



University of  
South Australia

# **From novelty to core: The essential role of education technology**

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Executive Dean: Education Futures



# Overview

- A brief history
- Changing dynamics
- Equivalent?
- Learning analytics within an integrated system

# Key Points:



- Multiple drivers for flexible education
- Technology is only one piece of the puzzle
- Impact in education requires a systems level approach
  - Integrated
  - Purposeful – address a key issue
  - Intention for scale



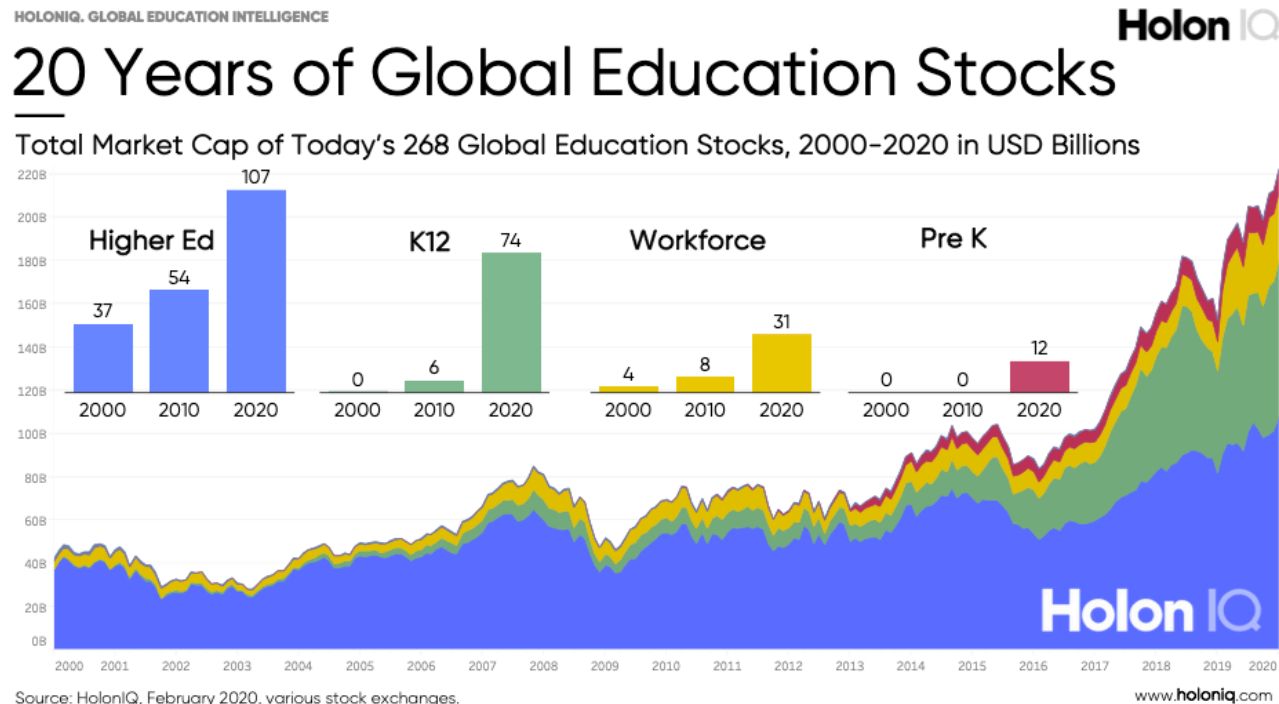
# Brief History



1800's	Weekly lessons via newspaper
1900's	Distance education – mail correspondence
1970's	Open Uni UK – link with television and radio
1990's	Computer based training
2000's	Intelligent tutoring systems - LMS developments
2008	1 <sup>st</sup> MOOC
2011	1 <sup>st</sup> LAK conf.
2015	Digital credentials – verified assessment
2020	Pivot to online – zoom and teams

# Changing Dynamics :

- Fastest growing market is online/ off-campus models
- And – Predictive analytics and education technologies.



Education Technology  
Market to Reach \$404B  
by 2025



# Equivalent?

- Strong demand for online
- Increased access to education
- No significant difference?



