

GMT research

The future of postgraduate taught STEM study in the UK

In this article, Michelle Morgan¹, Learning and Teaching Coordinator at Kingston University, introduces one of the 20 Postgraduate Support Scheme projects funded by the Higher Education Funding Council England (HEFCE). The project investigates the expectations and attitudes of students, employers and Higher Education Institutions (HEIs) towards postgraduate taught study in science, technology, engineering and mathematics (STEM) subjects. This article introduces the background literature which informs the project and details the projects aims and objectives.

Introduction

Broadly speaking, postgraduate (PG) qualifications can be classified into two groups: those that are substantially taught such as Masters by coursework; and those with a significant research component such as Doctorates by research (Smith et al., 2010). Up until 2010, postgraduate taught study participation in UK HEIs continued to grow quite dramatically with the full-time mode replacing the part-time as being the most popular mode of study. The increase has been attributed to the EU and Non-EU markets especially for the full-time mode (Millward and Creasey, 2013; Morgan, 2013a). However, in the past three years, three major issues facing postgraduate taught (PGT) study in the UK have come to the fore.

Firstly, although the postgraduate taught market experienced a dramatic expansion in the UK in the past 20 years, there has been a noticeable decline in growth in overall PG student numbers but especially on PGT courses. This has been most notable amongst UK and overseas domiciled students, and with the part-time study mode, which has traditionally been dominated by UK domiciled students (Millward and Creasey, 2013; Morgan, 2013 a,b). All STEM disciplines have been affected (see figure 1). Although intuitive reasons can be made to explain the decrease, there is limited evidence to provide accurate explanations.

Secondly, although extensive research has been undertaken in the field of the undergraduate student experience (e.g. Tinto, 1988; Thomas, 2002; Morgan, 2011), there is limited, although a growing body of research for the PGT student experience of applicants, students and postgraduate alumni (Wakeling, 2005; Stuart et al., 2008).

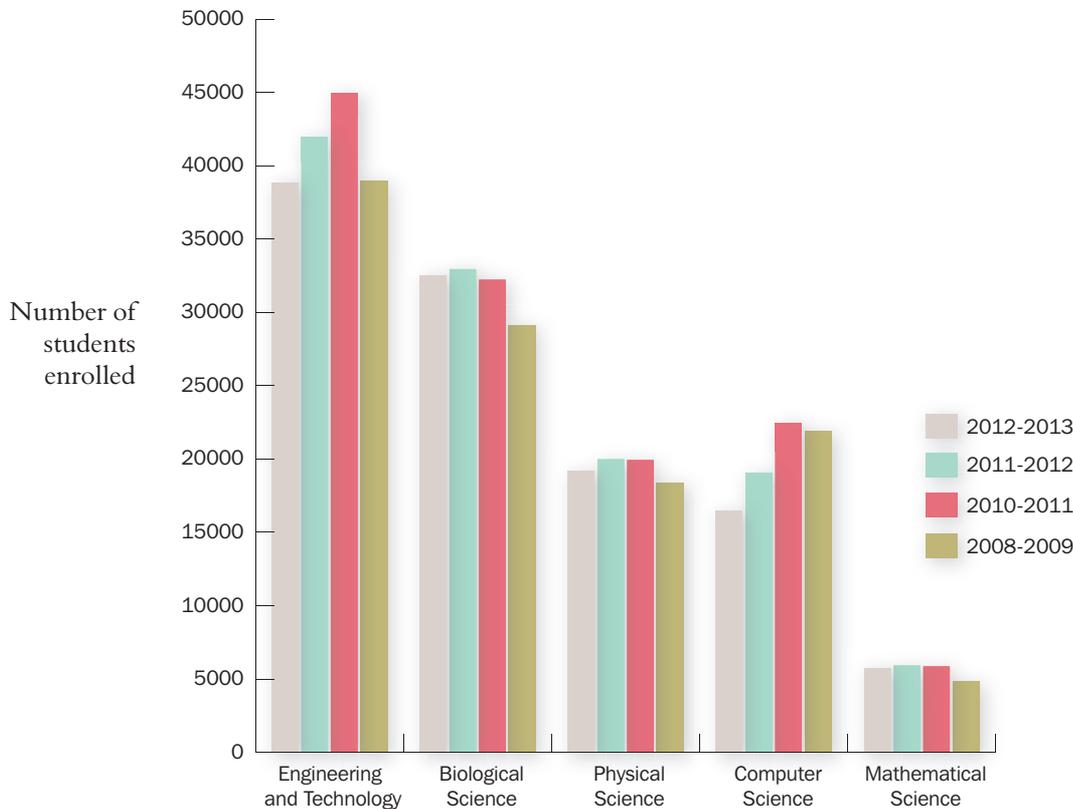
Thirdly, when it comes to understanding the needs and requirements of employers and whether they value and can use the skills of a graduate qualified at this level, there is a scarcity of knowledge and evidence. Although, the research available suggests that postgraduate applicants and students believe that employers do value a PGT qualification more than an undergraduate one (Wells, 2011; Morgan, 2013b), current evidence also indicates that employers are not only concerned about the increasing number of postgraduates but the variable quality (Connor et.al., 2010). A report by the Council for Industry and Higher Education (CIHE) for the Department of Business Innovation and Skills (BIS) found that although a PG qualification did enhance a range of the skills, it was no indicator of leadership potential or work wisdom which were two of the key skills employers were looking for in Master and Doctorate graduates (Connor et.al., 2010). Disconcertingly, only 1 in 10 employers of PhD graduates, and fewer for Masters, felt that a PG qualification was a guarantee of a high quality candidate (Connor et.al., 2010). It is unclear whether the growth in PGT education has been as a direct result of employer demand or whether employers are merely taking the opportunity to recruit from a higher qualified pool of graduates.

