

— Scalable Authentic Assessment in the Information Age (A Year of Living Dangerously)

Cliff Ashford

Delivery Lead, eSolutions,
Monash University



OUR GLOBAL FOOTPRINT



100+
partner
universities

**STUDY ABROAD
EXPERIENCES**

900+

INCOMING TO AUSTRALIA

4500+

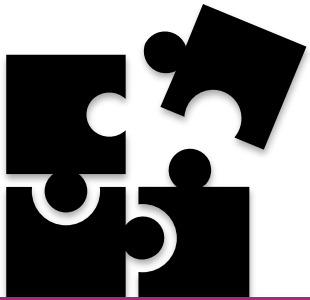
OUTGOING TO PLACES
AROUND THE WORLD

Any idea what he's doing?



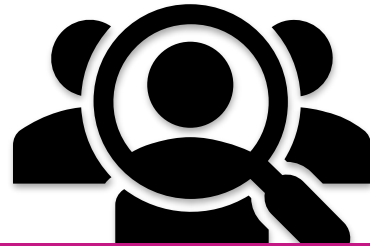


What?



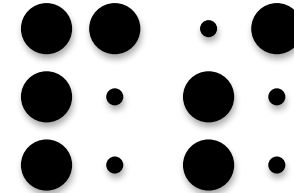
Creation

- Ways to test knowledge
- Validating method
- Reuse / Rework
- Security



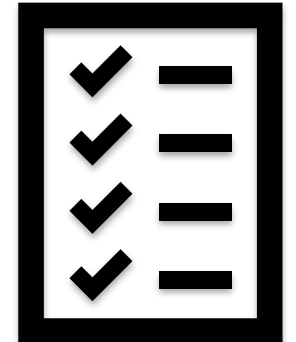
Staging

- Quality Assurance
- Scheduling
- Risk Planning
- Security
- Measurement



Sitting

- Invigilation
- Monitoring
- Medical
- Cheating
- Security
- Measurement



Marking

- Management
- Bias
- Adjustment
- Security

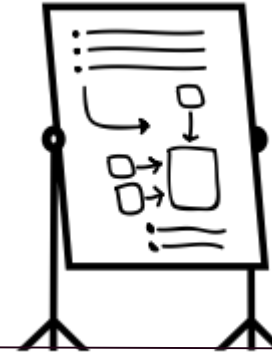
Why?



SACKS OF
PAPER



HUMAN
ERROR



ADMINISTRATION BY
WHITEBOARD



ANALYTICS



AUTHENTICITY



STUDENT
EXPERIENCE

Scale

MONASH UNIVERSITY ADMINISTERS **360,000** SITTINGS ANNUALLY

125,000 ON CAMPUS (PER SEMESTER)

600 SEMESTER ONE 2018

10,000 SEMESTER TWO 2018

37,000 SEMESTER ONE 2019

40,000 SEMESTER TWO 2019

CONVERSION

31%

Who?