## The Open Learning Initiative: Measuring the Effectiveness of the OLI Statistics Course in Accelerating Student Learning

*Marsha Lovett, Oded Meyer, Candace Thille*

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5000 Forbes Ave. Pittsburgh  
USA  
[www.cmu.edu](http://www.cmu.edu)

**Abstract:** The Open Learning Initiative (OLI) is an open educational resources project at Carnegie Mellon University that began in 2002 with a grant from The William and Flora Hewlett Foundation. OLI creates web-based courses that are designed so that students can learn effectively without an instructor. In addition, the courses are often used by instructors to support and complement face-to-face classroom instruction. Our evaluation efforts have investigated OLI courses' effectiveness in both of these instructional modes – stand-alone and hybrid.

This report documents several learning effectiveness studies that were focused on the OLI-Statistics course and conducted during Fall 2005, Spring 2006, and Spring 2007. During the Fall 2005 and Spring 2006 studies, we collected empirical data about the instructional effectiveness of the OLI-Statistics course in stand-alone mode, as compared to traditional instruction. In both of



# No significant difference

## ½ the time – same content to same standards

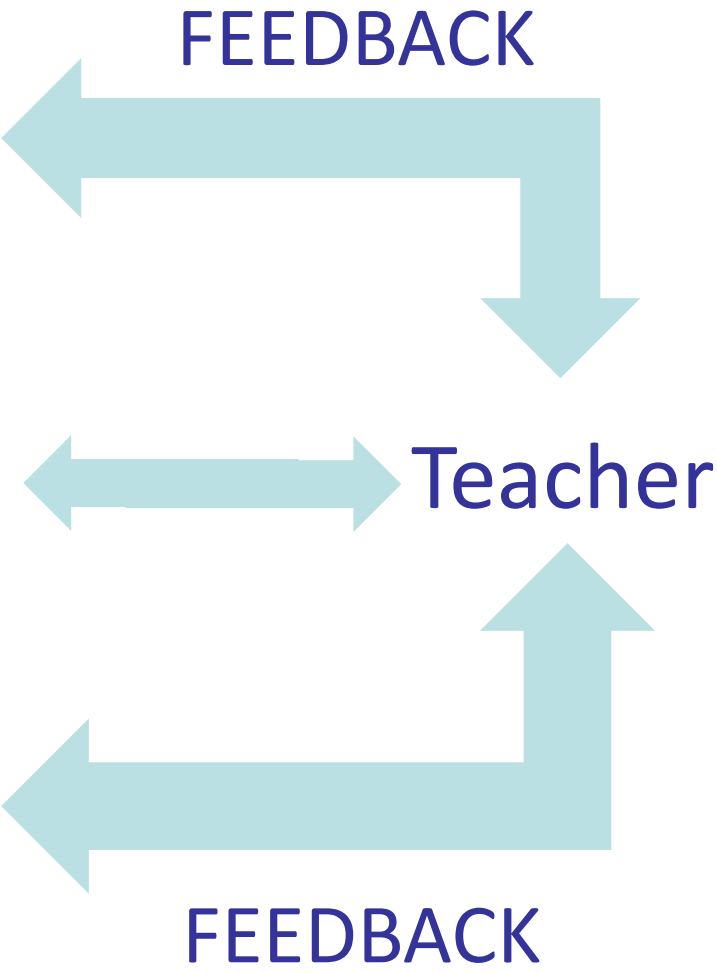
