



# TRANSFORMINGEXAMS.COM

A Scalable Examination Platform for BYOD Invigilated Assessment

## e-Exams Masterclass

Mathew Hillier,  
Monash University

University of Queensland, 27 Sep 2018



Australian Government  
Department of Education and Training



MONASH  
University



THE UNIVERSITY  
OF QUEENSLAND



UNIVERSITY OF  
TASMANIA



Australian  
National  
University



MACQUARIE  
University



EDITH COWAN  
UNIVERSITY



University of  
South Australia

# Acknowledgements

## Project Partners

- Monash University: Dr Mathew Hillier (PI), Prof. Marilyn Baird, Dr Scott Grant
- University of Tasmania: Dr Andrew Fluck.
- Central Queensland University: Dr Michael Cowling, Kenneth Howah, Mary Tom.
- Australian National University: Brandon Colquhoun, Beth Harris
- Edith Cowan University: Assoc. Prof. Paul Newhouse (deceased)
- Macquarie University: Assoc. Prof. Matthew Bower, Prof Dominic Verity
- RMIT University: Assoc. Prof. Shona Leitch
- University of South Australia: Dr Ruth Geer, Bruce White
- University of Queensland: Dominic McGrath
- University of New South Wales (Canberra)/ADFA: Dr David Meacheam, Emma Betts

## Academics hosting trials

- Monash college: Nathaniel Lyons (Globalisation + Geography)
- Monash Uni: Dr Shani Tobias (Translation), Dr Charanjit Kaur (Bus Stats).
- UQ: Dr Amy Hubbell (French language).
- CQU: Dr Rahat Hossain (KM in IT).
- UTAS: Dr Wendy Balassa (Education)
- ECU: Dr Jeremy Pagram (Programming/Python)
- UNSW/ADFA: Andrew Gilbert (Air Power).

## Project staff

Martin Coleman (lead software developer)

Vilma Simbag (project manager/admin)

Former staff: Lubos Rendek (software dev).

Students (summer/winter projects and casual RAs):

Chao Wang, Kim Martinow, Sayumi Umeda, Annie (Yunyi Yang), Yi Zheng.

# Problems with current exams

## Paper based exam features...

Limited pedagogical scope... MCQ/TF, short/essay response, static diagrams.

Tendency to examine end product (final response) rather than process.

Harder to examine deep/higher order skills - tends to lower order

Hand-written pen-on-paper is much less common as a problem solving and information presentation tool.

But, computerised MCQ and a text box isn't making pedagogical progress!

Not reflective of the modern world of work.

*Is this limiting our ability to accredit graduates as being able to operate in the world of today, immersed in technology, information and complexity? Other problems you know of?*

# Why keep exams?

## Discuss!

# Why keep exams?

High stakes, supervised testing is still needed because:

Qualification identify verification (be sure it is the student's work  
- rise of contract cheating)

A test of the student's 'metal' under pressure.

Accreditation requirements.

Social/political stakeholder expectations.

Time and workload efficiencies?

Other reasons ... ?

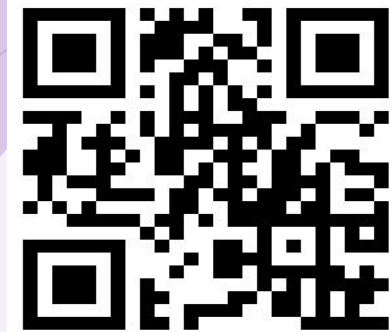
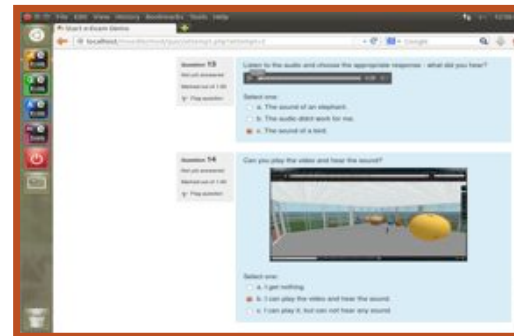
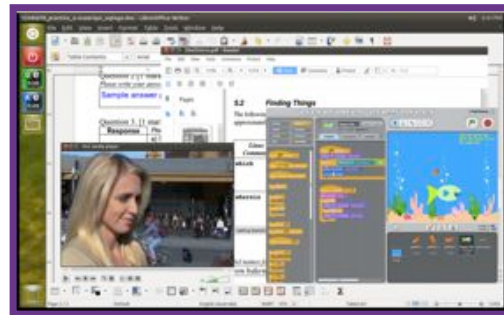
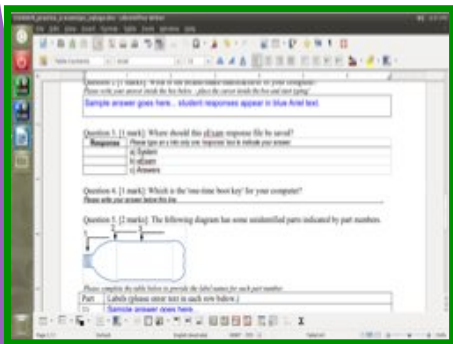


# e-Exam Types

# Types - Phased implementation strategy

Start >	> > >	> > >	> > >	> > >	> Future >
<b>Get Ready</b>	<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3</b>	<b>Phase 4</b>	<b>Phase 5</b>
Institutional approvals, research ethics, hardware and infrastructure.	Paper equivalent small scale.  Basic doc exams to begin.	Post-paper small to medium.  Expanding the landscape with apps and media.	Medium to large scale.  Adding the power of an LMS (Moodle).	Whitelisted and logged Internet  Network BYOD exam.	Open but fully logged Internet  Network mixed mode BYOD exam.
	<b>Crawling</b>	<b>Walking</b>	<b>Running</b>	<b>Jumping</b>	<b>Flying!</b>

<http://ta.vu/e-exam-roadmap>



## e-Exam types now in use

The e-Exam platform features in use now:

**1: Paper-equivalent doc or spreadsheet 'form' based exam**

**2: Post-paper word doc centric exam (multimedia, programming, spreadsheets as math tools)**

**3: Moodle based exam (client/server with 'offline')**

Features under development ~ 2018-2019+

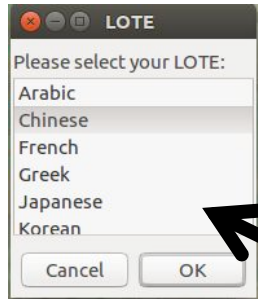
**4: White-listed online exam with logging (half done!)**

**5: Open online exam with logging**



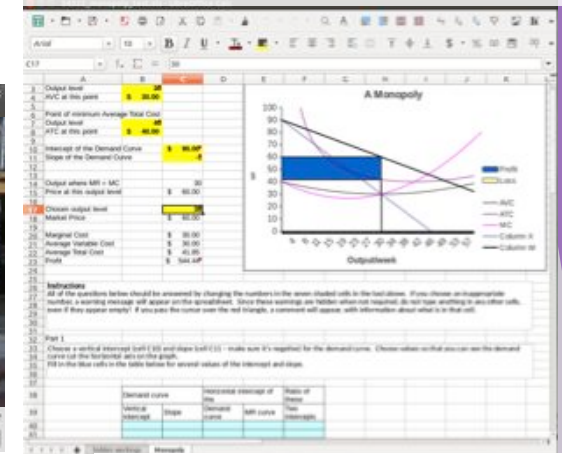
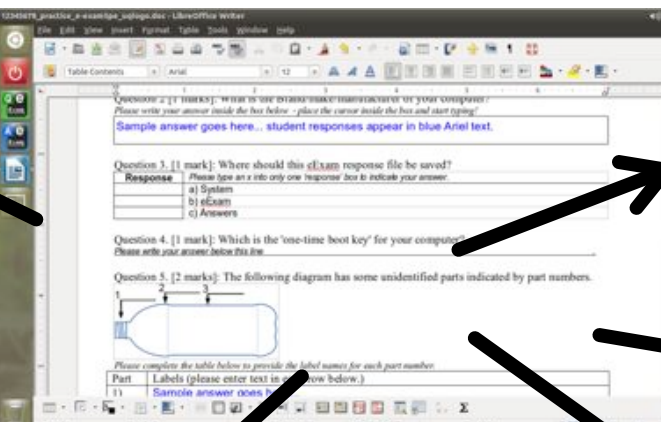
# e-Exam Trials: Towards 'post-paper' (phase 1 to 2)

Start simple and build up!

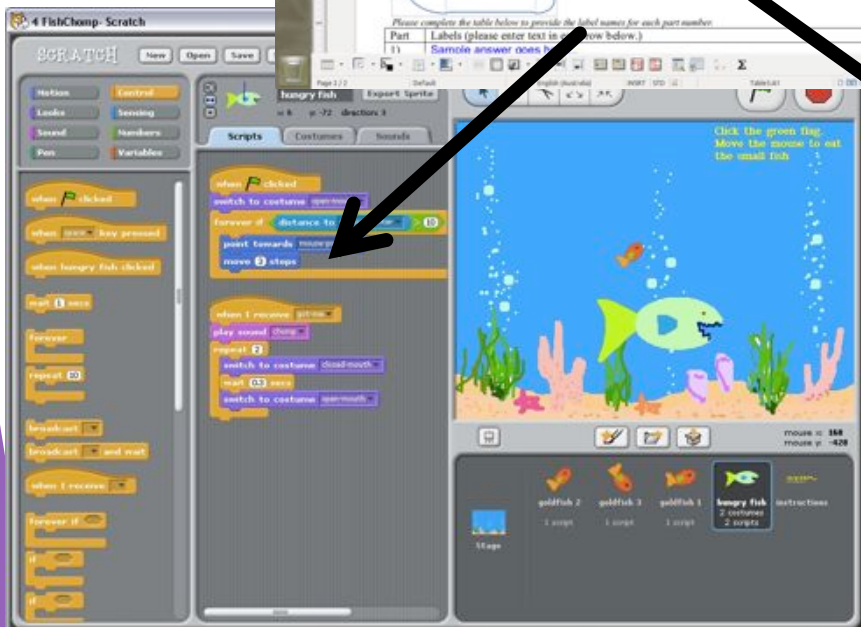


Start! Exam doc

Video



Scratch SDK



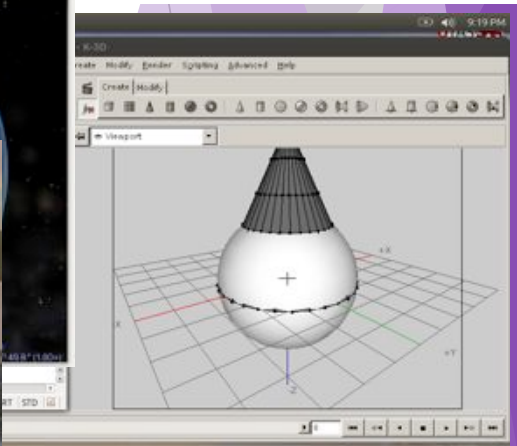
PDF

Sims



Spreadsheets as 'forms' or as calculation and analysis.

