

# Content and learner engagement in vUWS

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# Housekeeping

### The session will be recorded

If you don't wish to be recorded please switch off your video

#### **Bandwidth**

- Consider turning off your video if bandwidth is an issue
- Only turn on microphone when speaking

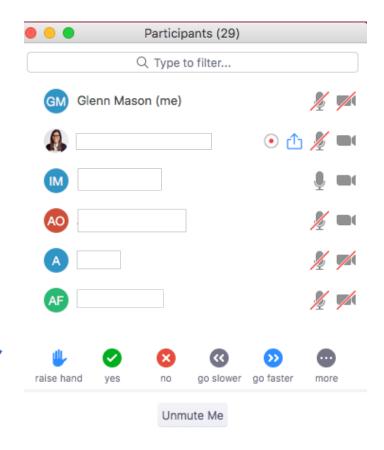
### **Dropouts**

- If we drop out the session will be recorded and made available
- If you drop out the recording will be available after the session



## Interaction management

- Raise your Zoom hand if you have a question
- To maximise your 'social presence' please turn your video on but if bandwidth is an issue please feel free to turn off









## Workshops in learning analytics

### There are three workshops:

- 1. Workshop 1. Focuses on key reports related to student access and student interaction. Outlines fundamentals of behavioural engagement in your unit.
- 2. Workshop 2. Outlines how the reports in the first workshop can be used to track students' cognitive engagement in your units.
- **3. Workshop 3**. Provides a guide in the use of learning analytics data for your teaching practice, learning design and delivery of your unit.



# Objectives

At the end of this session you should be able to:

- Identify opportunities for the use of vUWS tools to improve the evaluation of learning in your unit including:
  - Identifying methods for establishing behavioural engagement
  - Identifying methods for establishing cognitive engagement
- Consider affective engagement in the evaluation of your unit

# What do we mean by learning analytics?

The 'what' and the 'why'

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

(Source: 1st International Conference on Learning Analytics and Knowledge, Banff, Alberta, February 27–March 1, 2011, <a href="https://tekri.athabascau.ca/analytics/">https://tekri.athabascau.ca/analytics/</a>)

### vUWS reports not the only data source

- vUWS reports/data
- SFUs
- Grade centre
- Anecdotal feedback
- Peer review
- Tutor feedback
- Historical comparison
- Comparison against other units



# Take a step back...in a previous workshop on vUWS and learning analytics

W

The previous workshop mainly looked at **behavioural engagement** in reports:

- Activity in content areas
- Logins
- Dates accessing content
- Student interaction
- Retention centre



### Some behavioural engagement questions...

- Which of my students students haven't logged in yet?
- How much time are my students spending in vUWS or on certain tasks?
- Which pieces of content are my students most/least interacting with?
- Can I get a list of students who haven't logged in?



### **Activity – behavioural engagement**

Are there questions that are relevant to your context?



# The practice of behavioural analytics

- Use the available reports to provide a holistic view of your unit
  - Familiarise yourself with learning analytics 'view' of your unit
- Begin formulating questions
- What do you want to know?
- Which report are you going to use?

Course At-a-Glance





**Course Management** 

**Control Panel** 

Course Tools

**Evaluation** 

**Course Analytics** 

Retention Centre

**SCORM Reports** 

**Grade Centre** 

Customisation

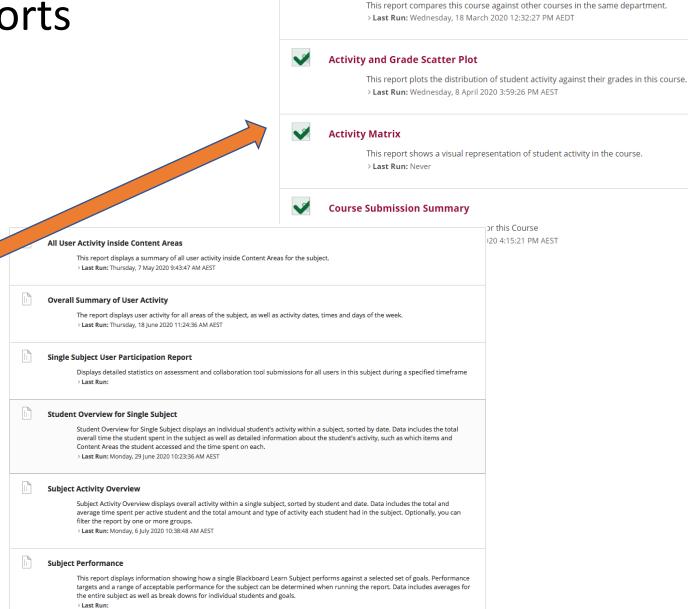
**Users and Groups** 

Packages and Utilities

Performance Dashboard

**Course Reports** 

Content Repository







## Summary of reports

REPORT NAME	DESCRIPTION	WHAT DOES IT ADDRESS	LIMITATIONS
Course (Unit) At A Glance	Summary and drilling down capacity	What is the nature of (behavioural) engagement pattern in my unit? How does my unit compare to the school averages?	Doesn't address what is the expected level of engagement
Activity and Grade Scatter Plot	A correlation between the accesses and the grades	Is there a relationship between activity and outcome?	Only takes final grade to make comparison – what about other forms of assessment?  Cannot switch into another activity type.
Activity Matrix	Gives a matrix of activity patterns throughout semester and compares against grade	Which students are consistently active/inactive? Does interaction lead to better outcomes?	Doesn't tell how the matrix is defined. Cannot switch to another activity type or change color scheme