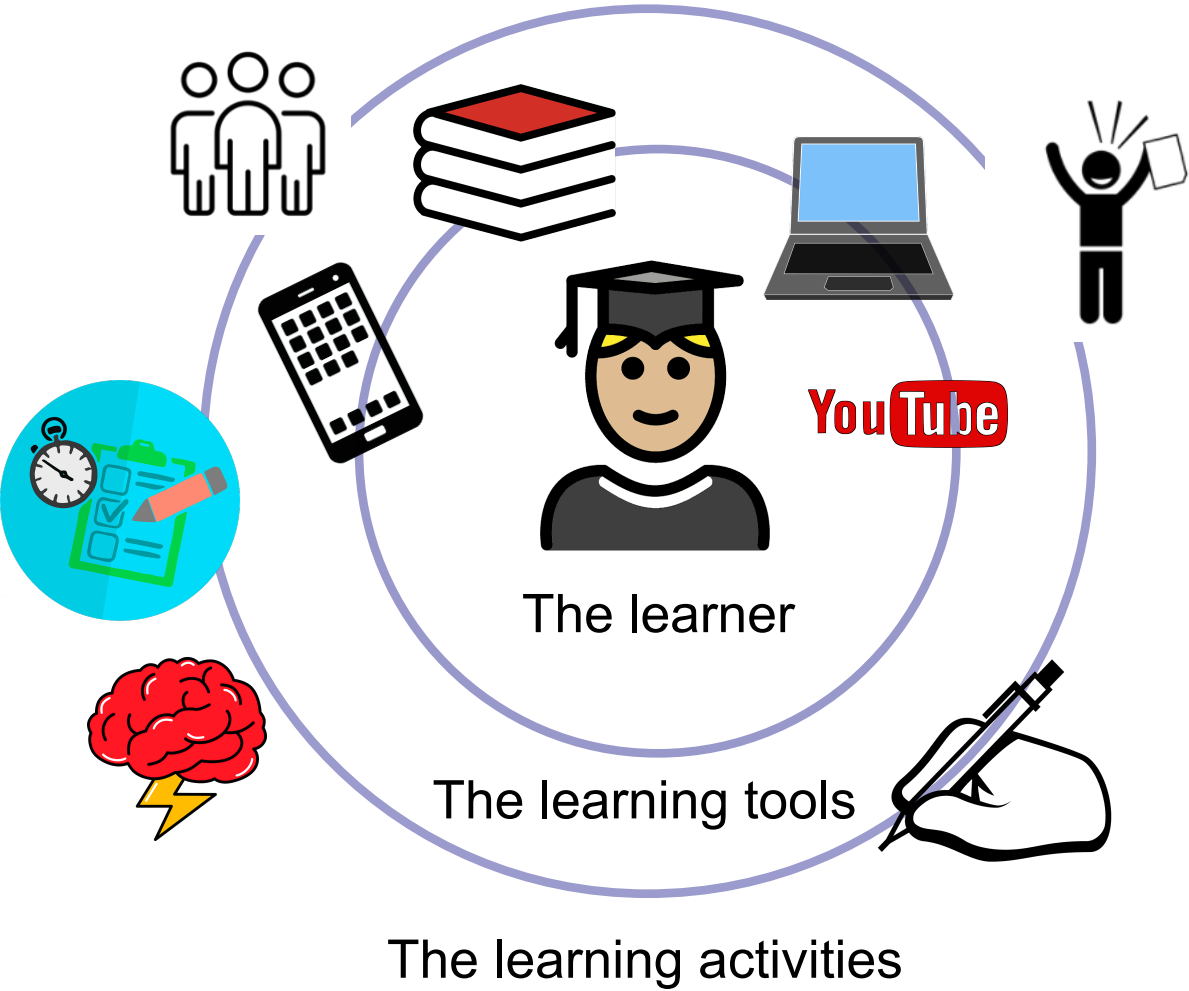




# Equivalent?

- Attrition high – requires far greater learner autonomy
- Effective online learning requires purposeful design
- Alternate teaching models
  - Provision of content online alone is NOT effective teaching and is NOT supporting learning.
- Online learning can be improved through learning analytics

# Learning Analytics





# Predictive Analytics

- Early work focused on reports
- Prediction of academic grades/ retention

Courses | Programs | Students | Search | Reports

Dashboard | Analytics | Assessments | Result Entry | Classes | Students | Staff | Evaluations

ACCT 1008 (105457) - Accounting for Business (SP2 - 2014) - Internal, City West

**Dashboard** ?

(Select an item to add) Reset to Default Layout

Students with no logins

**2**

students have **never logged into learnonline** for this course

● Logged In ● Never Logged In

[View Report](#)

learnonline engagement - last 24 hours

**0%**

of students have **engaged** within learnonline over the past 24 hours

● Engaged ● Not Engaged

[View Report](#)

learnonline course visits - last 7 days

learnonline course site visits over past 7 days

[View Report](#)

learnonline engagement - ratio

**99.6%**

of students have **engaged** within learnonline

● Engaged ● Not Engaged

[View Report](#)

