Student-led employability audit of undergraduate learning, teaching and assessment practice

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Thursday 29th June 2017

Working with students

My involvement with paid student researchers:

- Kingsley Webster, *Evaluation and development of the Maths Arcade at NTU and nationally*, Nottingham Trent University, 2014.
- Anna Johnson and Callum Mulligan, *Effective outreach in mathematics*, NTU, 2015.
- Lisa Eccleston and Peter Tonks, *Maths Arcade enhancements*, SHU, 2016.
- Daniel Arnold and Joseph Sugrue, *Maths Arcade enhancements*, SHU, 2017.
- Lewis Hartley and Edd Smith, *Games in mathematics higher education*, SHU, 2017.
- **Amber Parkes and Ellie Weatherald, *Student employability audit*, SHU, 2017**.

SHU projects funded by the ACES Teaching Enhancement grant scheme.

BSc Mathematics and employability

- Designed to deliver a range of discipline-specific and generic skills.
- Designed to deliver employability development alongside technical content, as this is an effective approach (Waldock, 2011; Rowlett, 2012).
- Focus on practical applications, using technology where appropriate (Waldock, 2016).
- Focus on reflective activities via Progress Files (a PDP activity) (Waldock, 2013; Challis, Gretton and Waldock, 2003).

Student-led employability audit

- However, it is important to keep this activity under review:
  - are we delivering what we think we have designed?
  - what are student perceptions of this?
  - are there opportunities for improvement?
- A student-led approach is sensible because:
  - student perceptions of their employability are important — self-awareness plays a strong role in willingness to engage meaningfully and ability to articulate skills development;
  - students are better placed to honestly assess their experience and collect the views of their peers than we, their lecturers.

Student-led employability audit

- Ellie and Amber were hired to complete an audit of the course in semester 2 of 2016/17, aiming to:
  - report perceptions from current students and alumni of the course;
  - identify where and how skills developments take place and what practices are successful;
  - make recommendations for ways in which this might take place more effectively.
- Detailed methodology was designed in consultation.

This talk

- What Ellie and Amber did.
- What they found.
- There is a focus here on the details of the maths course, but of course we hope the methodology and some findings will be of wider interest.

Methodology

- Questionnaire targetting all first, second and final year students which asked about:
  - placement year experience or intentions;
  - general employability on the course;
  - attitudes towards the Progress Files.
- A variety of question types was used. Students were not required to answer all questions.
- At the end of the questionnaire, students were asked to identify themselves if they were willing to be contacted for interview.
- Returned by 59 students in total (out of 289; a 20% response). 26 first year, 22 second year and 11 final year.

Methodology

- Interviews, with:
  - current students — those who gave interesting responses to the questionnaire;
  - two alumni working in different sectors;
  - one ‘employer’, an established maths graduate not from SHU, who is active in the professional body.
- Interviews were semi-structured.

Methodology

- N.B. ethics approval is slow — build in time for this.
- Though officially we are told ethics approval is not supposed to get in the way of doing research, in practice we had a period of waiting for a response to our Research ethics checklist (SHUREC1) when my (casual) workers could not do any work.

Findings — employer expectations

- Interview with employer:
  Employers want students with
  - problem-solving skills;
  - a passion for the subject;
  - willingness to tackle things head on;
  - programming skills;
  - ability to present their work to a non-technical audience;
  - ability to apply maths through modelling.
- Alumni interviews indicate SHU Maths is developing these skills.

Findings — placements

- 56% of respondents had not or did not intend to complete a placement, including:
  - those who did not/do not want to complete a placement (want to finish the course ASAP and start their career; some wanting to be teachers);
  - those who wanted to complete a placement but did not (couldn't find one that interested them or were unsuccessful in applying).
- 27% of respondents intended to complete a placement (to gain real world experiences, to improve graduate job prospects).
- 10% of respondents are unsure as to whether or not they want a placement (lack of interest, not having a clear career plan, not wanting to go into a year of full time employment).
- 7% had completed a placement (to gain work experience and improve chances of getting a job).

Findings — placements

- Interviews suggest including:
  - more about what you get out of a placement (from student who had been on placement);
  - exposure to wider range of placement options, including those listed for Business students and more use of external placement listing websites;
  - more sessions on career paths and employer visits to broaden range of potential placement options.
- Students who had completed a placement felt somewhat prepared for their year, including via placement portal, CV sessions and subject content.

Findings — course employability content

- Most students felt the course had helped their future employment prospects.
- A number of modules were given special mention by students and alumni, including those using technology, mathematical modelling and statistics.
- Issues raised with explicit employability content in second year, especially re. exposing students to a wider range of career options and the feedback provided in this section.
- Not all modules were rated as useful for employability.
- Students do not always appreciate that assessment methods (group work, report writing, presentations) are relevant to employability.

Findings — Progress Files

- Most respondents only complete these for marks.
- Few indicate understanding of the value of recording and reflecting on their own progress.
- Indicates a need to develop students' understanding of this value.

Conclusions (drawn by student researchers)

- Employability content of the course is good.
- More could be done to encourage more students to consider a placement.
- More could be done to show students how the content, skills development and assessment in all modules are relatable to industry.
- Some specific changes recommended to second year employability content.
- Expose students to a wider range of possible career options.
- Progress Files need to be better promoted and explained, as students are unaware of the skills they develop when they engage with them and how these skills will help in the workplace.

Project outcomes

- A 31-page report detailing the methodology and findings.
- 23 recommendations about placements (5), course employability content (15) and Progress Files (3).
- These will be considered by the course team.

My conclusions

- A student-led audit is a really interesting way to find out about the course delivery in practice.
- There is a cost involved - Student Researchers cost £8.97 p/h and we had two researchers for 54 hours each.
- Important to have a final year student involved.
- Quite a lot of support needed re. research processes and methods as well as to understand course content.
- But in the end they did a very professional job.

References

- Challis, N., Gretton, H. and Waldock, J. (2003). Web-Based Assessment of Student Progress Files. *Maths-CAA Series*, Dec 2003. Retrieved from `http://icse.xyz/mathstore/repository/mathscaa_dec2003.pdf`
- Rowlett, P. (ed.) (2012). *Further Work Developing Graduate Skills in HE Mathematics Programmes*. Birmingham, U.K.: Maths, Stats and OR Network. Retrieved from `http://www.mathcentre.ac.uk/resources/uploaded/furthergradskills.pdf`.
- Waldock, J. (ed.) (2011). *Developing Graduate Skills in HE Mathematics Programmes – Case Studies of Successful Practice*. Birmingham, U.K.: Maths, Stats and OR Network. Retrieved from `http://www.mathcentre.ac.uk/resources/uploaded/gradskills.pdf`.
- Waldock, J. (2013). The SHU Mathematics Approach to Developing Student Employability. *On Reflection*, 26, pp. 35–39.
- Waldock, J. (2016). *BSc Mathematics Open Day Programme 2017 Entry*. Sheffield Hallam University.

Any questions?

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