



# USING ONLINE ASSESSMENT WITH UNDERGRADUATES

## PROS, CONS AND LESSONS LEARNT

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# TIMELINE – 11 YEARS OF E-ASSESSMENT IN LIFE SCIENCES

- 2002- Blackboard VLE introduced for all modules
- 2003 –Life Sciences decides to adopt online assessment for all 1<sup>st</sup> year modules
- April 2003 – staff training in online assessment
- Sept 2003 – first assignments published in first year modules – used for all tutorials and exams
- Sept 2004 – formative and low-stakes summative assessments introduced to 2<sup>nd</sup> and 3<sup>rd</sup> year modules
- Sept 2012 – combination of QMP and ExamOnline for second year exams
- Sept 2013- use of ExamOnline for third year exams and Turn It In for coursework
- 2015- Turn it in for all coursework and Honours projects - Final year exams will use ExamOnline!!

# WHY CHANGE?

- Increasing student numbers
- Changing student expectations
- Reduction in staff numbers
- Slow turnaround for paper based coursework
- Limited feedback on coursework
- No “feed forward”
- Students needed more practice in assessments



# WHY USE E-ASSESSMENT FOR FORMATIVE (AND SUMMATIVE) ASSESSMENTS?

## Staff

- – reduced time spent marking
- -easier to track individual student's progress
- - wanted students to do assessments more readily and repeat them until they got them right

## Students

- - instant feedback
- - more practise
- - available anytime/ anywhere

# WHERE DID WE DECIDE TO USE E-ASSESSMENT INITIALLY?

- Formative, summative or both?
- 1<sup>st</sup> year – formative and summative
- 2<sup>nd</sup> year – formative and low stakes summative
- 3<sup>rd</sup> year - formative

# POSITIVE POINTS ABOUT QMP

- Flexibility of question types
- Reusable resource
- Using Enterprise Reporter, marks are easily extracted and transferred to Excel files
- Question performance and validity can be analysed.



# NEGATIVE POINTS



- Very few – initial staff time to learn how to use the software
- Initial preparation of question banks
- Hardest part – designing feedback that is useful without giving away the answers.
- BUT - If you want students to write more than a few words not really suitable

# SUCCESS STORY

- Introduced to 1<sup>st</sup> year modules in 2003-04
- Uptake by students phenomenal – each assessment attempted on average 6 times
- Module pass rates improved
- Staff – less time spent marking more time spent with students
- This gave us the confidence to expand our use of e-assessment BUT what system to use?
- ExamOnline really allowed our expansion to all years

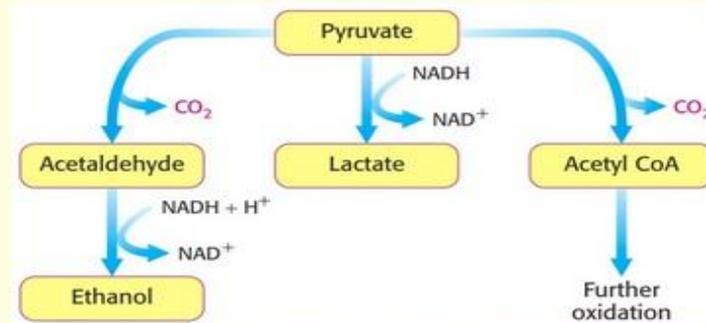
# EXAMONLINE



- At level 2 and above exams use more SAQs and essays
- QMP not suitable for this
- ExamOnline - Intelligent Assessment Technologies Limited
- Supports extended writing
- Trialled it for mid-module tests for a third year module in 2011
- BUT – students needed to be able to add diagrams!!
- Now can upload hand-drawn diagrams
- Rolled out for Level 2 exams in 2012/13, Level 3 2013/14 and Level 4 2014/15

Editor | 12pt | **B** | *I* | U |  $x^2$  |  $x_2$  | [List icons] | [Text icons] | [Color icons] | [Eraser] | [Pencil] | [Sum]

1.



[Click to view full size](#)

The diagram above shows the fate of pyruvate in metabolism.

