

The undiscovered country: widening participation to postgraduate study

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Introduction

There is a well developed body of literature (Gorard et al., 2007) and mature policy on initial access to higher education (Morris et al., 2009), but entry to postgraduate study is under-researched and widening participation beyond undergraduate level has received limited policy attention in England (Gorard et al., 2007; Wakeling and Kyriacou, 2010).

Whilst it is too early to assess the impact of the recent reforms to fees for and funding of higher education in England on progression to postgraduate study, it is an area which will require more detailed investigation (Wakeling and Hampden-Thompson, 2013). For many learners, particularly those from lower socio-economic groups, the barriers to study at undergraduate level are replicated at postgraduate level. However, research skills are not the preserve of those who wish to follow an academic career; they are central to the knowledge economy and professions in which graduates seek employment. The Panel on Fair Access to the Professions (2009) also noted that postgraduate qualifications were increasingly becoming an entry route for careers in a growing number of professions.

In this chapter we focus on an institutional initiative – an undergraduate research internship scheme – designed not only to enhance student employability but also to encourage and facilitate progression to postgraduate study. Firstly, we set the scene by rehearsing the arguments for incorporating and increasing the opportunities for research in the undergraduate curriculum, identifying the gaps in the data on postgraduate students and postgraduate study, and highlighting the limited policy attention that widening participation to postgraduate study has received. Secondly, we briefly describe the mechanics and operation of the research internship scheme. Thirdly, we outline the methods used in the research

and evaluation of the scheme. Finally, we report on initial findings from one element – qualitative interviews with interns and supervisors – of the research and evaluation.

Undergraduate research and inquiry

A number of commentators have argued that research and inquiry should be embedded in the undergraduate curriculum (Brew, 2003, 2006; Healey, 2005; Healey and Jenkins, 2009). As Ian Diamond (2010), Chair of the Research Councils UK commented: ‘Postgraduate study is too late to start; research attributes need to be integrated fully into undergraduate courses’.

When thinking about research in the undergraduate curriculum the binary divide of ‘teaching’ and ‘research’ is unhelpful, and as Boyer (1990) argues the conceptual challenge is to realise the synergies rather than the differences between teaching and research. A more helpful typology of ‘scholarship’ has been developed which identifies the scholarships of: discovery (advancing knowledge); integration (synthesising knowledge); service or engagement (advancing and applying knowledge); and teaching (advancing and applying knowledge about how to teach and promote learning) (Boyer, 1990; Glassick et al., 1996).

This typology and the ‘ideal types’ developed by Healey (2005), set out in Figure 1, might be used as a starting point to raise awareness and facilitate discussion within institutions on the value of research in the undergraduate curriculum. While more selective approaches, such as internship schemes, are common, Healey (2005) notes that the most effective way to promote undergraduate research and inquiry is to mainstream it and integrate it into the curriculum for all students.

Whilst each activity shown in Figure 1 is valuable and should be included in the undergraduate curriculum the majority of students will be a ‘passive’ audience engaging in activities in the lower quadrants as opposed to ‘active’ participants engaging in activities in the upper quadrants.

Widening participation to postgraduate study

The review of the widening participation literature commissioned by the Higher Education Funding Council for England (HEFCE) noted the gap

Figure 1: Curriculum design and the research-teaching nexus

Students as participants			
Focus on research content	Research-tutored Engaging in research discussions	Research-based Undertaking research	Focus on research processes
	Research-led Learning about current research in the discipline	Research-oriented Developing research skills and techniques	
Students as an audience			

Source: based on Healey (2005: 70)

in the research examining widening participation to postgraduate study (Gorard et al., 2007). This gap in the literature and the underdeveloped policy referred to in the introduction have to be set in context. Firstly, in the absence of a national postgraduate admissions system, the quality and availability of data about postgraduate students in higher education institutions (HEIs) is limited. This is further compounded by the complexity of postgraduate education compared to undergraduate provision (Wakeling and Hampden-Thompson, 2013).

Institutions, at least from their Widening Participation Strategic Assessments (WPSAs), are largely silent in terms of postgraduate access. Action on Access' analysis of WPSAs (from the 129 institutions required to submit a strategic assessment) revealed that the majority of institutions, over 85 per cent, do not mention postgraduate access or the postgraduate learning experience in their WPSA (Thomas et al., 2009). Only 27 HEIs, covering all institution types, make reference to postgraduate activities and of these references only 18 are specifically about widening participation to postgraduate study. Widening participation to postgraduate study is still clearly in the margins rather than the mainstream.

