TRANSFORMINGEXAMS.COM

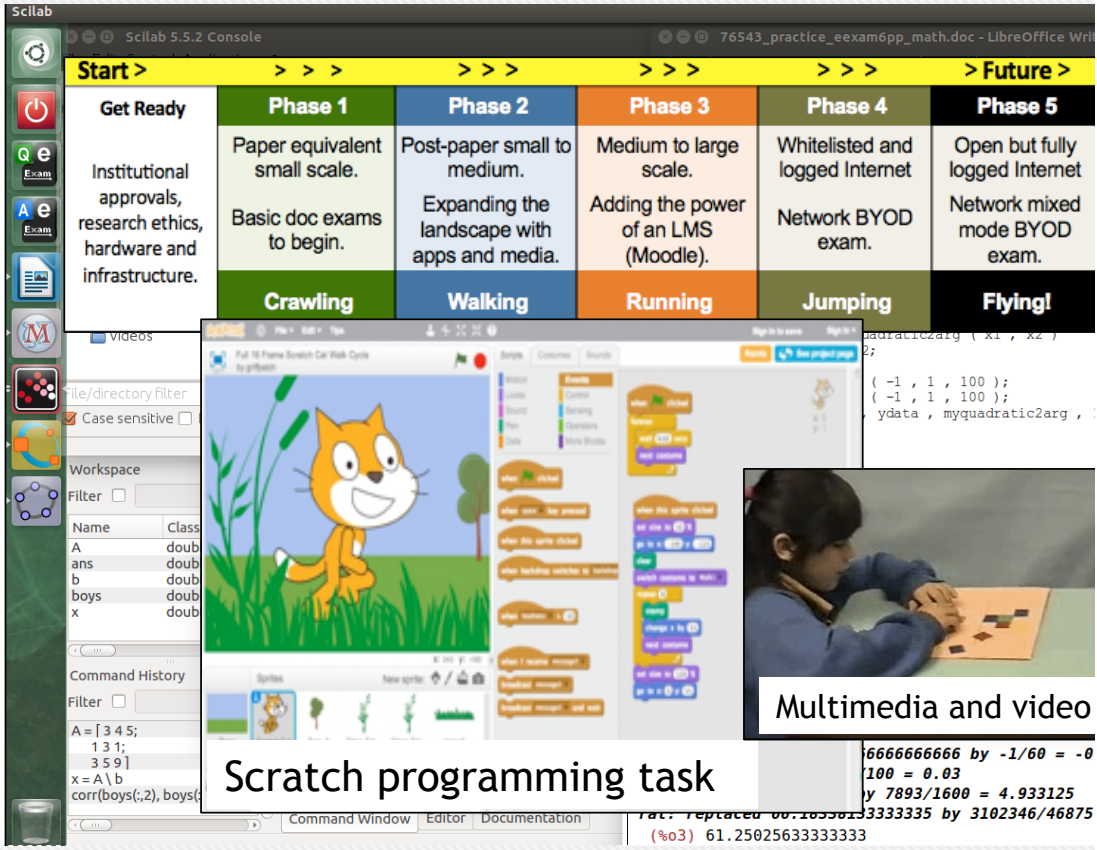
A Scalable Examination Platform for BYOD Invigilated Assessment

Pedagogy of e-Exams:

Examples and Transition

Dr Mathew Hillier (Monash University),
A/Prof Matthew Bower (Macquarie University)
Dr Andrew Fluck (University of Tasmania)

e-Exam Symposium 24 Nov 2018
Melbourne, Australia

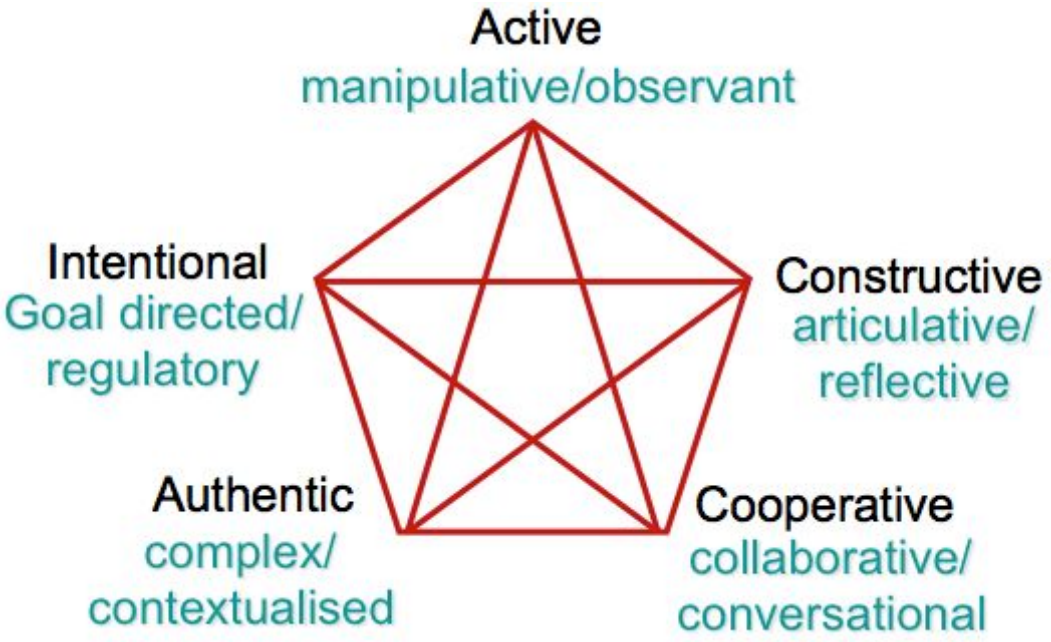


Australian Government
Department of Education and Training
MONASH University
The University Of Queensland
University of Tasmania
Australian National University
Macquarie University
ECU Edith Cowan University
CQUniversity Australia
RMIT University
UNSW Australia
University of South Australia

Pedagogical aspirations

Meaningful learning

Meaningful learning is:



(Jonassen et al, 2008)

Authentic

Authentic learning involves:

1. Authentic context
2. Authentic activities
3. Expert performance
4. Multiple roles and perspectives
5. Reflection
6. Collaboration
7. Articulation
8. Coaching and scaffolding
9. Integrated authentic assessment
10. Professional learning

(Herrington & Kervin, 2007)

Constructive alignment (Biggs & Tang, 2011)

	Outcomes	Tasks	Assessments
Authentic	Situated, industry relevant, digital	Software use, modelling, programming	Demonstrate digital and C21st problem solving capabilities
Traditional	Academic, abstract knowledge and skills	'Bookwork'	Write essays Answer multiple choice questions