- a) In the conversion of pyruvate to ethanol, describe the types of reaction that take place and how they occur.
- b) What kind of reaction is the conversion of pyruvate to lactate?
- c) Acetyl CoA can be derived from pyruvate and is an important molecule in many pathways. How does this molecule help balance the metabolism of carbohydrates and fat? [10 marks]

The types of reaction that take place are:-

- this is where the student types an answer...
- 
- 
- |

Submit

▲ Top of answer

▼ Bottom of answer

Question 3



[Click to view full size](#)

- (a) What type of lever system is shown in the diagram above? (2 marks)
- (b) What is the main advantage of this type of lever for movement in the human musculoskeletal system? (2 marks)
- (c) What is the main disadvantage of this type of lever? (1 mark)
- (d) What arm muscle is illustrated in the diagram? (1 mark)
- (d) A myofibril in this muscle measures 120 mm in length at rest, at which point the average sarcomere length is 2.4  $\mu\text{m}$ . The myofibril shortens to 96 mm during an isotonic contraction. How many sarcomeres does the myofibril contain (2 marks) and what is their average length at peak contraction (2 marks)?

 [Click here to answer question 3](#)

Navigation icons: A^, A^, a grid of colored squares, a text editor icon (T), and a flag icon.

## Questions



## Student Answer

Question Text

Mark Scheme

Expand All

Collapse All

Help

Edit question

Highlight keywords

Find similar

BS21002 Resit Exam August 2014

Question : 1

- 7 marks Answer : 1
- 10 marks Answer : 2
- 4 marks Answer : 3
- 10 marks Answer : 4

Question : 2

- 2 marks Answer : 1
- 9 marks Answer : 2
- 10 marks Answer : 3
- 8 marks Answer : 4
- 9 marks Answer : 5
- 6 marks Answer : 6
- 10 marks Answer : 7

Question : 3

Question : 4

- 4 marks Answer : 1
- 1 marks Answer : 2
- 7 marks Answer : 3
- 0 marks Answer : 4

Question : 5

- 4 marks Answer : 1
- 5 marks Answer : 2
- 2 marks Answer : 3
- 3 marks Answer : 4
- 8 marks Answer : 5
- 3 marks Answer : 6
- 10 marks Answer : 7

Splicosomes are found within eukaryotic cells and are used to cleave introns from mRNA strands to form a mature RNA strand containing only exons ( genes that shall be expressed [Comment by marker (William Whitfield) : **Exons are not genes;** ] ). The purpose of these is to give more variation between genes as different combinations of genes can be synthesised.

An mRNA strand must be cleaved of it's introns before traversing through the nuclear pore.

Splicing occurs on a mRNA strand, small nuclear ribonucleic proteins bind with 5' and 3' splice sites which are specific sequences the snRNP's recognise and bind to, the 3' site is slightly behind the 2nd exon, this is to allow the lariat to form. The snRNP's are bound to the sites and a bend occurs in the mRNA and the snRNP's combine into a splicosome which initiates the cleaving and combining of the mRNA intron loop and also the combining of the now matured mRNA strand. The exons are bound and the Splicosome breaks off and The lariat is formed and then released after the 5' and 3' of it join. The lariat is broken down and recycled and the splicosome disassembles and is ready to perform again . [Comment by marker (William Whitfield) : **Generally excellent answer;**]

Marked by William Whitfield on 05/08/2014 04:09 PM

View only human markable

Previous

Next

Mark : 5

Insert Comment

Delete Comment

Done

Autosaved

Linda Morris (123456789)

[Hide timer](#)

01:54:22

Editor      | 12pt **B** *I* U | x<sup>2</sup> x<sub>2</sub> |          | 



 [Click to view full size](#)

1 The centromere is marked by the orange Cen38 signal. The surrounding retrotransposons. What is it called?

2 Where on Chromosome 3 are most of the genes found? What is the region?

3 Why are 'young' LTR retrotransposons found throughout the chromosome? Why are retrotransposons collectively far more common in the blue region than the centromere?

4 MITE transposable elements (abbreviated to DNA-TE/MITE in the figure) are found in the same region as most of the genes. Why?

[10 marks]

Students can insert a reference to a hand-drawn diagram.