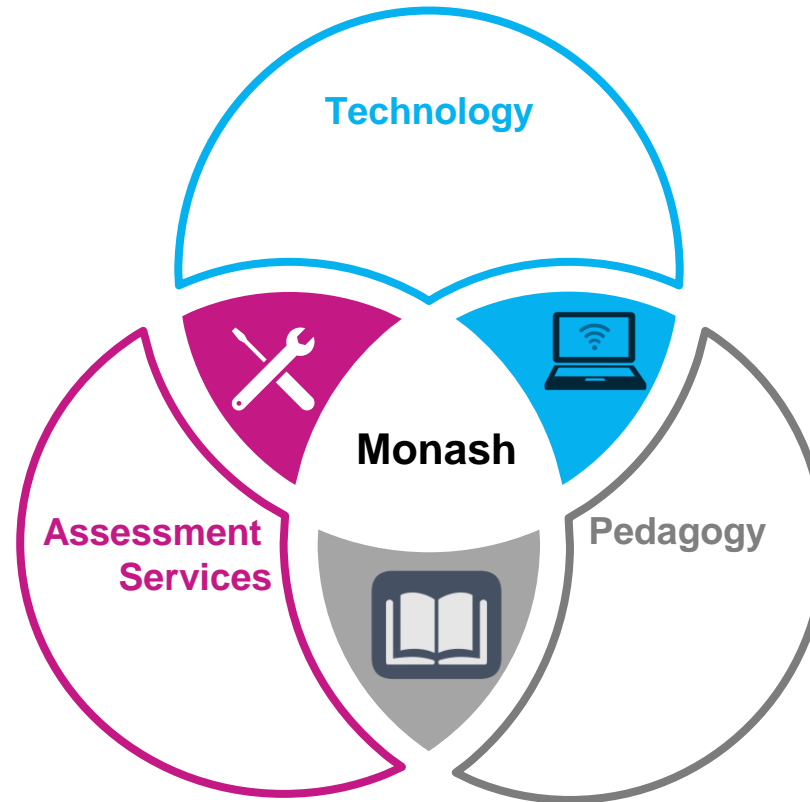
Assessment Services



Operational exam delivery, event management, venue set up, invigilation, exam creation, BYOD, contingency arrangements, delivering at scale.



**Vern Garth, Assoc.
Director, Exam Services,
SEBS**



**Cliff Ashford,
Delivery Lead,
eSolutions**

Technology



Platform stability & robustness, security, wi-fi, scalability, technical development, user experience, laptops, BYOD, venue fit-out.

Pedagogy



Authentic assessment, sound pedagogical design, faculty and student engagement, education innovation.

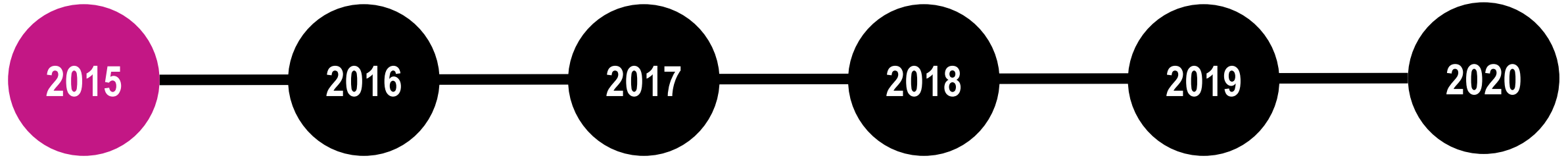


**Kris Ryan, Academic
Director Education
Innovation**

Who?



Timeline...

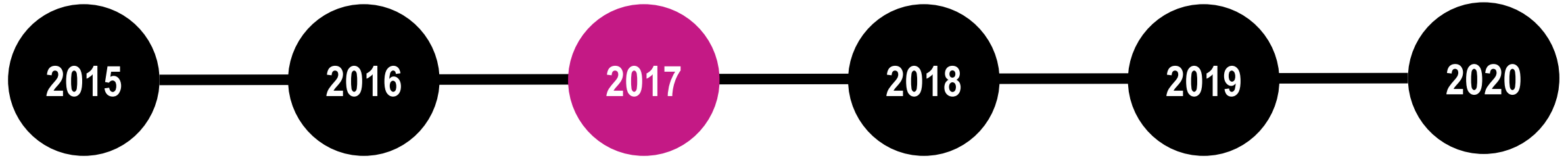


SMALL PILOT

- 3 UNITS
- FACULTY OF LAW, BUSINESS & ECONOMICS, IT
- VENDOR MANAGED – SOFTWARE AND HARDWARE
- 100 STUDENTS PER SITTING
- MULTIPLE CHOICE + SHORT ANSWER
- WI-FI NETWORK

**“WE NEED TO
DO SOMETHING
IN THIS AREA...”**

Timeline...



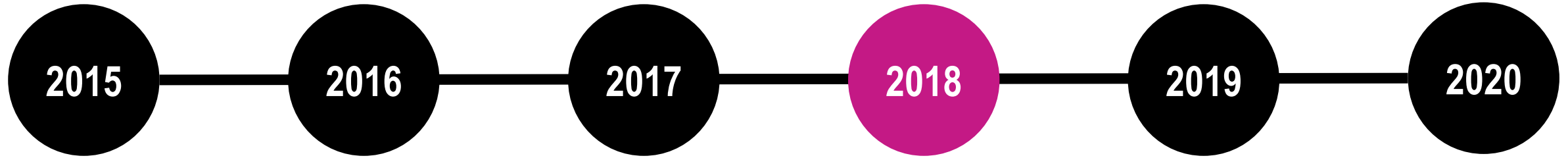
MARKET SCAN

- 5 VENDORS
- 7 LOCAL AND INTERNATIONAL UNIVERSITIES

RE-EXAMINE ORIGINAL REASONING

- CORE FUNCTION OF AN INSTITUTION
- MASTERS OF OWN DESTINY
- FOCUS ON STUDENT EXPERIENCE
- UNDERSTAND **ALL** ASPECTS OF HIGH RISK ACTIVITY
- MOVE BEYOND THE CONCEPT OF 'EXAMS'

Timeline...



