Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 228 (2016) 561 – 566

Procedia
Social and Behavioral Sciences

2nd International Conference on Higher Education Advances, HEAd´16, 21-23 June 2016, València, Spain

Entry to Study Expectations of Science, Technology, Engineering and Mathematics Postgraduate Taught Students

Michelle Morgan[a]*, Inês Direito[b]

[a]*Kingston University London, Faculty of Science Engineering and Computing, Penrhyn Road, Kingston upon Thames, Surrey KT1 2EE, UK*
[b]*University College London, Institute of Education, 20 Bedford Way, London WC1H 0AL, UK*

Abstract

There is extensive knowledge of learning and teaching behaviour and practice at undergraduate level, but limited, albeit increasing, of postgraduate taught study. The Postgraduate Experience Project (PEP) was one of 20 projects funded by the Higher Education Funding Council for England to explore ways of widening participation at postgraduate master's level. It was the largest consortium comprising of 11 universities across the UK (9 English, 1 Scottish and 1 Welsh). PEP assessed STEM postgraduate masters students' learning and teaching experiences and expectations through an online survey during Induction period (Entry to Study survey). The survey explored students' experiences of previous learning and teaching methods, their understanding of academic feedback and their preferences, as well as their expectation of learning at postgraduate taught level (PGT). This paper presents different student´s experiences and expectations by groups such as gender and mode of study. The findings suggest that a 'one size fits all' learning and teaching approach to PGT students is not adequate to support the student experience due to the complexity and multiplicity of postgraduate the student's profile, background, needs and expectations.

Peer-review under responsibility of the organizing committee of HEAd´16

Keywords: postgraduate taught study; entry to study expectation; STEM; learning and teaching; government funded research.

* Corresponding author.
E-mail address: michelle.morgan@kingston.ac.uk

Peer-review under responsibility of the organizing committee of HEAd´16
doi:10.1016/j.sbspro.2016.07.086

1. Introduction

There has been an expansion in the number of postgraduate students in the UK over the past decade (Morgan, 2014b). However, in contrast with undergraduate level (e.g. Thomas, 2002; Morgan, 2011; Stuart et al., 2008), there is still limited research about the postgraduate masters (known as PGT hereafter) student experience, students' prior learning experiences and how this might affect and impact on study at PGT level (Morgan, 2013b; Morgan & Rigby, 2014). Independent bodies such as the Higher Education Commission, have commented that 'Postgraduate education is a forgotten part of the sector' (Higher Education Commission, 2012:17).

The Postgraduate Experience Project (PEP), which was one of the twenty projects funded by the Higher Education Funding Council for England (HEFCE) in 2013, was designed to investigate the expectations and attitudes towards Science, Technology, Engineering and Mathematics (STEM) PGT study, and post-study outcomes from the perspective of students, universities and employers to support and sustain PGT growth in the UK. PEP was the largest consortium comprising of 11 universities (9 English, 1 Welsh and 1 Scottish) that are geographically dispersed universities across the UK.

PEP collected data on expectations of studying at PGT level of new STEM students enrolling at the start of the academic year 2014/15 via an online survey – the Entry to Study Survey (ESS). The ESS aims, structure, procedure and demographics are presented in the section below.

1.1. Entry to study survey

Aims: To collect demographic variables, information on prior feedback experiences, and the expectations of new PGT students relating to their upcoming academic studies; to identify any particular issues that appeared to affect successful engagement; and to determine what interventions or activities could be put in place to manage student expectations and improve their experience.

Structure: The survey comprised open and closed questions. It collected demographic data to check the representation of the sample and to provide detailed analysis of the questions asked with different student characteristics such as gender, domiciled status, generational status, entry route to study. It contained eight sections designed to obtain as much information as possible about their prior experiences of higher education and their PGT expectations and aspirations. The sections were as follows: 1) previous study qualifications; 2) previous study experience; 3) current study information; 4) motivations and challenges of postgraduate study, fees and funding; 5) postgraduate study expectations; 6) your current learning expectations; 7) attitudes towards postgraduate study; 8) biographical details. The survey consisted of 92 questions, providing a massive amount of information and an extensive dataset. The questions were developed from an existing survey that had already been implemented at the lead university (Morgan, 2013b) and it was piloted with 25 students.

Procedure: New PGT STEM students across the 11 participating universities were asked to complete the Entry to Study survey during the orientation period in September/October 2014. They were informed about the purpose of the survey, that it was anonymous and voluntary, and were made aware that the survey had two aims: firstly, to provide their university with data to contribute to understanding and improving their experience and, secondly, to act as a personal development activity for new PGT entrants, as they would be asked to reflect on how they had previously learnt and how they wanted to, or expected to, learn at postgraduate level. Within six weeks of the orientation period, each university published a self-help sheet for their new students that contained some of their basic findings of the survey, along with advice and guidance in the areas students had highlighted as potential problems.

