Transforming Exams Across Australia

An off-line e-assessment platform for computer science education

Mathew Hillier, Monash University & Andrew Fluck, University of Tasmania

Phased Pedagogical Implementation Roadmap

Start > > > > current phase 1 trials > > > > > > > > > Future >

Get Ready
Institutional approvals, Research Ethics, Hardware and infrastructure.

	Phase 1 – Crawling	Phase 2 – Walking	Phase 3 – Running	Phase 4 – Jumping	Phase 5 – Flying!
	Paper equivalent small scale. Basic doc exams only to begin!	Post-paper small to medium scale. Expanding the media landscape.	Medium to large scale. Adding the power of an LMS.	Whitelisted and logged Internet Network during BYOD exam.	Open but fully logged Internet Network during BYOD exam.
Type 1: Paper equivalent (e-Exams via word docs)	**Type 1: Paper equivalent word docs** Students given choice to type. Small numbers of typists ~ 20 to 50. Simultaneous, on campus, supervised. No live network. Paper fullback/alt. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	**Type 1: Paper equivalent word docs** Students given choice to type. Medium numbers ~ 100-200. Simultaneous, on campus, supervised. No live network. Paper fullback/alt. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	**Type 1: Paper equivalent word docs** Students given choice to type. Large numbers ~ 200+ Simultaneous, on campus, supervised. No live network. Paper fullback/alt. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	> *Type 1 exams may continue alongside other exam types* >	
Type 2: Post paper (Word docs linked to media)	**Type 2.A: Post paper via word docs linked to media and other tools** All students must type. Small to medium numbers ~ 50-200. Simultaneous, on campus, supervised. No live network. Docs linked to multimedia, 3rd party apps, simulation, PDF, etc. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	**Type 2.A: Post paper via word docs linked to media and other tools** All students assessment must type. Medium number of typists ~ 100-200. Simultaneous, on campus, supervised. No live network. Docs linked to multimedia, 3rd party apps, simulation, PDF, etc. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	**Type 2.B: Post paper via word docs linked to media and select online refs** All students must type. Large numbers ~ 200+ Simultaneous, on campus, supervised. Whitelist Internet. Docs linked to multimedia, 3rd party apps, simulation, PDF, etc. Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.	**Type 2.C: Post paper via word docs linked to media, open online access** All students must type. Large numbers ~ 200+ Simultaneous, on campus, supervise Fully logged open internet. Docs linked to multimedia, 3rd party apps, simulation, PDF, etc. Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.
Type 3: On-board LMS (Moodle)	**Type 3.A: On-board LMS (Moodle)** All students must type. Medium numbers of typists ~ 100-200 Simultaneous, on campus, supervised. No live network. On-board Moodle quiz tool. BYO student laptops, Venue power sockets, spare laptops. Data collection, analysis, evaluation.	**Type 3.B: On-board LMS, online refs** All students must type. Large numbers ~ 200+ Simultaneous, on campus, supervised. Whitelist Internet. On-board Moodle Quiz tool. Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.	**Type 3.C: On-b'd LMS, open online** All students must type. Large numbers ~ 200+ Simultaneous, on campus, supervise Fully logged open internet. On-board Moodle Quiz tool. Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.
Type 4: Online/Networked (Mixed)	**Type 4.B: Online/Networked. Mixed Mode, online refs** All students must type. Medium numbers of typists ~ 100-200 Simultaneous, on campus, supervised. Whitelist Internet. Online LMS (Blackboard, Canvas, D2L etc.), on-board LMS, remote desktops, docs, media, sims, apps Mix n match! Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.	**Type 4.C: Online/Networked. Mixed Mode, open online access** All students must type. Large numbers 200+ Simultaneous, on campus, supervise Fully logged open internet. Online LMS (Blackboard, Canvas, D2L etc.), on-board LMS, remote desktops, docs, media, sims, apps ... Mix BYO student laptops, Venue power sockets and Lab PCs. Data collection, analysis, evaluation.	

You need to crawl before you can *fly*! Timeline duration is relative to the conditions at each institution.

