ALT-C
Shaping the Future of Learning Together
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Engaging learners in computer-based summative exams

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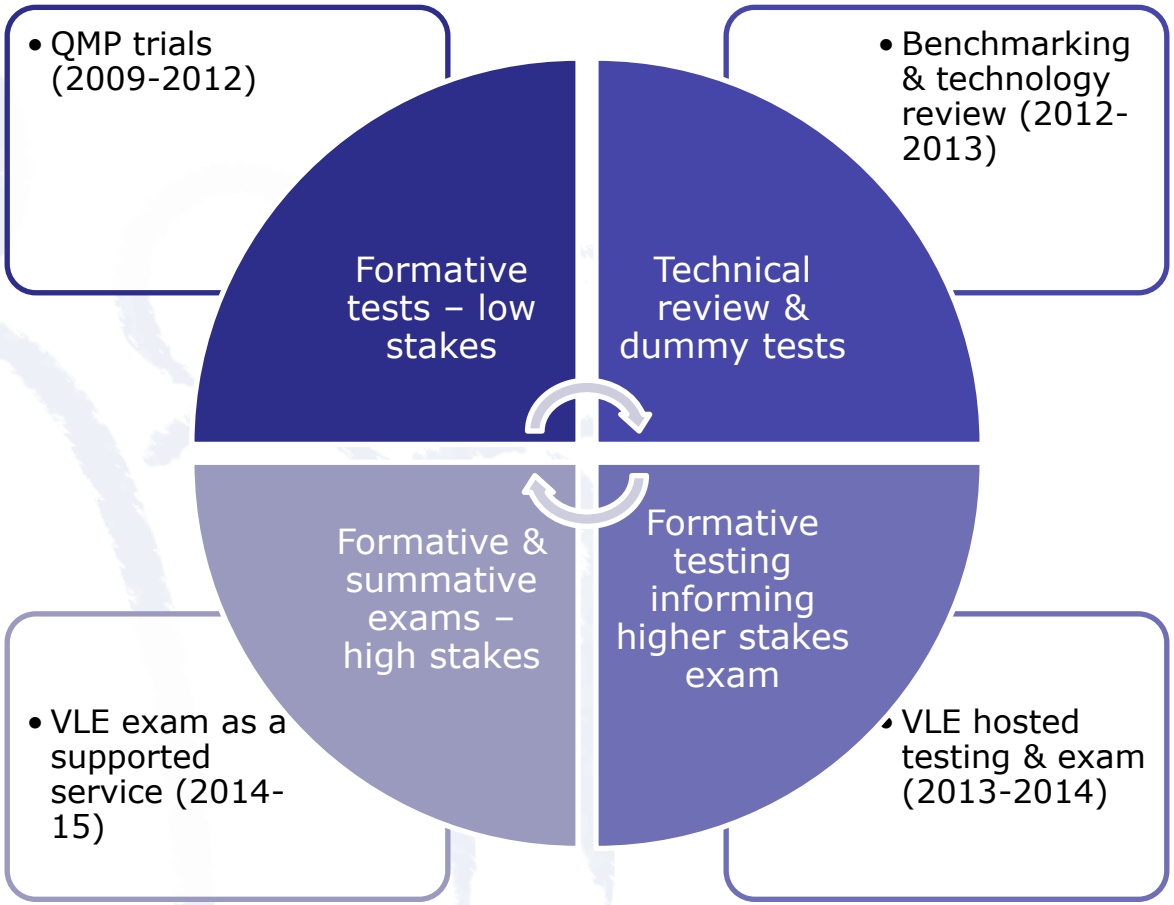
Computer-based testing in HE: A review

- Most research has focused on the differential impact of computer-based vs. pen-and-paper assessments on student achievement (Kingston, 2008; Leeson, 2006; Mead & Drasgow, 2008)
- Attention has been directed to the relationship between individual differences (gender, race, digital literacy) and performance on computer-based assessments (Leeson, 2006)
- Typically this has been case study research / surveys with a focus on the UG experience
- Only a limited number of studies on students' attitudes (e.g. Dermo, 2009; Hillier, 2014; Walker, Topping & Rodrigues, 2008)

Our challenge

- Designing a computer-based assessment for international postgraduate students in research methods (MA Language Learning & Teaching)
- Developing an assessment to address criticality & higher order thinking (combining MCQ & open questions)
- Delivering an assessment successfully across multiple test venues simultaneously for 150+ PG international students, with no prior exposure to computer-based testing at the University
- Managing the assessment within a ‘greenfield’ institutional context, with no established policy / protocols in place.