LET'S DO IT OURSELVES...

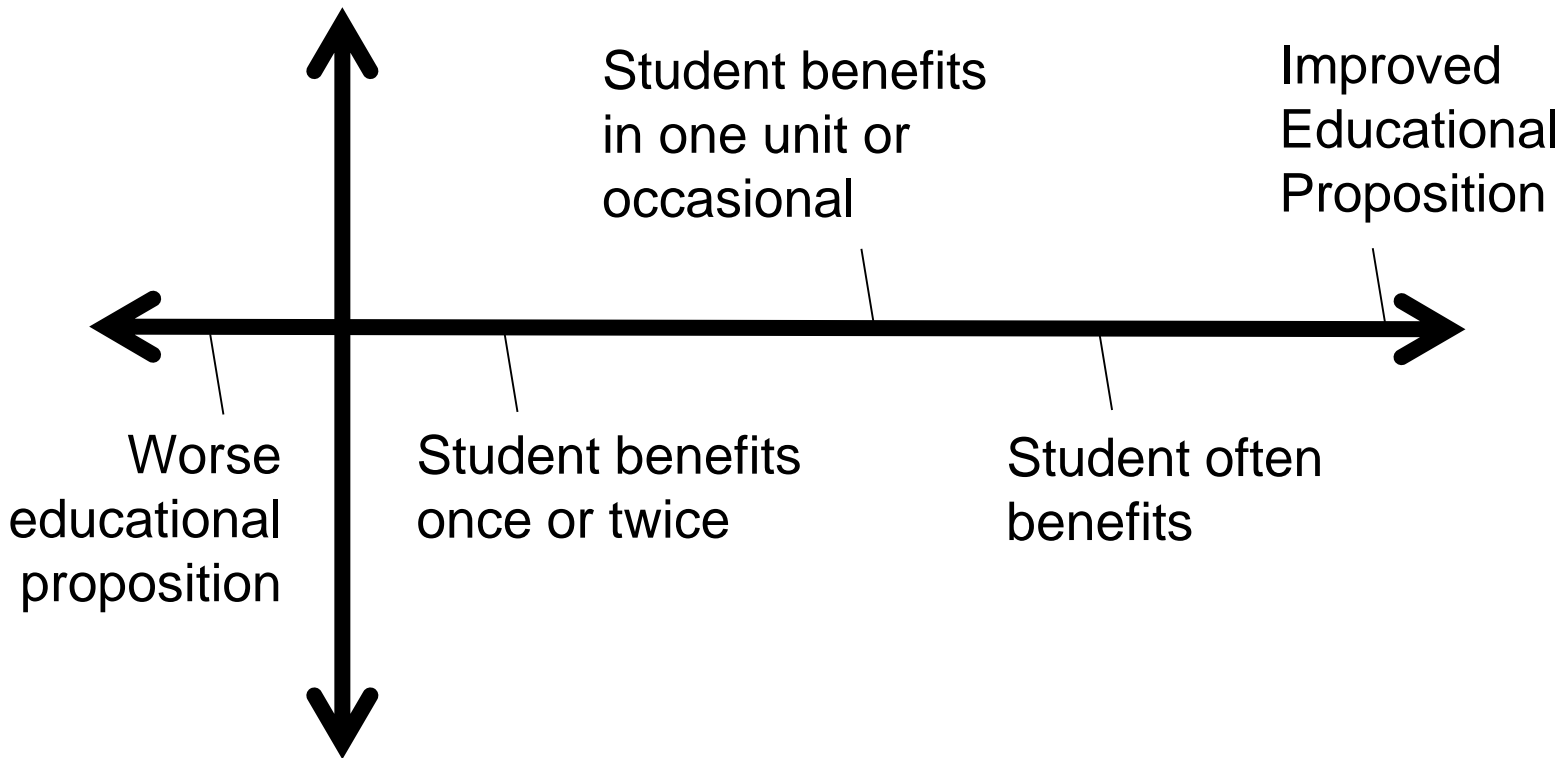
- EXPRESS A VISION
- IDENTIFY PLATFORM
- CHOOSE A PARTNER
- CONVINCE THE UNIVERSITY
- ENGAGE WITH STUDENTS
- ... AND LATER STAFF