Next Due Assessment

No Assessments Currently Open

Current Grade Distribution

Current grade distribution (based on learnonline assessments)

[View Report](#)

## Courses (current)

+ show previous courses

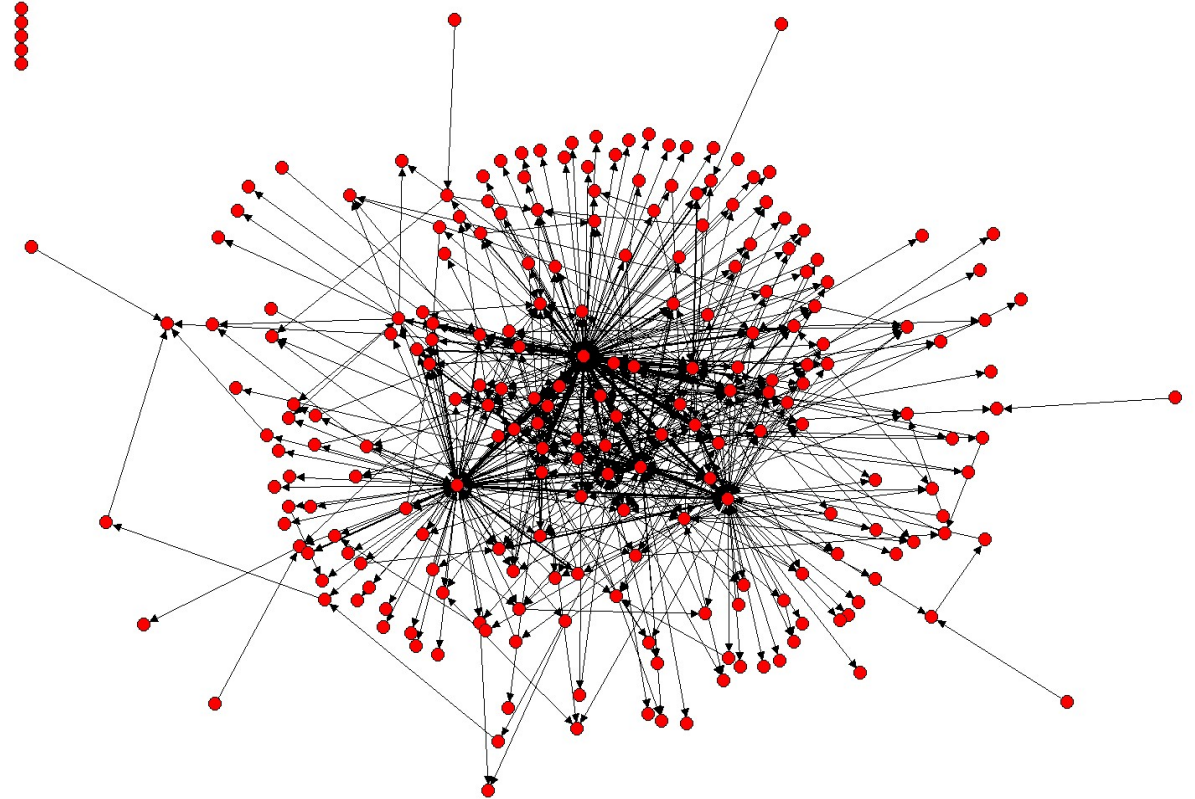
Study Period 5 - 2015								
ACCT	Current Grade	Last Site Login	Risk Level	Late Assessment Submissions	Number of Site Logins	Forum Contributions	Lecture Recording Views	
Accounting Internal, City West	<b>C</b> — Course Average: P1	<b>5 days ago</b> (12 Sep 2015) Course Average: 2 days ago	<b>Low</b> Course Average: Low	<b>0</b> — Course Average: 0	<b>29</b> ▼ Course Average: 36	<b>3</b> ▼ Course Average: 12	<b>10</b> ▼ Course Average: 4	
MARK Market Internal, City West	<b>P2</b> ▼ Course Average: C	<b>1 days ago</b> (15 Sep 2015) Course Average: 1 days ago	<b>Medium</b> Course Average: Medium	<b>1</b> ▼ Course Average: 0	<b>10</b> ▲ Course Average: 11	<b>0</b> ▼ Course Average: 12	<b>4</b> ▲ Course Average: 4	
COMP Business External, City West	<b>C</b> ▲ Course Average: C	<b>1 days ago</b> (15 Sep 2015) Course Average: 2 days ago	<b>Low</b> Course Average: Low	<b>0</b> — Course Average: 0	<b>10</b> ▼ Course Average: 36	<b>0</b> — Course Average: 0	<b>10</b> ▼ Course Average: 4	

