1.3 Where teaching meets research

Engaging postgraduate teaching assistants with research-based education

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1. Introduction

Employing doctoral students to teach, especially on large undergraduate courses, has long been a feature of higher education in the USA. While it is not in itself new in UK institutions, what might be considered a more recent trend is the growing scale on which it is happening, and the increasing dependence of many degree programmes on this – and other – part-time staffing (Park and Ramos 2002; Muzaka 2009). UCL is no exception: the institution has around 6,000 students engaged in doctoral research, and while it is not possible to quantify the number contributing to departmental teaching activities, annual attendance at the university’s mandatory training workshop for all PhD students with teaching or assessing responsibilities is around 600, from across departments. This demonstrates the high level of reliance on this cohort for the delivery of a range of activities.

Winter et al. (2015) point to the simultaneous growth in the UK of the professionalisation of the practice of university teaching, citing the development of training courses for graduate teaching assistants (GTAs) as part of this agenda. Again, UCL’s recent development of training provision through its Arena programme (discussed in detail in Section 3) mirrors research by Lee et al. (2010), which found that over 50 per cent of UK training courses for GTAs were compulsory, 57 per cent were assessed, and that content was increasingly aligned with the UK Professional Standards Framework (UKPSF).
In 2002, Chris Park and Marife Ramos published the first UK study to explore the experiences of the country’s growing body of GTAs – a contribution the authors felt to be already overdue. The study called for further research and discussion around the role, funding and frameworks to support this group, who, the authors concluded, often perceive themselves as the ‘donkeys in the department’. Subsequent research has sought to further unpick this ‘niche’ role (Muzaka 2009), while other research has focused, for example, on the specificities of the international GTA experience (Winter et al. 2015) and how disciplinary differences can shape GTAs’ expectations of their training and development (Chadha 2013).

This chapter adds to this small, but growing, literature on UK GTAs by focusing, in line with the overarching aims of the volume, on the role of GTAs in the development and implementation of a research-based education model. As an educational developer running a training scheme for GTAs, and as a contributor to the R=T initiative, I have observed first-hand their role at the meeting point of research and education. Many of our group of R=T student authors, brought together here in Section 2 of the book, form part of the large body of UCL GTAs, while others have current and previous teaching responsibilities that they combine with research and professional roles. I would argue that all of the group, as early-career researchers and teachers, can be said to occupy a unique space which bridges the taught student experience and the research environment.

With an enthusiastic and open-minded approach to their teaching, GTAs are not only receptive to new ideas but, moreover, are often skilled at bringing creativity and originality to the classroom. By first identifying how some of the specificities of GTAs’ experience and role can positively impact a research-based education model, and then presenting a case study of a training programme which supports them in creating innovative student learning experiences, I advocate for an approach to research-based education that engages closely with GTAs. In both pragmatic and conceptual ways, their experience and insight can inform and strengthen curricula. At the heart of a research-based education agenda is the breaking down of traditional academic hierarchies, and this approach can offer a vital first step in doing so.

2. GTAs and the research-based education model

Graduate teaching assistants can be considered to hold a unique position at the intersection of research and education. Often only recently
emerging themselves from the taught student experience, they can be expected very quickly to start working with undergraduate (and, in some cases, Masters) students in a range of teaching, assessing and mentoring situations. Simultaneously they are on the threshold of their own disciplinary research environment and of the wider academic community. This close proximity to what have sometimes traditionally been two quite delineated communities creates an exciting environment for innovation, which has all too often been ignored due to what are perceived, understandably, as the challenges of giving comparatively inexperienced members of staff substantive teaching responsibilities. Yet, all too aware of the challenges that will face them as they enter a competitive marketplace, GTAs can often be highly motivated to develop themselves professionally, and are receptive to exploring new approaches and methods.

While there is little doubt that GTAs need to be properly trained and supported to undertake teaching and assessment, and that their main priority must always be their doctoral studies, there is great potential to be explored in creating opportunities for their close engagement in the experience of taught students. Having recently completed a programme of study, for example, might provide a GTA with insight into both the positive aspects and drawbacks of an established course, which existing staff members may be unable to identify. A survey of undergraduates, GTAs and staff in a social sciences department at the University of Sheffield sought to explore the beneficial and problematic aspects of GTA-run seminars. One of its findings of perceived benefits for students suggested that GTAs ‘recent university experience gives them additional awareness and knowledge of what might work best for students in this setting, thus helping to keep “seminars useful and interesting”’ (Muzaka 2009, 4). Students also commented that GTAs were better at stimulating discussion and were not afraid of trying new methods. Staff, meanwhile, suggested that GTAs tend to be more open to innovative teaching methods, more enthusiastic about learning to teach and more capable of providing an informal learning environment (ibid.). For programme and module leaders, GTAs can offer valuable support in suggesting and implementing change.