Our Take on e-Exams

- ◆**Expand the pedagogical landscape in the exam room!**
- ◆Gives teachers the power to design authentic, rich, constructed tasks for supervised assessments.
- ◆Students can use a full office suite, drawing tools, coding, multimedia, Moodle LMS, plus discipline specific tools via a plug-in architecture to construct their response.
- ◆Exams can be set and typed in a range of languages.
- ◆Focused 'on-campus', supervised assessments where all students sit at the same time. Off-campus exams need invigilation.
- ◆Sequential groups with document based exams use different versions or question banks via a LMS based exam (see exam type 3 & 4).
- ◆BYO laptops for hardware provision - Apple and 'Windows' computers. Lab computers OK but do not scale-up to large numbers. If a mix of BYOD and Labs used, e-Exam System give a consistent student experience on all compatible computers.
- ◆Use e-Exam System by starting from a 'live USB stick' that contains a customised operating system, rather than from the internal hard-disk drive. This allows the institution full control over software and data access without installing any invasive 'lock-down' software in student's computers. All computers are left untouched following the exam. The compatibility of each student's computer can be reliably determined once. Upgrades to the student's system won't impact the e-Exam System.
- ◆We differentiate 'Online' exams that use a live network during the exam, while in 'computerised' exams a network is prohibited or optional. In phases 1 to 3 there is no network during the exam. Using a network during the exam increases the requirement for a highly robust infrastructure and the risk of a single point of failure affecting the whole cohort. By avoiding networking during the exam any technical failure is brief and limited to an individual, and easily addressed using current exam room protocols.

e-Exams in Use

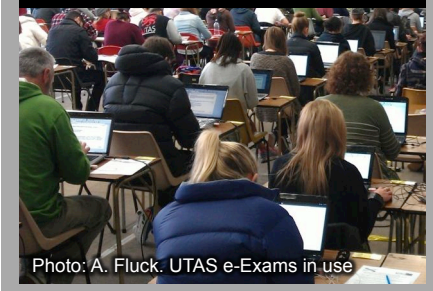


Photo: A. Fluck. UTAS e-Exams in use

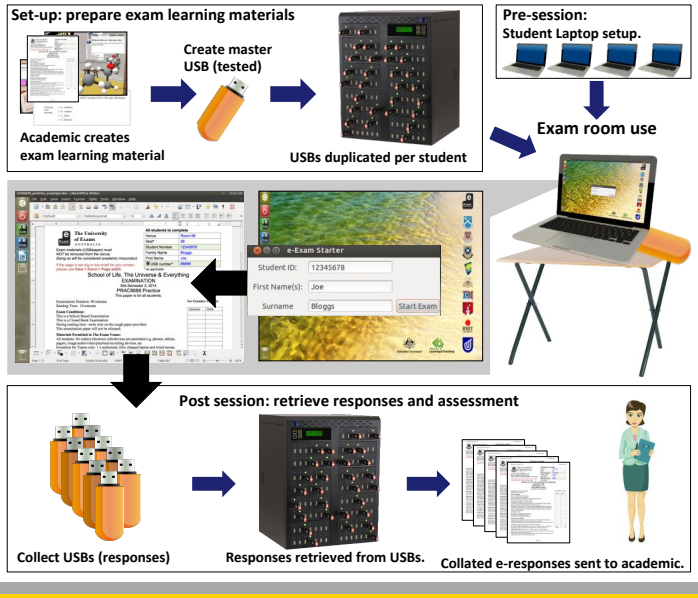
Try it yourself

1. Download the disk image of the e-Exam System client.
2. Follow the demo set-up guide to build your own e-Exam USB.
3. Read user and features guides.
4. Start your laptop with the e-Exam USB.
5. Set-up and start up guides available for Apple Mac and 'Windows' laptops.

Download and try today...

Current e-Exam Workflow

Design assessments with post-paper features ~ Mix n Match simulations, programming, high-def video, CAD, flow diagrams, spreadsheets, office suite, on-board Moodle, text response, quiz.



Why e-Exams

To accredit graduates as proficient for the modern world we need to test the wicked, messy, complex problems of today's world using the "tools of the trade of the 21st century".

Get Involved...

- e-Exam v6 (16.04) now out!
- National trials at 9 Universities in 2017 - seeking EOIs!
- Formation of an 'International e-Examinations Research Network' - Seeking EOIs!

mathew.hillier@monash.edu

'Transforming Exams Across Australia' is funded by OLT grant ID15-4747 (2015-2018).
Content not endorsed by OLT

Australian Government
Office for Learning & Teaching

TransformingExams.com