### Summary of reports

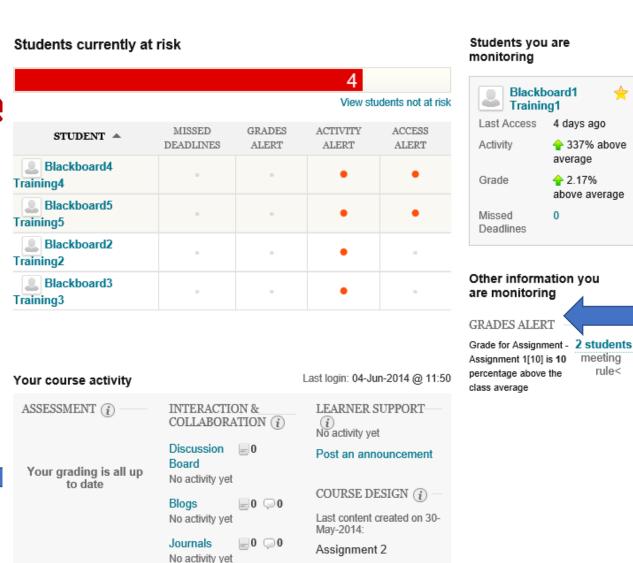


REPORT NAME	DESCRIPTION	WHAT DOES IT ADDRESS	LIMITATIONS
Student Submissions Summary	A summary of the submission patterns of individual students	Which student hasn't submitted regularly? Which students are 'struggling' to submit?	A mapping of the submitted vs unsubmitted items is not possible
Course Reports	A detailed breakdown for different kinds of items and tools used in the site	Which module is engaging/less engaging? Comparison among groups (access hits) The discussion board breakdown (hits in discussion boards)	The amount of useful information is relatively low in comparison to the size of the report.  The run time could take hours for some report.  There is limit of 180 days from the date of run
Performance Dashboard	A single stop for overall performance of students	When did my students last login? Are my students at risk? Are students contributing to the conversations?	Doesn't display grade but redirects to the grade centre Unnecessary fields are not customizable
Retention Centre	Dashboard compiles a view of potential red flags	Who are the "at-risk" students? (parameters can be edited)	Doesn't allow to export the file

### Retention centre

### **Course Management Control Panel Content Repository** Course Tools **Evaluation Course Analytics Course Reports** Performance Dashboard Retention Centre **SCORM Reports** Grade Centre **Users and Groups** Customisation

Packages and Utilities



Your own activity in the site

**WESTERN SYDNEY** 

UNIVERSITY

Monitor students

Monitor missed

deadlines, grades,

activity or access

4 days ago

average

2.17%

0

→ 337% above

above average

meeting

rule<

Results cannot be exported!

Groups

Create a

group

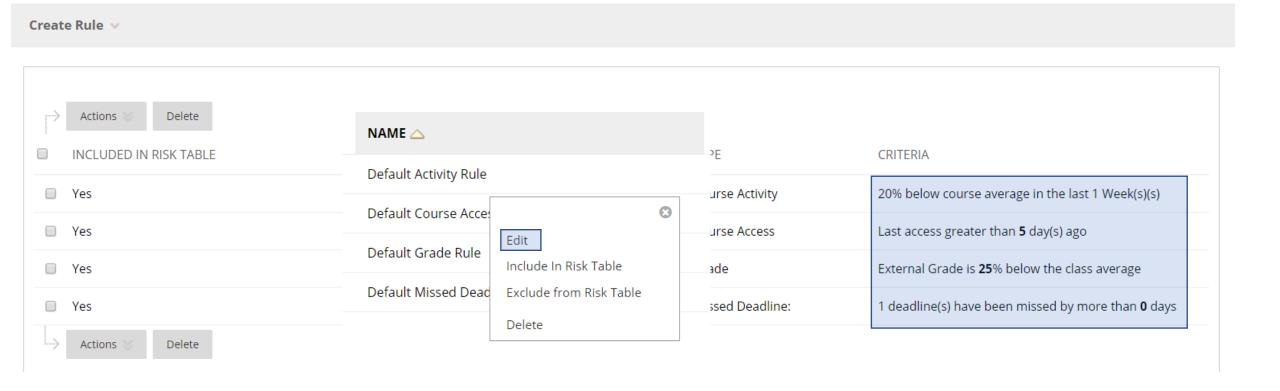


### **Customising the retention centre**

#### Retention Centre



The Retention Centre helps you discover which students on your subject are at risk. You can communicate with struggling students and help them take immediate action for improvement. You can also keep track of patterns over time. More Help





### **Activity – retention centre**

Do the rules in the retention centre work for your context?