Yet, in spite of these compelling arguments (and there are likewise pragmatic ones: in a culture of growing student numbers, GTAs and other part-time staff allow for scalability of provision), there remains an assumption that GTAs will only undertake teaching in bounded situations with little space for autonomy or responsibility (Park and Ramos 2002; Muzaka 2009). This does, of course, reduce the risk of them being
over-burdened and, for departments, could be perceived as a necessity for matters of quality assurance, but this lack of ownership over course content and delivery negatively impacts both the GTAs and their students:

This has an important bearing on the GTA’s sense of identity and academic value, particularly for those who see themselves as apprentice academics. It severely restricts the GTA’s ability to exercise academic leadership and responsibility, and compromises the way their students see them. (Park and Ramos 2002, 51)

Mazuka’s (2009) survey indicated much the same. However, it also suggested that while GTAs rarely saw themselves as having ownership of, or authority in, their teaching responsibilities, many staff, by contrast, did indeed perceive them as ‘academic apprentices’ (Mazuka 2009, 10). This might suggest, in turn, a willingness to allow them some freedom and creativity in their teaching practices.

It seems salient at this point – as we begin to touch on ideas of innovation – to turn to our central question of engaging GTAs in a research-based education model, and the specific advantages associated with this. Scholarship advocating a closer integration of teaching and research suggests a number of arguments which – when considered in our context – provide compelling reasons to further this agenda. Jenkins et al. (2003, 41–8) suggest that enhanced motivation for both staff and students is a likely outcome of a curriculum which emphasises the linkages between teaching and research. They argue, for example, that staff discussing research with students is an opportunity to develop trust and intimacy, and share interests (and discover the interests of the student). Such conversations can be used to discover learner goals, explain why knowledge is useful and make learning interesting and relevant. The authenticity with which many GTAs would no doubt discuss their research may provide a motivating factor for students to engage more deeply with the discipline.

Similarly, research-based education encourages staff to share their learning experiences and frame themselves as fellow learners rather than experts (Jenkins et al. 2003, 41–8). GTAs can act as role models, presenting a possible pathway for less experienced learners and an archetype of the experience of seeking knowledge for intrinsic good, rather – as may be the case for some learners, particularly at the outset of their studies – as learning for short-term benefits and strategic goals. Sharing the challenges of research is of equal importance, and by doing
so, GTAs (as all staff members) can help students develop strategies to ease anxiety. Once again, it is the distinctiveness of their particular position that increases the potential gains here: GTAs will be no strangers to setbacks in the research process, and, coupled with their concurrent experiences of robust processes of feedback, peer review and criticism, they can introduce to learners (over-achieving ones in particular) the realities of dealing with uncertainty and the threat of failure. Turning again to the findings of the University of Sheffield survey, Mazuka argues that, ‘being a GTA, and not necessarily an “expert”, could be beneficial in that a GTA’s own inquiry into the subject area may help to convey students the message that knowledge is not transmitted but actively constructed’ (Mazuka 2009, 9). What some students might, understandably, perceive as a lack of knowledge or experience in their teaching staff could be usefully reconceptualised to emphasise the role of higher education not as knowledge transfer from ‘expert’ to student, but to create an environment designed to foster independence, critical thinking and the ability to handle change and uncertainty.

At our R=T Launch Event, Professor Elizabeth Shephard, UCL Biosciences, described what she viewed as one of the fundamentals of research-based education in the scientific disciplines – which in itself can be suggested as a means of reducing anxiety and learner stress. In this undergraduate model, integration into both the discipline and the research environment is a stepped process: the first year is about developing the relevant skills set, learning the technology, building confidence and becoming numerate, coupled with a first-year tutorial system that includes a lab visit in which all students meet research staff. In this way students begin to appreciate the people behind the research. The second year involves group work and guided projects. By the final year, students are ready to challenge themselves and carry out an independent research project. The aim, for Liz, is to ‘inspire students to be enchanted by science’ (R=T Launch Event).