Specialist applications



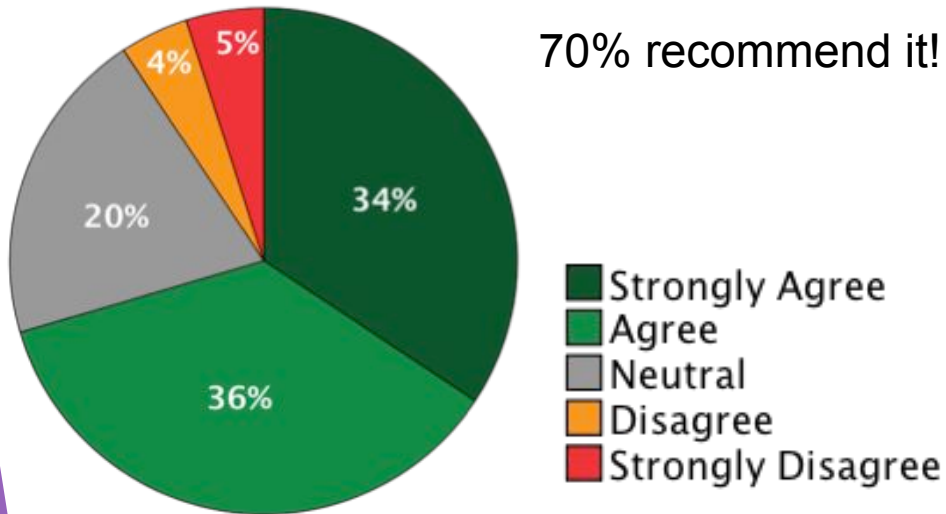
# e-Exam trials

Exams	Typists	Pen	Weight	Minutes
<b>Sum</b>	1750	1309	~	4145
<b>Mean</b>	40	37	32%	106
<b>Smallest</b>	1	~	5%	15
<b>Largest</b>	166	~	50%	180

## Typists:

*I would recommend the e-Exam system to others.*

70% recommend it!



Recent e-Exams 2017 and 2018	
Monash	<ul style="list-style-type: none"> <li>• Business Statistics</li> <li>• Chinese online media ('Robust' online).</li> <li>• Geography x 3 classes [Monash college 2016]</li> <li>• Globalisation x 4 classes [Monash college 2017]</li> <li>• Language Translation (some NAATI)</li> <li>• Introductory Chinese language (offline, Spreadsheet used as a form)</li> <li>• Introduction to Chinese ('Robust' online).</li> </ul>
UQ	<ul style="list-style-type: none"> <li>• French language translation</li> </ul>
CQU	<ul style="list-style-type: none"> <li>• Knowledge Management Principles (IT)</li> <li>• Ethics and Social Issues (IT)</li> <li>• IT management</li> </ul>
UTAS	<ul style="list-style-type: none"> <li>• ICT in Education (post-paper exams)</li> <li>• Environmental Chemistry</li> </ul>
MqU	<ul style="list-style-type: none"> <li>• ICT in Education</li> </ul>
UNSW	<ul style="list-style-type: none"> <li>• Air power (ADFA)</li> </ul>
ECU	<ul style="list-style-type: none"> <li>• Teaching Introductory Computer Programming</li> <li>• OHS for trades</li> </ul>
UniSA	<ul style="list-style-type: none"> <li>• Science &amp; Math for secondary teaching</li> </ul>

# Paper equivalent using word documents

Suitable format adjustments were made to cater for both paper and screen.

Question 2. Match the following host-MOTA below).

Possible descriptions:

- a) Mauris id mi id orci interdum semper.
- b) Sed eu neque ut est dignissim fringilla
- c) Vivamus in dolor euismod, luctus libe
- d) Mauris vehicula eros a viverra pellent
- e) Curabitur eu mi at nibh commodo var
- f) Aenean eget orci porta, malesuada lor

Please write or type the letter of the descriptions listed

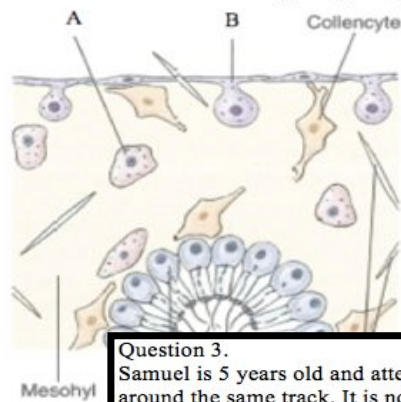
Answer a to f.	Terms
<u>f</u>	<u>I. Paxogen</u>
<u>a</u>	<u>II. Sitabosis</u>
<u>c</u>	<u>III. Fakeasalism</u>
<u>e</u>	

Question 7: Some rationales for punishment are **XEZT** does this mean?

Please write / type your response inside the box below.

The student types their answer here. In this example a two row table. The response table row is created cell has a minimum height set (by dragging the box) and a minimum height cell instead of successive carriage returns to set the box height, the next question will be less likely to be disrupted when students type their responses. The initial size of the box should indicate the desired length of the response. The box will automatically expand when it gets full.

Question 5: For the following diagram please provide the names for **THE XING** in the table below.



A	<u>Label goes here. Constructed response question.</u>
B	<u>Blue text makes it easier to see which questions have been answered and which have not!</u>
C	<u>Use minimum row heights to provide plenty of space, but don't use double carriage returns!</u>
D	<u>Doing so means the layout is less likely to be disrupted.</u>

Question 3.

Samuel is 5 years old and attends racing cars 5 days per week. Eamon is 10 years old and rides a superbike around the same track. It is not a selected response item so some text will be expected.

In the table below, give two (2) examples of flippant faxadism relevant to his age range (4-6 years), and describe how Samuel and Eamon differ in their abilities to perform faxadism.

[4 marks]

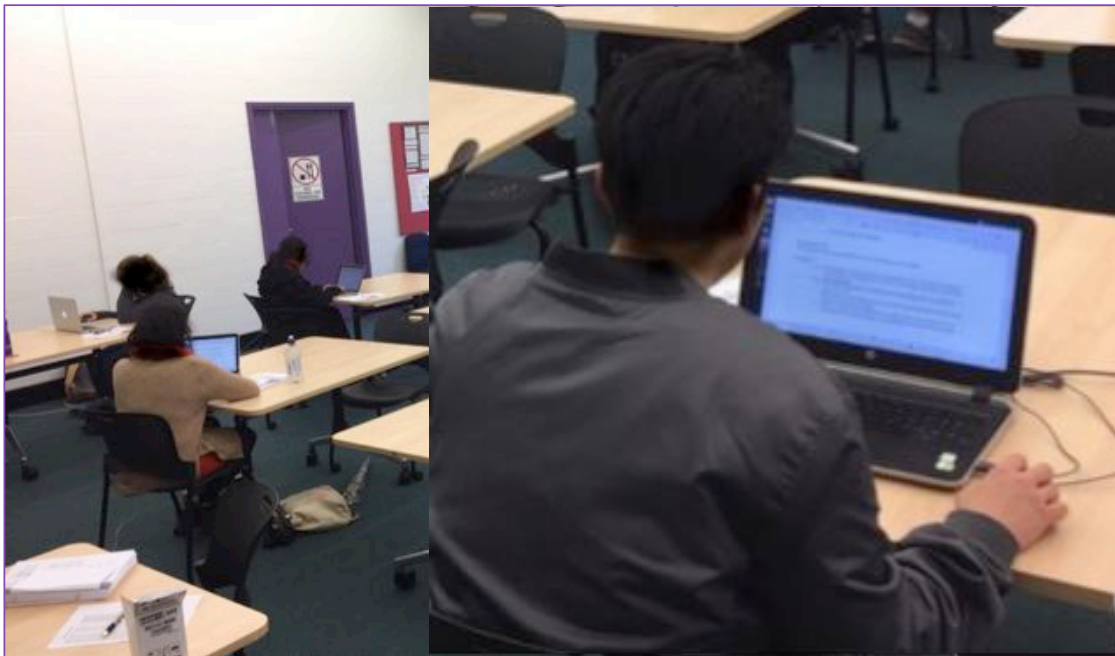
Two different examples of flippant <u>faxadism</u> (one per row) <u>Type here</u>	Describe Samuel's abilities (age 5)	Describe <u>Eamon</u> 's abilities (age 10)
	<u>Minimum heights set for both rows</u>	
		<u>More details about setting heights appear later in these examples.</u>

# e-Exam trial feedback - Macquarie U

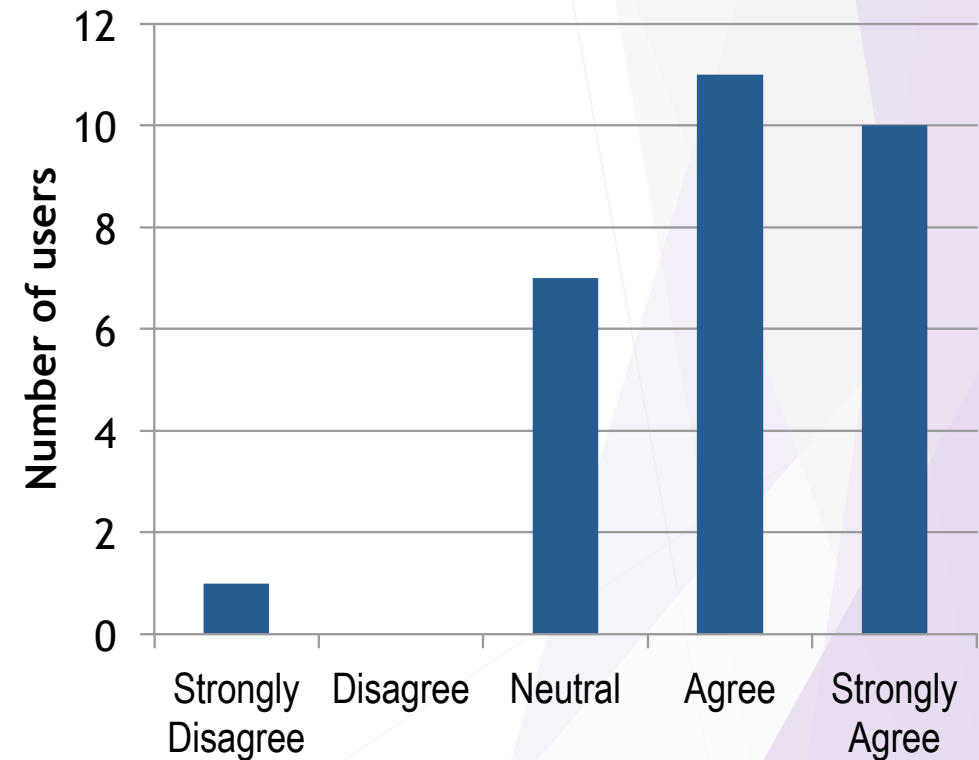
“I would recommend the e-Exam system to others”.