PLAN FOR THE FUTURE BUILD FOR THE NOW

- GET EVERYONE WE CAN OFF PAPER
- INITIATE BYOD POLICY, BUT PROVIDE LAPTOPS NOW
- ENSURE ABSOLUTE RELIABILITY
- FOCUS FIRST ON LARGEST IMPACT - STUDENTS
- ENGAGE KEY INNOVATORS IN THE FUTURE STATE

Business & Pedagogy

Increased cost per EFTSL

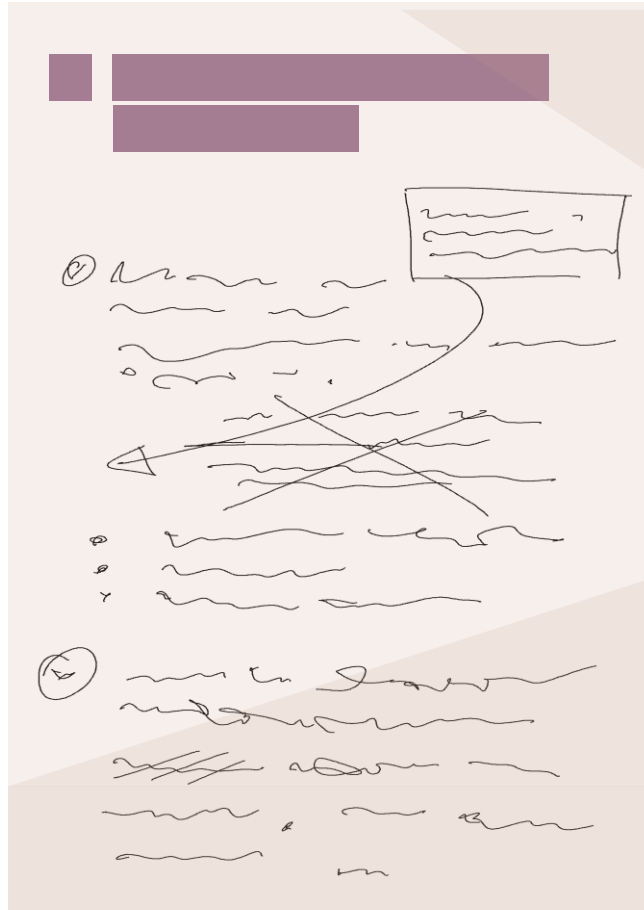


Decreased cost per EFTSL

Non Negotiables

- Scalable
- Interdisciplinary applications
- Focus on student outcomes
- Plan for evidence
- Plan for transition
- Independent risk assessment

The Money Slide



80% ONLINE

MARKING LONG FORM
QUESTIONS

\$7,000,000*

SAVINGS PER ANNUM

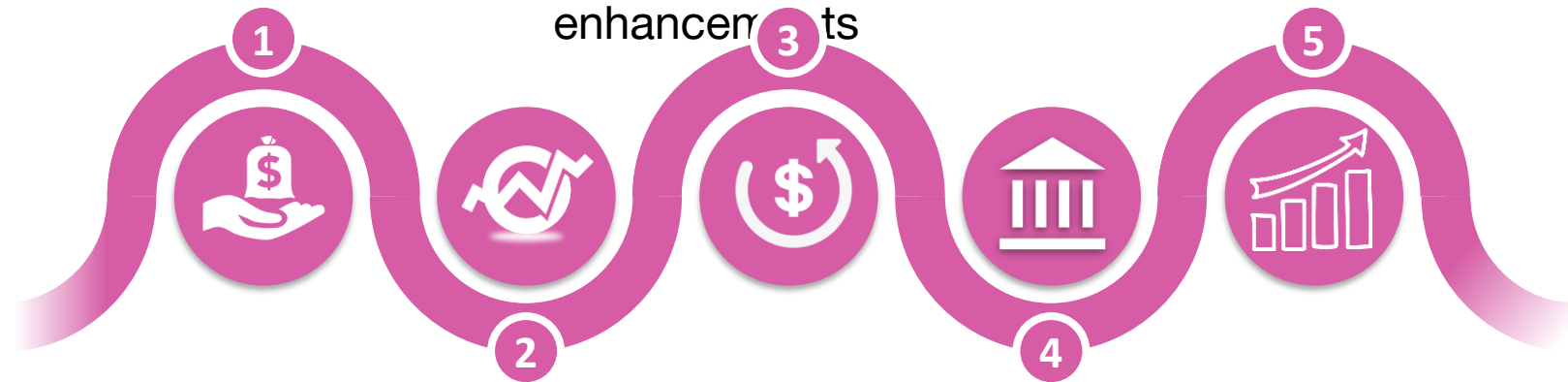
*BASED ON MONASH FINDINGS
COMBINED WITH LITERATURE
REVIEW

Opportunities

A Lean process by reducing manual handling, and possibilities for error.