Demographics: The sample comprised of 1226 students, of which 37% were female and 63% male; 83% were studying full-time and 17% studying part-time; 52% were first generation and 48% second generation; 60% were UK domiciled, 11% European (EU) and 29% Overseas (OS). Other demographic variables, such as discipline, age and ethnicity, are described in Table 1 (source Morgan & Direito, 2016). Students whose parents (or guardians) had not been to university were classified as a first generation student, and those that had one or both parents attend were classified as second generation. In terms of *route into study*, students coming straight from university were the ones

who completed their highest qualification in 2014. Students coming straight from work were the ones who completed their highest qualification prior 2014 and were in full-time or part-time paid jobs in the few months immediately before starting their postgraduate courses. All the other cases were labelled as 'Other' route into study (e.g. on voluntary work).

Table 1. Demographic variables of the ESS

Variable	Sub variable	%
Discipline	Engineering	34.9
	Physical Sciences	25.4
	Biological Sciences	20.4
	Computer Science	17
Age	< 25	56
	26 – 30	22
	31 – 40	15
	> 41	7
Ethnicity	White	59
	Asian	19
	Black	12
	Mixed	5
	Other	5

2. Results and discussion

2.1. Expectations of how to study at postgraduate level

It is well known that managing study expectations at undergraduate level can promote and increase engagement, success and overall satisfaction (Morgan, 2011, 2013a; Thomas, 2012). Of the sample, 62.2% respondents had an expectation of how to study at postgraduate study compared to 37.8% who did not. Second generation respondents reported that they were more likely to know what to expect (65.8%) in comparison to first generation (59.2%), X^2 (1, N=1209) = 5.594, p<.05. This may be due to second generation students having the guidance of parents who have university experience to help, in contrast with first generation students even though they may have experienced university themselves (Morgan, 2014a). No major differences were found between respondents in the different social classes, those coming from different routes into study and between different age groups.

UK domiciled respondents were more likely to have an expectation on how to study at postgraduate level (65.4%) in comparison to EU respondents (54%) (X^2 (2, N=1205) = 9.124, p<.01) which may be due to an understanding of the UK higher education system. This lower expectation by EU students could be due to only 22.6% having previously studied in the UK.

2.2. Prior academic feedback preferences

The most preferred method of receiving academic feedback for assessed work in their previous studies was *face to face with tutor (individually)* followed by *written feedback (hard copy)* (see Figure 1). These two ways of receiving academic feedback were also the most preferred for non-assessed work followed by *feedback via email.* It is interesting to note that in an age of technology, traditional methods such as face to face feedback still appear to most popular

rather than IT approaches amongst STEM students, whom it would be reasonable to assume would have preferred feedback via technology.

