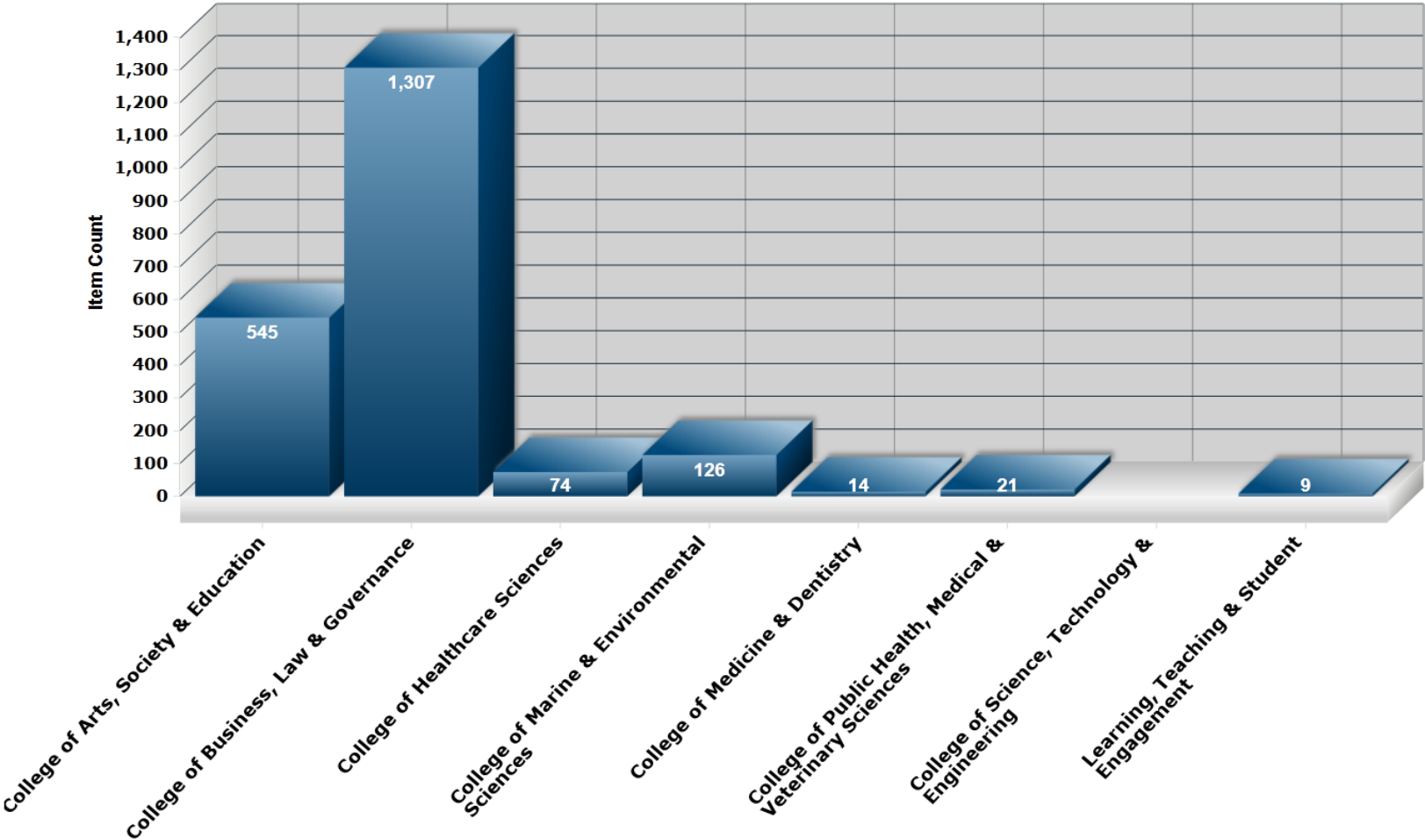




# 2015 - Why?

## To initiate change

■ Blackboard Collaborate



# Reflection ...

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- No one likes *change*
  - More structure around *Student Support* at JCU
  - More support and training on how to interrogate data
  - Dashboards were not widely used – only 15% take up
  - Blackboard unprepared
  - The journey is beginning for Educational Designers in colleges

Changes will be needed in 2016....

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# 2016 – The Plan?

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- [Student Support & Learning Analytics Triage Plan ver1.](#)
  - Recording [Student Support](#) as an organising tool
  - [Weekly Push Reports](#) for Student Support stakeholders
  - [Training](#) sessions for Educators
  - [Partnerships](#) with Educational Designers
  - Communication for future directions
-

# Where to from here?

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## – Maintain and expand role groups to:

- ❖ Remote Study Centres
- ❖ Course Coordinators
- ❖ Deans of Colleges

## – Build and test Curriculum review and use reports:

- ❖ Nominated Courses in Colleges working with Ed Designers
- ❖ Provide data at a Discipline, College and Whole of Institution

## –Wish list - plan and build an integrated Subject Dashboard :

- ❖ Sitting inside JCU Staff Online section
  - ❖ Linked to a CRM – single point of truth / Student Profile
-

# And finally the goal is to

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## Engage staff to ‘harness the data’!

- Demographic data
- Student learning data
- Learning analytics
- Student evaluation data
- Predictive analytics

**IMPROVE THE STUDENT EXPERIENCE,  
ENGAGEMENT AND RETENTION!**

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# References

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JCU Access Participation & Success Plan 2015-2017, available at:

[https://www.jcu.edu.au/\\_\\_data/assets/pdf\\_file/0012/121503/jcu\\_145875.pdf](https://www.jcu.edu.au/__data/assets/pdf_file/0012/121503/jcu_145875.pdf)

Kift, Sally. 21st Century Climate for Change: Curriculum Design for Quality Learning Engagement in Law [online]. Legal Education Review, Vol. 18, No. 1/2, 2008: 1-30.

Availability:<<http://search.informit.com.au.elibrary.jcu.edu.au/documentSummary;dn=770610459663871;res=IELAPA>> ISSN: 1033-2839. [cited 24 May 16].

JCU Blended Learning Guide, available at:

[https://www.jcu.edu.au/\\_\\_data/assets/pdf\\_file/0004/227866/JCU-Blended-Learning-Guide-2015.pdf](https://www.jcu.edu.au/__data/assets/pdf_file/0004/227866/JCU-Blended-Learning-Guide-2015.pdf)

Pyramid Analytics website: <http://www.pyramidanalytics.com/>

Learning Analytics at JCU webpage: <https://www.jcu.edu.au/learning-and-teaching/designing-for-learning/blended-learning/learning-analytics>

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