Faster ROI by getting something working then iterate enhancements

Sustainable – Learn the problem space and never repeat mistakes.

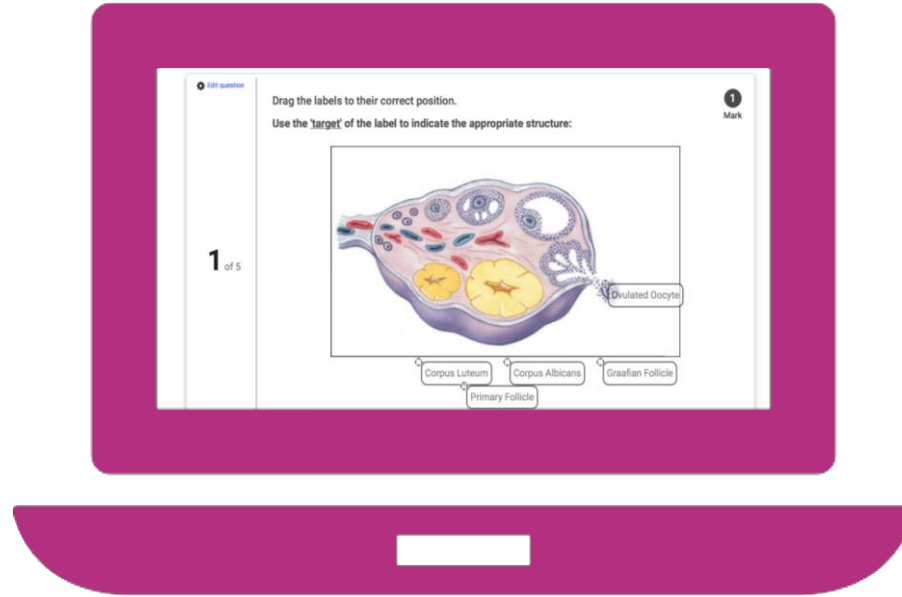


Scalable efficiencies
Embracing automation and the flexibility of cloud services.

Best practice approach with analytics, security and privacy embedded from the beginning.

Partners

okta



catalyst 



moodle

aws



The System

Exam navigation

Questions attempted: 1/17

Multiple choice questions

 1 2 3 4
5 6 7 8

Short answer questions





9 10 11 12 13

Essay/Case study questions

 14 15 15a 15b
15c

Saved: 0:27:41

Key

-  Attempted
-  Unsure of attempt
-  Not Attempted
-  Incomplete



What do we remember on Anzac Day?

Select one:

- ☐ a. The landing of the Australian and New Zealand Army Corps at Gallipoli, Turkey
- ☐ b. The landing of the First Fleet at Sydney Cove
- ☐ c. The arrival of the first free settlers from Great Britain

1 of 15

☐ Unsure1
Mark

Notes +



What are the colours of the Australian Aboriginal Flag?

Select one:

- ☐ a. Black, red and yellow
- ☐ b. Green, white and black
- ☐ c. Blue, white and green

