A blended course that includes a FutureLearn MOOC: Learner and teacher experiences

Vicki H.M. Dale and Jeremy Singer

FutureLearn Academic Network, 28 February 2018

University of Glasgow

INSPIRING PEOPLE

Definition of blended learning

"At its simplest, blended learning is the **thoughtful integration of classroom face-to-face learning experiences with online learning experiences** … The real test of blended learning is the effective integration of the two main components (face-to-face and Internet technology) such that we are not just adding on to the existing dominant approach or method."

(Garrison & Kanuka, 2004, p96-7)

Overview

- FutureLearn Haskell MOOC and online course in Moodle developed as part of BOLD project (Blended and Online Learning Development)

- One year development, one year implementation

- Instructor motivations:
  - To make learning more engaging and interactive
  - Opportunity to showcase University of Glasgow as Haskell pioneer

Course	Findings
Medical anatomy MOOC by Leeds, embedded in first year curriculum (Swinnerton et al., 2016)	• Students appreciated videos & quizzes • Less engaged with discussion boards • Rejected replacement of campus-based teaching with MOOC
Students in Romania did a MOOC of choice as 10% of web programming studies (Holotescu et al.,2014)	• Students valued discussions & feedback in forums • Perceived lack of tutor engagement
Local course 'wrapped' around Stanford MOOC at Vanderbilt University (Bruff et al., 2013)	• Students liked accessibility & flexibility of videos • Preferred to interact with local learners • Unhappy with 'subject coupling' of Stanford & Vanderbilt material

University of Glasgow

Methods

Experiences of 4th year Computing Science students (and some Masters students)

Online survey (n=36) followed by focus group (n=6)

Semi-structured interview with staff (Jeremy) as part of affiliated study

Student experiences

1. What were learners' experiences of a MOOC as part of a blended learning design?
   a) What did they value most?
   b) What did they find most challenging?
2. How did students experience being part of a massive community of learners?
3. How did the MOOC prepare learners for the second part of the course?
4. How should the blended course be modified for a future iteration?

https://www.haskellmooc.co.uk/tutorial11/#step9

prev

Haskell Tutorials

University of Glasgow

Active users

```
Type Haskell expressions in
here.

λ 4+-3
Not in scope: '+-'
Perhaps you meant one of these:
'-' (imported from Prelude),
'++' (imported from Prelude),
'+' (imported from Prelude)
λ 4+ -3
Precedence parsing error
cannot mix '+' [infixl 6] and
prefix `-' [infixl 6] in the
same infix expression
λ ▮
```
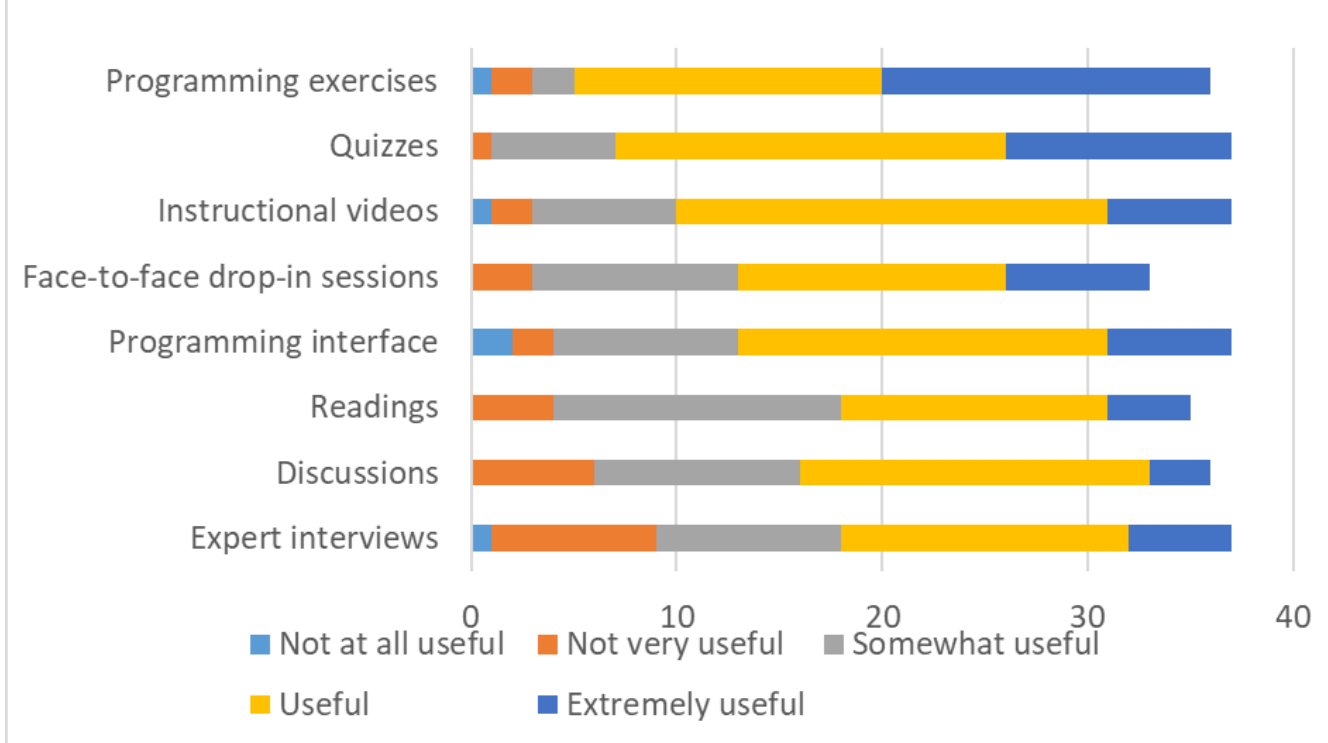
Again, that did not work as expected: Haskell does not allow you to combine 'infix' operations (like 3+4) with 'prefix' operations (like '-4').

