

# The graduate teaching assistant (GTA): lessons from North American experience

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The employment of graduate students on a part-time basis to help with the teaching of undergraduates is growing in the UK and many higher education institutions are confronted with challenges about how best to do this. UK institutions have much to learn from North American experience of appointing graduate teaching assistants (GTAs), and this paper seeks to highlight key lessons by reviewing published literature on the use of GTAs in North America. After sketching out the emerging context in the UK, some important implications of North American experience in the selection and preparation, training, supervision and mentoring of GTAs are explored. The paper also identifies lessons relating to practical issues (including communication and managing conflict), personal issues (including reflective practices, and issues of identity and self-worth) and professional development issues (including GTAs as aspiring academics and the ambiguity of the GTA role).

## Introduction

Higher education institutions (HEIs) in the UK are increasingly making use of graduate students to help with the teaching of undergraduate students. The larger and more research-led North American universities have long used graduate students as teachers, particularly on large introductory undergraduate courses (Shannon *et al.*, 1998). The role of the graduate teaching assistant (GTA) has grown because of greater student diversity and an increased emphasis on undergraduate education (Nyquist *et al.*, 1989).

In North America, the GTA is a recognized position, with its own status and niche within the higher education system. A GTA position provides funding for postgraduate research, although the main purpose is to provide teaching support and it often serves as the first career step for an aspiring academic. In a small but growing number of HE institutions in the UK, a GTA holds a recognized post and is an employee. However, the more common model in the UK is still the graduate student who teaches, whose main role is as a research student and who engages in some teaching, often primarily in order to secure financial support and, often secondarily, to gain teaching experience. These two models differ in emphasis and orientation, and the postgraduate experience differs greatly between them.

Given that universities in North America have long and often successful traditions

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of employing GTAs, there is merit in examining North American experience and evaluating the lessons it might hold for HEIs in the UK.

### **Context**

Many HEIs across the UK are confronting the challenges of teaching ever-increasing numbers of undergraduate students, whilst coping with serious and mounting resource constraints (including funding, facilities and staffing). Graduate students have often been employed on a part-time basis to help deliver this teaching load, traditionally as laboratory, practical and field class demonstrators, and leaders of tutorials and seminar groups (Goodlad, 1997). Departments often rely heavily on this cohort of part-time teaching staff, who are typically well motivated, have at least sound subject knowledge and acceptable proficiency in teaching, are invariably cheap to employ, and tend to be adaptable and flexible as employees (Gillon & Hoad 2001).

It's not just a question of coping with large classes, because North American GTA models serve a number of needs—including reducing teaching loads and thus increasing research time for academics (Eble, 1987), providing financial support for graduate students (Stockdale & Wochok, 1974), and offering an apprenticeship model for future professors (Lambert & Tice, 1993).

### **Selection and preparation**

The selection process must be fair, transparent and consistent, and the outcome can seriously influence GTA effectiveness and thus student learning.

Important selection criteria, which often correlate closely with effectiveness, usually include appropriate subject knowledge, aspects of the student's undergraduate university (Pickering, 1988), previous training and teaching experience, and written and spoken language proficiency for non-native speakers (Yule & Hoffman 1990). Effective GTAs have or can master a rather daunting range of relevant competencies, including ability to cope with stress, and set realistic goals and priorities, understanding of what to reasonably expect from undergraduate students (particularly new ones) and of how to conduct productive class discussion, how to foster autonomous skill development, and how to measure and evaluate student progress (Sheehan *et al.*, 1986; Allen & Reuter, 1990). Simpson and Smith (1993) identify 26 competencies that are important for GTAs.

Once selected, the GTA needs to be prepared for the tasks ahead. Effective preparation of GTAs is usually achieved by means of a carefully constructed programme of appropriate activities, some voluntary, but others compulsory, delivered at both departmental and institutional levels.

For many GTAs preparation is both a discovered and a learned experience, as they find out what it means to be teachers as well as graduate students. Staton and Darling (1989) argue that this early socialization is vitally important, because the skills, behaviour and attitudes developed as a GTA have a major impact on future development as an academic. Milner-Bolotin (2001) goes further, in describing how

GTAAs can create an effective 'teaching community', which can inject change in the culture of teaching in a department, thereby increase GTA satisfaction and, at the same time, enhance the learning experience for the undergraduate students they teach. For international GTAAs, an effective preparation programme can also significantly increase their perceived level of self-confidence about their ability to teach in English (Salinas *et al.*, 1999). Meyers (1998) emphasizes the importance of supportive communication relationships (between GTAAs, with course leaders and organizational leaders) during the assimilation stage.

## Training

Training means the process of bringing the GTA to an agreed standard of proficiency by practice and instruction, and much of the North American GTA literature explores this important theme (Lambert & Tice, 1993). Many North American universities have developed GTA training programmes, based on the premise that teaching can be learned, practiced and continually improved.