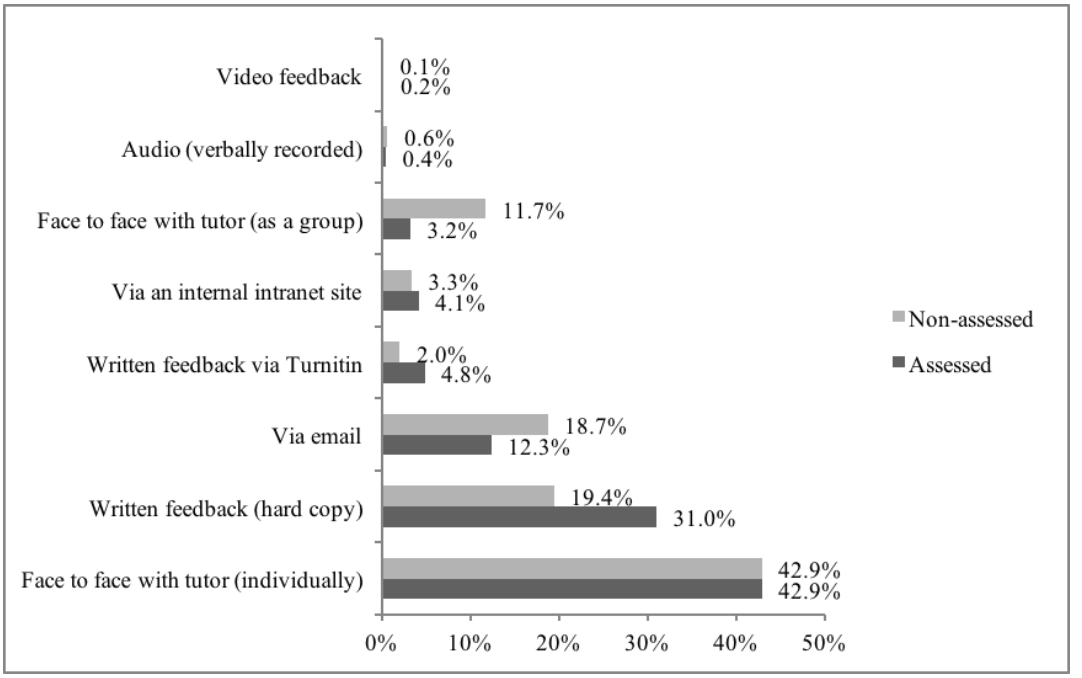

Fig. 1. Academic feedback method preferences. (Source: Morgan & Direito, 2016, p.128)

When analysed by a range of variables, a number of noticeable differences emerged:

- UK respondents were more likely to prefer written feedback (hardcopy) for assessed work (36%) in comparison to EU and OS respondents (22.5% and 23.9% respectively). Feedback via email was more likely to be favoured by OS respondents (19%) than UK respondents (8.5%) (X^2 (16, N=1210) = 85.421, p ≈.00). This was also the case for non-assessed work, with similar figures.

- Female respondents were more likely to prefer written feedback (hardcopy) for assessed work (38.4%) than males (26.6%), but male respondents were more likely to prefer face to face with tutor (individually) (46.4%) in comparison to female respondents (37.3%) (X^2 (8, N=1213) = 22.300, p<.01).

Of 73.2% respondents who stated that they had approached a tutor to discuss their academic feedback, the most commonly cited reason was that they *wanted more feedback on how to improve their mark*. Only 7.6% stated that they had done so because *they did not understand the feedback*, 11.8% *did not agree with the mark* and 3.2% *did not agree with the feedback.*

- Male respondents were more likely to have approached a tutor (77.2%) compared to female respondents (66.4%) (X^2 (1, N=1220) = 16.907, p<.01). Female respondents (29.4%) were more likely than males (18.4%) to say that they never thought of asking about the feedback when asked to cite the reasons for not having approached a tutor. X^2 (1, N=327) = 5.493, p<.05

- EU respondents (25.5%) were more likely to have approached a tutor because they did not agree with the feedback in comparison to UK and OS respondents (8.9% and 12.2% respectively) (X^2 (8, N=887) = 29.207, p<.01).

2.3. Current academic feedback expectations

Respondents were asked to rank in order of importance which academic feedback activities were the most or least important to receive during their course. For 56% of the sample *getting regular academic feedback* was the most important feedback activity to receive followed by 25.1% wanting to know *what they did well and what they could improve*. For 44.7%, discussing feedback with students outside of class was the least important, followed by 24.1% citing *receiving feedback that is encouraging and raises confidence levels*.

Respondents were asked what the most helpful type of academic feedback on their work would be in their current postgraduate studies. The most commonly cited responses were *comments on written or assessed work* (45.3%), followed by ongoing informal feedback outside of class (32.3%). The least cited responses were ongoing informal feedback during lessons/workshops/seminars (19.6%), feedback by peers (2.1%) and 'other' (0.7%). However, at PGT level, students are expected to develop critical thinking skills. It is argued that feedback techniques such as peer feedback, that was considered one of the least helpful types of academic feedback, can support students to actively engage in class discussion (e.g. Race, 2010; Gibbs, 2010) and help them to become independent learners.

When analysing preference and mode of study, full-time respondents were more likely to rank first that they preferred *face to face individual feedback* with 40.3% compared to part-time respondents with 29.9%. On the other hand, 22.1% of part-time respondents were more likely to rank first that they preferred receiving feedback *via email* compared to 14.5% of full-time respondents. Appropriate feedback methods need to be fit for purpose, not only for class size and learning outcomes, but also so students with different modes of study can effectively progress and staff can manage their workload (Brown, 2012)

2.4. Preferred method of learning and assessment

Respondents were asked to select a response that most represented how they would prefer to learn on their course. The most preferred type of study for 52.3% of the sample was a mix of *independent* and *group study* followed by *independent study* (27.4%), *work-based learning* (11.5%) and *study in group* (8.8%).

- More full-time respondents preferred a mix of both study methods (54.6%) compared to part-time respondents (40.9%). Part-time respondents (39.9%) cited a substantially higher preference for independent study compared to those who were full–time (24.5%) respectively (X^2 (3, N=1210) = 25.654, p<.01). This is not surprising as independent study provides more flexibility which part-time students stated the needed.