It is a traditional model for curriculum design, which has been well-used in the sciences – and to varying extents in the arts and humanities – but it can also be re-conceptualised as something more innovative than that. In a study of first year undergraduates’ experiences of research, Levy and Petrulis (2012) found that, by the middle of the first year, many students were not able to explain what research by advanced scholars might entail. They therefore emphasised ‘the need to help first years to situate and connect their own experiences of inquiry and research more clearly with those of more experienced researchers in the discipline . . . to move students towards more advanced conceptions of inquiry and of themselves as student-researchers’ (Levy and Petrulis 2012, 98). It is this
connection that is happening in the Biosciences tutorial system and is a conclusion that aligns with Lave and Wenger’s (1991) communities of practice, in which learning occurs socially and ‘novice’ members of the community learn to think like members of the discipline by participation in its work. Angela Brew (2012) suggests that for the maintenance and continuation of this community, its experienced members have a responsibility to induct its new members into it. Her argument reinforces the legitimate sense of community proposed by Lave and Wenger, in which there is a shared responsibility for the maintenance of the community, for carrying on its traditions and for moving it forward to the future. Returning to many of the scientific disciplines, there can already be the convention that at each stage of a career, one has the responsibility to induct those at the stage below: the postdocs induct the postgraduates, for example, and the principal investigators the postdocs. It should not be too great a step to see the GTAs inducting the taught students.

Indeed, implementing a through-line of research to a degree (as proposed by Fung’s Connected Curriculum [2017], and which is, to a certain extent, the Biosciences model) might mean an ‘apprenticeship’ model where mistakes need to be made early on and steps need to be repeated and practised – something which GTAs are ideally placed to support. That said, this model used in the sciences is not without its faults: it implies a one-way transmission of information and expertise, while in Lave and Wenger’s framework teachers’ and students’ activities are not seen as separate, and learning is reciprocal. Similarly, in other disciplines (such as the humanities) in which research work can be less collaborative – where colleagues’ research interests are sometimes only tangentially linked, and the progression from student to PhD to postdoc to Principal Investigator is not so clearly defined – it might be challenging to see how the model could be put in place, but it is not impossible. Encouraging all members of the community to participate in its work and learn collaboratively within it will foster both a collegial environment and an identification with a department, discipline or culture, and is ultimately of benefit to all. As Brew argues:

The development of academic communities of practice where both students and academics engage as legitimate peripheral participants cannot take place without the relationships between students and their teachers changing. What I have suggested means breaking down the distinctions between teaching and learning as both teachers and students explore the issues which confront them. (Brew 2012, 111)

For me, a vital step in this process is the greater involvement of GTAs and other early-career researcher–teachers in taught provision. Above,
I noted how engaging with research-based education can be beneficial for staff as well as students, and also how GTAs are often intrinsically motivated to develop themselves professionally (and our collection of chapters in Section Two of this volume certainly provides evidence of both). Centring their discussion on GTAs’ engagement with teacher development programmes, Winter et al. suggest that:

Engagement with [a] GTA course can potentially enhance [...] GTAs’ understanding of the expectations upon them in their wider PhD role. In order to develop academically, the PhD candidate as a student-researcher must become reflectively aware of their metacognitive strategies within the appropriate cultural context as well as developing their research potential; these are interlinked practices which are increasingly recognised by the institutions governing research careers [Vitae, 2011]. (Winter et al. 2014, 40)

Resources such as Vitae’s Researcher Development Framework (2011) recognise the value and importance of teaching (and teacher development) to the early-career academic. Moreover, it is instructive to acknowledge that in a research-intensive environment such as UCL, staff can be the beneficiaries of a reconceptualised relationship between research and education (Brew 2012). However, where studies have predominantly discussed how research can inform teaching, Winter at al.’s findings thus suggest possibilities for advocating the benefits of ‘teaching for research’ (2014, 40, emphasis mine). The training and development of research students is a key strategic priority for many UK higher education institutions. I would argue that not only should doctoral candidates and early-career researchers be encouraged to teach, but that they should be closely and actively involved in the development and implementation of a research-based education model. UCL’s development programme for GTAs, Arena One, seeks to prepare research students for their teaching responsibilities in a research-intensive environment; in Section 3 of this chapter I offer it as a case study for how an institutional programme can help to support GTAs as they cross some of the boundaries from student to teacher.