Many of the North American GTA training programmes are taught by full-time professional trainers, but some also use experienced teachers as role models, to inspire and motivate the GTA trainees, as well as educating them (Knotts & Main, 1999). Peer mentoring can also offer many benefits that complement the work of the professional trainers and experienced teachers (Bollis-Pecchi & Walker, 1999–2000). Hollar *et al.* (2000) describe a scheme at Cornell University's College of Engineering that trains experienced engineering graduate students (called TA Fellows) to deliver instruction in teaching to GTAAs.

A great deal of attention has been paid in North America to the design of effective GTA instructional programmes (Burk, 2001). Common ingredients include the use of active learning strategies (Meyers & Prieto, 2000b; Johnson, 2001), such as in-class activities, written assignments and modelling, and observation of the teaching/learning process. Constructivist learning strategies—in which GTAAs construct their own understanding through guided questions, problem-solving, reading and analysing papers, discussions of their teaching experience and group work—also offer great potential (Etkina, 2000). Other useful ingredients include the provision of formative evaluation (Lawrenz *et al.*, 1992) and summative assessment (Robinson, 2000), and the use of learning sets, observer groups and peer support (Croteau & Hoynes, 1991) and other strategies that foster social interaction in the learning environment (Robinson, 2000). The evidence also suggests that GTA training underpinned by transfer of training principles (Notarianni-Girard, 1999) and by motivational principles (Ralph, 2001) can produce much more effective teaching and learning. The effectiveness of GTA training programmes can be assessed in a variety of ways, including classroom evaluations, student feedback, and self-evaluations (Trautwein, 1999).

Much GTA training is orientated towards generic teaching skills, because this is usually a cost-effective way of delivering training to large groups of aspiring GTAAs, but also because every GTA should have a sound grounding in core skills (Abbott *et al.*, 1989). The precise list of generic skills deemed most appropriate will

doubtless vary between subject areas. Content analyses of GTA training manuals often uncover an emphasis on both intellectual and inter-personal material (Lowman & Mathie, 1993).

Training in generic teaching skills is usually complemented by more discipline-specific subject training (Korinek *et al.*, 1999). For example, McGivney *et al.* (2001) found that maths GTAs' beliefs about the teaching and learning of their subject informed their teaching practice.

It is certainly not a case of 'one size fits all', and decisions about appropriate forms and amounts of GTA training should be informed by a range of factors, many of them specific to the student and their background (Mueller *et al.*, 1997; Meyers & Prieto, 2000a). Commander *et al.* (2000) recommend that such decisions should follow a proper needs assessment process, which takes into account the needs of the graduate student, the department and the institution. International graduate students are often employed to help teach foreign languages and they often have quite specific training needs (Azvedo, 1990). This group—referred to in North America as International Teaching Assistants (ITAs)—poses particular challenges because of linguistic differences, and cultural diversity and sensitivity.

Empirical studies have shown how appropriate GTA training can enhance the learning experience for both teacher and taught. Prieto and Altmaier (1994), for example, found that GTAs with prior training and some teaching experience were more effective teachers than those without, and Prieto and Meyers (1999) showed that formal training has a positive, statistically significant effect on psychology GTAs' sense of self-efficacy toward teaching.

GTA training strategies should involve ongoing activities and opportunities, not just the formal training programme. Rushin *et al.* (1997) found, in a nationwide survey in the USA, that even when there is some formal structure in the GTA training program, these experiences are usually brief and follow-up activities are generally loosely defined or non-existent.

Good GTA training programmes evolve through time, and keeping them fresh and updated is an ongoing challenge. Winternitz and Davis (2000) describe how the University of California–Davis Program in College Teaching has adapted in order to enhance satisfaction among participants and mentors, and to increase employment success by participants. Thornburg *et al.* (2000) identify seven key elements (leadership, teaching attitude, financial resources, modest growth pace, institutionalization, willingness to change and a history of success) that have enabled that program to mature and be revitalized.

### **Supervision and mentoring**

In North America the GTA's teaching is usually supervised by the leaders of the courses they are attached to, and peer mentoring—the pairing of a new GTA with an experienced one—can also provide extremely useful support and guidance (Puccio, 1986). Supervisor and mentor play different roles, the former as line manager and director, and the latter as role model and peer support, but both roles are important ones, which demand commitment of time and energy. They also bring

responsibility for overseeing the work and professional development of one or more GTAs (Sprague & Nyquist 1989).

Nyquist and Wulff (1996) explore the supervisory challenges facing academics as they prepare graduate students to become better teachers and researchers, and they suggest how staff might best think and plan as supervisors. However, the role of GTA supervisor is often a complex and demanding one, with success contingent upon an effective inter-personal relationship between supervisor and supervised. It can be a challenging experience for supervisors, many of who often feel unsupported and disenfranchised (Slick, 1998). Many GTAs regard frequency of supervision as inadequate (Prieto, 1999) and many prefer a collegial style of supervision to a style that is a primarily task-orientated or interpersonally sensitive (Prieto *et al.*, 2001).