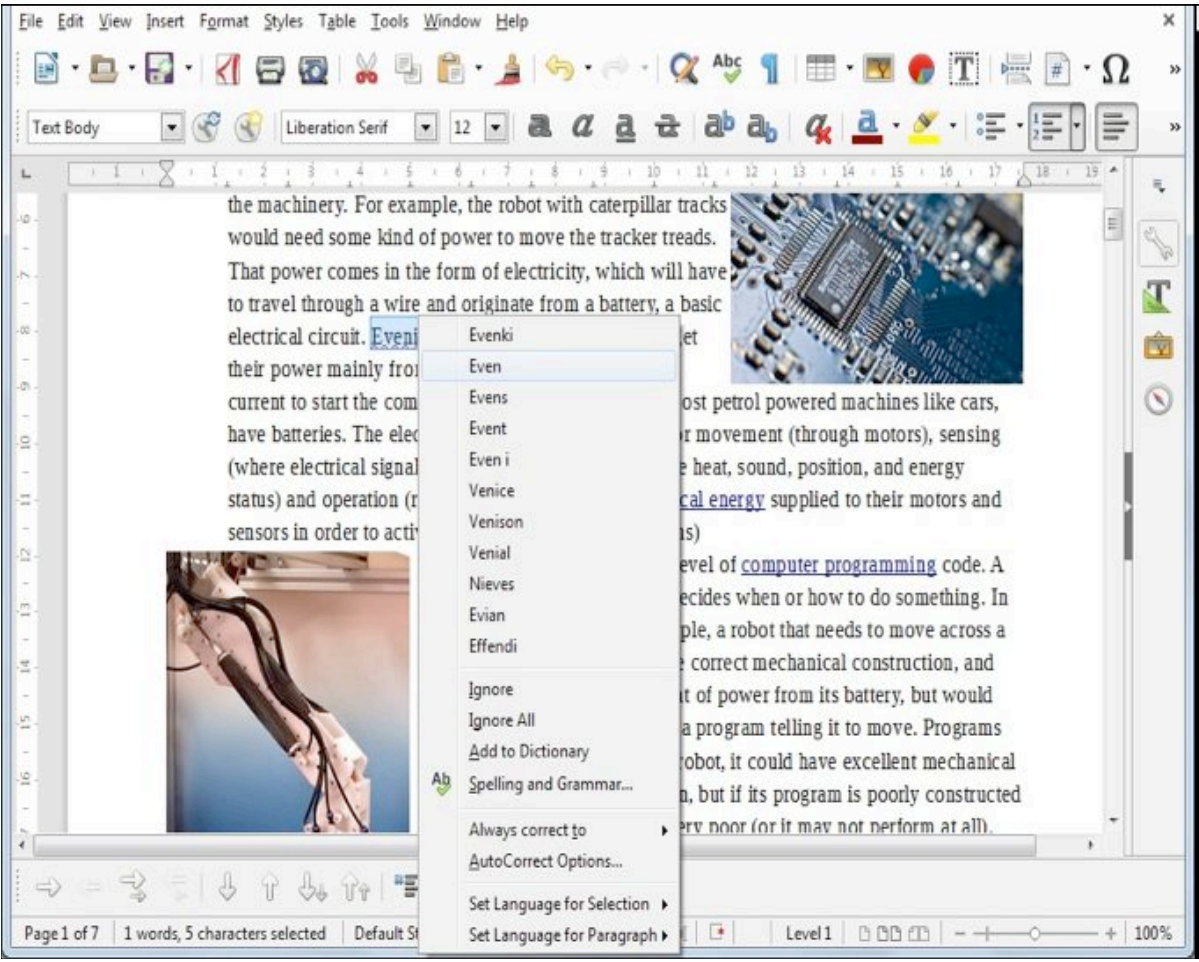
Discussion Question 1:

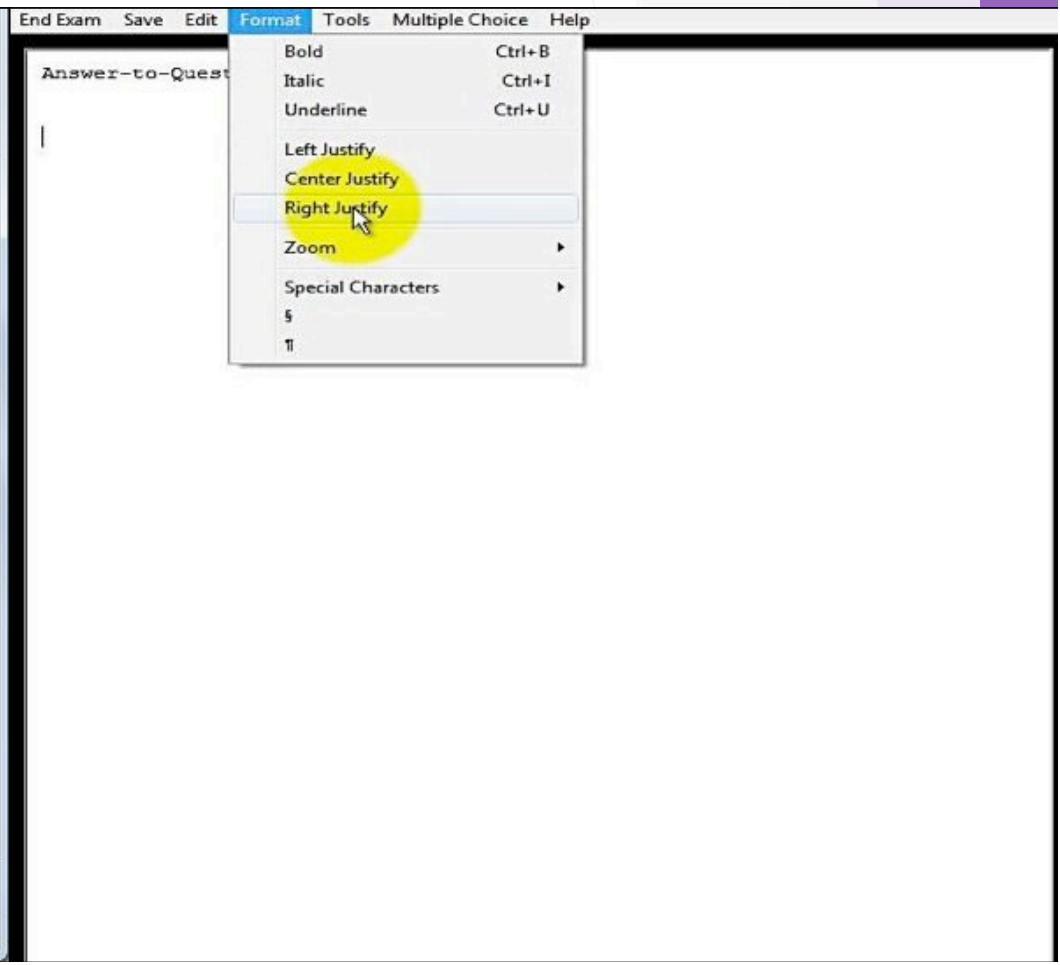
What would authentic assessment ideally look like in your discipline area?

Authentic - Writing Tools

Authentic

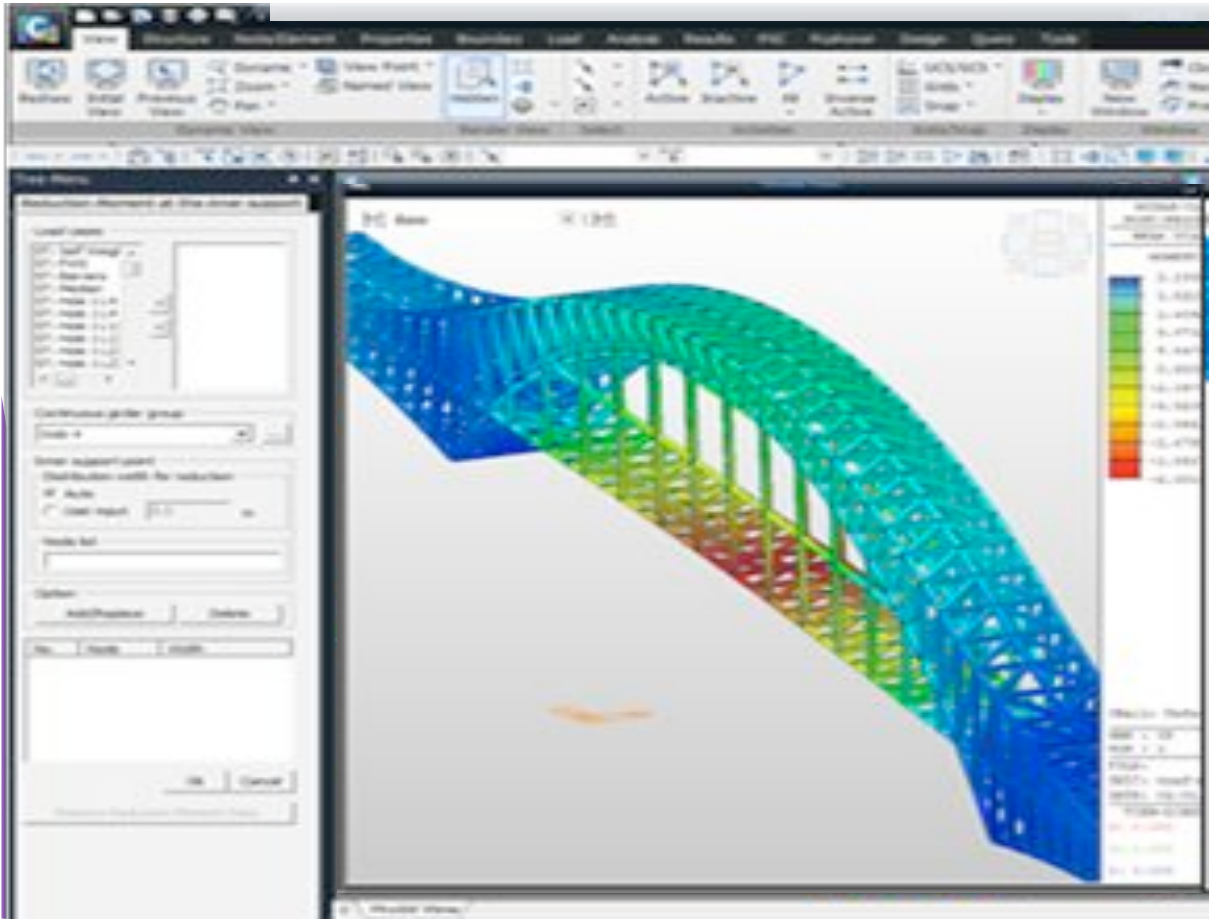
Not





Authentic - Engineering Problem Solving

Authentic



Not

F.E (PART-II) MCQ Test, 2012

BASIC CIVIL ENGINEERING

Day and Date: Tuesday, 26/03/2012 **Time: 08.50 a.m. to 09.50 a.m.** **Total marks: 50**