Informed by internship programmes in the UK, such as the University of Central Lancashire's Undergraduate Research Internship Scheme (Centre for Research-informed Teaching (CRIT), 2009), as well as student support

programmes in the USA, such as the McNair Scholars Programme (Henley et al., 2011), the University of East London's (UEL) response was to develop an undergraduate research internship scheme which would provide an authentic research experience for students.

The UEL Undergraduate Research Internship Scheme

The UEL's Undergraduate Research Internship Scheme (URIS) was launched during the academic year 2010/11, with the first cohort of interns undertaking their internship in spring/summer 2011. To date the scheme has provided internships for 108 undergraduates, including the current second cohort of 52 undergraduates who were the subjects of the research and evaluation reported in this chapter. In this section we set out the aims and objectives of the scheme and briefly describe the application and selection process for both the interns and academics supervising them.

Aims and objectives

The scheme aims to develop undergraduates' research skills further and encourage them to see research and postgraduate study as a career option on graduation. Students are given the opportunity to work as researchers and boost their employability skills by working with academic researchers for 10 weeks on a diverse range of research projects from across all schools and service departments within the university. The benefits of the scheme (UEL, 2012) are promoted to undergraduates as an opportunity to:

- Gain valuable work experience before you graduate
- Develop new skills and refine others
- Apply knowledge gained from coursework to on-the-job situations
- Reality-test tentative career choices
- Meet and work with professionals, establishing contacts for letters of reference and networking
- Experience new work environments
- Earn money

Interns are contracted to work for a maximum of 210 hours over a 10 week period for which they are paid a total of £2000 in instalments.

Application and selection process

In order to be considered for an internship, students must go through a formal application process. The recruitment and selection process consists of a short online application form in which candidates are asked to justify their choice of research project, demonstrate knowledge of research methods, and finally explain why they are interested in research and what they hope to gain from undertaking the internship. Shortlisted candidates are interviewed by the supervisor of the project they are applying for and a member of support staff. Interviewers are provided with a set of questions to ensure a degree of standardisation across all interviews. All shortlisted candidates are provided with feedback following interview.

To host an intern, academic and support staff are required to submit an application form with details of their research project, which is reviewed and assessed against a number of criteria. In addition to setting out the aims and objectives of the research project, applicants are expected to demonstrate: firstly, how they will support the intern; secondly, how the intern will contribute to the project by detailing the activities they will undertake; and finally, how the research project will contribute to the school or research area.

Evaluation of the internship scheme

In this section we briefly outline the approach adopted by the institution to evaluate the internship scheme. Whilst there are a number of studies which have investigated research experiences, there is a gap in the literature in terms of undergraduate research internships compared to internships in other settings. As Seymour et al. (2004) note there are only a few studies in which the benefit of research internships are reported. Many of the studies are descriptive accounts and are often produced by academic staff delivering the programme (Boyle and Briggs, 2007). Even where studies are well designed, with pre- and post-internship measurements, the sample sizes adversely impact on validity and they do not have a control group.

The evaluation adopted a quasi-experimental mixed methods design. Fieldwork was divided into four phases with all interns being surveyed to measure employability pre and post internship. Interns' scores were also

compared with those of a control group of learners (n=48) who were shortlisted but did not secure an internship. In-depth interviews were conducted with a small sample of interns (n=5) and supervisors (n=7). A destination survey will be administered to all interns six months after completing their internship.

Phase 1: pre internship

In this phase all undergraduates who were shortlisted and attended for interview were surveyed using a hand-out, hand-back paper-based questionnaire. Based on previous experience of administering surveys at UEL this method was chosen as it was likely to yield a high response rate. The questionnaire was designed to measure:

- transferable employability skills, based on Mulvey's 19 item Transferable Employability Skills Scale (TESS);
- perceived employability, based on Rothwell's 16 item Self-Perceived Employability Scale (SPES);
- confidence in research skills, based on a new 22 item Confidence in Research Skills Scale (CRSS).

To reduce the burden on respondents, permission was sought to link the questionnaire to administrative data held on the student record system.