Why? Why not?

How do you think you might use the retention centre when you next run your unit?



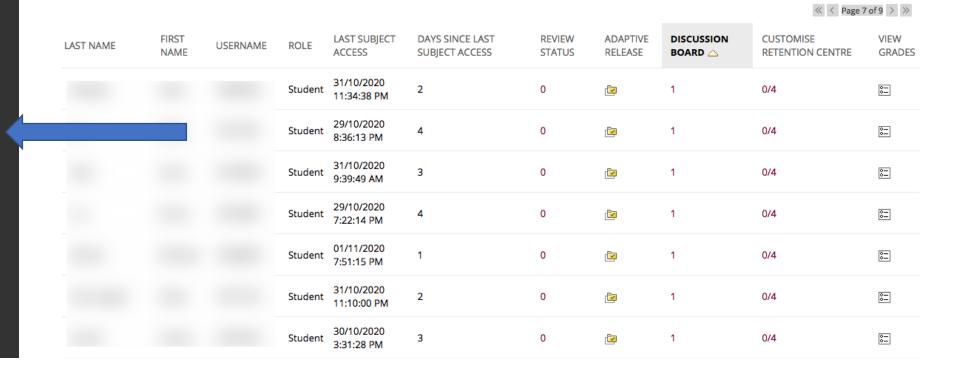
### **Performance Dashboard**

#### **Course Management**

- **▼ Control Panel**
- Content Repository
- Course Tools
- Evaluation

Course Analytics
Course Reports
Performance Dashboard
Retention Centre
SCORM Reports

- Grade Centre
- Users and Groups
- Customisation
- Packages and Utilities





# When to run reports

Period in semester	What are you tracking?	Which report should I use?
Start of semester	Students who haven't logged in	Unit At A Glance
Around census date	At risk students (uneven attendance, missed submissions)	Performance Dashboard, Retention Centre
Around submission due	Students who haven't submitted	Course Submission Summary, Unit At A Glance, Retention Centre
Throughout the semester	Behavioural engagement	Unit At A Glance, Retention Centre, Performance Dashboard
End of semester	Correlation between student activity and grade	Unit At A Glance, Activity vs Grade Scatter Plot, Activity Matrix



### How do I access vUWS reports?

#### **Course Analytics**



#### Course At-a-Glance

This report compares this course against other courses in the same department. 

Last Run: Wednesday, 18 March 2020 12:32:27 PM AEDT



#### **Activity and Grade Scatter Plot**

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

> Last Run: Wednesday, 8 April 2020 3:59:26 PM AEST



#### **Activity Matrix**

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

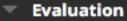
> Last Run: Never



#### **Course Submission Summary**

Summary of User Submissions for this Course

Last Run: Wednesday, 8 April 2020 4:15:21 PM AEST



Course Analytics
Performance Dashboard
Retention Centre
SCORM Reports
Subject Reports

#### All User Activity inside Content Areas 💿

This report displays a summary of all user activity inside Content Areas for the subject.

> Last Run: Friday, 25 September 2020 8:43:56 AM AEST

#### Overall Summary of User Activity

The report displays user activity for all areas of the subject, as well as activity dates, times and day > Last Run: Friday, 25 September 2020 8:29:35 AM AEST

#### Single Subject User Participation Report

Displays detailed statistics on assessment and collaboration tool submissions for all users in this > Last Run:

#### Student Overview for Single Subject

Student Overview for Single Subject displays an individual student's activity within a subject, sorte information about the student's activity, such as which items and Content Areas the student access Last Run: Friday, 30 October 2020 11:31:29 AM AEDT

#### Subject Activity Overview

Subject Activity Overview displays overall activity within a single subject, sorted by student and da activity each student had in the subject. Optionally, you can filter the report by one or more group > Last Run: Tuesday, 27 October 2020 6:09:19 PM AEDT

#### Subject Performance

This report displays information showing how a single Blackboard Learn Subject performs agains determined when running the report. Data includes averages for the entire subject as well as bre >Last Run:

#### User Activity in Forums

This report displays a summary of user activity in Discussion Board Forums for the subject. > Last Run: Thursday, 2 July 2020 2:19:09 PM AEST

#### User Activity in Groups

This report displays a summary of user activity in Groups for the subject.

> Last Run: Friday, 25 September 2020 8:39:54 AM AEST



## Types of student engagement

There are three key dimensions of student engagement:

- Behavioural
  - Attendance, accessing units, task completion etc.
- Cognitive
  - Comprehension, application, integration etc.
- Affective (a much larger piece about development of online learning communities)
  - Interest and enthusiasm
  - Belonging
  - Identity



# Step 1. What do you want to evaluate?

### Scenario 1

I am concerned with the lack of focus in tutorial sessions. I am interested in seeing how many students have accessed (and viewed) the lecture prior to coming to tutorial sessions. I also want to know if they are having any difficulties with the content.