# Predictive Analytics

- Peer influence and community

## Use of SNA (+ text analysis)

- Creativity
- Sense of community
- Student satisfaction
- Social and cognitive presence
- Student retention



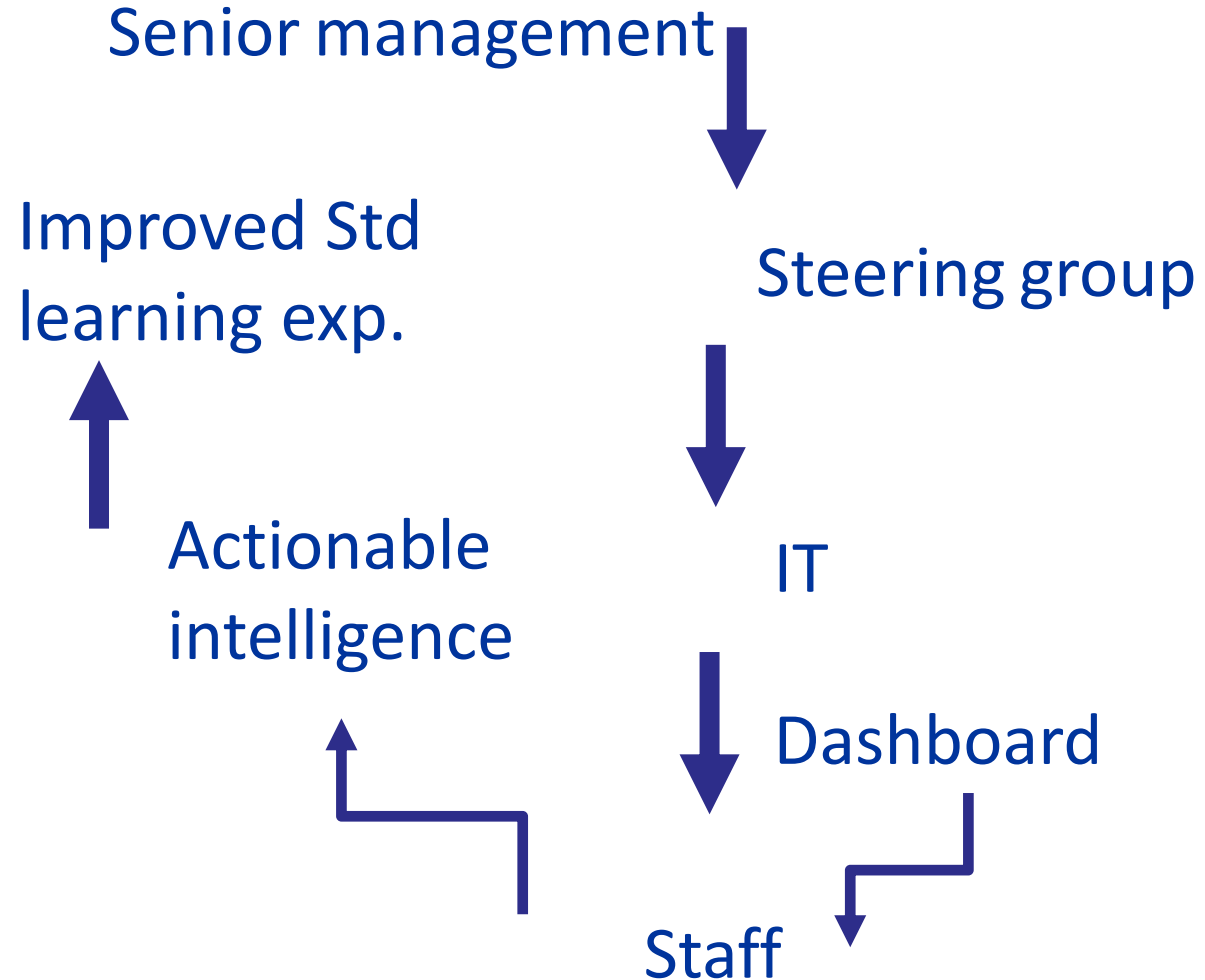


# Learning Support

- Very few examples of large scale adoption and impact
  - Strategic priority
  - Complex to implement LA and alter practice