An evolutionary approach: participative-informed design



QMP trials (2009 – 2012) – LOW STAKES

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PHASE 1

	Benchmarking Review	Pilot QMP Local Install	Pilot QMP On Demand
Stakeholders	Strategic IT Projects Group (sponsor) E-Learning & IT Services	E-learning, IT networking & desktop services Education & Management School	E-learning, IT networking & desktop services
	Summer 2010	Summer 2011	Autumn 2012
Outcome	Identification of QMP as software solution	Configuration & performance challenges (missing data)	Configuration & performance challenges (connection speed & submission problems)

Benchmarking & technology review (2012-2013)

PHASE 2

	Sector Review	VLE Pilot	VLE Mock Exam
Stakeholders	Strategic IT Projects Group (sponsor) E-learning / IT & Education Department	E-learning, IT networking & desktop services Education Department	Education Department; IT and e-learning services; Exams Office Students
	2013	Summer 2013	Autumn 2013
Outcome	Reappraisal of Blackboard VLE's assessment engine	Creation of VLE Exam instance – with locked down desktop	Issues over exam design: question volume & balance

VLE hosted exams (2014 – 2015) – HIGH STAKES

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PHASE 3

	VLE Exam Masters	VLE Mock Exam Masters & UG	VLE exam Masters & UG
Stakeholders	Education Department; IT & e-learning services Exams Office Students	Education Department; IT & e-learning services Exams Office Students	Education Department; IT & e-learning services Exams Office Students
	Spring 2014	Autumn 2014	Spring 2015
Outcome	Review of question-set: Ratio of MCQ & open questions; randomisation & sequencing	Successful delivery of exam (160 students)	

Exploratory research framework

2013-14 cohort (n= 155)

- Survey after summative exam (Jan 2014)
- Focus group (n=5) after summative exam, before release of results
- Qualitative content analysis on transcripts & free text survey comments:
- Focus on reception of computer-based testing methods (attitudes / experiences)

2014-15 cohort (n=160)

- Surveys after formative (mid-term) and summative exam (Jan 2015)
- Focus groups (n=18) after summative exam, before release of results
- Qualitative content analysis on transcripts & free text survey comments: repeated & combined with 2013-14 data to form rich picture of students' reception of assessment methods

Issues Prior exposure to computer-based testing: rationale and perceived fairness & equity

"**It's kind of fair** for most students because using a computer is almost a necessity for us and especially **for our generation but it is not as much fair, as other generation**."

"Some of our classmates after they have had some experience … they return to school to get more experience in teaching. **It could be some difficulty for them to use a computer in typing when they attend the examination, so it could take them longer time to get used to the system**, so I think it could unfair for them."

Post-Test Focus Group 2014-15

Engagement Issues: Students' preparation for assessment

Issues **Keyboard proficiency under exam conditions: familiarisation with exam environment & controls**

"I'm not used to using the keyboard because **it's different from laptop keyboard**."

"I feel in the real exam, I found **there's no correction tools** for you to correct."

Post-Test Focus Group 2014-15

Engagement Issues: Exam technique

Issues Online exam craft - question selection, time management…

"I do not like not having the ability to circle questions I am unsure about or make notes to myself about which questions to come back to. **During written assessments, I often write all over my test questions with arrows, circles, and other brainstorming sketches** and it is difficult to work through the online assessment without these techniques"

2014-2015 Pre-Test Questionnaire

Post-Test Focus Group 2014-15

"In terms of **time management…when we are doing the handwriting exam, I know what questions to I have, but in e-exam I just didn't know** what I am currently facing and I don't know what kind of questions, you know closed or open question or is coming next "

Issues Management of self-study

"In China we will focus on the memory so we try to remember the long answers to these questions……**for the Chinese exam, I will remember all of the answers, long sentences, but I will not do this for this module**."

Post-Test Focus Group 2014-15

Engagement Issues: Assessment Design and Interface

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Issues Organisation and presentation of question-set, preparation of user interface

"It's no sense to put an open question for ten points at the beginning, so because **our brain doesn't work at the beginning** to write/type so much."

Post-Test Focus Group 2014-15

"Random questions for each student don't represent the level of difficulties, **for some students could encounter long answer question at Q1 which gives little confidence of students to move on**. More it could also waste time in trying to answer that question and therefore time is not enough"

Questionnaire 2013-2014

Questions?

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Discussion points

1. How does our experience compare with your experience (with UGs / PGs, in a greenfield / mature institutional context)?

2. What recommendations would you make based on our results / your experience?

3. What developments do you foresee in computer-based testing in the next 5 years? What are the implications for learner engagement?

Recommendations

- **Our research highlights the importance of:**
  - Socialisation of learners focusing on the aims and rationale for computer-based assessment
  - Providing students the opportunities for practice necessary to develop **IT proficiency for computer-based testing** and **test-taking strategies for computer-based testing**
  - Asessment interfaces should be flexible and intuitive to accommodate a range of test-taking strategies – 'one-interface' does not fit all students

The LEeAP framework

Socialisation	• ***Orientation of students to assessment methods***
Preparation of students for assessment	• ***Guidance and preparation of students for computer-based testing:*** Digital skills; Exam technique; Revision strategy
Assessment design and interface	• ***Organisation and presentation of question-set, preparation of user interface and assessment venue:*** Assessment design; Design of assessment interface; Preparation & management of assessment centre(s)

The LEeAP framework

- **Read our working paper:**
  - Walker, R. & Handley, Z. (in preparation). Designing for Learner Engagement with eAssessment Practices: The LEeAP Framework. For submission to *ALT-J.*
- **At:**
  - http://tinyurl.com/LEeAP
- **All comments and feedback welcome!**

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Thank you!

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