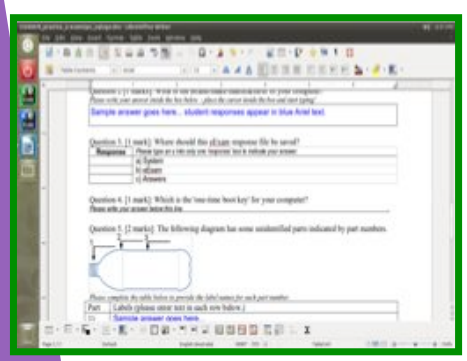
SECTION I

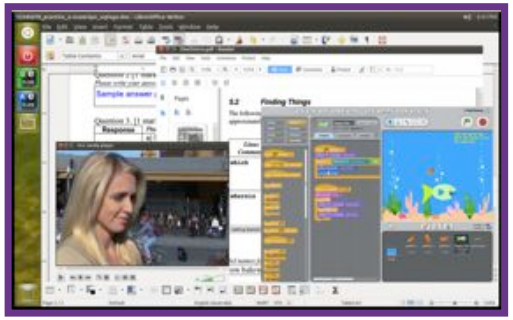
1. The curvature of earth is ignored in
   a) Geodetic surveying c) Plane surveying
   b) Hydrographic surveying d) Astronomical surveying
2. In an optical square; the mirror are fixed at an angle of
   a) 30° b)60° c) 45° d) 90°
3. The true meridian passes through
   a) Geographical poles c) Magnetic poles
   b) Arbitrary poles d) only N-pole
4. In WCB system; a line is said to be free from local attraction, if the difference between FB and BB is
   a) 0° b) 90° c) 180° d) 360°
5. When higher values are inside the loop; it indicates a
   a) Hill c)pond
   b) sloping ground d) Overhanging cliff
6. The line of collimation and axis of the telescope should
   a) coincide c) by parallel
   b) be perpendicular d) intersecting
7. The canal taken directly from reservoir is called as
   a) Main canal c) branch canal
   b) Distributary d) Field canal
8. For national highway the road way width is
   a) 9 m b) 12 m c) 7.5 m d) 25 m
9. Cumulative error is proportional to
   a) L b) 2L c) √L d)L
10. The compass box is made of
    a) Iron b) Aluminum c) Brass d) Wood

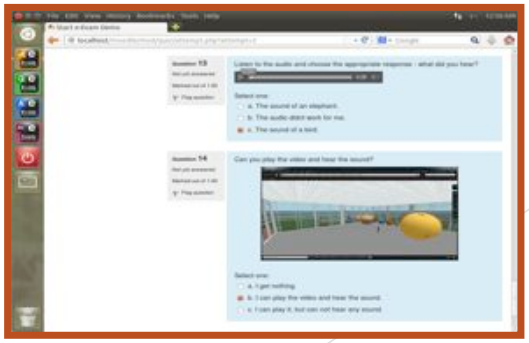
Phased implementation strategy

Start >	> > >	> > >	> > >	> > >	> Future >
Get Ready	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Phase 5**
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.
	Crawling	**Walking**	**Running**	**Jumping**	**Flying!**

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



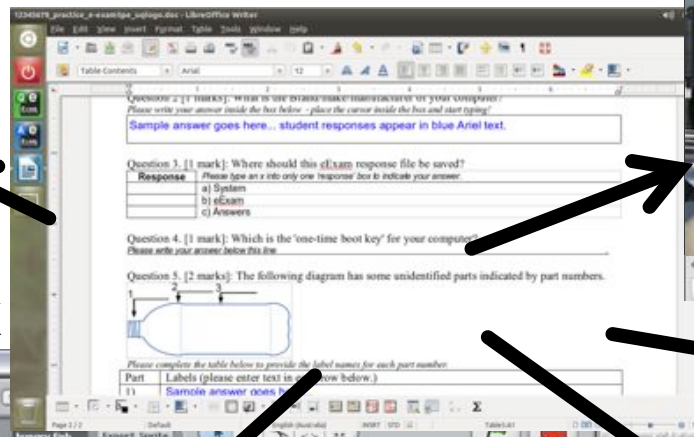




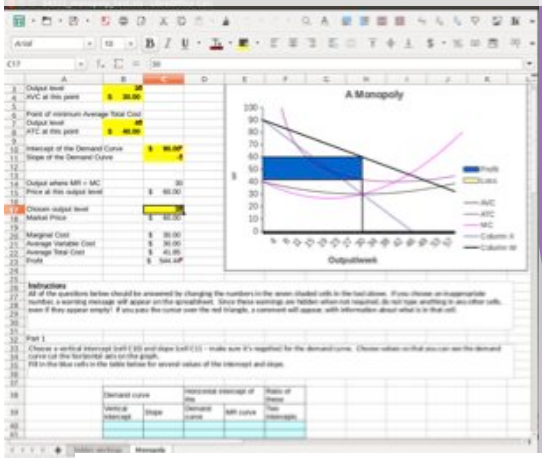
e-Exam Trials: Towards ‘post-paper’ (phase 1 to 2)

Start simple and build up!

Start! Exam doc

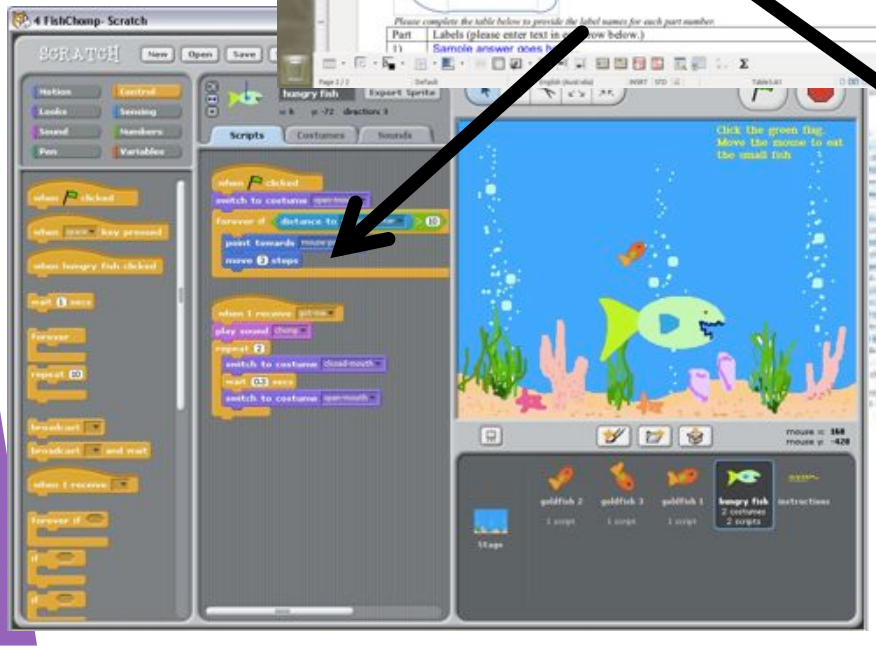


Video



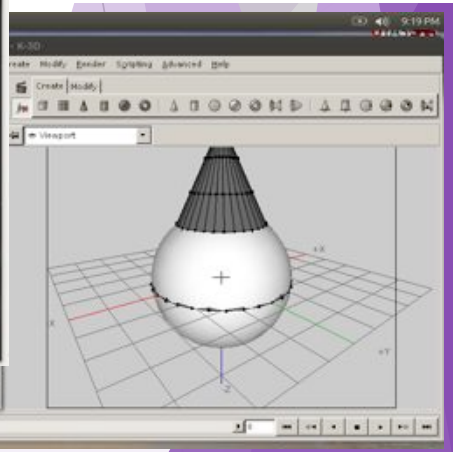
Spreadsheets as ‘forms’ or as calculation and analysis.