### Design:

- Establish the behavioural metrics
  - Number of accesses and interest 'spikes' in video material. See previous session on analytics on how to do this.
  - Attendance (logins using 'unit at a glance')
  - Activity with content items ('all user activity inside content area' report)
- Design for cognitive engagement
  - Ensure video material is associated with learning activities can do this in Panopto
  - Design reflective learning tasks



### Need to get the basics right

- Have you ensured that there is alignment between learning activities, learning materials and assessment tasks (constructive alignment)?
- Coherent vUWS navigation
- Clear instructions for all tasks (from basic to complex)

		Instructional Materials
		4.1 The instructional materials contribute to the achievement of the stated learning objectives.
The Western QM Rubric		4.2 The relationship between the use of instructional materials in the unit and completing learning activities is clearly explained.
The Quality Matters (QM) Rubric is an internationally recognised, research- rubric useful in the design and quality assurance of learning and assessmen materials for units delivered in online or blended modes.		4.4 The instructional materials represent up-to-date theory and practice in the discipline.
The Western QM Rubric highlights 26 out of the 42 QM Specific Review Star to keep in mind when designing your own units.	ndards	4.5 A variety of instructional materials is used in the unit.
		Unit Activities and Student Interaction
Unit Overview and Introduction	Pts	5.1 The learning activities promote the achievement of the stated learning
<ol> <li>Instructions make clear how to get started and where to find various unit components.</li> </ol>	3	objectives.
1.2 Students are introduced to the purpose and structure of the unit.	3	5.2 Learning activities provide opportunities for interaction that support active learning.
		5.4 The requirements for student interaction are clearly stated.
Learning Objectives		
2.1 The unit learning objectives describe outcomes that are measurable.	3	Unit Technology
2.2 The module level learning objectives describe outcomes that are		6.1 The tools used in the unit support the learning objectives.
measurable and consistent with the unit-level objectives.	-	6.2 Unit tools promote student engagement and active learning.
2.3 All learning objectives are stated clearly, written from the student's perspective and are prominently located.	3	6.3 A variety of technology is used in the unit.
2.4 The relationship between learning objectives and learning activities is clearly stated.	3	Student Support
Assessment and Measurement		7.1 The unit instructions articulate or link to a clear description of the technical support offered and how to obtain it.
3.1 The assessments measure the achievement of the stated learning objectives.	3	7.2 Unit instructions articulate or link to the institution's accessibility policies
3.2 The unit grading policy is stated clearly at the beginning of the unit.	3	and services.
3.3 Specific and descriptive criteria are provided for the evaluation of students' work, and their connection the unit grading policy is clearly explained.	3	Accessibility and Usability
3.4 The assessments used are sequenced, varied, and suited to the level of	2	8.1 Unit navigation facilitates ease of use.
the discostricted discostricted, varied, and suited to the level of	-	0.7 The cost decime to distance and decition

3.5 The unit provides students with multiple opportunities to track their

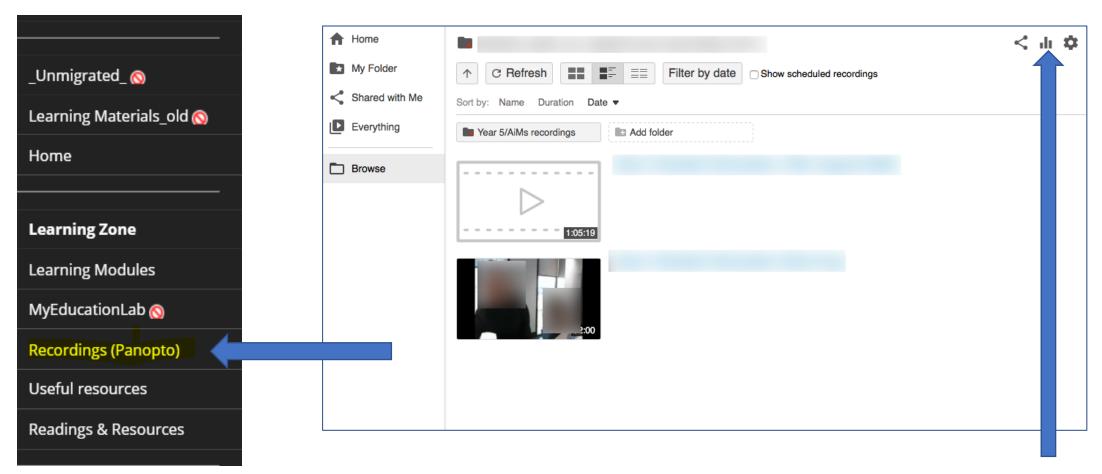
learning progress with timely feedback.