3. Case study: A training ground for research-based teaching practitioners

UCL’s Arena One is a training pathway composed of three steps: an initial, mandatory ‘Gateway’ workshop for all PhD students who teach, assess or
support students’ learning; an optional five-session course based around peer dialogue and self-reflection; and finally the opportunity to submit an application for Associate Fellowship of the Higher Education Academy (AFHEA). The case study focuses on the full process from first workshop to successful completion of the application, in order to foreground the GTAs’ burgeoning self-confidence and their increased understanding, and implementation, of research-based learning activities.

The Gateway workshop is most PhD students’ first introduction to teaching, and many are understandably anxious. Participants are encouraged to engage with an online learning environment in advance of the first session and contribute to an activity designed to demonstrate that these anxieties are common and reasonable. An anonymous ‘hot question’ function invites them to submit a query or concern and then vote for one of the others. The top concerns are addressed directly in the session, and it is hoped that indirectly many of the others will also be considered. Alongside the validation that comes with recognising that they are not alone in their worries, the exercise models a helpful teaching technique that the GTAs can go on to try with their own classes. The ‘hot questions’ posed across all workshops are remarkably similar: how to respond to a question to which you do not know the answer; how to engage students to participate actively in class; how to manage quiet or disruptive students; what are the boundaries for giving support and feedback; how to ensure marking is at the appropriate level; and how to work with students from diverse backgrounds. In response, the workshop introduces participants to the principles of active learning and introduces them to classroom techniques that promote student participation, rather than being tutor-led. Its central aim is to welcome and induct GTAs into the community of UCL teaching staff and to provide an opportunity to meet fellow GTAs: there is a strong institutional focus to the session and plenty of occasions for GTAs to network with peers from across the disciplines.

GTAs who wish to progress from the Gateway workshop to the full Teaching Associate Programme are required to have some prior teaching experience or to be teaching at the same time as following the course. This allows them to put into practice what they are learning and means they are able to write about their experiences in their future applications for AFHEA. As this is an optional programme, it tends to attract the most highly motivated research students who are willing to engage actively with both their continuing professional development and their educational roles. That said, the majority do not have responsibilities for course design and most of their teaching remains small group or lab-based, rather than more traditional lecture style (as was noted above to
be common across the sector). They are nonetheless encouraged to try out new techniques in the environments available to them and are given support in designing sessions and activities.

The programme is centred around peer dialogue and group activities, with the tutors’ role being predominantly to facilitate interaction and discussion. Both formal and informal feedback garnered from the GTAs suggests that what they most value from the course are these opportunities to learn from and interact with their peers, alongside the modelling activities that they can take forward to their own classes. The second session builds on the basics of active learning discussed in the Gateway workshop and expands on this to introduce the GTAs to research-based teaching, both as a concept and as it is being put into practice institutionally. The GTAs work in groups to design a research-based learning activity, and their resulting ideas are often inventive and sophisticated; they are also, perhaps most importantly, generally realistic and achievable. Here are three examples of the activities proposed:

My group decided that we would create a walking route and communicate this to students ahead of time. Students would be placed in small groups and required to select a building located on this walking route to present to the class. Roughly, students would be looking at the who/what/when/where/why/how related to the building’s construction, its current status, and could potentially remark on the building’s future. The class would thus consist of a tour created by the students themselves. The outcome of this exercise is to get students applying processes/terminology discussed in previous classes into a real-world context. Teamwork will be required in order to create a thorough and cohesive group presentation. We are interested in the following: what can we know about the building by experiencing it? And conversely: how does our knowledge affect the experience? (Doctoral student in the UCL Slade School of Fine Art)

My group decided that we would present the class with an object/text/plan (we all come from different disciplines – but all wanted to approach an object in a practical way) and discuss possible approaches or solutions to it. For example, if it is a text to be translated, how we would consider certain words or phrases. In the case of an art object, we would consider its material, its techniques, etc. We would then split the class into smaller groups and present each group with a different object, expecting them to go through the same process again, but without being led by the teacher. The students would come up with their
own approaches to the object at hand, and then later feed this back to the other groups. This way the teacher plays a limited role, and it is the students who really guide the learning of the whole group through their interactions with one another, and their engagement with a specific problem (as problem-based learning). (Doctoral student in the UCL School of European Languages, Culture and Society)