Submit

 Top of answer

Include a hand-drawn sketch

### How to include a sketch for this question

Please follow these instructions:

1. Ask an invigilator for a **drawing sheet**.
2. Write your **name**, the **question number**, the **date** and the **room number** on the sheet.
3. Enter the **Drawing ID** from the printed drawing sheet into the spaces below.
4. Click on the **Continue** button.

Drawing ID:  -  -  -

Continue

Cancel

Questions

Student Answer

Question Text

Mark Scheme

Expand All

Collapse All

Help

Edit question

Highlight keywords

Find similar

BS32006 Resit Exam August 2014

Question : A1

Question : A2

Question : B1

Question : B2

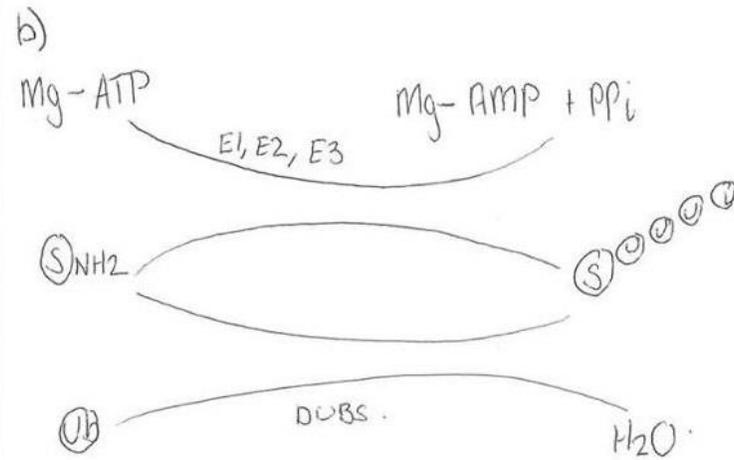
15 marks Answer : 1

18 marks Answer : 2

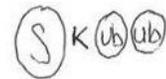
9 marks Answer : 3

Question : C1

Question : C2



a)



Enter the drawing ID into your answer in ExamOnline, or IT WILL NOT BE MARKED.

a) Ubiquitins have 3 forms - multi ubiquitin chains, monomeric poly ubiquitin chains and poly ubiquitin chains. The chain type affects the fate and function, which ubiquitin binding domain it will interact with and the chains conformation. For a chain to form with another UB must have an N terminal Met1 (Comment by marker (Carol MacKintosh) : **this is only true for linear chains**), to which other ub can attach covalently. Homotypic polyubiquitin chains only have a single linkage type where as heterotypic can have mixed type or a branched type chain. (ub extended at 2 or more lysines) Lys63 has an extended conformation (similar to linear chains) exposing the lle44.

Marked by Carol MacKintosh on 06/08/2014 04:36 PM

# PROS OF EXAMONLINE

- Hugely reduced Admin load
- Easy upload of diagrams
- No file room full of papers
- Easy access for markers – within an hour of the exam finishing
- Remote access for markers
- Can track progress of marking
- Checking of question performance
- Can easily show students their answers

**EXAM**  **ONLINE**



## ExamOnline Case Studies The University of Dundee

### Key points:

The University of Dundee license ExamOnline for up to 3,000 students per year.