So what should we do? Enclose the infix operation in parentheses:
4+(-3)

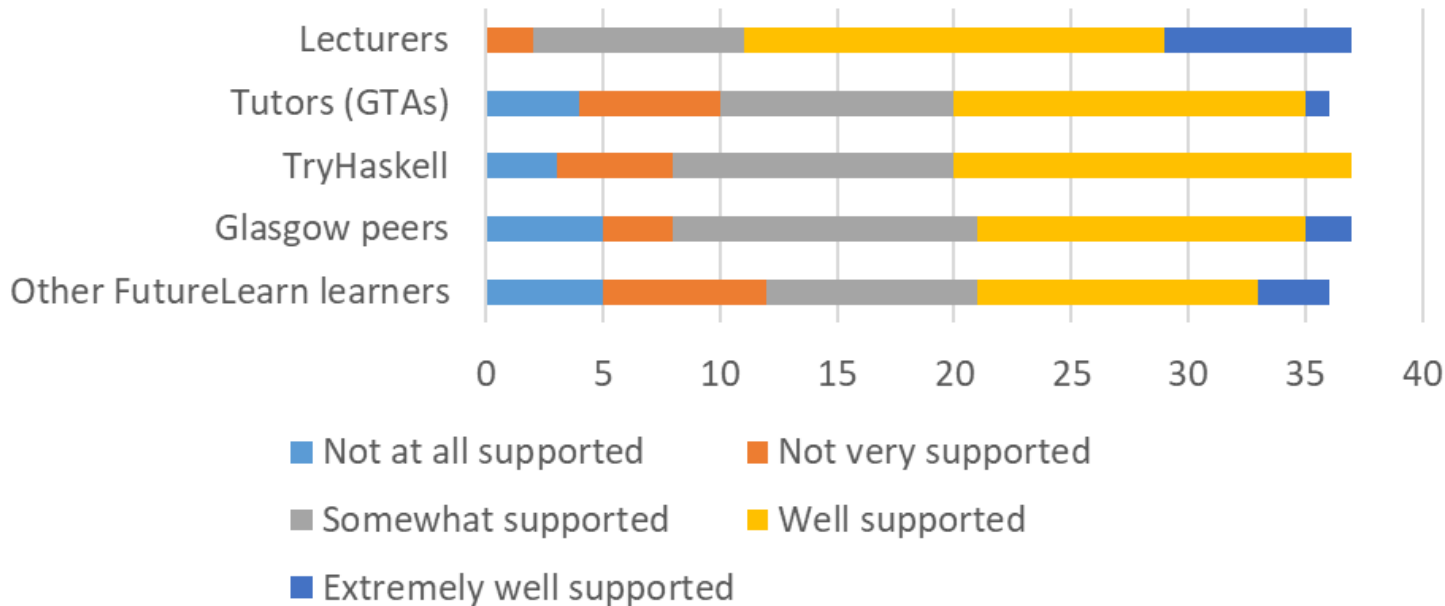Usefulness of different learning activities

Recognised sources of support on the blended course

University of Glasgow

Combination of learning activities

"The quizzes, videos, and exercises formed a very strong combination.   The reading provided greater detail on topics given in the lighter materials e.g. videos. The discussions that sat alongside the materials were extremely useful."