ICT in Education, 80 min 40% Final exam

Word document: 10 x MCQ and 1 x Essay



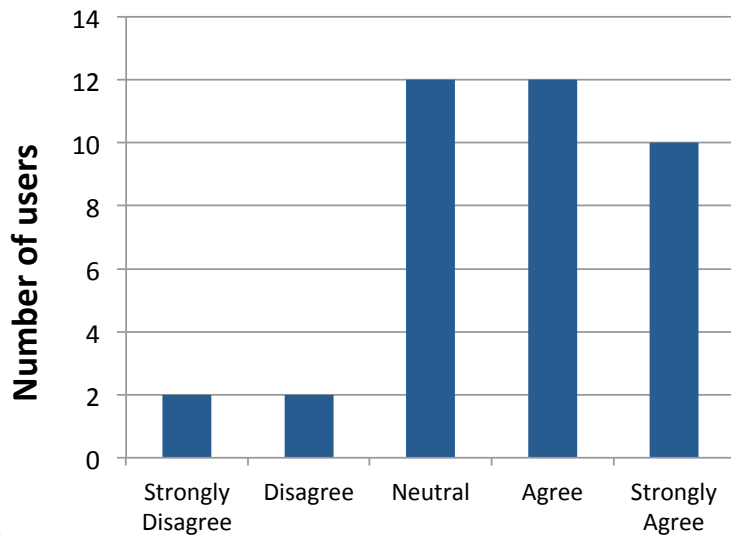
(MQU. Post. S1, 2017)



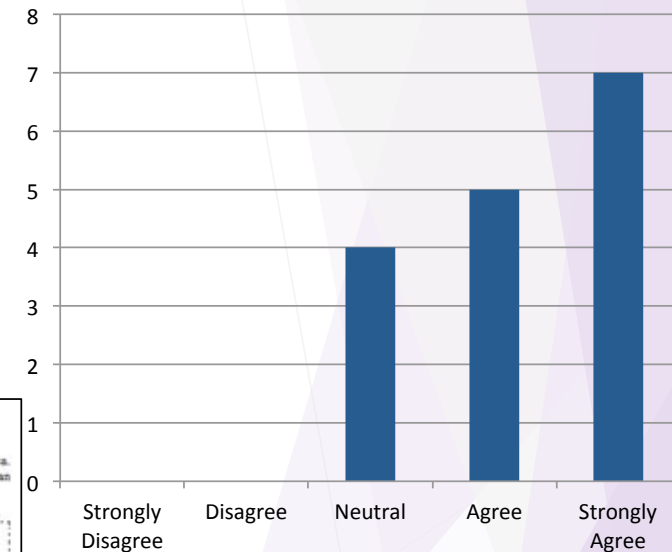
# e-Exam trial feedback - case studies

“I would recommend the e-Exam system to others” ~ Sem 1, 2017.

UTAS Education (multi media)



UQ French translation (doc)



**Text 1**  
**Brief**  
This French ad for Expedia.fr is targeted at Francophone travellers who want to visit Senegal, West Africa. The Australian branch of Expedia has asked you to translate the ad copy into English with Australian travellers in mind.

*Source Text 338 words*      *Target text - type in the dashed box below.*

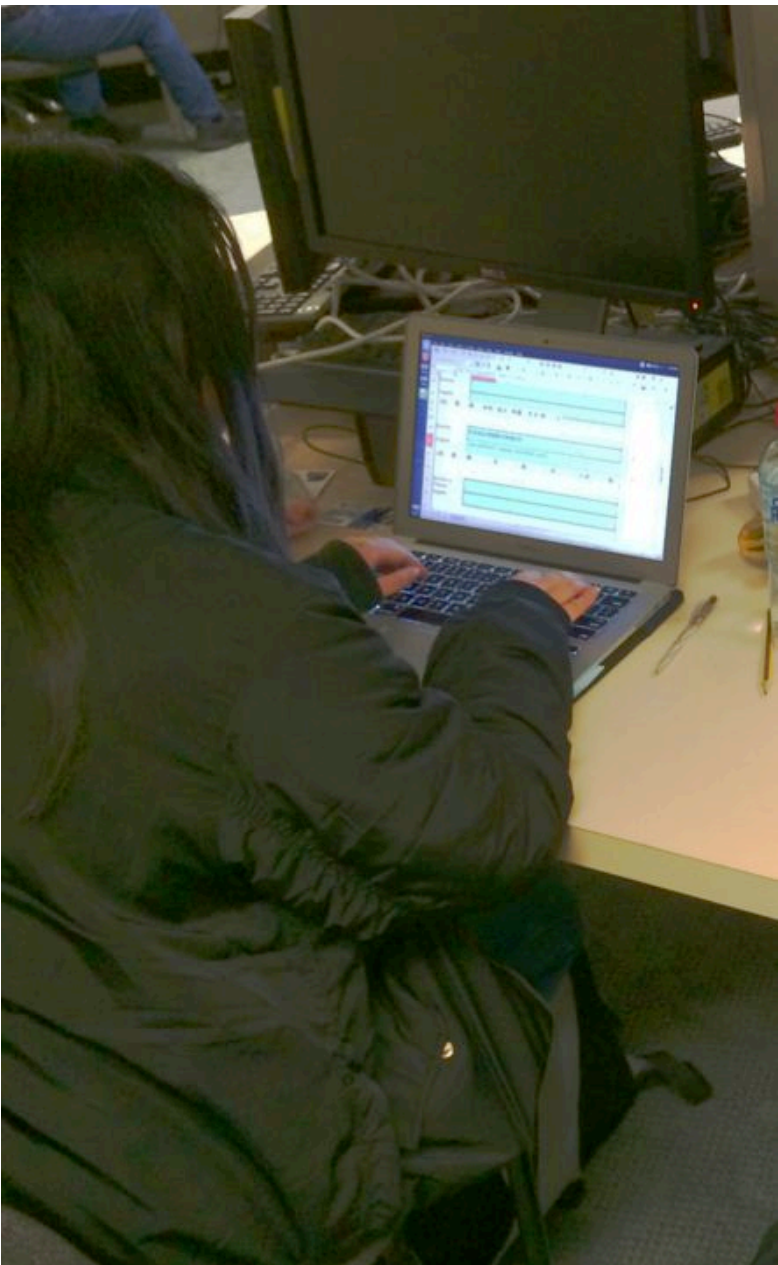
**Vacances à destination de : Sénégal**

Envie de partir en vacances en Sénégal ? Laissez Expedia vous guider vers les vacances parfaites, où vous pourrez vous détendre et profiter de votre séjour. Notre page consacrée aux séjours en Sénégal vous aide à organiser votre séjour et à en profiter pleinement. Si vous avez déjà réservé ou pensez réserver un voyage en Sénégal, pourquoi ne pas réserver un hôtel avec votre billet d'avion ? Vous pourrez ainsi réaliser des économies en profitant des meilleures offres d'Expedia.

Pour planifier votre séjour, utilisez notre carte pour trouver les principaux sites touristiques à visiter en Sénégal et vous familiariser avec les environs de votre hôtel. Vous serez y rendez pour la première fois ? Notre page sera un bon point de départ. Vous pourrez en apprendre plus sur votre destination et ainsi établir un itinéraire reprenant tous les lieux que vous souhaitez visiter, y compris les musées, marchés, magasins, restaurants et bars. Nous avons également une section dédiée aux attractions touristiques et lieux d'intérêt. Jetez-y un œil pour plus d'idées d'activités lors de votre séjour.

*Holidays in Senegal!*



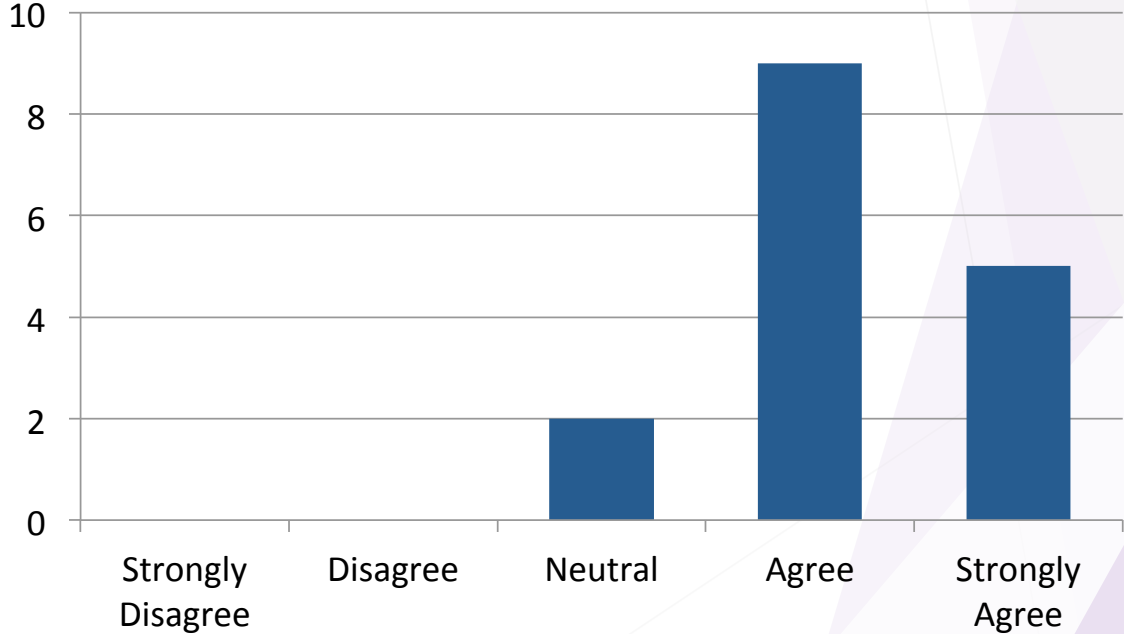


# Offline Spread sheet as a Form

Intro to Chinese (first year): 2017 Semester 2.  
22 students at pre-exam practice.