Scratch SDK



PDF

Specialist applications



Sims

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).

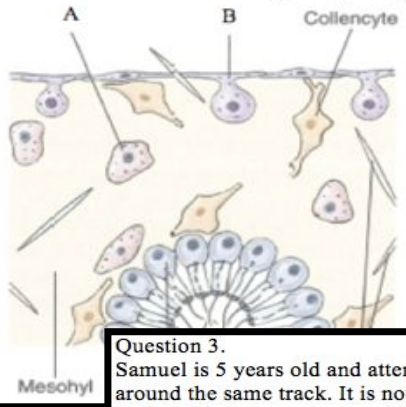
Possible descriptions:

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**
f	I. Paxogen
a	II. Sitabosis
c	III. Fakeasalism
e	

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



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

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

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

Please write / type your response inside the box below.

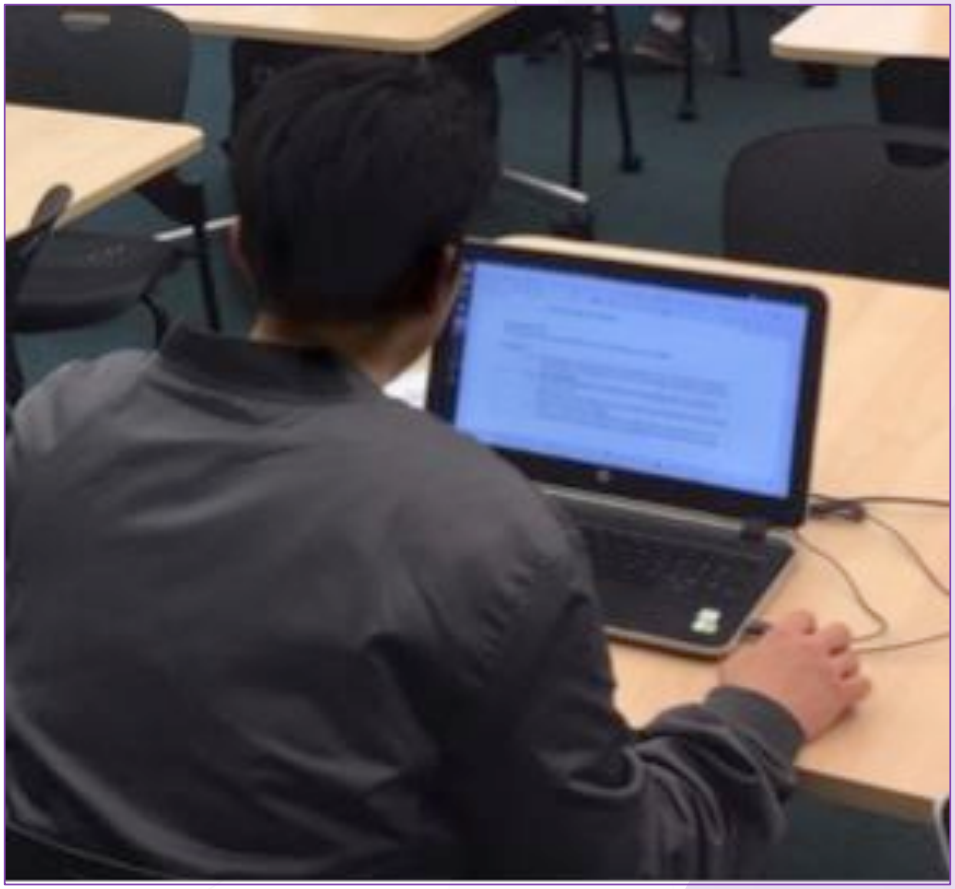
The student types their answer here. In this examp
a two row table. The response table row is created
cell has a minimum height set (by dragging the bo
and a minimum height cell instead of successive carriage returns to set the box height, the next question will be less likely to be disrupted when students 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.

Student's choice - Macquarie U

ICT in Education, 80 min 40% Final exam

Word document: 10 x MCQ and 1 x Essay.

Phase 1 ~ toe in the water.

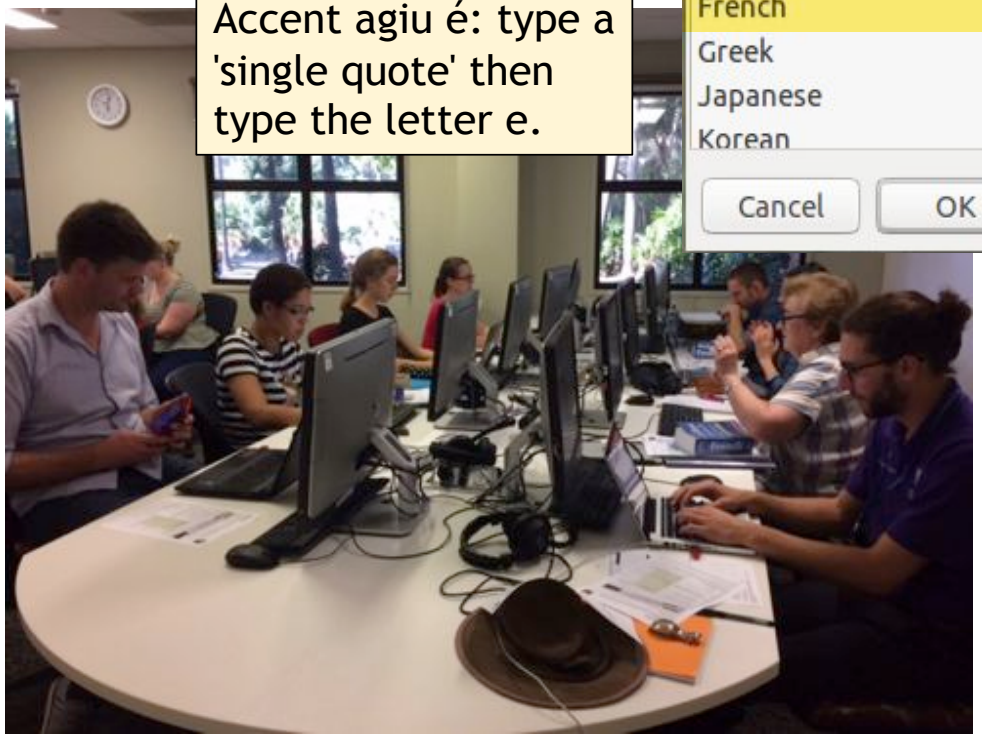


Language exams – UQ

French language. 120 min 30%. Word document: article translation and response essay. Type English and French.

- QWERTY with accents
- AZERTY layout

Example:
Accent agiu é: type a 'single quote' then type the letter e.



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

Post-paper e-exams at UTAS (Andrew)

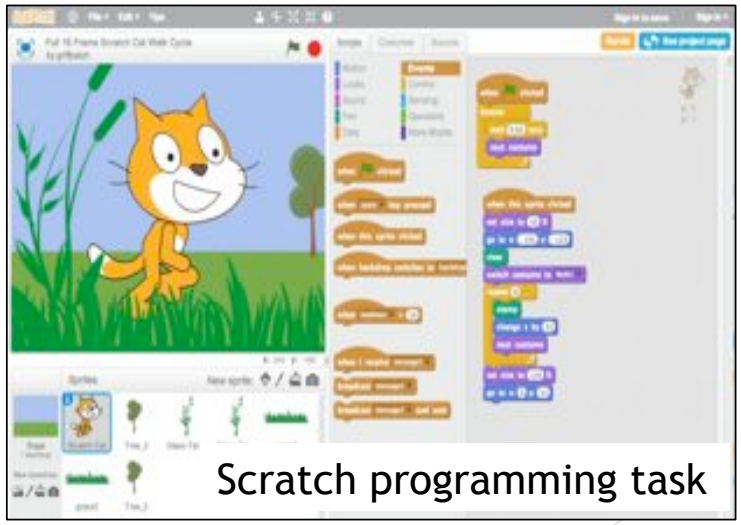
Word document question and response space – links to e-tools

Final exam: 47%, 2 hours.
Word doc with short and long text. Constructed response tasks.

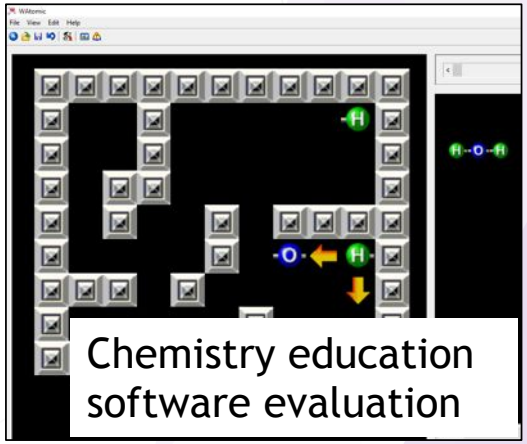
Critique student understanding (video)

Multimedia video prompts.