- Female respondents were more likely to prefer independent study (31%) than males (25.3%) and less likely to prefer group study (5.1%) compared to males (10.9%) (X^2 (3, N=1205) = 14.312, p<.01).

When it comes to preferred assessment, 50.2% of the respondents preferred to undertake individual assessments and 40.5% preferred a combination of individual and group-based assessments. Only 7.4% of the respondents preferred undertaking group-based learning assessment, and 1.9% were unsure.

- Part-time respondents were more likely to prefer individual assessments (66.2%) than full-time respondents (46.9%). Full-time respondents were more likely to prefer a combination of both assessment methods (42.7%) in comparison to part-time respondents (19.9%) and also more likely to prefer group–based assessment (8.3%) than part-time respondents (2.9%) (X^2 (3, N=1216) = 27.036, p<.01).

3. Conclusion

It is recognised at undergraduate level that effectively managing student expectations by providing targeted support, information and advice, and supporting the transition into study in the academic and non-academic spheres can impact on the resilience and success of the student (e.g. Morgan, 2013a; Thomas, 2012). Again, it is highly likely to be the same at PGT level, but it will be important for HEIs to guard against merely using and implementing the same mechanisms and processes used at UG level to support PGT students.

The project has given a valuable insight into expectation of studying at PGT level, prior and current feedback preferences, preferred methods of learning and assessment. The findings illustrated that certain student characteristics such as generation status, domicile, gender and mode of study were significant variables in contributing to different students' experiences. One of the legacies from the project is that the ESS – that captured extensive intelligence on prior learning experiences, current learning expectations, finance issues, support requirements and expected employment outcomes – has been taken into the portfolio of Higher Education Academy Surveys for development and sector implementation.

Acknowledgements

The Postgraduate Experience Project would like to thank the Higher Education Funding Council for England (HEFCE) for initiating the Postgraduate Support Scheme in England.

References

Brown, S. (2012). Diverse and innovative assessment at Masters Level: alternatives to conventional written assignments. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education, 4* (2), 85.

Gibbs, G. (2010) *Using access to support student learning,* Leeds: Leeds Metropolitan University.

Higher Education Commission (2012). *Postgraduate Education - An Independent Inquiry by the Higher Education Commission*. HEC, London.

Morgan, M. (2014a). Study expectations of 1st/2nd generation STEM postgraduate taught students. *Quality Assurance in Education*, *22*(2), 169–184. doi.org/10.1108/QAE-03-2013-0014.

Morgan, M. (2014b). Patterns, Drivers and Challenges Pertaining to Postgraduate Taught Study: An International Comparative Analysis. *Higher Education Research & Development, 33* (6), 1151–65. doi:10.1080/07294360.2014.911258

Morgan, M. (2013a). *Supporting Student Diversity in Higher Education – a practical guide.* Oxon: Routledge.

Morgan, M. (2013b). *Individual Project Report - Understanding prior feedback experiences of new postgraduate taught (PGT) STEM students' and their expectations and attitudes towards PGT level study at a 1992 institution*, York: HEA.

Morgan, M. (2011). *Improving the student experience – a practical guide for Universities and colleges*. Oxon: Routledge.

Morgan, M. & Direito, I. (2016). *Widening and sustaining postgraduate taught (PGT) STEM study in the UK: a collaborative project. Creating change through understanding expectations and attitudes towards PGT study, experiences and post-study outcomes from the perspective of applicants, students, universities and employers.* Available at: http://www.postgradexperience.org/wp-content/uploads/2016/01/Postgraduate-Experience-Report-Final.pdf

Morgan, M., & Rigby, S. (2014). The importance of understanding the expectations and attitudes of the student body, university staff and business and industry in improving the STEM postgraduate taught student experience. *The Higher Education Academy STEM*.

Race, P. (2010) *Making Learning Happen – a Guide for Post-compulsory Education,* London: Sage Publications Ltd.

Stuart, M., Lido, C., Morgan, S., Solomon, L., & Akroyd, K. (2008). *Widening participation to postgraduate study: Decisions, deterrents and creating success. Project report.* Higher Education Academy. York.

Thomas, L. (2012), Building Student Engagement and Belonging in Higher Education at a Time of Change: A Summary of Findings and Recommendations from the What Works? Student Retention and Success Programme, Paul Hamlyn Foundation and HEFCE, London.

Thomas, L. (2002). Student retention in higher education: The role of institutional habitus. *Journal of Education Policy, 17* (4), 423-442.