16 typed the exam. 7 females and 9 males.

I would recommend the e-Exam system to others



Caveat: sample was small and not random - descriptive of these groups only.

# Spread sheet as a Form

Language tools available according to LOTE selection

Language tools available according to LOTE selection

Respond in designated cells (other cells are locked).

# Mathematics example

The screenshot displays a multi-window environment. At the top, there is a LibreOffice Writer window titled '76543\_practice\_eexam6pp\_math.doc'. The document content includes a question: 'I be required for the following question. application, click on the circular icon on the top left of the screen, and then type 'Scilab' ch box that appears. results of the following Scilab program? [1 mark] response inside the box below.' Below the text is a small contour plot and a text box asking 'How do you interpret this chart?' with a 'The graphic shows...' button. In the foreground, a Scilab 'Graphic window number 0' displays a contour plot of a quadratic function. The plot shows concentric elliptical contours centered at the origin, with axes ranging from -1 to 1. The Scilab console window shows the following code and output:

```
Startup execution:
loading initial env
-->function f = myqua
-->f = x1**2 + x2**2;
-->endfunction
-->xdata = linspace (
-->ydata = linspace (
-->contour ( xdata ,
-->
```

```
A = [ 3 4 5;
      1 3 1;
      3 5 9 ]
x = A \ b
corr(boys(:,2), boys(:,3))
ans = 0.95695
```

```
rat: replaced 1.55 by 31/20 = 1.55
rat: replaced -0.016666666666666666 by -1/60 = -0.016666666666666666
rat: replaced 0.03 by 3/100 = 0.03
rat: replaced 4.933125 by 7893/1600 = 4.933125
rat: replaced 66.18338133333333 by 3102346/46875 = 66.18338133333333
(%o3) 61.25025633333333
```

Candidates can access wxMaxima, SciLab, GeoGebra, GNU Octave (like MatLab), R (statistics package) alongside the standard LibreOffice suite (word processor, spread sheet etc), media, plus programming tools such as Python, Scratch etc. Responses via documents or Moodle LMS.



# e-Exam trial feedback - ECU case studies

“I would recommend the e-Exam system to others”.

Teaching Python Programming exam:

Word document + Python IDLE

**Q1: [Sequence, user input, output] 5 points**  
A painter requires a program to calculate the number of litres of paint needed for a job. One litre of paint will cover 16 square metres. The program should accept the number of square metres to paint and then output the number of litres of paint required to the user.

Write a commented Python program for this task.  
Open IDLE Python environment.  
Remember to save all files to `./exam/answers/`

**Q2 [looping] 5 points**  
A program is required that receives input of five surnames one by one and surnames sorted alphabetically.

- Draw a flowchart to represent the algorithm for your program [3]
  - You can use the drawing tools within this word processor. Make here, draw the diagram and save this file (it will be submitted) or
  - Use a separate piece of paper labelled with your student ID
- Write a Python program for this problem [2 points]

**Q3 [write a text file] 5 points**  
A program is needed to store a list of tools and their hire rate in dollars Python program to accept data from the user and store it in a text file.

Possible Data:  
Air compressor: \$45 per day  
Tile cutter: \$25 per day  
Brick Saw: \$110 per day  
Nail gun \$40 per day

**Q4 [read a text file, use a function] 5 points**  
a) Add to your program in Q3 so that it can retrieve the name of the tool from the text file [3 points].  
b) Display the data read from the file on the screen: make 'displayData' program [2 points].

**Q5 [Everything] 10 points**  
Create a *robust, modular, user-friendly, & commented* Python program automatic teller machine. The program should:

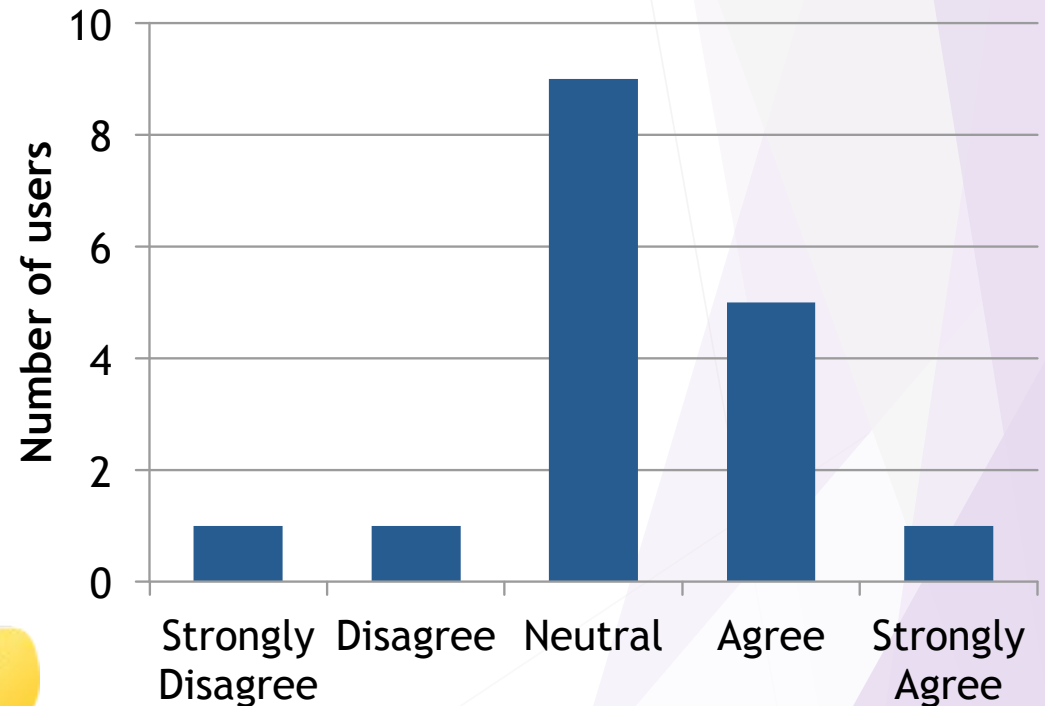
- Set up the accounts for 3 people and store their four-digit pin number balance in a text file. [3 points]
- Allow a user to login using their pin [1 point]
- Allow a user to see the balance of their account [2 points]
- Allow a user to deposit and withdraw money [4 points]

End of Exam

```
1  #...//Assessment 1.2: In-Class Test~
2  #...//Question: #3 & #4~
3  #...//Author: #####~
4  ~
5  #...//Create text file to store tools and hire rate~
6  ~
7  def displayData():~
8  ...print(a.read())~
9  ~
10 a = open("tools_sheet.txt", "w")~
11 ~
12 #...//Receive user input of tools and hire rate~
13 tool1 = input("Please enter the first tool tool needed:")~
14 price1 = input("Please enter the hire rate:")~
15 print(tool1, ":", price1, file=a)~
16 ~
17 tool2 = input("Please enter the second tool tool needed:")~
18 price2 = input("Please enter the hire rate:")~
19 print(tool2, ":", price2, file=a)~
20 ~
21 tool3 = input("Please enter the third tool tool needed:")~
22 price3 = input("Please enter the hire rate:")~
23 print(tool3, ":", price3, file=a)~
24 ~
25 tool4 = input("Please enter the fourth tool tool needed:")~
26 price4 = input("Please enter the hire rate:")~
27 print(tool4, ":", price4, file=a)~
28 ~
29 a.close()~
30 ~
31 #...//Start of Question: #4~
32 ~
33 #...//Retrieve data from Question: #3~
34 a = open("tools_sheet.txt", "r")~
35 print("displaying contents of text file")~
36 displayData()~
37 a.close()~
38 ~
39 ~
40 #...//Display data from text file (in IDLE Shell enter 'displayData()')~
41 ~
```



ECU: CSE & DTE Post-survey 2017 S2



# e-Exam trial feedback - UQ

“I would recommend the e-Exam system to others”.

French language. 120 min 30%.

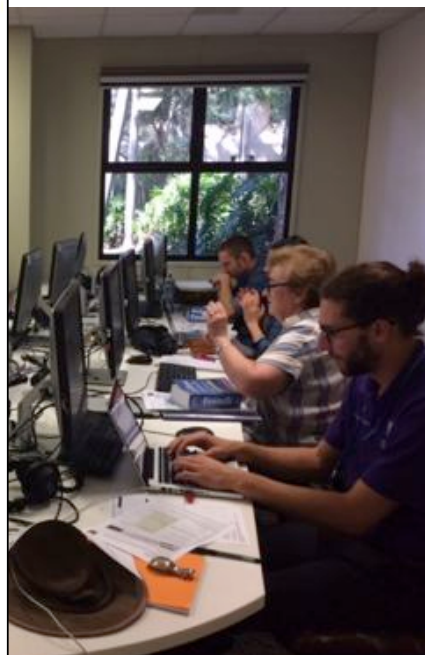
Word document: article translation

**Text 1**  
**Brief**  
This French ad for Expédia.fr is targeted at Francophone travellers who want to visit Senegal, West Africa. The Australian branch of Expedia has asked you to translate the ad copy into English with Australian travellers in mind.  
*Source Text 338 words* *Target text – type in the dashed box below.*

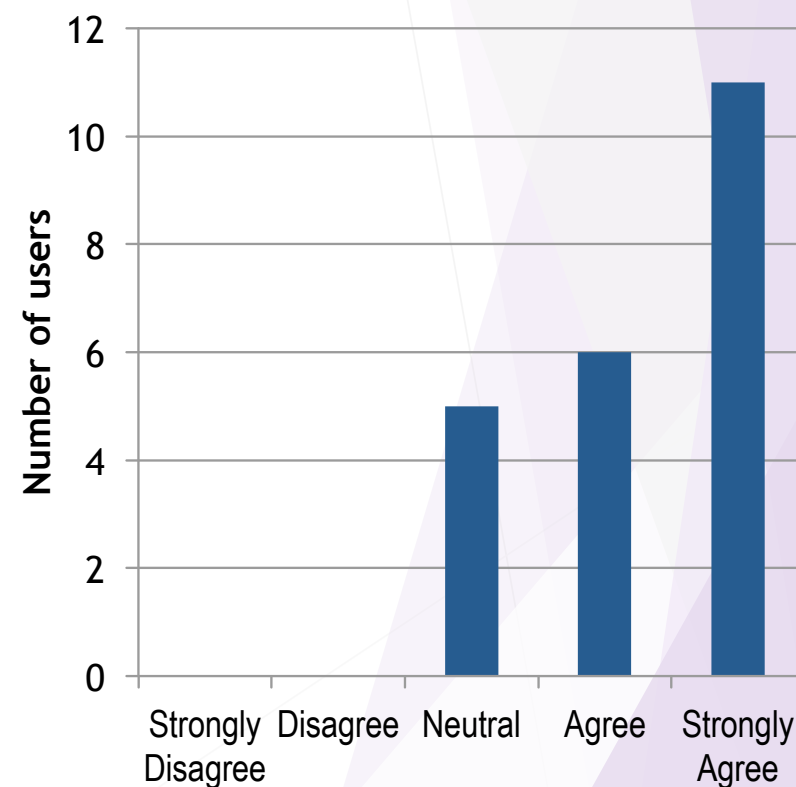
**Vacances à destination de : Sénégal**  
Envie de partir en vacances en Sénégal ? Laissez Expedia vous guider vers les vacances parfaites, où vous pourrez vous détendre et profiter de votre séjour. Notre page consacrée aux séjours en Sénégal vous aide à organiser votre séjour et à en profiter pleinement. Si vous avez déjà réservé ou pensez réserver un voyage en Sénégal, pourquoi ne pas réserver un hôtel avec votre billet d'avion ? Vous pourrez ainsi réaliser des économies en profitant des meilleures offres d'Expedia.