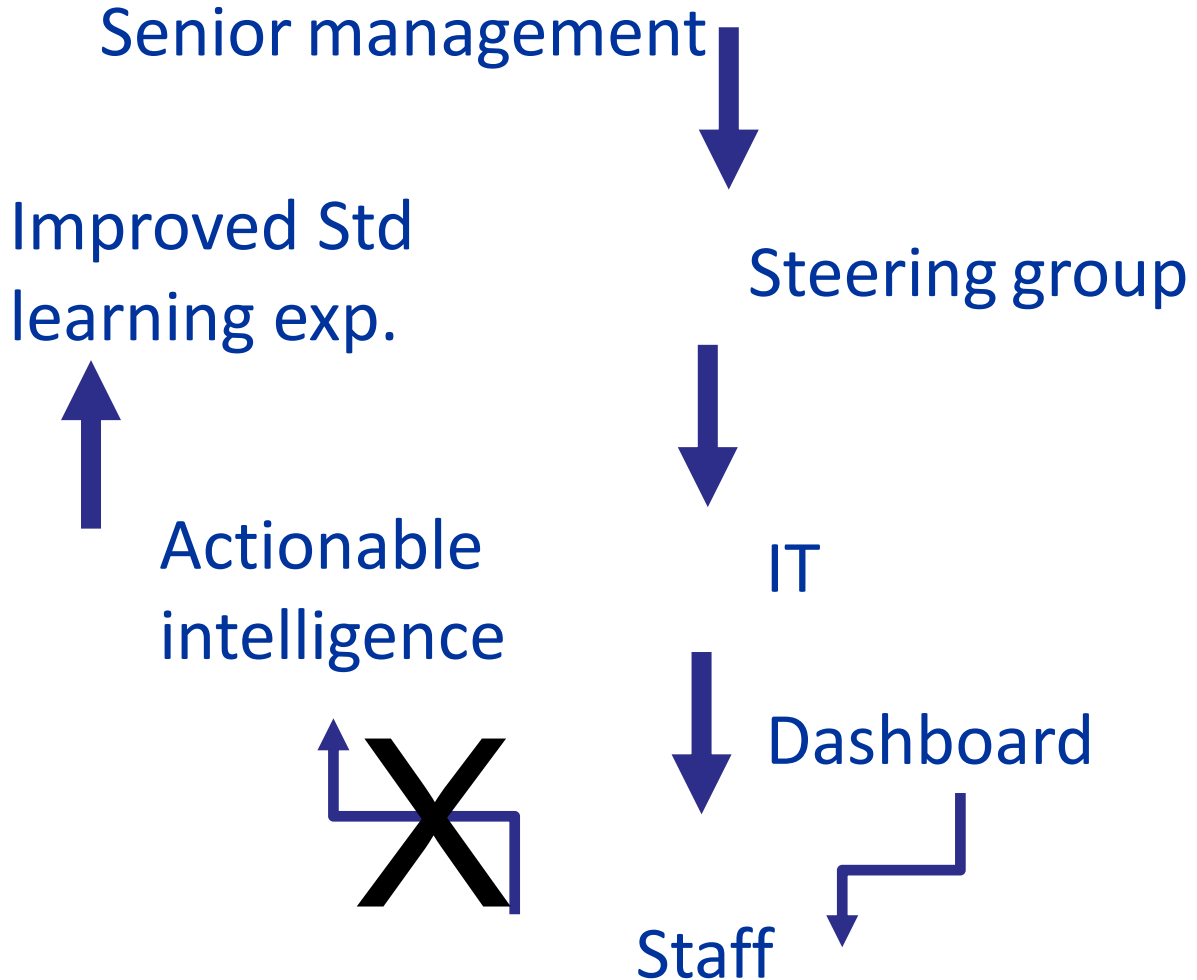
# Learning Support





# Learning Support

Presentation of data  
DOES NOT meet staff  
requirements/ and  
increases workload





# Learning Support

- Introduction of LA must complement and be adaptive to culture and practices
  - Supporting learning requires ongoing and personalised feedback
  - This is a challenge – how to scale personalisation?



# Personalised Feedback



- Teacher remains central
  - Creation of rules and messages
  - Each student receives a different message dependent on their online interactions and outcomes
- Reduced workload and increased feedback and engagement
- Increased academic performance and student satisfaction

The screenshot displays the OnTask version 0.3.3 interface. On the left, a sidebar contains navigation icons for Data, Main, Rules, and Summary. The main area shows three conditions being configured:

- 2. Condition Name: **Connect2**. Rule: Connect equal 2.
- 3. Condition Name: **Tutorial**. Rule: Tutorial less or equal 2.
- 4. Condition Name: **Workshop**. Rule: Workshop less 2.

Each condition has a 'Delete This Condition' button and '+ ADD RULE' / '+ ADD GROUP' options. Below the conditions are 'Add Condition' and 'Verify Condition' buttons.

On the right, the 'Insert Conditions to Email Template' section shows 'StudentID' and 'Condition 1: Connect' being inserted into a template. The 'Insert Custom Attributes' button is also visible.

The 'Drafts Email Template' section shows a preview of an email with the following content:

Hello {{StudentFirstname}},

I trust you have settled into uni life and are becoming familiar with how to study at university. I've been keeping an eye on how you've been tracking over the past 4 weeks and would like to chat about a couple of things.