Benefit of massive cohort

"When I got stuck at some of the exercises I had a look through the comments, and it turned out a few other people had similar problems."

Flexibility (pace of new material)

"For people with no functional programming experience it is useful to have online training (you can re-read, google stuff), while if done in classroom might not be able to go at the pace of the lecture. This is particularly good at the beginning of a new study area, when you have no base and foundation for it already."

University of Glasgow

Reduced motivation to attend face-to-face

"… non-mandatory face-to-face sessions made me feel less inclined to attend (and more likely to miss out on useful learning / understanding)."

Lack of practical labs

"No labs. I feel like there should be like all upper case, like NO LABS … there definitely should be labs."

Getting to grips with difficult concepts online

"Explaining a difficult concept using a video or text is not as good as explaining it in class, where you can ask questions right away when it's still fresh in mind and face-to-face explanations are clearer as well."
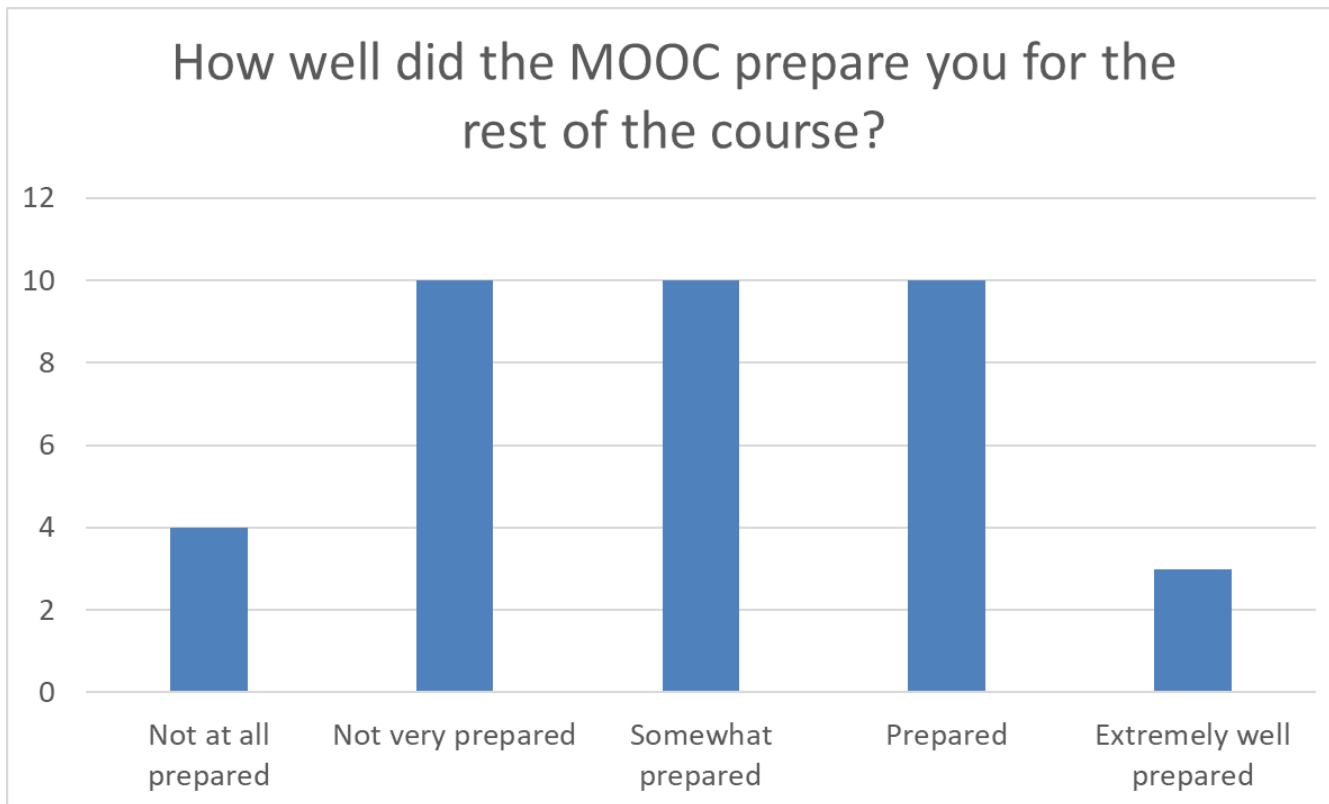
Difficult transition from small practice exercises to long-form programming for assessment