2 of 15

☐ Unsure1
Mark

Notes +



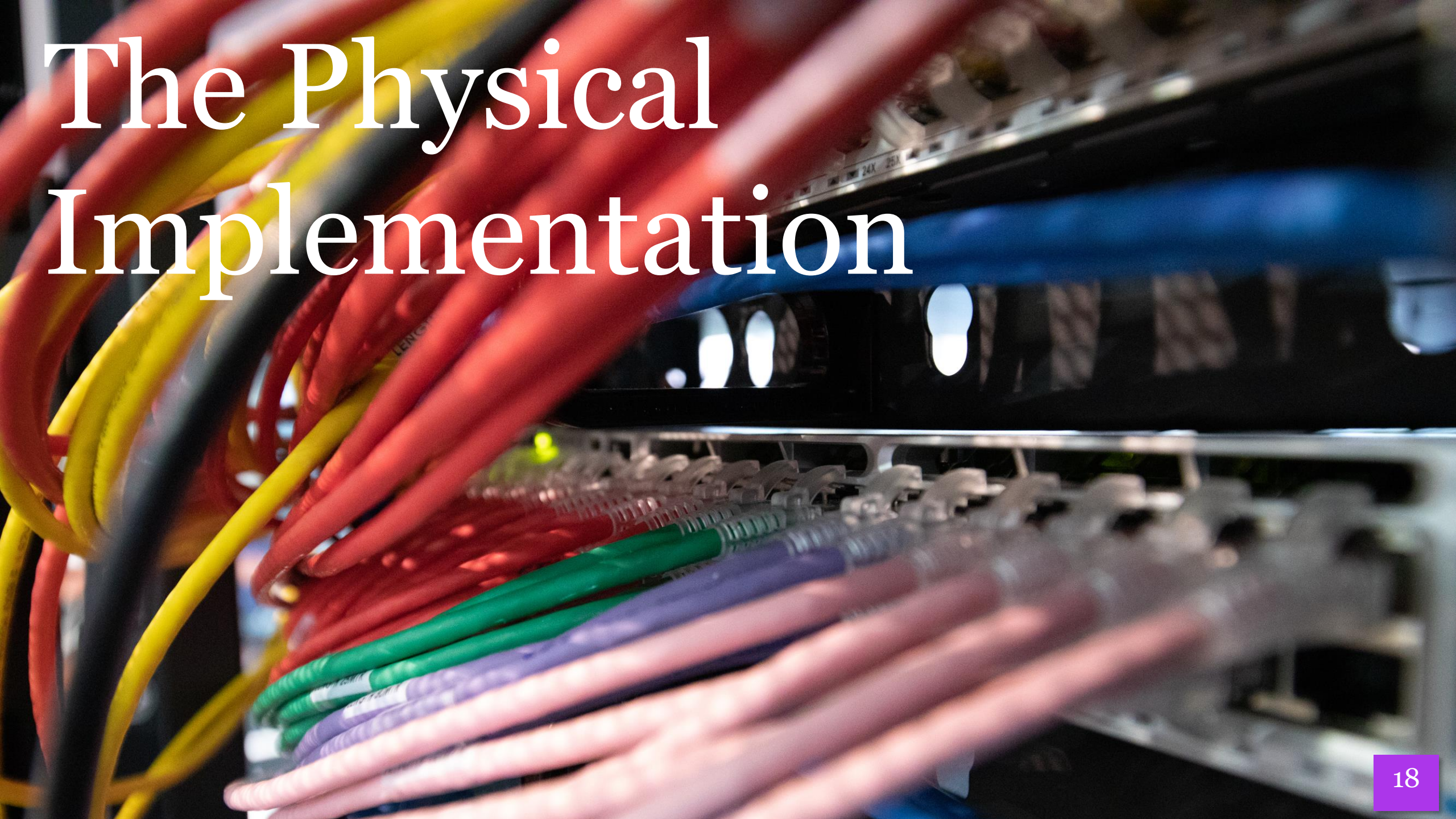
Which of these is a responsibility of Australian citizens aged 18 years or over?

Select one:

- ☐ a. To attend local council meetings
- ☐ b. To vote in elections

3 of 15

1
Mark



The Physical Implementation

Big, bold and Secure

Monash University

Caulfield
Racecourse

Triple Redundant
Network Connection



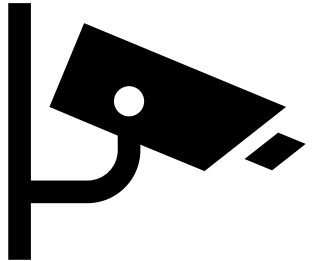
Infrastructure



56 KILOMETRES OF
NETWORK CABLE



\$80,000 PATCH LEADS



60 VIDEO CAMERAS



850M CABLE TIES



2 x 10GB DARK FIBRE



40 TROLLIES
1,500 LAPTOPS

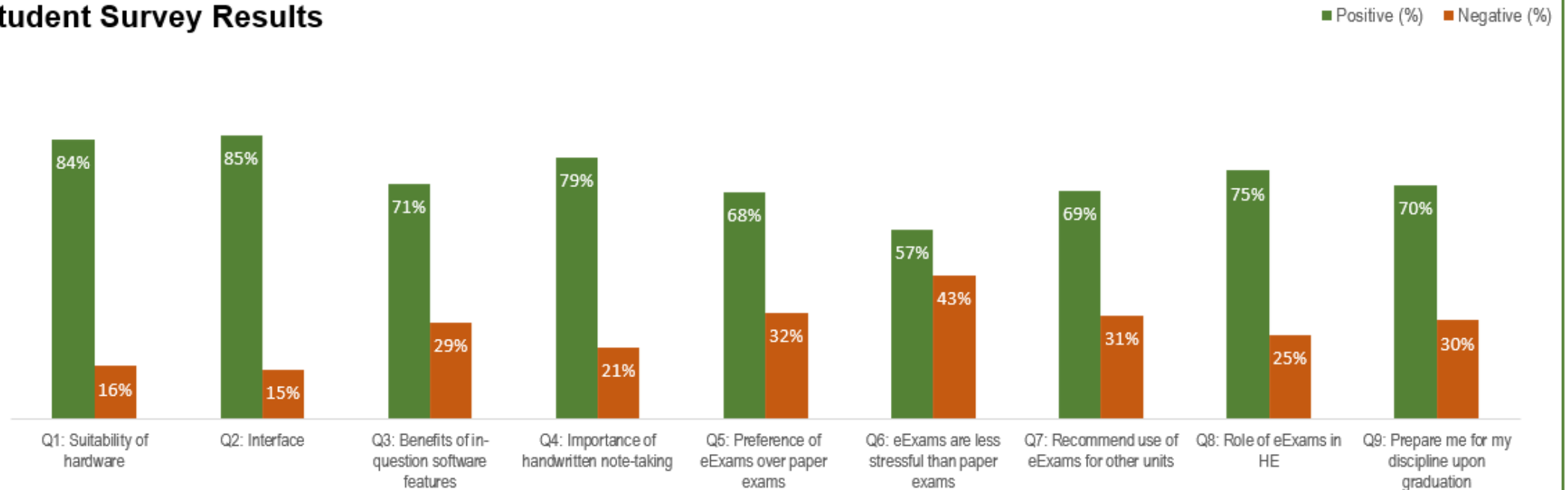
The Response



Post Exam Surveys

# of actual sittings to date	# of actual eExams units to date	# of BYOD sittings to date	# submitted answers to students survey	# of responses answering all questions
34,541	153	2,490	10,915	10,507

Student Survey Results



Focus Groups

WHAT THEY **LIKED** SO FAR...

- **OVERALL, LESS TIME MARKING**
- **100% LEGIBLE RESPONSES**
- **MARK AS SOON AS EXAM FINISHES**
- **MARK EXAMS ANYWHERE**
- **CHIEF EXAMINERS COULD TRACK PROGRESS OF BATCHES**
- **ACCESS TO ANALYTICS**
- **EXAM DURATION SAME AS PAPER**
- **TRUE BLIND MARKING**
- **SAME AS IN-SEMESTER EXPERIENCE**
- **FUTURE POSSIBILITIES**
- **MOCK EXAMS PREPARED STUDENTS**

WHAT THEY WANT **NEXT**...

- **EXAM MARKING USABILITY**
- **QUESTION DATABANK WITH ANALYTICS**
- **EXTEND QUESTION FUNCTIONALITY**
- **ANALYTICS LOCKED UNTIL ALL MARKING COMPLETE**
- **CLEARER PROCESSES WITHIN FACULTY**
- **GRADEBOOK & CALLISTA (SMS) INTEGRATION**
- **FREEHAND SUPPORT**

Academic Staff Feedback

“My goodness, this is absolutely wonderful. Where has this system been all my academic life..?”

*no exam bags, ease of use of the system, sharing among markers, **READING** the student responses, no handwriting of marks, blinded marking...bloody brilliant.”*

Associate Dean (Education)
Faculty of Pharmacy and Pharmaceutical Sciences

Student Feedback

HEADLINE OUTCOMES

- 77% OF STUDENTS WOULD RECOMMEND EASSESSMENT TO OTHER STUDENTS
- 70% OF STUDENTS WOULD PREFER TAKING AN EASSESSMENT TO A PAPER EXAM

*“I really **loved** it, I wish my other exams this semester are also done through e-assessment. It’s so much easier to **edit and clarify** my thoughts and I think it helped improve the quality of my answers”*