8.3 The unit provides accessible text and images in files, documents, LMS

pages and web pages to meet the needs of diverse students



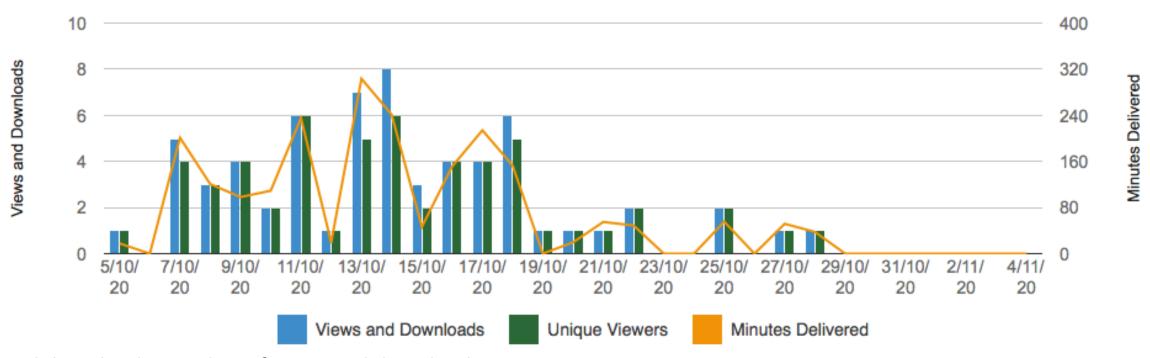
### Video analytics - refresher





### Global view of views and downloads

#### Views and Downloads by Day



Views and downloads=number of views and downloads across all videos

Unique viewers = number of unique viewers who have accessed folder

Minutes delivered = number of minutes streamed AND downloaded combined

**Note**: For video downloads, the entire duration of the video will count towards minutes delivered even if the download fails or is cancelled at the last minute.



# Individual behavioural metrics for video usage

#### Top Viewers Viewer Views and Downloads ▼ Minutes Delivered Average Minutes Delivered Percent Completed Notes Comments 83 86.9 29 0 1.5 1.5 82 0 0 0.02 0.02 0 0 0.1 0.1 0 0 55 55 0

See All



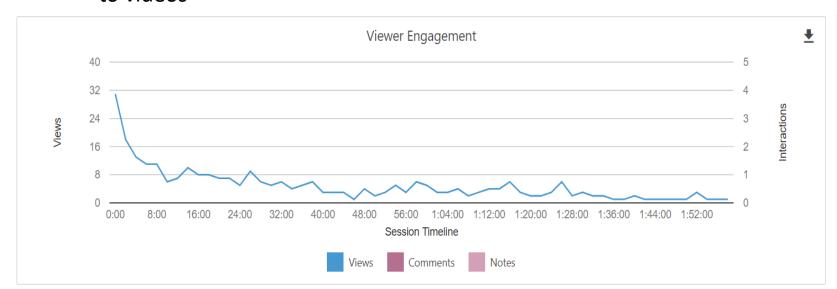
# Viewing spikes

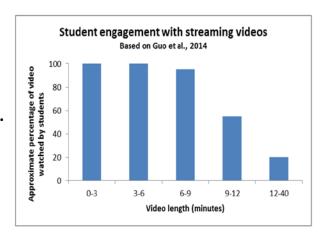
#### What does this tell us?

- Confirms research that tells us about drop in interest after about 10 mins.
- Views start flattening out after about 8 minutes into the video
- Problems:
  - What if key concepts are introduced throughout the video?
  - What if understanding of key concepts required for tutorial?

#### Solution:

- Create series of key concept videos (promote germane load)
- To evaluate cognitive engagement ensure learning activities/quizzes attached to videos



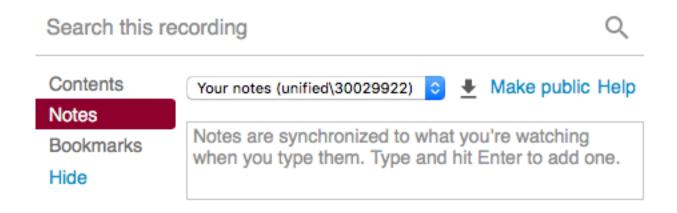




# Establishing cognitive engagement in your videos

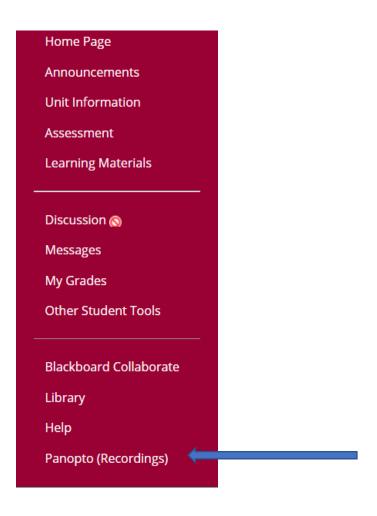
Active learning – get your students to *do* something with knowledge

- Comprehension Panopto quizzes
- Reflection encourage students to use notes and bookmark with Panopto