In 2012, this lack of knowledge led to the Higher Education Commission (HEC) commenting that the 'postgraduate education is a forgotten part of the sector' (Higher Education Commission, 2012:17). As well as the HEC, concern has also been expressed by a number of organisations about the future of postgraduate education including the 1994 Group, the National Union of Students and the Sutton Trust who have called for further research to be undertaken.

¹ Michelle Morgan is Learning and Teaching Coordinator in the Faculty of Science, Engineering and Computing at Kingston University. Michelle is the Principle Investigator and Project Lead of the Postgraduate Experience Project (PEP)

Figure 1: Growth in PG enrolments in UK HEIs on STEM courses

Source: HESA (2013) Students in Higher Education Institutions 2012/13



Commitment to change

The UK Government realises that if higher education (HE) is to expand and become sustainable through the delivery of high quality teaching, research and knowledge exchange (as well as supplying knowledge and skills to industry, professions and students) then targeted research needs to be undertaken and it requires the input of a range of stakeholders. It is committed to expanding PGT study to improve the UK's industrial competitive global position as well as the UK's position in the global market of HE. The recent changes in higher education, as a result of the White Paper 'Students at the Heart of the System' (BIS, 2011), and the falling PGT numbers, has made research into identifying factors impacting on participation and successful progression very pressing.

If institutions can effectively understand the barriers, drivers, motivations and outcomes facing their applicants, students and postgraduate alumni as well as UK employers' needs, it will help the HE sector understand how postgraduate study has evolved in the UK in recent years and importantly, enable us to identify what the key stakeholders (applicants, students, business and industry and universities) want and need it to be. This knowledge, as well as working with employers, should help provide better targeted and sustainable support for applicants and students, improved course design providing students with the

skills business and industry require, and institutional and national strategies fit for purpose in growing and sustaining the postgraduate taught (Masters by coursework) market in the UK.

Current research

As a result of Government commitment and organisational concerns, HEFCE has invested £25 million in a publicly-funded programme that aims to test ways of supporting progression into postgraduate taught education in England and to stimulate participation by students who would not otherwise progress to this level by working with universities and employers. Twenty projects have been funded that will support more than 2,800 students and involve a range of support activities including financial and pastoral support, mentoring and networking, curricula change, funded studentships, work placements and a variety of bursary and loan schemes.

