



Essay Exams on computers – the story so far!

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School of Divinity Assessment

- Mainly essay type
 - Course work (predominantly essays or online wiki/blog) – has to be **typed**
 - Exams – traditionally **hand-written**; typically three essay-type questions in two hours




The Issue

Course Work




Exams





What can we do?


- Multi-choice exams do not test the higher order skills that are important in our discipline
- Often there are no correct answers
- Writing critically is key; not so much about the facts themselves; more about how they are used



Exam4 Software

<http://www.extegrity.com> Easy to use, cut down word processor

- Easy to use, cut down word processor
- Student use own laptops – download install from web (PC & Mac versions; no linux)
- Exam questions provided on paper as per normal
- Course team decides re spell check & other features
- Course team decides re saving to network, USB, local disc
- Student just signs in & picks course from list, no file names to enter
- Regular encrypted snapshots throughout exam
- Option for student to retain encrypted version of script
- Student decides re font size, timer settings
- Admin needs code to decrypt scripts
- Can print or mark digitally, whole or part scripts



Can we give a choice – trial carried out in Spring 2008

- 1st year divinity class, 70 students
- Mock exam, free choice to handwrite or type
- Use own laptop or borrow a loan machine
- Select one question from three, all pre-seen
- All students sit in same room
- Transcribe all scripts into other format
- Four experienced PG markers
- Each marker marks every student script once - either as typed or as handwritten



Results

- **Is there a difference in the amount of text that can be written or typed in an examination?**
 - **Yes**
 - The longer scripts were typed (but not a lot longer)
 - No correlation between reported typing speed and volume actually written.
 - Females tended to write slightly more than males.
 - No correlation with age.



- **Are students who type slowly any more or any less disadvantaged than students who handwrite slowly?**
 - **No**
 - Scores for typed and handwritten scripts were broadly similar
 - Very short scripts score low marks



- **Is the mark influenced by the format of the script (typed or handwritten) rather than its content?**
 - **Not really**
 - The variation is tiny - less than one mark
- **The variation between markers is the worrying thing!**




Is there a difference in the quality?

'Quality' factors considered:-

- engagement with subject
- knowledge of topic
- evidence of critical thinking
- wider reading
- essay structure


No evidence of a difference in the quality of the text handwritten or typed

But markers differ in how they assess the different quality factors



Conclusions

- We were pleased to be able to give students the choice of whether to type or hand-write their exam script
- Although marker variation was the dominant feature this was probably higher than normal – volume of essays to mark, quick turn around demanded and there was no course manager moderation (concern but not alarm bells)



Next steps

- Move to offering to classes –
 - 2008-09 - computer option offered for one first year course
 - 2009-10 - computer option offered for all first year courses and a few Honours courses in all exam diets (including re-sits)



Practical considerations

- At Edinburgh have **one** exam hall equipped with Wi-Fi, power and desks can be arranged with larger spacing; needs forward planning and liaison with Registry
- Students with Disabilities adjustments – accommodating needs
- Invigilator training



Moving to the real thing

	Dec 2010	May 2011
Actual Exam choice		
Typed	13 (9.4%)	11 (8.6%)
Hand	125	117
		Handwriters: Would you ever consider typing for an exam ?
		Yes 57 (55%)
		No 46 (45%)
Self reported typing speeds		
Handwrite faster	29 (21%)	31 (24%)
Type faster	49 (35%)	51 (39%)
Not much difference	42 (30%)	28 (21%)
Response set		
Total	140	130



Student explanations for why they choose to handwrite

- Focus group with few students during 2010-11
- After each of the exams in Dec 2010 and May 2011, students given short multi-choice questionnaire to complete

1a. Misunderstanding what is wanted in an exam essay



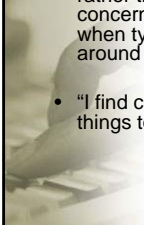
"I think there are dozens of moments within the space of a timed handwritten essay when you go (acts : *thinking*) it would make more sense in terms of actually developing an argument and a progression of thought for me to go back and change this but I could be using that same time to list as many facts as possible and I understand, that both I and the person that is grading this understand, that this is the context within which this is taking place."



1b. The misunderstanding leads to fear of wasting time



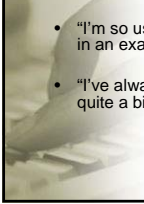
- "I think one of the dangers is that I'd get bogged down into the formatting of it and reformatting it into the right argument, progression and things like that, rather than writing stuff. I think that's a genuine concern that you'd have to be very very aware of when typing in an exam. 'Cos the opportunity to play around with it is there and I think that is dangerous."
- "I find computers distracting because I can change things too easily"




2. Lack of experience




- "I would handwrite. I haven't had the practice typing under pressure. I am in 3rd year now, this is my honours, I don't want to risk doing badly in an exam. I'd definitely handwrite. I know I am capable of doing that. At no point in my A level education, my GCSE education, did I get any practice at typing under timed conditions."
- "I'm so used to writing, worried might not be able to do it (typing) in an exam. Considering typing next year."
- "I've always written exams. Worried I couldn't use it in exams, quite a big risk to take."





3. Personal preference

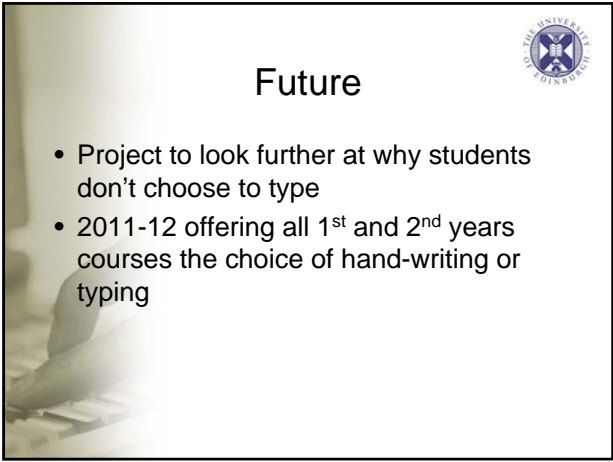
- “I think better with a pen”
- “Not good with computers so would probably make a technical error”
- “I type faster but when in an exam I need to scribble things down when I think of them... it would ruin my thinking”
- “Not sure I can type fast enough”


4. Personal organisation

- My computer was broken
- Forgot to sign up for laptop usage
- Too lazy to bring laptop


Questionnaire results

- Most students did make some sort of plan
– but no apparent differences in behaviour for type vs handwrite
- Strong evidence that students do make use of the core word processing functionality



Future

- Project to look further at why students don't choose to type
- 2011-12 offering all 1st and 2nd years courses the choice of hand-writing or typing