Solve a problem in Scratch (block programming for primary school students)



Scratch programming task



Chemistry education software evaluation

Critique student understanding(video)

Teaching Secondary Mathematics

Comment on the child's understanding of symmetry based on her response to this task.

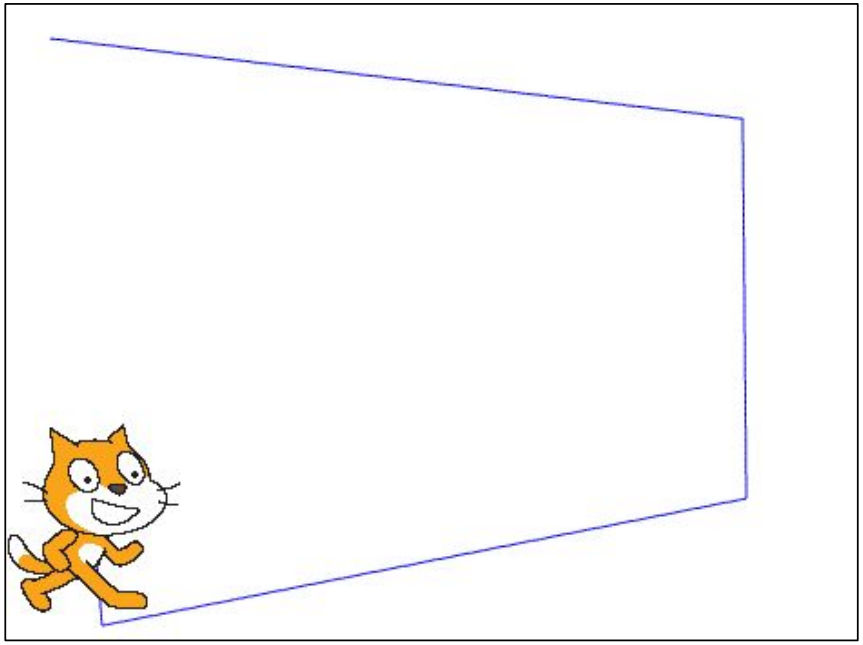
Solve a problem in Scratch

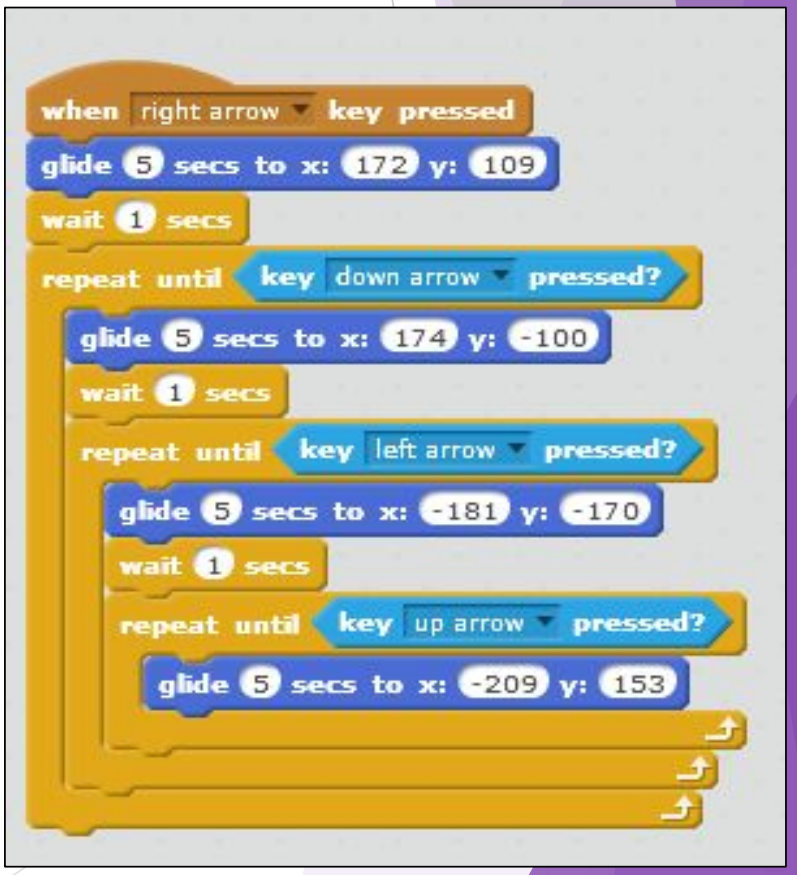
Digital Technologies Education

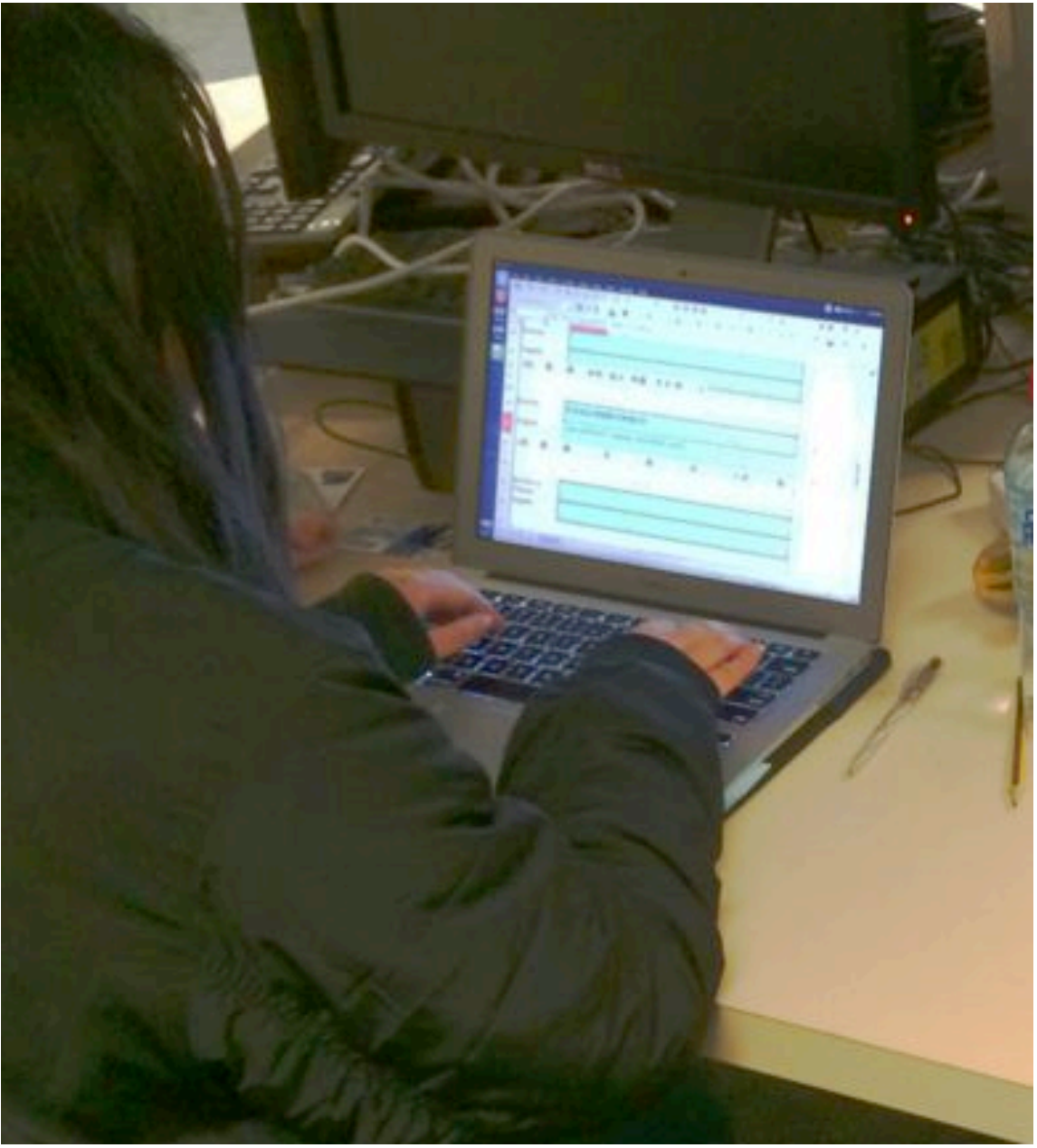
Write a program in Scratch using Felix the cat and a blank stage that:

a) Allows Felix to be moved by pressing arrow keys on the keyboard

b) Allows the user to draw a picture of a house as they move Felix around the stage.