Pour planifier votre séjour, utilisez notre carte pour trouver les principaux sites touristiques à visiter en Sénégal et vous familiariser avec les environs de votre hôtel. Vous vous y rendez pour la première fois ? Notre page sera un bon point de départ. Vous pourrez en apprendre plus sur votre destination et ainsi établir un itinéraire reprenant tous les lieux que vous souhaitez visiter, y compris les musées, marchés, magasins, restaurants et bars. Nous avons également une section dédiée aux attractions touristiques et lieux d'intérêt. Jetez-y un œil pour plus d'idées d'activités lors de votre séjour.

*Holidays in Senegal*



UQ. Post. S1 & S2, 2017



# Case studies - hand out (double sided!)

UTAS - Post-paper word document based eexam

Monash - 'robust' online e-exam in Moodle

Your help ....

Any suggestions to improve these cases?

Anything we left out that you would like to know?



# e-Exam trial - Robust Moodle (Monash case):

Monash – Chinese language – two units  
(1<sup>st</sup> year and 3<sup>rd</sup> Year)

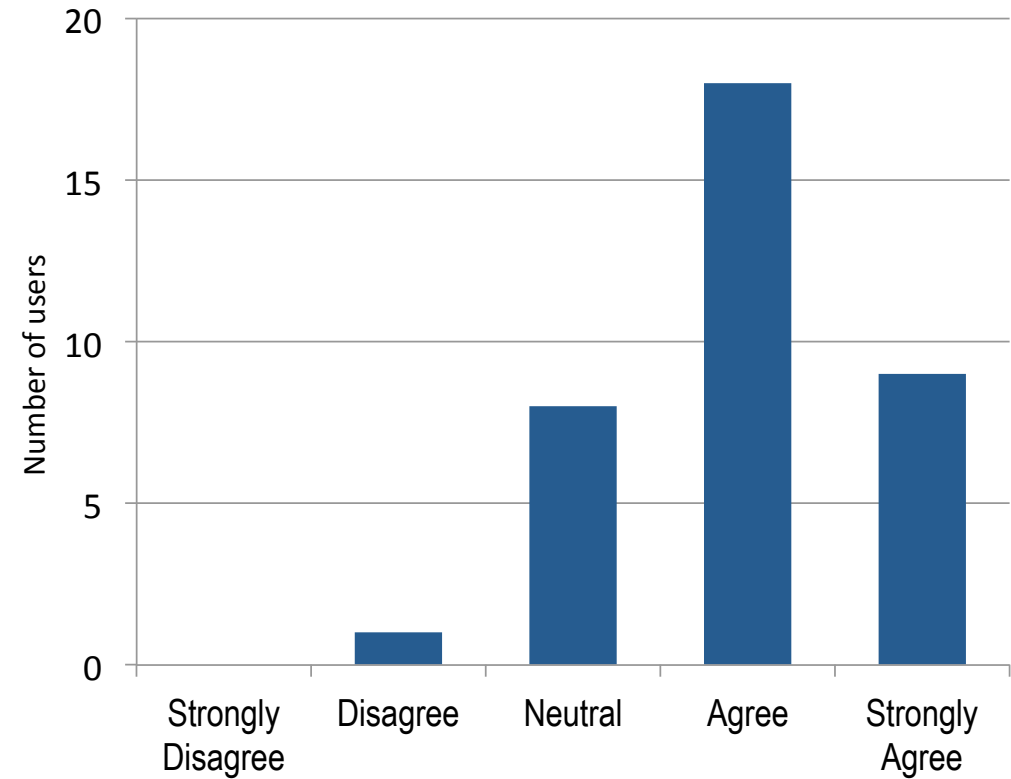
Early days for Moodle mode!

Robust Moodle worked to rescue network  
outages (double layered backup!)

Select 3<sup>rd</sup> party software carefully  
(can be limited).



“I would recommend the e-Exam system to others”  
Sem 1, 2018.

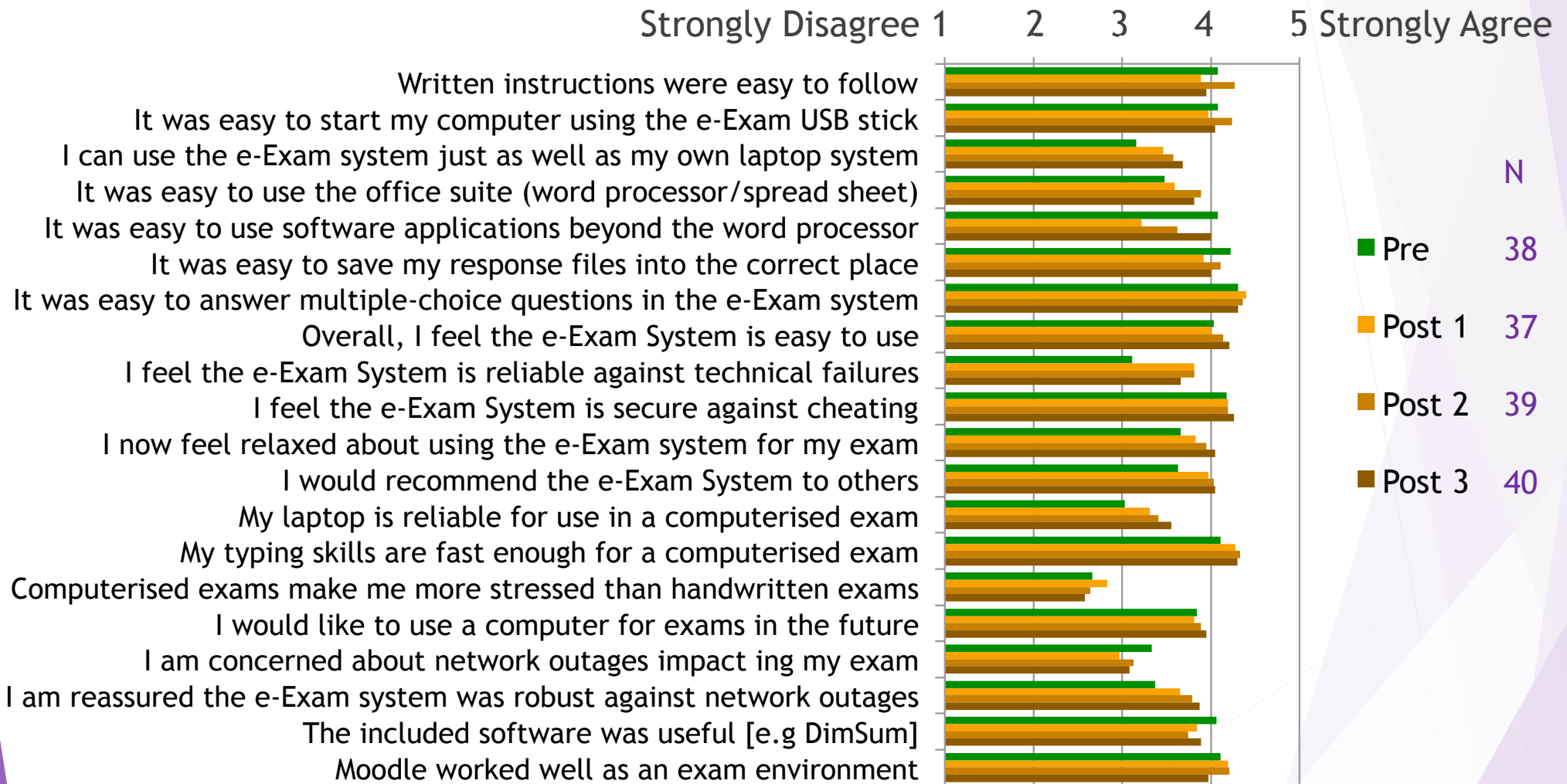


# e-Exam Process - Trials at Monash...

- 1) Two weeks prior: practice session + pre-survey.
- 2) Exam day: In-class, graded, supervised assessment task + post survey.



# Pre and post response trends (preliminary)



Caveat: Not random samples - descriptive of these groups only.

## Some Key Findings

- a) **The e-Exam system was rated well by the typists:**  
4+ out of 5.
- b) **Robust network features worked (at least one obvious wifi outage)**  
Responses were auto saved to USB, retrieved following exam and re-joined the e-workflow in Moodle.
- c) **Time saved in marking essay responses: 20% to 30% over that of paper responses.**
- d) **Students need transition opportunity: roughly 30% preferred paper!**

What else do you want to ask about findings?