Phase two: during internship

Face-to-face interviews were conducted with a small sample of interns (n=5) and supervisors (n=7) during the final few weeks or at the very end of the internship. The sample was purposive in that we aimed to include interns and supervisors from all academic schools and services. Where possible we endeavoured to conduct individual interviews with both intern and their supervisor as the aim of the qualitative interviews was to gain an understanding of the internship process from the perspective of both. All but two of the interviews were conducted face-to-face. Two interviews were conducted over the telephone, one due to the supervisor undertaking research overseas and the other because the intern had secured full-time employment. Interviews were audio recorded with the consent of the respondents, transcribed and analysed using NVivo (a computer assisted qualitative data analysis package).

Phase three: post internship

The survey administered pre-internship was re-administered online to all interns (n=52) at the end of their internship as well as to the control group (n=48) of undergraduates who had applied for an internship but were unsuccessful.

Phase four: post internship

A short destination survey will be administered online to all interns from the second cohort six months after their internship ends. The aim of the survey is threefold: firstly, to gather data on the destinations of the interns; secondly, to gather further reflective comments on the internship experience; and finally, to use these data and the information to create a series of profiles which could be used as ‘footprints’ for prospective interns. Given that 25 students undertook their internship at the end of their first or second year of study we expect them to return to study, and the 27 who were in their third and final year to have graduated and progressed either into employment or postgraduate study.

Findings

In this section, drawing on administrative data we provide an overview of the learners who successfully applied for the internship in 2011/12, the second year that the scheme operated. We then draw on the qualitative interviews with learners and supervisors to provide a more detailed account of the research experience. In particular we focus on the timing and duration of the internship, the intern-supervisor relationship, the place of internship, the developing of support networks and communities of practice, the perceived and actual impact of the internship, the destinations, and the impact on research culture.

Demographics

A total of 459 students applied for an undergraduate internship in the 2011/12 academic session, of whom 102 were shortlisted for interview. Internships were subsequently offered to 52 students after interview. The demographic characteristics of the applicants and interns are set out in Table 1.

Females were more likely than males to apply for an internship and were proportionately more successful at interview. White applicants were disproportionately more likely secure an internship than their Black or Asian peers.

Timing and duration of the internship

Timing

For many of the interns who we interviewed, scheduling the internship at the end of the semester, after examinations and coursework submission, was seen as preferable. For this second cohort, the 2012 London Olympics and Paralympics impacted on the timing of the internship. Most, however,

Table 1: Proportion of applicants and interns, and percentage chance of selection by level of study, gender and ethnicity

	No. of applicants	No. selected as interns	% chance of selection
Level of study			
Level 1	133 (29%)	5 (10%)	4%
Level 2	165 (36%)	20 (38%)	12%
Level 3	156 (35%)	27 (52%)	17%
Level 4	3	0	0%
Gender			
Male	197 (39%)	17 (33%)	9%
Female	282 (61%)	35 (67%)	12%
Ethnicity			
White	148 (32%)	28 (54%)	19%
Black	139 (30%)	13 (25%)	9%
Asian	118 (26%)	8 (15%)	7%
Mixed	17 (4%)	2 (4%)	12%
Other	37 (8%)	1 (2%)	3%

Note: 2 applications at Level 0 were received, neither of which were selected.

seemed to have negotiated successfully with their supervisors to manage workloads and others were advised by their supervisors to focus on examinations before commencing their internship.

I think the timing is right in the summer, because it would allow you to concentrate instead of increasing your workload while you are studying and doing other things, so I think it gives you an opportunity to kind of concentrate on it and learn as much as you could from it, so I think the summer is the time to do it, yeah. (Research intern, BME/male)

I sat here, I said, 'Look, I don't want you thinking about this until your exams are done. She's got to get her exams, you know... I don't want to distract her; that's what she's here to do; she needs to focus on that. The internship happens afterwards. (Research supervisor, White/male)

The majority of supervisors interviewed reported that their teaching load meant that they could not supervise during the semester.

Okay, so first of all, there are two issues. One, during teaching time, I cannot supervise somebody in the lab. I don't think that's... I don't think that that's the sort of experience I'd want to go through with them. I'd have to be around and on planet, you know, for them when we are teaching, and because I am a new member of staff, this last term was, you know, pretty crazy for me. So there's no way I could have had anybody, in fact I refused to have anybody in the lab up until when the summer started and I had cleared my teaching responsibilities, my lecturing responsibilities because, you know, that is a... it is a full time commitment with these people, you know, and so I have to be there. (Research supervisor, White/Male)

However, a small number of supervisors thought that there should be some flexibility in the timing of the internship, firstly in order to accommodate fieldwork and data collection with specific groups of respondents who would only be available during the semester or term time, and secondly because of personal commitments. As one supervisor explained:

Well, maybe there needs to be a bit more flexibility. For some projects it probably might be more appropriate to run over the summer. For the sorts of things I would be interested in, I need the school term because my research is essentially about [research topic]. I've got other demands on my time in the holidays, like children. (Research supervisor, White/female)

Duration

The 10 week duration seems to be 'just about alright' as a number of interns commented:

I think it was just about alright to be honest with you.... 12 weeks wouldn't be any sort of hardship, 8 weeks isn't long enough; I think it's just about the right time. (Research intern, White/male)

...10 weeks, I think 10 weeks is good; I think it's not too long or too short.... (Research intern, BME/female)

The place of research

Our interviews with the interns and their supervisors revealed a diverse pattern of working arrangement, not only in terms of when the research tasks were undertaken but also where. For some the place of research was determined by the project; for example, interns undertaking science based projects were often based in the laboratory for significant periods of time. For others, the place of research was determined by the circumstances of their supervisor; in some cases this meant that interns would undertake work independently at home or in the library, and in other cases they would work in a shared office with other members of the team. As supervisors commented:

...most of my research is done at home on my own, apart from when I'm interviewing people...and it wouldn't be appropriate – I mean, there are issues about having the students sitting in our office in terms of confidentiality of other students...and we've got an open plan office. So there are those kind[s] of tensions about how we manage that. We've got a room on the fifth floor for research

students, which they've been encouraged to use, and in this school, they're invited to all the seminars and things that are going on. (Research supervisor, White/female)

...their experience is what my experience is in.... You know, I'm not in a team of people doing research. (Research supervisor, White/female)

...so that she could feel supported, part of the project, just so that actually she felt like she had a space that was different to being a student, that she was learning to be a researcher and working in that kind of environment as a colleague rather than as a student. (Research supervisor, White/female)

The comment from the last supervisor recognised the importance of place in defining a new and different relationship.

Intern-supervisor relationship

All of the interns reported that their supervisors had been supportive and accommodating throughout the internship process. In particular interns welcomed the ability to work flexibly.

As long as you get the work done, you work on your own time – and as an adult learner, mature student, I'm kind of set in my ways. I know what works for me. (Research intern, BME/female)

In one instance where an intern secured full-time employment the supervisor agreed to continue the project, with the intern being supervised remotely using Skype for meetings and Dropbox (Internet/cloud based storage) for working on project documents.

A number of the supervisors, in particular those who were part of a research unit or team, elaborated on how they endeavoured to integrate their intern into both the team and the research project:

Yeah, I...we immersed [name] in what we do, ...he came to meetings.... I was very conscious to try to bring it [the research]

alive for him...so I tried to make it as real for him as possible so that it meant something, and I think we were in a...probably the second, maybe the third week of the project, and we had a conversation, and he suddenly said to me something like, 'Yeah, it's interesting now', ...and I think what really helped was involving him in the work of what we do that was being researched, rather than just the research. (Research supervisor, White/female)

The relationship with her and the allocation of tasks and the work she's doing works out really well. It's just that I'm constantly having to squeeze in supervision sessions with [name]. (Research supervisor, White/female)

Communities of practice

A number of interns commented that they would value the opportunity to meet with their peers during the course of the internship to share their experience and develop a support network. However, they recognised the practical difficulties of trying to bring their peers together due to different working patterns and other commitments. Some suggested a virtual meeting space, that using social media, such as Facebook, may meet the needs of future interns and enable them to develop a support network and community of practice.

Yeah I think that would be nice because then you know the fellow students that are doing other internships and you get to know about their project.... (Research intern, BME/female)

Supervisors with less experience of research supervision, in particular those from service departments, reported that they would welcome support and guidance, even if it was just in the form of an initial briefing with the opportunity to meet with other supervisors. A more experienced supervisor thought that such a session would be useful not only for less experienced colleagues but also for experienced supervisors as well because of the different relationship.

...and I think it's a very different beast, supervising a research student and supervising an intern. I think there are different nuances and expectations, I think. (Research supervisor, White/female)

An experienced colleague saw the benefit of developing a community of practice for supervisors:

I really like that idea of community of practice as well.... So I think it would be a really good idea, and it would be really nice to know what everybody else is doing and how they're getting on with their interns. (Research supervisor, White/female)

Progression to postgraduate study or employment

None of the interns interviewed intended to progress to postgraduate study immediately after graduating. They viewed the internship as enhancing their employability and had either secured employment or were actively seeking graduate level employment. When asked about the possibility of postgraduate study they said that getting a job was a priority. When probed a little more, all of them indicated that their motivation for getting a job was to pay off their debts and that a postgraduate course would only increase their level of debt.