Spread sheet as a Form

Phase 2.5!

A form – but with no network.

Intro to Chinese (first year): 2017 Semester 2.

22 students at pre-exam practice.

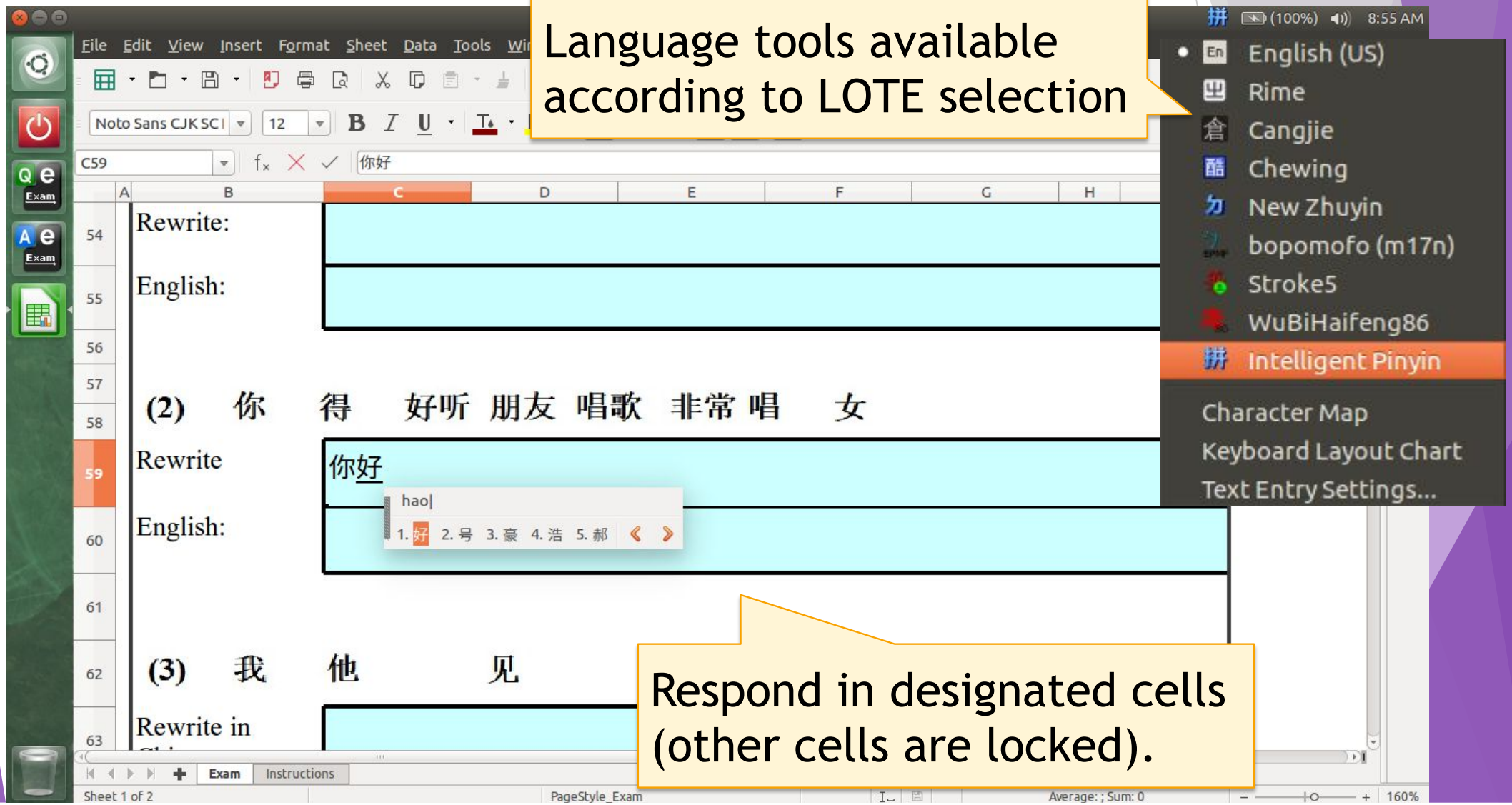
16 typed the exam.

Two components:

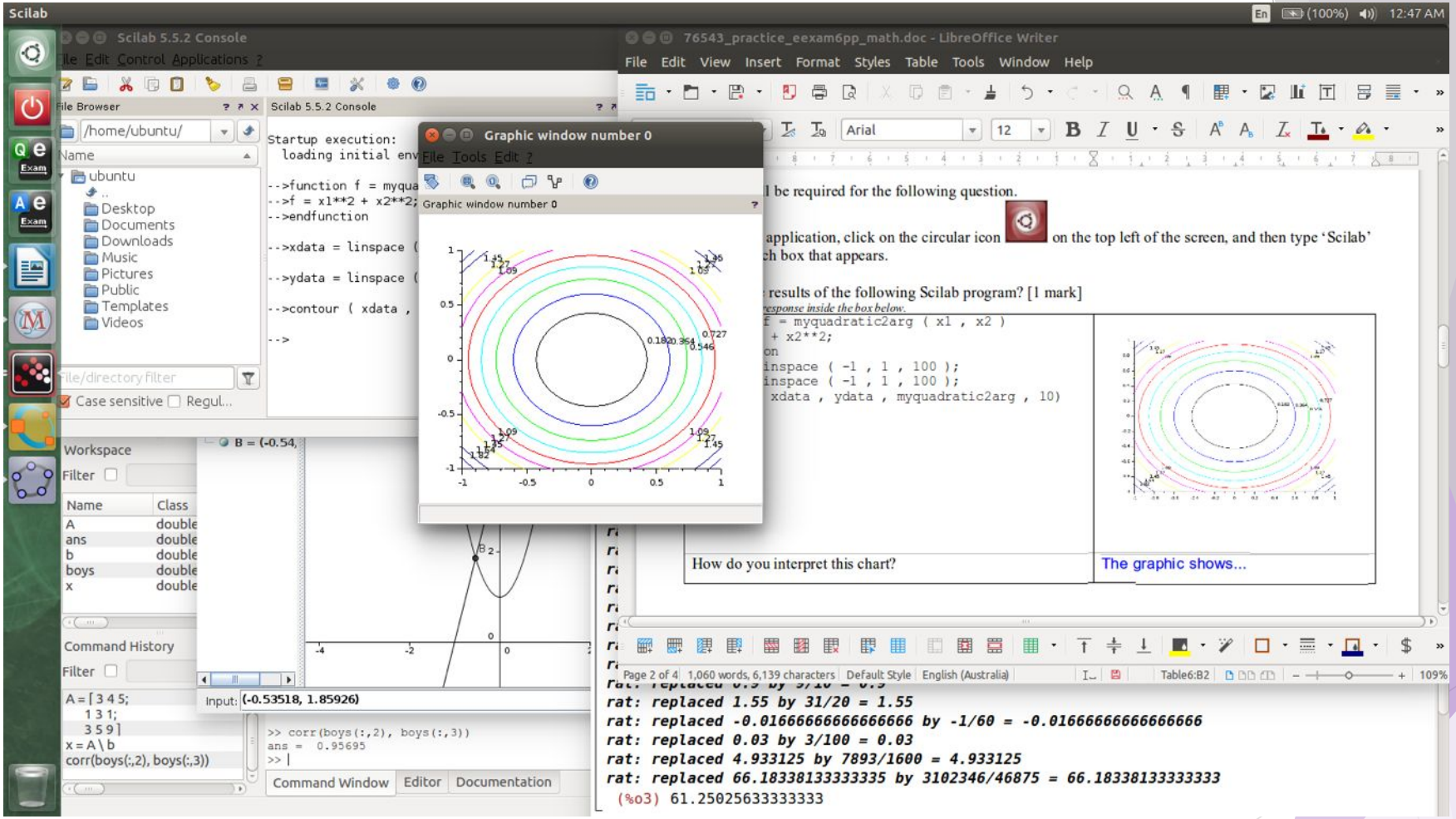
Student XLS file

Marking XLS file

Spread sheet as a Form



Mathematics example



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.

