



CAREERS SERVICE BRIEFING

Career motivations, behaviours and outcomes of Edinburgh maths students

Research findings

Inspiring futures

What questions were we trying to answer?

The 2015/16 Graduate First Destinations Survey (DLHE) results for the School of Mathematics (published 2017), were somewhat mixed. Although the metrics were above average compared with most Schools, given the high calibre of UoE maths students we felt graduate outcomes could be better. We wanted to investigate more fully to identify some of the contributory factors, and posited whether:

- Maths students exhibited lower levels of engagement with the Careers Service and a reluctance to plan and direct their career. If so, what barriers might preclude career planning and how could we mitigate these?
- There was something unique or distinct about the 'Edinburgh experience' that might account for the above.
- Other high-ranking universities were taken a different approach. Was there anything we could surface – about the prevailing culture or provision – that we could usefully apply, not just within Mathematics but potentially other STEM disciplines?

We hoped to gain insight from students and recent graduates into their career thinking and experiences. Did they have career aspirations and at what stage did they move from exploration to planning and action?

Finally, we recognised the value in seeking perspectives from key academics to further our understanding about student behaviour and general attitudes to careers and employability.

How did we approach this?

We recruited an *Employ.Ed* student intern to undertake the primary (qualitative and quantitative) and secondary research, which included:

- Benchmarking against 10 comparable Russell Group (RG) institutions (using [Unistats](#)), to examine graduate destinations and salaries as well as course satisfaction and sense of community.
- 30-minute telephone interviews with Careers Service staff at 5 of the benchmarked institutions.
- Designing and circulating a questionnaire to c. 600 undergraduate students. 99 responses (16.5%) were collected and analysed across years 1-5. (By survey date finalists had actually become graduates).
- Follow-up interviews (telephone or face-to-face) with 6 students to elicit more in-depth responses.
- Interviews with 4 members of academic staff: Head of School, Director of Teaching, Senior Undergraduate Personal Tutor and Student Learning Adviser.

What did we find out?

- **Benchmarking** – Edinburgh sits broadly in the middle of the 10 comparator RG universities in terms of graduate destination data. London institutions benefit from higher salaries due to proximity to City jobs and the London weighting. There were no obvious differences in career provision or approach across benchmarked institutions.
- **Student engagement** – Students are delaying their career planning, with 35% taking action in their final year. Survey responses and interview feedback suggest lack of confidence may contribute to procrastination. However, it should be noted that some students are actively resistant to earlier career engagement, stating that pre-honours is "too soon".
- **Satisfaction with Careers Service** – Responses were largely positive, particularly with individual careers support, *MyCareerHub* and access to careers events. There was less satisfaction with the range of employers on campus and the Careers Service website. Of greatest concern was the number of students not using services.

What did we find out? [cont.]

- **Impact of the Careers Service** – Most student users reported favourably around the following themes: *a) feeling better informed, b) more confident in their plans, c) motivation and d) skilled in applying*. Conversely students identified potential weaknesses in the areas of *a) understanding and evaluating their options, b) the range of employers/sectors open to them and c) how to articulate their skills more effectively*. A quarter to a third of respondents (depending on the specific service mentioned) were unable to offer feedback as they hadn't used the services.
- **Work experience** – Over half the students that responded had undertaken some kind of work experience – for example internships (53%), part-time jobs (43%), student societies/PALS (35%), volunteering/outreach (24%), summer jobs (14%) and research (6%). They reported benefits such as: *a) gaining skills, b) enhanced confidence and c) formulating or shaping career plans*. The challenge for the Careers Service and School of Mathematics is to encourage more students to seize opportunities from the myriad of experiences open to them. Our survey results were actually more positive than those for from the *2018 Trendence Student Survey*. Here the data for Edinburgh indicates maths students are in the bottom third of subjects, as regards seeking work experience, at around 26%. (For comparison, Informatics stands at 51%, Business Studies at 43% and GeoSciences at 12%.)
- **Communication** – 67% of students were aware of the programme of events (e.g. bespoke workshops, alumni panels and employer sessions) circulated to maths students. Communication was highlighted as a particular issue. Weekly emails and Facebook were the preferred means of communication, albeit by a small margin. Minimal awareness of the most basic services was evident. Some students were reluctant to access the Careers Service unless they had clear career ideas and a sense of purpose.
- **Career aspirations** – Results suggest students' career interests broadly align with institutional and national career destinations. The most popular sector by some measure was finance. Other sectors of strong interest, in descending order, included IT; business, consulting & management; science/pharma; energy/utilities; engineering and teacher training/education (which includes academia/research).
- **Obstacles/barriers to career planning** – Absence of relevant information was cited as the most significant factor. Much of the information requested is available but students are not finding or choosing to engage with it, confirming the communication challenge. Limited experience and indecision were also vocalised.
- **Confidence** – Low levels of confidence was a recurring theme and particularly notable around the recruitment process (applications, interviews), exemplified by slightly more students (53%) feeling negative towards future career planning, than positive (47%). In the 1:1 interviews, students were able to voice their career aspirations but seemed unable to effectuate any plans.

What do we recommend?

This briefing highlights the recommendations most relevant to the School and Careers Service. Crucially, many of the suggestions in the report already apply, so the question is how to raise awareness and foster a greater sense of purpose, action and ownership amongst our student body?

- More regular emails and Facebook communication – re-asserting the ways in which students can access and receive help. Emphasising the value of early career conversations and reassuring students that we can support them at every stage, whether creating, developing or refining career ideas and plans.
- Strong endorsement from academic colleagues for the above. Building and propagating a climate where students' personal and career development is prioritised, irrespective of academic capability or career choice.
- Review and refresh of content for maths students on the Careers Service website with obvious links from the School of Mathematics intranet. This should include specific information on tailored (*and generic*) opportunities for maths students.
- Production of webinars and video materials, so that students can view talks at their convenience.
- Encourage planning and exploration in early years and experimentation (through work experience) in penultimate years.

Interested in finding out more?

The full report is available from the Careers Service. To request a copy and to discuss the issues and findings in more detail please contact Matthew.Vickers@ed.ac.uk or Helen.Stringer@ed.ac.uk.