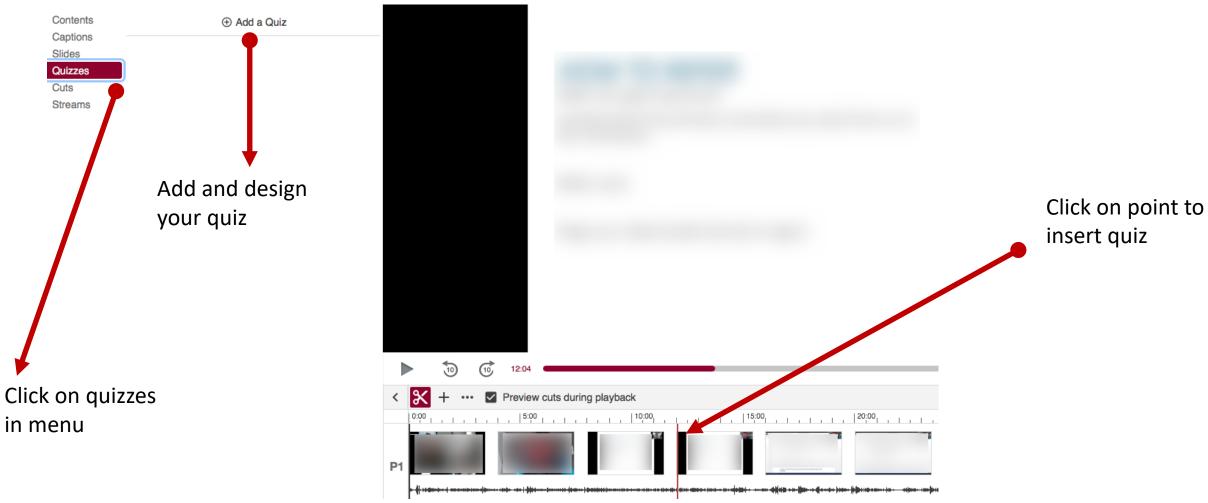
### Getting started with Panopto quizzes



https://support.panopto.com/s/article/How-to-Add-a-Quiz-to-a-Video



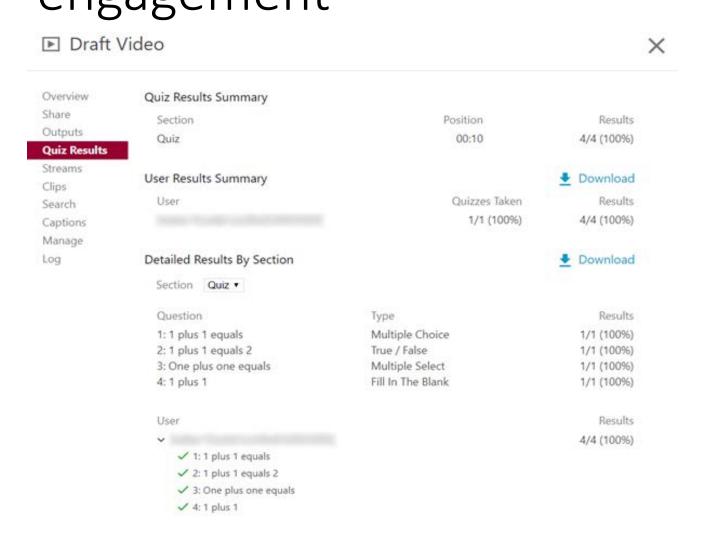
# Adding quizzes in Panopto



https://support.panopto.com/s/article/How-to-Add-a-Quiz-to-a-Video



# Panopto quizzes – analytics for cognitive engagement



#### Summaries include:

- where the quiz is positioned in video
- How students are performing overall (number of correct answers/ number of attempts)
- Individual student and question based
- a complete breakdown of how each student performed on each question.

The results are also downloadable

Students who have retaken a quiz only the **last** attempt is recorded and previous attempts are erased.



# Review of steps

### Establish behavioural engagement metrics

- What is the level of engagement with other content areas?
  - Run the 'all user activity inside content area' report
- Know your students through data
  - Run the retention centre report
  - Run the performance dashboard
  - Run the 'unit learning at a glance' report



### Logins and attendance - unit at a glance report

Student Activity Summary (529 Students)