Programming e-Exam - ECU

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 ../mnt/answers/

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

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

b) 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 per day. Write a 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 tools and the cost per day from the text file [3 points].
b) Display the data read from the file on the screen: make 'displayData' a function in your program [2 points].

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

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

End of Exam

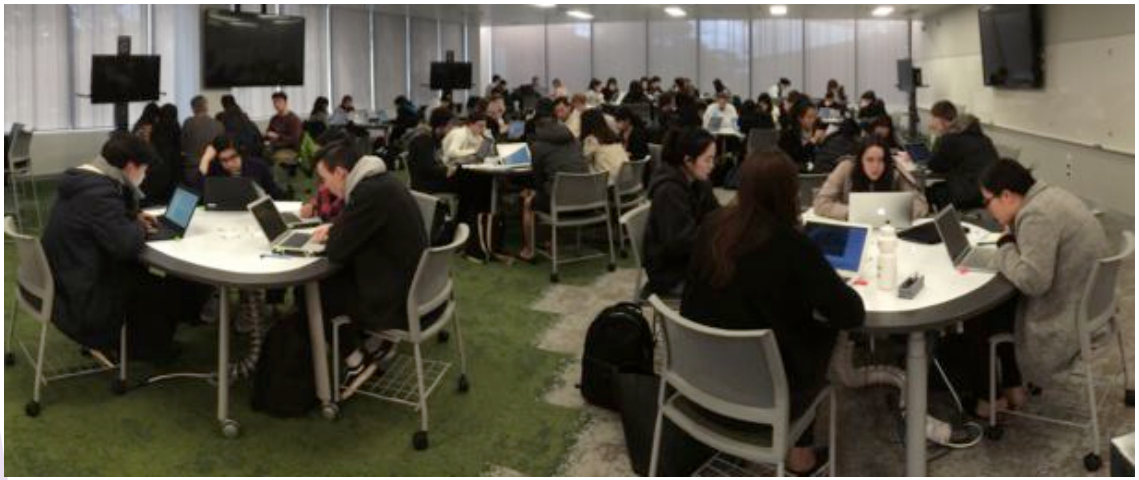
```
##···//Assessment·1.2:·In·Class·Test¬
##·····Question·#3·&·4¬
##·····Author:·#########¬
¬
##··//Create·text·file·to·store·tools·and·hire·rate¬
¬
def·displayData():¬
····print·(a.read())¬
¬
a·=·open("tools_sheet.txt",·"w")¬
¬
##··//Receive·user·input·of·tools·and·hire·rate¬
tool1·=·input("Please·enter·the·first·tool·tool·needed:·")¬
price1·=·input("Please·enter·the·hire·rate:·")¬
print·(tool1,·":",·price1,·file=a)¬
¬
tool2·=·input("Please·enter·the·second·tool·tool·needed:·")¬
price2·=·input("Please·enter·the·hire·rate:·")¬
print·(tool2,·":",·price2,·file=a)¬
¬
tool3·=·input("Please·enter·the·third·tool·tool·needed:·")¬
price3·=·input("Please·enter·the·hire·rate:·")¬
print·(tool3,·":",·price3,·file=a)¬
¬
tool4·=·input("Please·enter·the·fourth·tool·tool·needed:·")¬
price4·=·input("Please·enter·the·hire·rate:·")¬
print·(tool4,·":",·price4,·file=a)¬
¬
a.close()¬
¬
¬
##··//Start·of·Question·#4¬
¬
##··//Retrieve·data·from·Question·#3¬
a·=·open("tools_sheet.txt",·"r")¬
print("diplaying·contents·of·text·file")¬
displayData()¬
a.close()¬
¬
##··//Display·data·from·text·file·(in·IDLE·Shell·enter·'displayData()'¬
¬
```

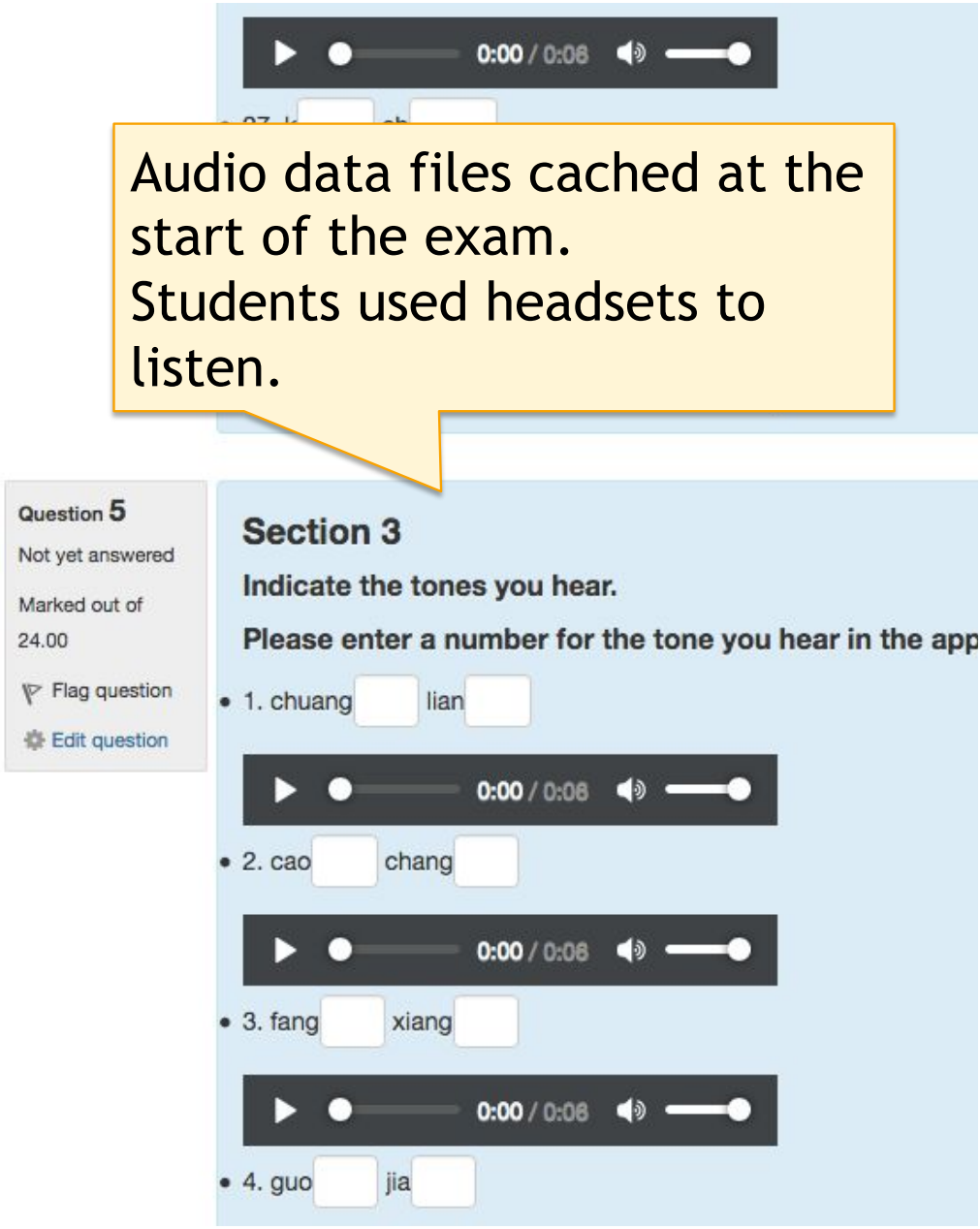
Robust Moodle - Monash

Monash – Chinese language – two units (1st year and 3rd Year)