The project, led by Kingston University and is entitled '*Investigating the expectations and attitudes towards postgraduate taught (PGT) STEM study, and post study outcomes from the perspective of students, universities and employers to support and sustain PGT growth in the UK – A collaborative project*', aims to draw together the neglected areas of research mentioned above into a coherent investigation.

It is the largest consortium that has been funded and comprises of 11 universities that are geographically dispersed universities across the UK. The collaborative Partners include the Universities of Brighton, Coventry, Edinburgh, Lincoln, Manchester Metropolitan, Portsmouth, Plymouth, South Wales, Teesside and Wolverhampton. Business and industry leaders as well as higher educational specialists are also involved.

The project will build on existing research and its overarching aims and objectives have been constructed to maximise the sector's knowledge regarding the participation, progression and success of all new PGT STEM students across the universities involved and the non-institutional stakeholders. The project aims to provide practical and pragmatic advice, guidance and initiatives to HEIs as well as business and industry, and applicants and students. It will provide an understanding of institutional issues as well as a UK perspective. This project will provide a template for other institutions wishing to undertake their own research. The aims and objectives of each stakeholder group are highlighted in Diagram 1.

The project started in January 2014 and is due to report the findings at its National Dialogical Conference at Kingston University on 14th and 15th July 2015.

References

- Connor, H., Forbes, P. And Docherty, D. (2010) *Talent Fishing- what businesses want from postgraduates*, London: DBIS.
- BIS (2011) Higher Education: Students at the Heart of the System. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32409/11-944-higher-education-students-at-heart-of-system.pdf (Accessed 8 July 2013)
- Higher Education Commission (2012) *Postgraduate Education - An Independent Inquiry by the Higher Education Commission*, London: HEC.
- Higher Education Statistics Agency (2013) Students by subject. Online. Available at: <http://www.hesa.ac.uk/index.php/content/view/1973/239/> (Accessed 2 March 2014).
- Millward, C. And Creasey. E. (2013) Understanding and Stimulating the Taught Postgraduate Economy, Paper presented at UKCGE Annual Conference, 'Master Class: the changing face of PGT in a research-intensive environment', Birmingham, 1-2 July.
- Morgan, M (2011) *Improving the student experience- a practical guide for Universities and colleges*, Oxon: Routledge.
- Morgan, M. (2013a) Where has Postgraduate Study Grown and What are the implications for the UK? An International Comparative Analysis, Paper presented at UKCGE Annual Conference, 'Master Class: the changing face of PGT in a research-intensive environment', Birmingham, 1-2 July.
- Morgan, M. (2013b) *Understanding prior feedback experiences of new postgraduate taught (PGT) STEM students' and their expectations and attitudes towards PGT level study at a 1992 institution -Higher Education Academy Individual Grant*, York: Higher Education Academy
- Smith, A., Bradshaw, T., Burnett, K. Docherty, D., Purcell, W. and Worthington, S. (2010) *One Step Beyond: Making the most of postgraduate education*. London: Department for Business, Innovation and Skills.
- Stuart, M., Lido, C., Morgan, M., Solomon, L. and Akroyd, K. (2008) *Widening participation to postgraduate study: decisions, deterrents and creating success* York: Higher Education Academy.
- Thomas, L. (2002) Student retention in higher education: The role of institutional habitus. *Journal of Education Policy*. 17(4), 423-442.
- Tinto, V. (1988) Stages of Student Departure: Reflection on the Longitudinal Character of Student Leaving. *Journal of Higher Education*. 59 (4), 438-55.
- Wakeling, P. (2005) La noblesse d'état anglaise? Social class and progression to postgraduate study. *British Journal of Sociology of Education*. 26 (4), 505-22.
- Wells, P. (2011) *The Higher Education Academy Postgraduate Taught Experience Survey - PTES 2011*, York: Higher Education Academy.

Diagram 1. Project aims and objectives of the key stakeholders