This activity was aimed at science students learning about microbiology. The activity involved students taking swabs from their home environment (kitchen, computer, bathroom, living room, etc) and cultivating them, identifying the organisms and then doing standard antibiotic resistance testing. Learning outcomes for this activity would include practical tasks of micro culture, resistance testing, microscopy, sample collection. The results could be collected and collated and the activity repeated over several years to build up a temporal picture of microbiological species in the environment and resistance patterns that would be built on by future classes. (Doctoral student in the UCL Division of Surgery and Interventional Science)

Interestingly, many of the activities were similarly based around this ‘legacy’ concept, whereby the outputs produced by students could be modified and built upon by subsequent cohorts. As many of the GTAs had recently completed a taught programme of study, they were perhaps all too aware of the frustration of their own, ‘valuable essays simply [sitting] in piles collecting dust for three years, then [getting] thrown out’ (Chang 2005, 387). Unwittingly, the GTAs had designed activities similar to the innovative work of a previous UCL colleague, Hasok Chang, who designed just such a project, ultimately resulting in a collaborative monograph. Chang has described the resulting volume as, ‘the product of a unique educational experiment, a pilot project aimed at a full integration of teaching and research at the undergraduate level’ (Chang and Jackson 2007, 383). Likewise, as one student from the UCL School of Slavonic and East European Studies reported:

The aim of our activity [gradually developing with subsequent student groups a peer-reviewed volume in Political Science or an online archive in History] would be to familiarise students with the research process and to create learning conditions in which they encounter the frontier of research in a certain field as opposed to relying on textbooks. If the students are producing a publication, they would have the satisfaction of seeing their work in print. Likewise, if the students
gradually produce an archive, they would not only become very familiar with the content of the source materials they were cataloguing, but they would also become adept at locating and working with primary sources. (Doctoral student in the UCL School of Slavonic and Eastern European Studies)

The final stage of the GTA training programme is the option to submit an application for AFHEA. For many, this is a major incentive for participating in the course: the opportunity to gain professional recognition is understandably appealing to students on the verge of entering the competitive job market. It is highly gratifying to read these applications and to observe how, with even a limited teaching load, but by participating in a peer-led, supportive training environment, GTAs can quickly come to be inspired by one another to create innovative student learning experiences. Reflecting back to the initial Gateway workshop and how so many of the concerns raised centre on, ‘But, what if I don’t know the answer?’, the GTAs gain an understanding that they too are experts, and that by integrating their own research into their teaching they can establish their expertise and authority. Moreover, they develop an appreciation of how exciting this can be to students and how they can play a role in making student learning relevant, challenging and inspirational.

4. Conclusions: GTAs and the R=T initiative

The unifying thread – and unique element – of the chapters written by the GTAs in the R=T initiative is that they are authored by academics at the meeting point between the taught student experience and the research environment. Working with this group on the R=T initiative has reinforced my belief in the fundamental importance of an approach to research-based education that engages coherently and robustly with GTAs and other early-career academics. The benefits to students, staff and the individuals themselves are unmistakeable. In a higher education environment which is seeking actively to encourage individuals and teams to think deeply about the nature and practices of their own research, to invite students at all levels to learn through engaging in some of those distinctive practices, to take students to the edge of knowledge, and to change the nature of the dialogue between staff and students (Fung 2017), there is a key role to be played by those at the confluence of research and education.
Notes

1. At UCL, doctoral students who teach are known as PGTAs (postgraduate teaching assistants), and go by a variety of other names at different institutions. It is common in the literature to use the term GTA, which has thus been adopted for the purposes of this chapter.

2. Based on a survey with 68 respondents, of which 82% offered developmental opportunities to GTAs.

3. See Dwyer (2001) for an analysis of the core tutorial programme in UCL Geography, which centres on geography as research practice. One of the first activities involves students ‘meeting the researcher’: interviewing an experienced member of staff about his or her research, the challenges, processes and ‘messiness’ of the research process (2001, 359).

4. See, for example, the 2016 UCL Doctoral Education Strategy: http://www.ucl.ac.uk/gs/doctoral-education-strategy/Doctoral-Education-Strategy.pdf [Accessed October 2017]

References


Park, Chris and Ramos, Marife. 2002. The donkey in the department? Insights into the Graduate Teaching Assistant (GTA) experience in the UK. *Journal of Graduate Education* 3, 47–53.