*“Overall, being able to type the exam **significantly aided my performance** as I barely handwrite nowadays.”*



INVIGILATED AND TAKE-HOME MOCK EXAMS

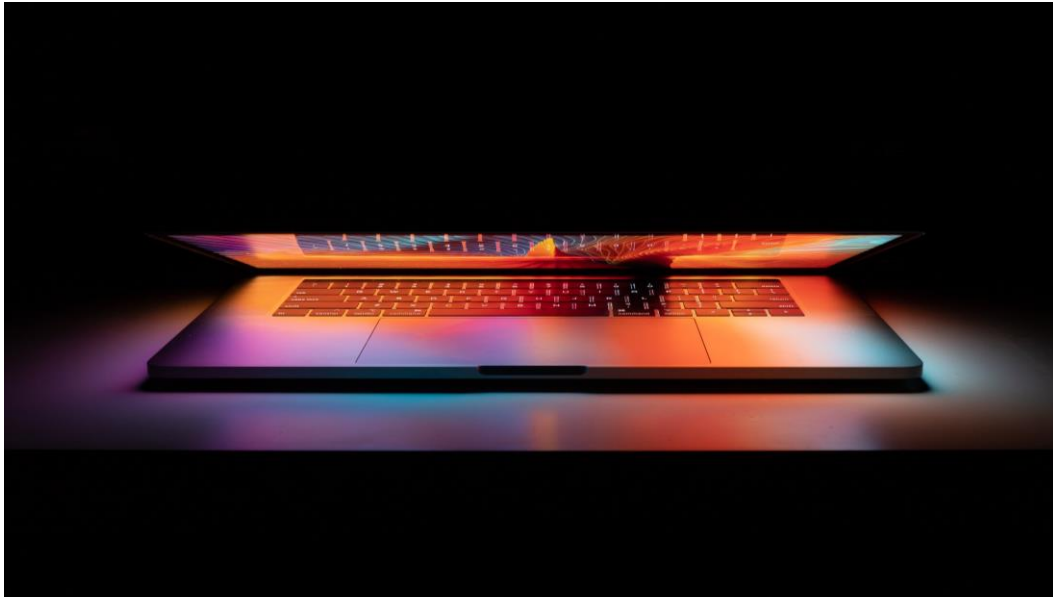
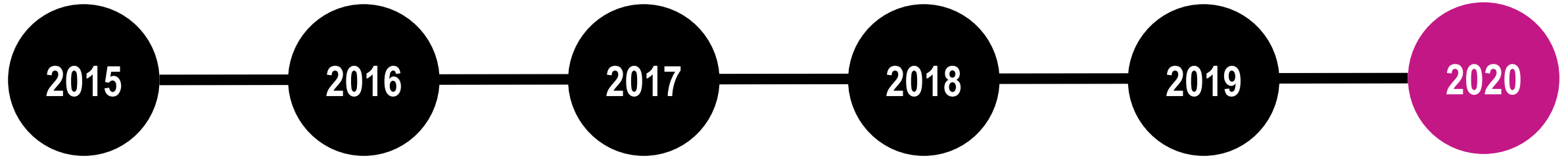
DROP-IN SESSIONS

CO-DESIGNED INTERFACE

LIBRARY SUPPORT

IN-CLASS SUPPORT MATERIALS

Where next?



Key Takeaways

MONASH SCALE

- 75 000 STUDENTS
- 360 000 'HIGH STAKES SITTINGS'
- 250 000 ON CAMPUS PER ANNUM

DEVELOPMENT TIMELINE

- DEVELOPMENT START – FEB 2018
- MAY 2018: 600 SITTINGS
- NOV 2018: 10,000 SITTINGS
- JUN 2019: 37,000 SITTINGS
- NOV 2019: 40,000 SITTINGS

OPERATIONAL SCALE

- VENUE CAPACITY 4,500 SEATS
- SUPPLIED 1,500 LAPTOPS

PROJECT SCALE

- TEAM 250 - 300 MONASH STAFF
- MANAGED SERVICE FOR AWS HOSTING

PRIMARY FOCUS AREAS:

- STUDENT EXPERIENCE
- RESILIENCE
- AUTHENTICITY

MORE FLEXIBLE ASSESSEMENT ENABLES BETTER
LEARNING OPPORTUNITIES

ANY ASPECT MAY BE VETOED BY ANY OF THE THREE
SPONSORSHIP AREAS

Any Questions?