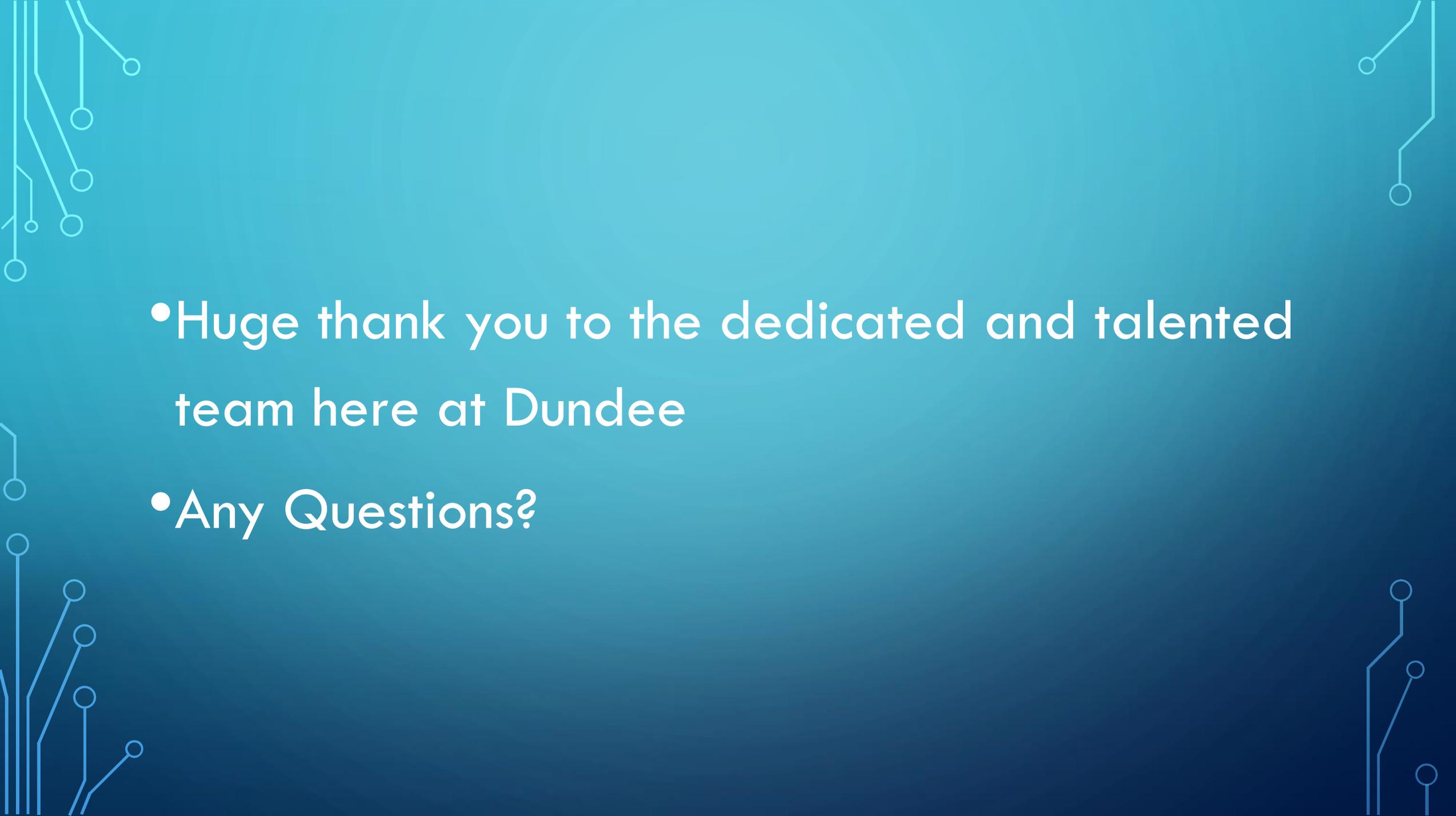
Up to 150 students at a time sit high stakes summative examinations using the system.

The examinations are almost exclusively composed of extended answer questions which are subsequently human marked, either on-screen or after exporting to PDF.

In 2010 the University of Dundee (in response to requests from academics and students) was looking for a system which would enable them to move extended answer and essay examinations on-screen. After carrying out a review of available systems, the University, which is experienced in the use of online assessment systems and is a long time Questionmark Perception (QMP) user, selected ExamOnline to address this specific demand. After an initial pilot, the University's use of ExamOnline has grown each year. Today the University license ExamOnline for up to 3,000 students and runs examinations in the College of Art, Science & Engineering, the College of Arts & Social Sciences, and the College of Life Sciences.

# LESSONS LEARNT

- Be brave - try new assessment tools
- Always have a plan B
- Need strong support team –LLC
- Devise a good question naming scheme
- Benefits for both academic and administrative staff outweigh initial time input
- Beware – once you start there is no going back!!

- 
- The background is a solid teal color. In the four corners, there are decorative white line-art patterns resembling circuit boards or neural networks, with lines and small circles connecting them.
- Huge thank you to the dedicated and talented team here at Dundee
  - Any Questions?