↑ > Avg. + 10%		→ Within Avg. +/- 1	0%	<ul><li>NA</li></ul>									
			UNIT AC	S	MINU	JTES	INTERAC	TIONS	SUBMISSI	ONS	GRADE CE	NTRE	SCORE
STUDENT \$ NAME	DATE OF LAST ACCESS	DATE OF LAST SUBMISSION	JUDENT \$	AVG	STUDENT \$	AVG	STUDENT \$	AVG	STUDENT \$	AVG	STUDENT \$	A	VG
	17/0	7/2028 07/06/2020	62	↑ 48	2259	↑ 161¢	850 1	366	16 ↑	9	66%	$\rightarrow$	669
	17/0	7/2020 04/06/2020	40	↓ 48	978	↓ 1616	436 4	366	11 ↑	ç	71%	$\rightarrow$	669
	09/0	7/2020 14/06/2020	34	↓ 48	556	↓ 1616	188	366	9 →	ç	61%	$\rightarrow$	669
	17/0	3/2020 07/06/2020	54	↑ 48	808	↓ 1616	324	366	11 ↑	ç	71%	$\rightarrow$	669
	09/0	7/2020 07/06/2020	66	↑ 48	1957	<b>↑</b> 1616	507 4	366	11 ↑	ç	58%	4	669
	22/0	3/2020 10/06/2020	34	↓ 48	1074	↓ 1616	176	366	8 1	ç	61%	$\rightarrow$	66%
	11/0	7/2020 08/06/2020	54	↑ 48	1123	↓ 1616	300	366	11 ↑	ç	64%	$\rightarrow$	66%
	25/0	7/2020 06/06/2020	39	↓ 48	1194	↓ 1616	5 224	366	11 ↑	g	75%	1	66%
	14/0	7/2020 23/05/2020	34	↓ 48	675	↓ 1616	5 171	366	9 →	g	55%	4	669
	10/0	7/2020 07/06/2020	40	↓ 48	1661	→ 1616	258	366	10 ↑	ç	70%	$\rightarrow$	669
	13/0	3/2020 06/06/2020	60	↑ 48	3 2029	↑ 161¢	440 4	366	9 →	ç	68%	$\rightarrow$	66%
	30/0	3/2020 06/06/2020	62	↑ 48	1313	↓ 1616	337 -	→ 366	10 ↑	ç	78%	1	66%
	24/0	3/2020 05/06/2020	77	↑ 48	2097	↑ 161¢	745	366	11 ↑	ç	72%	$\rightarrow$	66%
	10/0	7/2020 07/06/2020	148	↑ 48	2883	<b>↑</b> 1616	1104	366	10 ↑	ç	77%	Α	66%
	06/0	7/2020 07/06/2020	56	↑ 48	537	↓ 1616	5 599 4	366	10 ↑	ç	65%	$\rightarrow$	66%
	09/0	7/2020 07/06/2020	61	↑ 48	1882	↑ 161¢	328	366	9 →	g	81%	Α	66%
	24/0	3/2020 07/06/2020	52	→ 48	898	↓ 1616	308	366	9 →	g	54%	1	669
	11/0	7/2020 09/06/2020	100	↑ 48	3999	↑ 161¢			10 ^	g	78%	<u></u>	669
	09/0	7/2020 07/06/2020		•	1997	↑ 161¢	5 293	366			82%	<u> </u>	669
	16/0	7/2020 07/06/2020	36	↓ 48	3 1574	→ 1616			8 1	g	62%	$\rightarrow$	669
	23/0	3/2020 07/06/2020		•	885	↓ 1616					63%	$\rightarrow$	669
	09/0	7/2020 07/06/2020		•		•	-				69%	$\rightarrow$	669
	28/0	3/2020 05/06/2020				•					63%	$\rightarrow$	66%



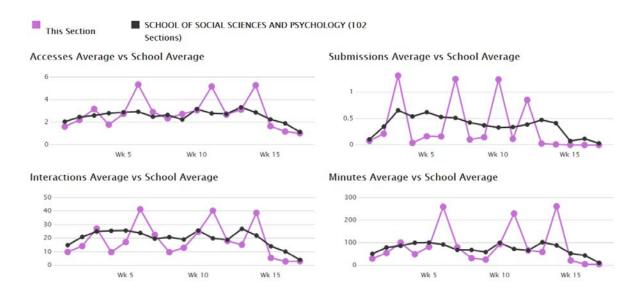
# Get a global sense of student activity

 Various ways to measure this. For example, measuring clicks in a content area or unit at a glance:

All user activity inside content area (subject reports)

### 

#### Unit at a glance (course analytics)





## Review of steps

### Establish behavioural engagement metrics

- How many students watched the video/videos?
  - Was it accessible? Was the location clearly communicated
  - Does it align with assessment tasks and learning activities?
- What is the history of students engaging in video material?
  - Run the analytics reports on other material to compare



## Review of steps

### Establish cognitive engagement metrics

- Did you embed quizzes in the video material to test demonstration of comprehension?
  - If not, go here https://support.panopto.com/s/article/How-to-Add-a-Quiz-to-a-Video
  - Did you make sure that your quiz content aligns with the learning outcomes? Other learning activities?
     Relevant assessment tasks?



## Review of steps

### Establish cognitive engagement metrics

- Did you embed reflective learning tasks as part of the activity?
  - Learning journals
  - Blogs
- Did you make sure the tasks are aligned with learning activities and assessment tasks?
  - If an assessment task requires reflection (and this is considered as a formative task), students are more likely to complete it.



## Putting it all together

### Learning analytics as a practice

- Using data to become a reflective practitioner
- Record the data and use it to improve future learning designs



### **Activity - Panopto analytics**

Choose one video
Run the Panopto analytics report
What does it tell you? Did anything surprise you?
How will you use the data to make changes to your video?

A more advanced task:

Choose one video

Design a quiz to indicate the demonstration of student knowledge (choose how you will design this using either Blooms or SOLO)

Make sure the quiz contents align with other elements in your site Embed the quiz in your video and let your students know you will be doing this Run the Panopto analytics after the scheduled time for students to engage in the video

- What does it tell you? Did anything surprise you?
- How will you use the data to make changes to your video?