Regular, repetitive study has been shown to help consolidate learning. Connect has been used in Mol to Tissues A for a few years now, and we know that students who regularly engage with the Connect learning platform do better in the course overall. {{ConnectTrue}} I have noticed that you haven't registered for Connect. It's important that you do this ASAP! The weekly learning modules will help you develop a good foundation knowledge in this course. Furthermore the Connect platform will be used to complete our summative assessment, Quiz 1 in a few weeks time. If you haven't registered for Connect you will be unable to complete the quiz. {{ConnectFalse}} I can see that you have registered for Connect, which is fantastic. {{ConnectTrue}} I can see you that you have registered for Connect using a trial membership. It is important that you upgrade to a full access account ASAP! The weekly learning modules will help you develop a good foundation knowledge in this course. Furthermore the Connect platform will be used to complete our summative assessment, Quiz 1 in a few weeks time. If you haven't registered for Connect you will be unable to complete the quiz. {{ConnectFalse}}

{{TutorialTrue}} I have also noted that you haven't attended all of the Mol to Tissues A tutorials this year. I know it's tempting to skip classes, but regular class attendance is key to success. {{TutorialFalse}} I can see you have attended all your tutorials, which is a fantastic effort. Keep up the good work! {{TutorialTrue}}

{{WorkshopTrue}} Sally, Dr Bresland has told me that you have missed at least 1 workshop. Workshop attendance is important to practical class success. {{WorkshopFalse}}

Please remember some of the key dates for study in 2017. They can be found at <http://www.unisa.edu.au/Student-Life/Support-services/Student-administration/Academic-calendars/Academic-calendar-2017/>

If at any stage you'd like to chat about your studies further, please touch base with either myself or Dr John Bresland.

Kind regards,  
Brendan

The bottom of the interface shows a 'Schedule Your Rule' section with a time set to 09:30 and a 'Repeat' dropdown menu. At the very bottom, there are 'ON Email' and 'OFF Notification' toggle switches.



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**Questions?**