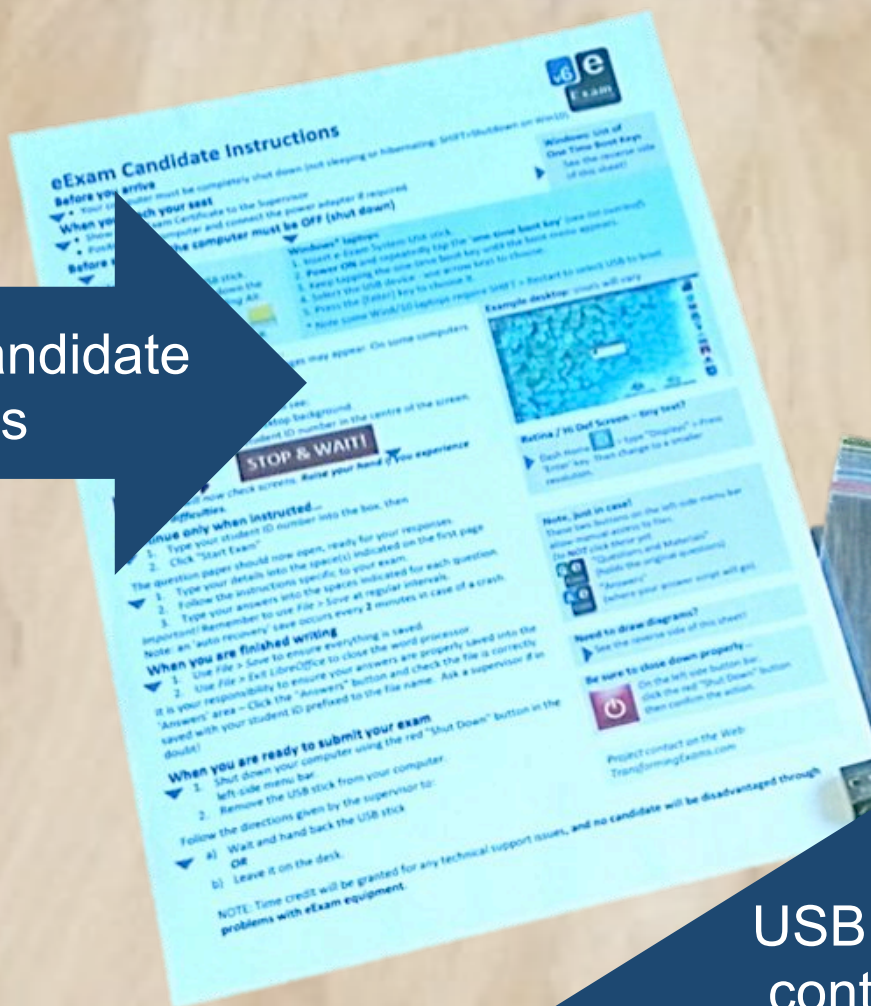
# Logistics – UTAS e-Exams

The Exam room –  
What is on the desks!

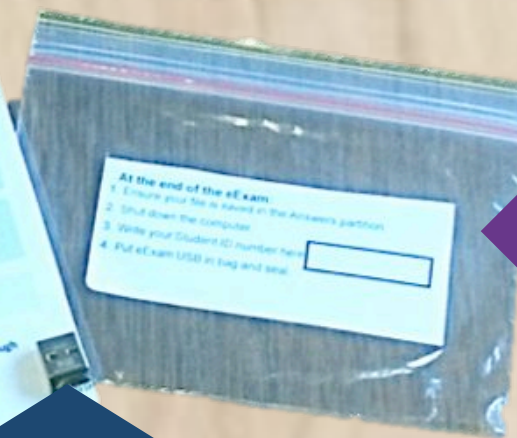


# A student's exam desk

eExam Candidate instructions



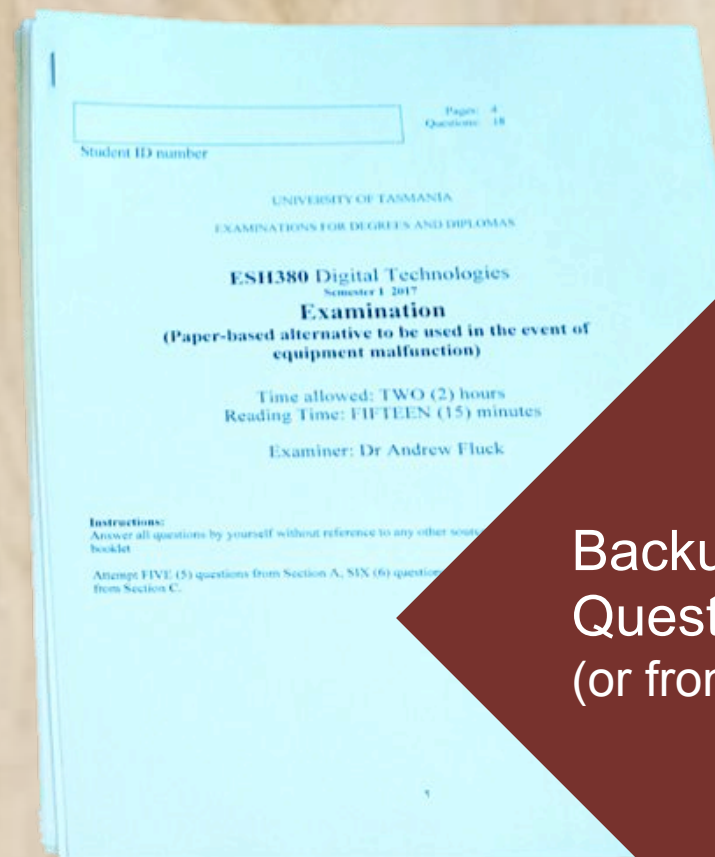
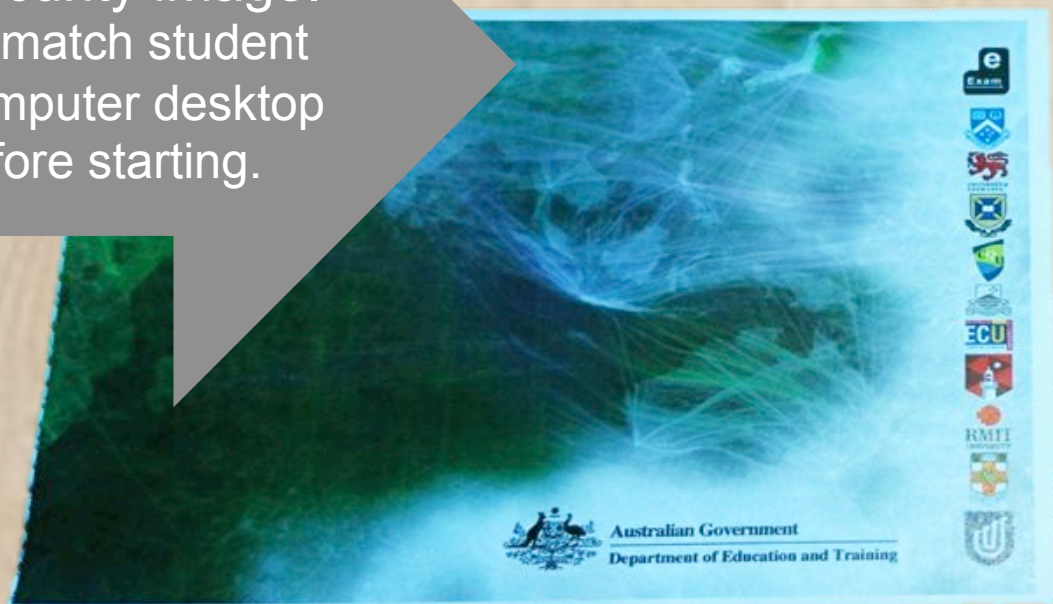
USB stick contains the eExam



Plastic ziplock bag

# What do Supervisors get?

Security image.  
To match student  
computer desktop  
before starting.



Backup  
Question papers  
(or from PDF)

# Staff professional development (UTAS)

## Invigilators/Supervisors

Hand out & collect USBs, not papers

Note USB numbers with ID checks

*Modified announcements to candidates*

BYOD computers start up as candidates sit down (staggered)

Start-up check – desktop picture from BACK of room

Revert to paper if necessary

## Information Technology Officers

**(basic IT skills sufficient)**

Assist with laying power (UTAS: < 50% of candidates used it!)

Don't touch keyboards when verifying files

How to reboot/resume from the eExam USB

IT support staff to be advised/follow exam room protocol

## ALL

University eExam reference web-site

eExam procedure manual

(Academic professional development for authentic e-exams!)