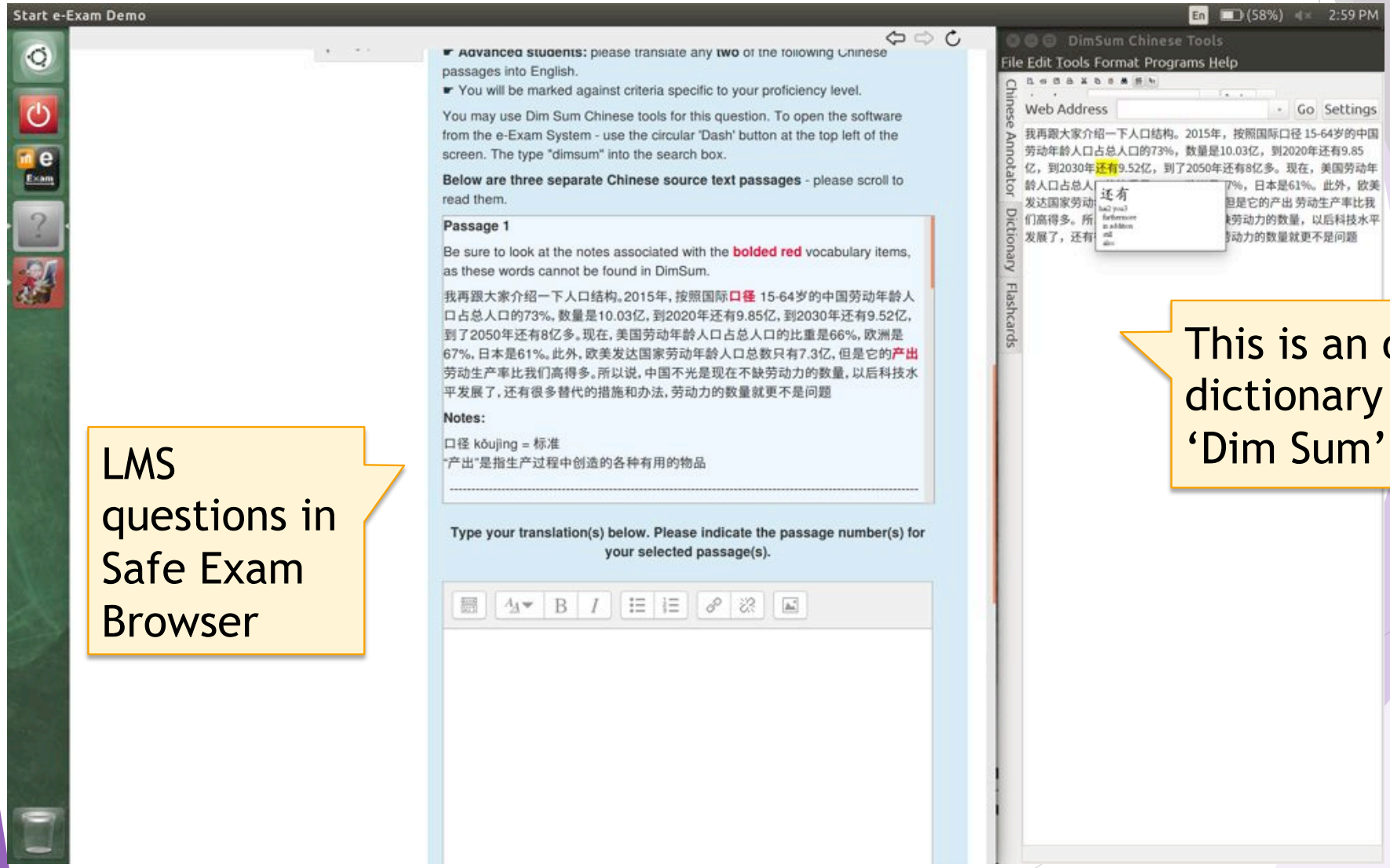
Moodle quiz question/response medium Selected 3rd party software included.

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





Third party software included.



LMS questions in Safe Exam Browser

This is an offline dictionary tool ‘Dim Sum’

Case studies – hand out (double sided!)

UTAS – Post-paper word document based e-exam

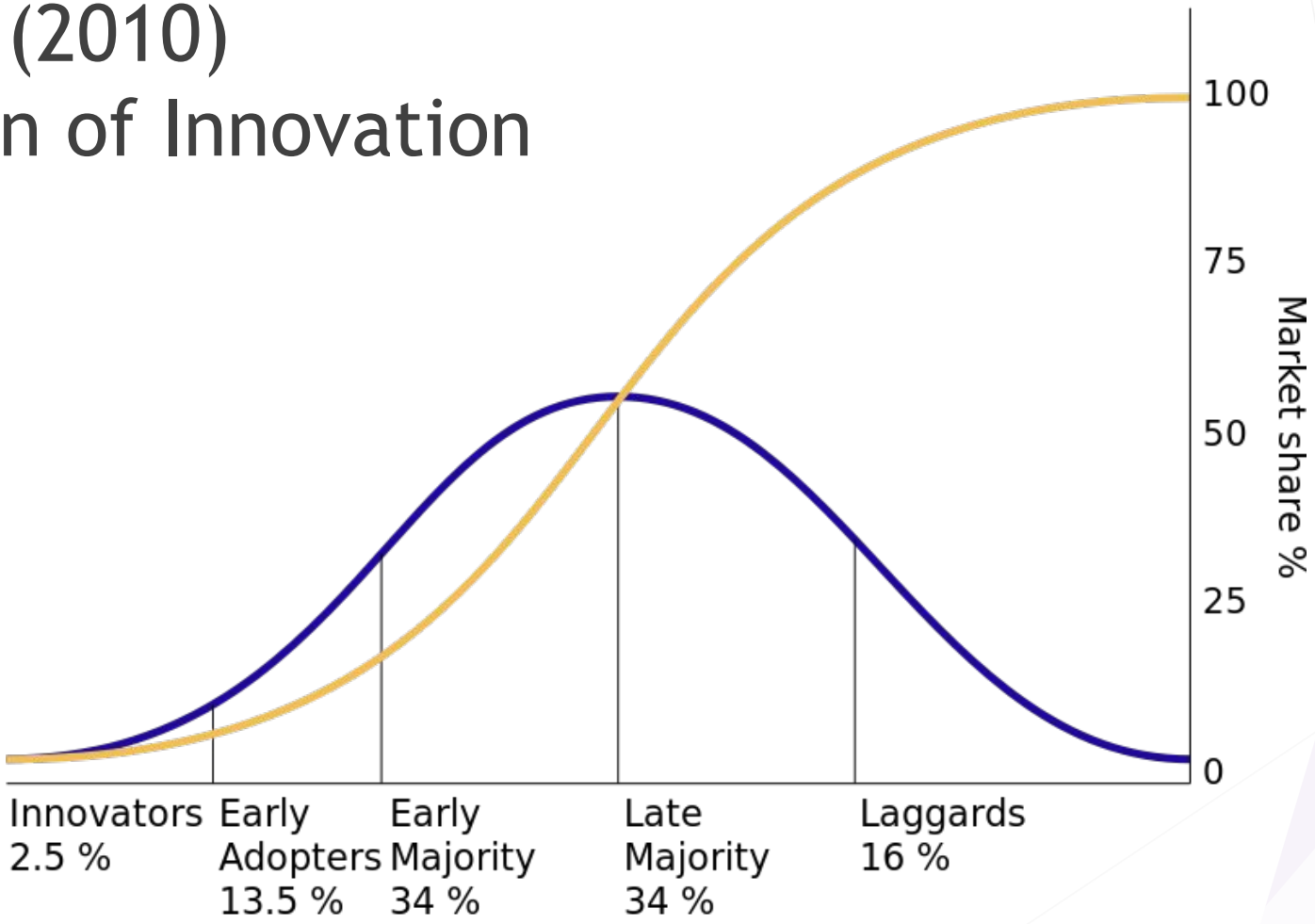
Monash – ‘robust’ online e-exam in Moodle

….

Discussion!

Innovation in education depends on teachers…

Roger's (2010)
Diffusion of Innovation



Barriers to technology integration

First order (external) barriers:

- Resources
- Hardware
- Software
- Training
- Support

Second order (internal) barriers:

- Confidence
- Beliefs about student learning
- Perceived value of technology in learning & teaching

Ertmer et. al. (2012)

Discussion Question 2:

What are the main barriers that universities/institutions/schools face in order to apply authentic assessment practices, and what are the best ways to overcome them?

References

- Biggs, J., & Tang, C. (2011). Teaching for Quality Learning at University (3rd Edition) (3rd ed.). Maidenhead, UK: McGraw-Hill.
- Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. Computers & Education, 59(2), 423-435.
- Herrington, J., & Kervin, L. (2007). Authentic learning supported by technology: Ten suggestions and cases of integration in classrooms. Educational Media International; v44 n3 p219-236 Sep 2007 44(3), 219-236.
- Jonassen, D. H., Howland, J., Marra, R., & Crismond, D. (2008). Meaningful learning with technology: Pearson/Merrill Prentice Hall Upper Saddle River, NJ.
- Rogers, E. (1995). Diffusion of Innovations. New York, NY: The Free Press of Simon and Schuster.

e-Exam Symposium

24 Nov 2018

Monash University Caulfield Campus

Melbourne, Australia

TransformingExams.com

TransformingExams@gmail.com