I am annoyed at being poor all the time and that is probably the main reason, and I am not going to start a job which had no future in it. I am still going to carry on studying and maybe just do small professional qualifications.... I just wanted to get earning. (Research intern, White/male)

All of them said that the internship was beneficial and had given them a deeper insight into research, and that they would consider returning to postgraduate study in the future.

Erm...it's still an option for me. I have managed to find a full-time job at the minute but it is still an option; it's not exactly dissuaded me from doing it or persuaded me either, it has just developed several of my skills I believe and if I do decide to do it in the future it will be very beneficial really. (Research intern, White/male)

Afterwards, well I was thinking of studying further but I think I wanna get experience first and then go into postgraduate study afterwards, but I want a couple of years' working experience. (Research intern, BME/female)

I wasn't sure if I wanted to go and do postgraduate study so I thought it would give me some skills in research and I would learn off whoever was in charge of my project, and it might benefit any postgraduate study if I chose it. (Research intern, White/male)

Supervisors likewise saw that the internship could provide opportunities for progression to postgraduate study as well as employment.

I would see it as opening both routes up for the individual intern in terms of allowing them to see, erm...the opportunities that postgraduate study can develop.... (Research supervisor, White/male)

I think it will actually help their CVs. I think one of them wants to go into research anyway and there's another one who's got a quite definite career progression. So I think that actually to have it on their CVs will set them apart.... It's a crowded market at the moment. Students aren't getting jobs in the way that they used to and I think it'll add something. (Research supervisor, White/female)

Impact on the research culture

Whilst some of the supervisors interviewed were established researchers others were at an early stage in their career and identified the opportunity to advance their own progression through participating in the scheme.

It's good in terms of employability and all of that. But I also think it's good for the university, as advertising this is how we support research, but also as a way of supporting research, especially for early career researchers like me. (Research supervisor, White/female)

I also...I think it will really help me...the reality is [that] funding is really hard to come by and my only chance is to do little small projects, publish some papers and then try and get bigger funding. (Research supervisor, White/female)

Another supervisor explained that a project she was supervising would benefit the school:

It is also meant to benefit the new school because it's looking at the early career patterns of students from UEL who've come through in art and design or media or a creative sector subject, so looking at their experiences of making that transition from their degree into working life and looking at the process of...looking at what characterises their careers. (Research supervisor, White/female)

The next steps

At this point in time we are unable to draw any firm conclusions about the impact of the internship scheme in terms of outcomes for enhancing employability, raising academic attainment and progression to postgraduate study. However, we make a number of proposals in terms of future evaluation and research, and suggest some minor modifications for the delivery and operation of the scheme. Given that the scheme is in its early stages of development – this being its second year of operation – we would be reluctant to suggest any major changes to the way in which it operates.

Research

We would recommend that the scheme continues to be evaluated on an annual basis and that interns continue to be tracked as they progress into employment and postgraduate study. Future research could usefully explore a number of areas.

- Firstly, it would be useful/beneficial to monitor the ethnicity of successful interns in future cohorts. To date White applicants have been proportionately more likely to be selected as interns than their Black or Asian peers. If a trend is observed this will need to be addressed in the context of the equality of educational experience.
- Secondly, the intern-supervisor relationship and place of internship would benefit from further research and analysis, with the intention of developing a typology and assessing the impact that these different scenarios have on employability outcomes and postgraduate progression.
- Thirdly, the impact of the scheme on individual supervisors and the broader research culture within schools could be reviewed by assessing

whether the research projects had made any contribution to both the individual's and the school's research area. This may be done using the measures provided by the applicants in the research proposal as well as other metrics such as research outputs and research income.

Enhancing the scheme

The operation and delivery of the scheme could be enhanced and developed in a number of ways to the benefit of the interns, supervisors and the institution. Firstly, this could be done by adopting the interns' suggestion that a virtual space should be provided which would enable them to develop a support network or community of practice. This could be facilitated by the institution in the first instance, with the interns managing the process thereafter. Secondly, training and guidance should be available for less experienced supervisors. Information could be provided through a briefing session, a set of guidelines or both. Thirdly, at the end of the internship supervisors should encourage the interns to complete a self-assessment.

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