**eExam Manual**  
*University of Tasmania*

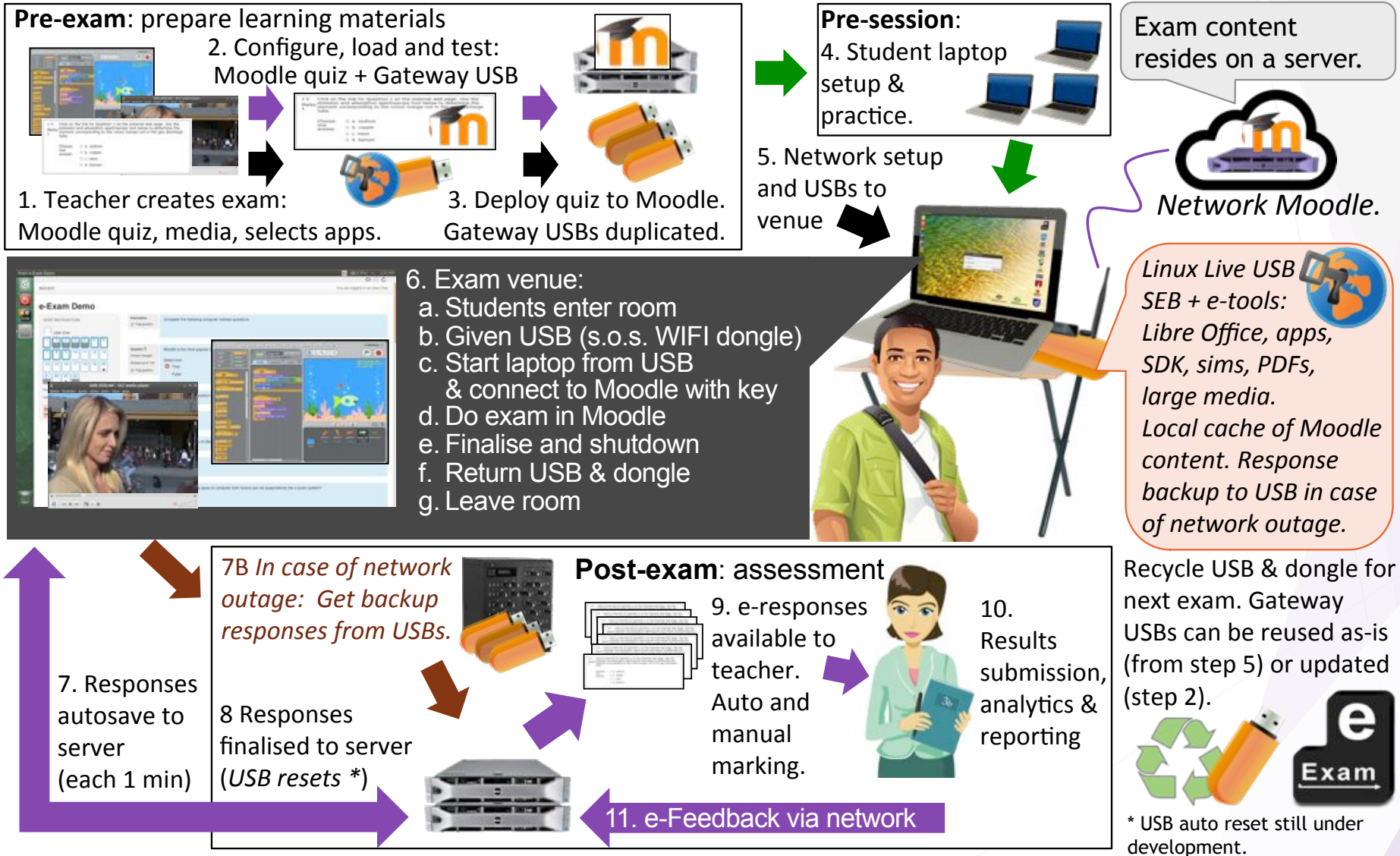


Copyright © 2017 University of Tasmania

**Additional documentation is available from:**

<http://www.transformingexams.com/guides.html>

# e-Exam process: robust online Moodle (Phase 3)



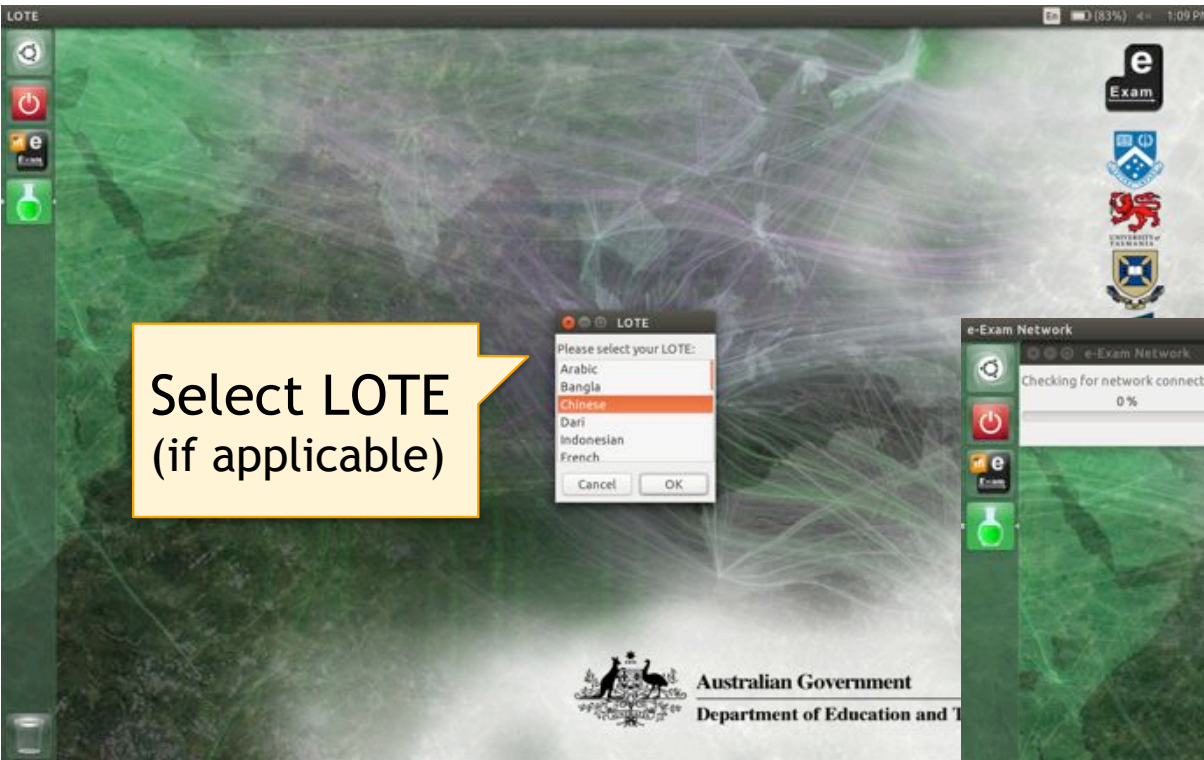
# Hands-on:

Try an e-Exam USB stick.

Follow the '*quick start*' guide to:

- Boot to USB...
  - **PINK USBs ONLY:** you join EduRoam using (yourusername@youruni.edu.au)
  - **GREEN** and **Black/RED:** will auto join WiFi.
- Logon to our demo Moodle  
**user1, user2... user50**  
**Passw0rd!**

# Start up



# Starting the exam at the same time - password

Log into  
LMS  
server

## Log in

Username

Password

Remember username

[Forgotten your username or password?](#)

Cookies must be enabled in your browser

Some courses may allow guest access

You are not logged in.  
[Home](#)

ATS3037 Seminar Test 1 April 2018

Dashboard > ATS3037 April 2018 > Test > ATS3037 Seminar Test 1 April 2018

NAVIGATION

- Dashboard
  - Site home
  - Site pages
- Current course
  - ATS3037 April 2018
    - Participants
    - Test
      - ATS3037 Seminar Test 1 April 2018
  - My courses
- ADMINISTRATION
  - Course administration

ATS3037 Seminar Test 1 April 2018

Attempts allowed: 1

To attempt this quiz you need to know the quiz password

This quiz has been configured so that students may only attempt it using the Safe Exam Browser.

Start attempt

Attempt this quiz.

Password

To attempt this quiz you need to know the quiz password

Quiz password

You are logged in as  
ATS3037 A

Password given  
out in class at the  
exam start time.

# Third party software included.

The screenshot displays two overlapping windows. The background window, titled 'Start e-Exam Demo', contains a question for advanced students to translate Chinese passages into English. It includes instructions on using the 'Dim Sum' software and provides a passage about China's labor force structure. The foreground window, titled 'DimSum Chinese Tools', is an offline dictionary. It shows a search for the Chinese character '还有' (hái yǒu), with a pop-up window displaying its English translation 'still' and 'more'.

Start e-Exam Demo

Advanced students: please translate any **two** of the following Chinese passages into English.  
You will be marked against criteria specific to your proficiency level.  
You may use Dim Sum Chinese tools for this question. To open the software from the e-Exam System - use the circular 'Dash' button at the top left of the screen. The type "dimsum" into the search box.  
Below are three separate Chinese source text passages - please scroll to read them.

**Passage 1**  
Be sure to look at the notes associated with the **bolded red** vocabulary items, as these words cannot be found in DimSum.  
我再跟大家介绍一下人口结构。2015年,按照国际口径 15-64岁的中国劳动年龄人口占总人口的73%,数量是10.03亿,到2020年还有9.85亿,到2030年还有9.52亿,到了2050年还有8亿多。现在,美国劳动年龄人口占总人口的比重是66%,欧洲是67%,日本是61%。此外,欧美发达国家劳动年龄人口总数只有7.3亿,但是它的**产出**劳动生产率比我们高得多。所以说,中国不光是现在不缺劳动力的数量,以后科技水平发展了,还有很多替代的措施和办法,劳动力的数量就更不是问题

**Notes:**  
口径 kǒujīng = 标准  
“产出”是指生产过程中创造的各种有用的物品

Type your translation(s) below. Please indicate the passage number(s) for your selected passage(s).

DimSum Chinese Tools  
File Edit Tools Format Programs Help  
Web Address Go Settings  
还有  
但是它的产出劳动生产率比我  
劳动力的数量,以后科技水平  
劳动力的数量就更不是问题

Questions in  
Safe Exam  
Browser

This is an offline  
dictionary tool  
'Dim Sum'



# Questions

## Lecture test 1

True

6. 我们大学有二个汉语老师。

True

False

7. 他要打电话女朋友。


True


False

### Question 5

Not yet answered

Marked out of  
32.00

 Flag question

 Edit question

### Section 3.

Section Mark: 32

Re-organise the following words into meaningful sentences in characters by typing the words into the boxes provided. Then translate the sentence into idiomatic English. Do not simply translate word for word.

Please DO NOT include punctuation marks in your Chinese character sentence.

PLEASE IGNORE THE MARK YOU RECEIVE AUTOMATICALLY WHEN YOU SUBMIT THIS QUESTION. THIS QUESTION WILL BE MANUALLY MARKED.

中国地图	你看	干什么
------	----	-----

Rewrite:

--	--	--

Translate:

--

A range of form based question types were used in these e-exams.

# Questions

## Listening test 1

• 27. k  ch

• 28. j  q

Audio data files cached at the start of the exam.  
Students used headsets to listen.

### Question 5

Not yet answered

Marked out of  
24.00

[Flag question](#)

[Edit question](#)

### Section 3

Indicate the tones you hear.

Please enter a number for the tone you hear in the appropriate box (e.g. 1, 2, 3, 4 or 0 for neutral).

- 1. chuang  lian

• 2. cao  chang

- 3. fang  xiang

• 4. guo  jia

# Questions

Constructed enquiry

monopoly.xls - LibreOffice Calc

	A	B	C	D	E	F	G	H
1	© Richard Green, 2001							
2	Point of minimum Average Variable Cost							
3	Output level		30					
4	AVC at this point	\$	30.00					
5	Point of minimum Average Total Cost							
6	Output level		40					
7	ATC at this point	\$	40.00					
8	Intercept of the Demand Curve							
9	Slope of the Demand Curve		-1					
10	Intercept of the Demand Curve							
11	Slope of the Demand Curve		-1					
12	Output where MR = MC							
13	Output where MR = MC		30					
14	Price at this output level		60					
15	Chosen output level							
16	Chosen output level		42					
17	Market Price		48					
18	Marginal Cost							
19	Marginal Cost		42.8					
20	Average Variable Cost							
21	Average Variable Cost		31.6					
22	Average Total Cost							
23	Average Total Cost		40.06561					
24	Profit							
25	Profit		837.2444					

change only shaded cells

A Mo

Output/week

1. Download file

2. Software application used to interrogate and construct a response.

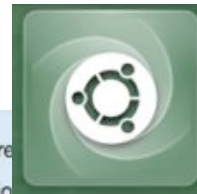
3. Respond via form

Question 20 Use the [attached spreadsheet] to determine the output level where profit is maximised. Enter a whole number as your answer for the output level. Answer:

Question 21 Use the Australasian Legal Information Institute (AustLII) online database portal to find the title of last Australian appeal case heard by the Privy Council.