Consider discussing the approach with your students during the next tutorial session



**Scenario 2**: Students are required to collaborate on an authoring task. How can I evaluate the collaborative process?

### **Evaluation design**

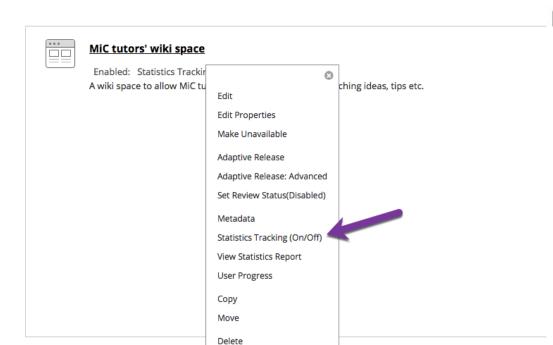
- Establish student **behavioural metrics** (using *course at a glance* report)
- Establish group-based metrics (user activity in groups (subject report)

   ensure statistics tracking is on content link)
  - ensure statistics tracking is on content link)
- Establish opportunity for cognitive engagement (and to track it)
  - Break down task to include opportunities for reflection e.g. survey, learning journals
- Analyse student learning outcomes

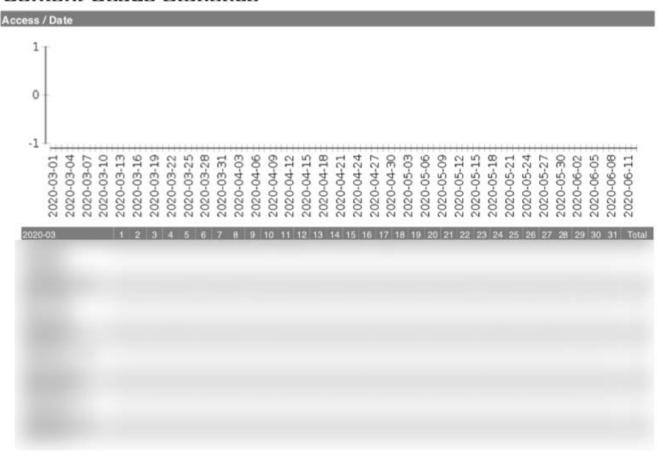


# Establish group-based behavioural (accesses) metrics





#### Content Usage Statistics



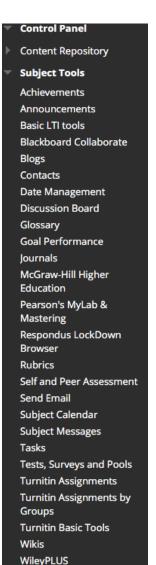


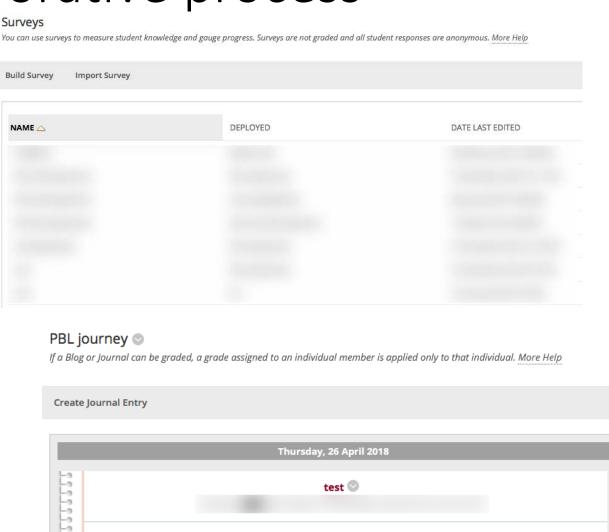
Comment

### Evaluation of the collaborative process

Consider creating opportunities to embed active learning in the collaborative process

- Surveys
- Learning journals







# Building a picture of engagement through analytics

Behavioural metrics	Cognitive
vUWS reports Panopto Retention centre Performance dashboard	vUWS test Survey Discussion forum Learning journal Panopto quiz



# What about affective engagement?

- This is harder to measure because the dimensions are unclear!
- Building a learning community is more important than measuring it...



### Social presence

- Group cohesion encourage collaboration
- Safe environment for discussion forum for open discussion and debate

#### Teaching presence

- Management of instruction facilitation,
   starting discussions, focussing discussions
- Building meaning synthesising knowledge from students

### • Cognitive presence

- Integration and resolution connecting ideas and applying concepts
- Posing initial questions/problems create a culture of ongoing inquiry



### Some considerations

- Are you interested in ALL areas of student engagement or are there important learning sequences that require investigation?
  - Threshold concepts?
  - Key information/material?
- These need **behavioural engagement analytics** (i.e. are students even clicking/watching/interaction) and **cognitive engagement analytics** (i.e. did students understand it, what did they find difficult etc.)
- Ensure evaluation of learning is a consideration during learning design phase
- Iterative improvement start small and experiment with one or two learning sequences



## Five things you can do right now

- Getting the basics right
- Designing good questions what do you want to evaluate?
- Using vUWS tools to design for evaluation
- Check reports to determine behavioural metrics
- Embed learning tasks to provide indication of cognitive engagement



# Conclusion – the iterative practice of learning analytics

Embed evaluation design



Student learning



Evaluate student learning



Modify learning design and teaching practice



## Next workshop

- Learning analytics for teaching practice
- How can data be used to help improve
  - Learning design
  - Delivery of units
  - Teaching practice