"Well, it's very difficult for the assessed exercise in the sense that…at least for me I was faced with new stuff there because otherwise you'd made them really simple examples, like we have some optional exercises and that's all easy. When you go into assessed exercise you're actually faced with I/O and everything. So basically you, kind of, need some sort of experience with that sort of stuff beforehand and I don't think MOOC really prepared us in any way for that or not really properly at least."

Benefits

- More managed learning and teaching process (front-loaded so less fire-fighting)
- Flexibility for learners
- Enjoyed experience of e-moderating
- Able to monitor learner experience in real-time and make changes as course was running

Challenges

- Time / deadlines (didn't allow time for beta-testing)
- Students had to use TWO platforms; difficult if they 'lost' FutureLearn login details
- Not all students came to face-to-face drop-in sessions

Enablers

- LEADS media team (videos); LEADS curriculum architect (project management and learning design); IT developer
- FutureLearn willing to add functionality e.g. colour-coded syntax
- PhD students who helped to deliver course

Impact on academic practice

- Developed confidence in chunking different types of content for online engagement
- Moved from a teacher-centred to student-centred approach to teaching; confidence to make lectures more interactive
- College now has an online and blended learning talking group
- BUT, has not impacted on colleagues' appetite to extend online offerings

Changes made in response to learner experience research

- More explicit signposting to additional sources of support including face-to-face drop-in sessions
- Bridge the 'jump' between MOOC and Glasgow components; gradually increase level of difficulty
- Continue to support students in Glasgow component through ongoing evaluation and addition of learning resources
- May convert second Glasgow component into an Advanced MOOC

Advice to other educators

- Take or review other online courses
- Allow time for design, development and beta-testing
- Make full use of university support services available
- Use whatever material you can to write up Discipline-Specific scholarship papers, e.g. Trends in Functional Programming in Education 2017 conference

Advice to institution

- Continue to offer opportunities for blended/online educators to share experiences across disciplines and different L&T initiatives
- BOLD showcase: www.gla.ac.uk/myglasgow/leads/staff/telt/blended/showcase/

Bruff, D. O., Fisher, D. H., McEwen, K. E., & Smith, B. E. (2013). Wrapping a MOOC: Student perceptions of an experiment in blended learning. *Journal of Online Learning and Teaching, 9*(2), 187.

Firmin, R., Schiorring, E., Whitmer, J., Willett, T., Collins, E. D., & Sujitparapitaya, S. (2014). Case study: using MOOCs for conventional college coursework. *Distance Education, 35*(2), 178-201. doi:10.1080/01587919.2014.917707

Griffiths, R., Chingos, M., Mulhern, C., & Spies, R. (2014). Interactive online learning on campus: Testing MOOCs and other platforms in hybrid formats in the University System of Maryland.   Retrieved from http://www.sr.ithaka.org/wp-content/mig/reports/S-R_Interactive_Online_Learning_Campus_20140710.pdf

Holotescu, C., Grosseck, G., Cretu, V., & Naaji, A. (2014). *Integrating MOOCs in blended courses.* Paper presented at the The International Scientific Conference eLearning and Software for Education.

Israel, M. J. (2015). Effectiveness of integrating MOOCs in traditional classrooms for undergraduate students. *International Review of Research in Open and Distance Learning, 16*(5), 102-118. doi:10.19173/irrodl.v16i5.2222

Koller, D. (2012). How online courses can form a basis for on-campus teaching [blog post].   Retrieved from https://www.forbes.com/sites/coursera/2012/11/07/how-online-courses-can-form-a-basis-for-on-campus-teaching/#6bc5ac2f2887

Swinnerton, B. J., Morris, N. P., Hotchkiss, S., & Pickering, J. D. (2016). The integration of an anatomy massive open online course (MOOC) into a medical anatomy curriculum. *Anatomical Sciences Education*, n/a-n/a. doi:10.1002/ase.1625

Acknowledgements