# Questions

Constructed response  
(file upload)



1. Open software

Question 26  
Answer saved  
Marked out of 1.00  
Flag question

Scratch will be required to open this application. To open this application, click on the circular icon on the top left of the screen, and then type 'scratch' into the search box that appears.

Using the default Scratch program, make the Cat sprite run in circles and 'meow' when it touches the sides.

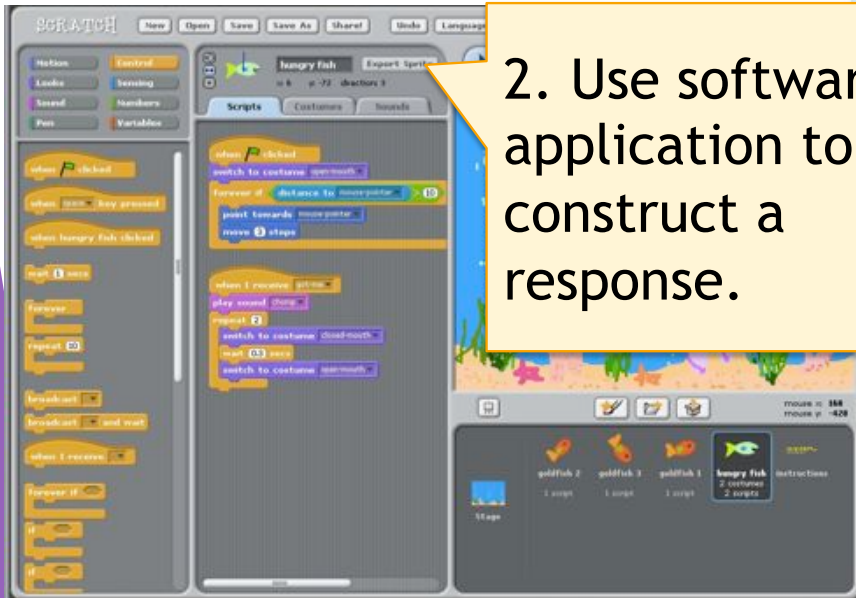
When done, save the file to the answers drive using your name as the file name.

1. Provide a one or two sentence summary of the commands you used in your response in the text box below.
2. Then attach your scratch program file to this question.

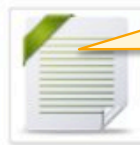


Scratch program is a cat game where we make cute and fluffy characters run in circles, bump into each other and make meow noises. We can keep typing a very long text based response into here. The system may spxll check your work.

2. Use software application to construct a response.



3. Respond by file upload



example.sb2

# Multi layered backup - Network Outage

Admin User

1 1 2 3 4 5 6

7 8

14 15

21 22

27 28

Finish attempt ...

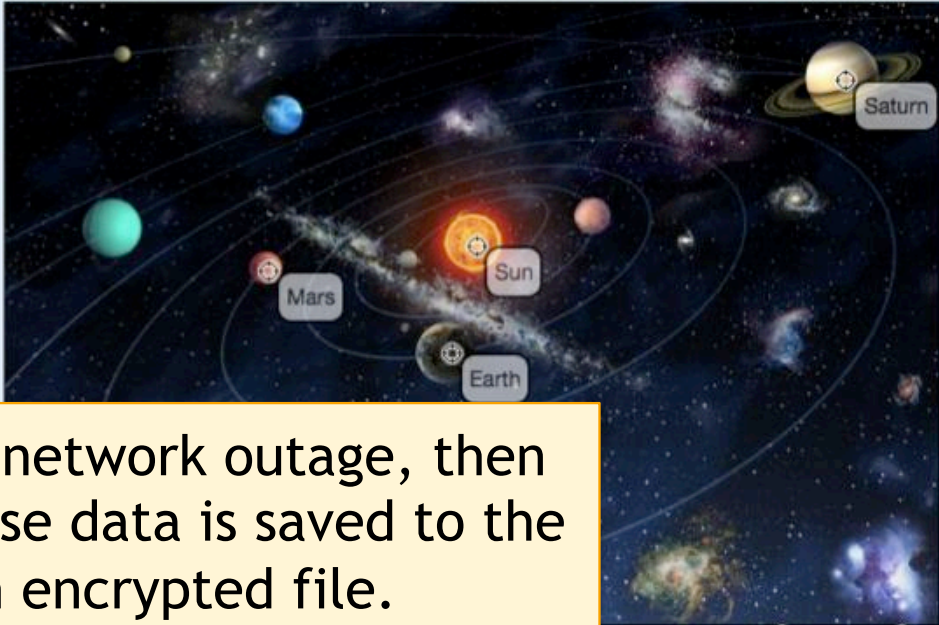
Last saved to the server: 15:49

Save to server failed. You can continue working.  
Responses have been saved to local storage..

Server: 3:52pm

Question 8  
Answer changed

Drag-and-drop below markers to corresponding celestial objects.



Mercury Uranus Neptune Pluto Venus

Question 9  
Answer changed  
Marked out of 1.00  
Flag question

We are what we repeatedly do. Excellence, then, is not an act, but a habit.

Aristotle

---

Drag-and-drop words to correct the above sentence:

a) Whilst there is a network connection student data is saved to the server each minute.

b) If there is a network outage, then student response data is saved to the USB drive in an encrypted file.

# Multi layered backup - Network Outage at Submission

Admin User

i	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	i
27	28	29	30	31	32	

Finish attempt ...

Start a new preview

Last saved to the server: 16:32

Save to server failed. You can continue working.  
Responses have been saved to local storage..

Server: 4:33pm

22 Not yet answered

23

24

25

26

27

28

29

30

31

32

- If at submission time there is a network outage, then student response data is saved to the USB drive.
  - Ideally the student should try again or call an exam supervisor for help.
- If the connection cannot be reinstated then after the exam the response file is retrieved from the USB and uploaded to Moodle.

Return to attempt

## Submit failed

Responses could not be submitted to the server. Responses have been saved to local storage. You can try to submit again...

Submit all and finish

If the problem persists please contact a staff member.

# Successful Submission

## e-Exam Demo

QUIZ NAVIGATION

User One

i	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24			

Show one page at a time

Finish review

Confirmed submission to server triggers USB self clean up ready for next exam.



Started on	Tuesday, 17 April 2018, 5:29 PM
State	Finished
Completed on	Tuesday, 17 April 2018, 5:42 PM
Time taken	12 mins 51 secs
Grade	Not yet graded

Immediate feedback (optional setting)

Information

Complete the following computer marked questions.

Flag question

---

Question 1

Correct

Mark 1.00 out of 1.00

Flag question

Moodle is the most popular LMS in the world today.

Select one:

True ✓

False

---

Question 2

Incorrect

Mark 0.00 out of 1.00

Flag question

What do you call a question format in which students must uniquely associate a set of prompts with a set of options?

Answer:  ✗

---

Question 3

Correct

Mark 1.00 out of 1.00

Flag question

What was the version of Ubuntu was released in April 2012?

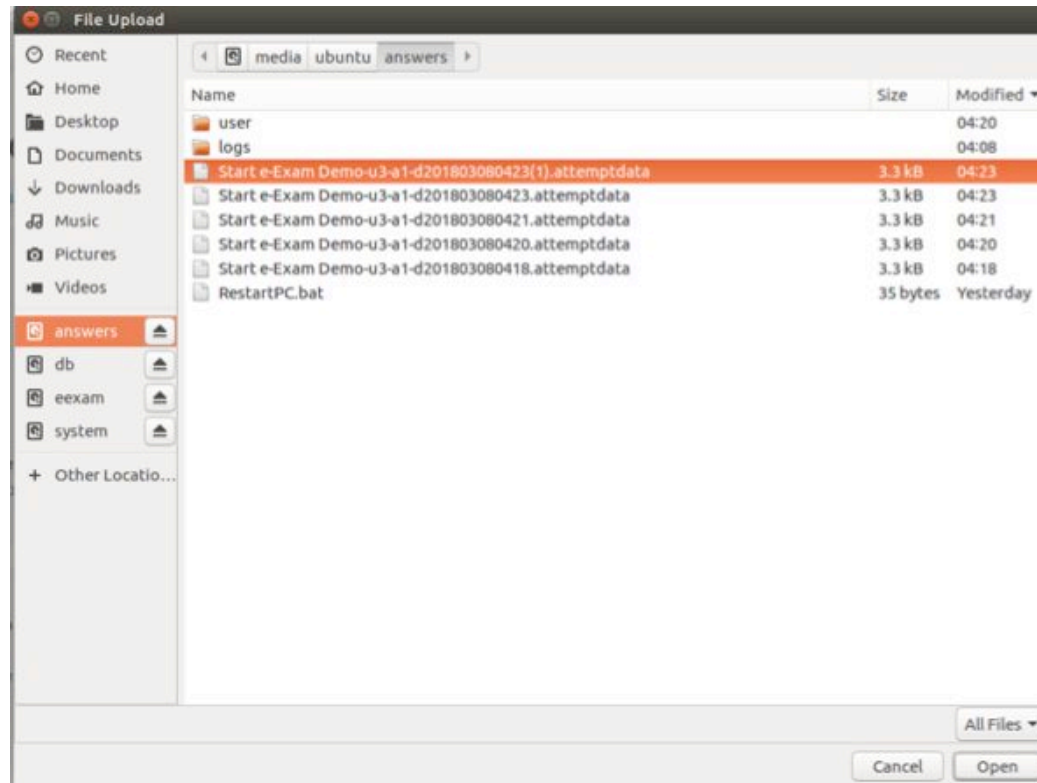
Answer:  ✓

# If not submitted - post-exam upload to LMS

This quiz uses fault-tolerant mode. Administrators can [upload exported responses](#)

This quiz has been configured so that students may only attempt it using the Safe Exam Browser.

You must use an approved version of Safe Exam Browser to attempt this quiz.



From the Quiz page, Admins/teachers can upload encrypted response file(s) from USB (can be done in bulk too using a large hub + our Admin tool)

After upload: USB clean-up using Admin tool to ready for next use





# Thank you

For further information contact:

[Mathew.Hillier@monash.edu](mailto:Mathew.Hillier@monash.edu)

[TransformingExams.com](http://TransformingExams.com)

[eExamSymposium.eventbrite.com.au](http://eExamSymposium.eventbrite.com.au)

Sat 24 Nov, Melbourne, Australia.

Two international speakers:

1) Head of e-Learning Service at Alpen-Adria University, Klagenfurt, Austria,  
A university with 40% uptake of e-exams.

2) Senior specialist in e-exams at the national Matriculation Examinations Board of Finland.  
Speaking about the roll out of their national e-exams project.



**Please  
complete our  
feedback  
survey!**