Supervisors are often closely involved with the evaluation of GTA performance and effectiveness, although the feedback and opinions of those they teach can be highly informative (Yule & Hoffman, 1993). Few studies have examined the factors that influence the instructional effectiveness of GTAs, although Bos *et al.* (1980) explored the relevance of factors such as the gender, age, degree, undergraduate major and teaching experience of the GTA.

### **Practical issues**

A variety of practical issues have to be addressed successfully by any GTA intent on performing the role properly. Among the more obvious is the GTA's knowledge of and, thus, ability to advise undergraduates about the availability of campus resources such as study skills help, academic advisory services, special needs services, library and IT facilities, careers advice and health services (Anon., 1985). Learning how to deal effectively with conflict (particularly with the students they teach) is a major concern for many GTAs, although the evidence shows that ability to deal effectively with conflict can be improved by participating in a conflict management workshop (Bloemhof & Zorn, 1999–2000). Less obvious, but also important, is the matter of how GTAs dress while they are teaching; Roach (1997) found that students were much more likely to misbehave when their GTA dressed casually than when the GTA adopted a more professional dress code.

Communication issues lie at the heart of many of the tensions confronting GTAs, in terms of communicating with their students, socialization with their peers, and professional relationships with their supervisory and other academic colleagues (Ferris, 1992). Feezel and Meyers (1997) found that GTAs experience eight interrelated types of communication concern (self, task, impact, role conflict, teaching, area knowledge, procedural knowledge and time management), the strength of each depending on a range of factors, such as the GTA's expected duties, prior teaching experience, newness to the area, foreign or domestic birth, and age.

Communication is often a major concern to international GTAs, whose language proficiency and ability to communicate clearly in English can be variable and who may be particularly susceptible to cultural miscues (Jenkins, 1997). ITAs can benefit a great deal from special training to improve their ability to communicate in ways that encourage and allow participative learning by their students (Rubin, 1993).

Crittenden (1994) contends that the lack of attention given to the role of the ITA is surprising and short-sighted, particularly in North American universities committed to internationalizing the curriculum.

The need for both the graduate student and their department to strike the right balance between fulfilling teaching duties and engaging in research, to enable successful completion and submission of the PhD, is another important practical issue and common tension (Park, 2002).

### **Personal issues**

North American GTA experience suggests that two key personal issues are effectiveness and identity.

Many GTA training programmes place great emphasis on identifying what makes an effective teacher, and on adopting appropriate practices and behaviour, in order to optimize learning opportunities (for students) and job satisfaction (for the GTA). GTA effectiveness can be improved through self-reflection and reflective practices, because they increase self-awareness and help in the recognition of things worth changing. One useful tool is the keeping of a diary or journal (Anon., 1995), in which the GTA logs not only their activities, but also their reflections on experiences, including the highs and lows, the successes and failures. Effective reflective activities—such as the analysis of videotaped teaching sessions, and sharing of ideas and feedback with peers and mentors—help the GTAs to evaluate the difference between their actual and theoretical teaching styles (Robinson *et al.*, 1997). Smith and Simpson (1993) found that one key discriminator of successful international GTAs is their ability to continually redefine personal goals to make them increasingly compatible with department-imposed conditions. Effectiveness should logically increase with experience, which is why many universities adopt a journeyman approach in which the GTA is given more responsibility, independence and authority with successive years' experience (Halo, 1964).

GTAs often confront issues relating to identity and notions of self-worth, as their views, beliefs and ideas are tested and refined in the crucible of classroom contact with students. Lal (2000) provides a graphic illustration of this in the context of gender, race and culture, reflecting on her own experience as a GTA when white students resisted a text that included works by women of colour that were critical of white, middle class feminism. Tang and Sandell (2000) outline innovative ITA training programs that focus on sensitizing new ITAs to cultural differences and teaching strategies commonly used in American classrooms.

### **Professional development issues**

A prominent theme in the North American GTA literature is the need for appropriate professional development, both to optimize their effectiveness as teachers today and to prepare them to serve effectively as professors tomorrow (Marinkovich *et al.*, 1998). This inevitably gives rise to some tensions between present and future needs, and between the roles of the GTA as researcher and teacher. Morris (2001) has

shown how classroom practices adopted by language GTAs differ from their professed beliefs about teaching, which the GTAs attribute to difficulties arising from their status as students and novice teachers.

Many GTA training programmes are based on an apprenticeship learning model (Nyquist *et al.*, 1991), but this is only really appropriate if every GTA wishes to pursue a career as an academic. Student perceptions of the pros and cons of an academic career vary greatly, in part reflecting the GTA's own personal experiences both as teacher and as student (Austin, 2002). Bomotti (1994) identified a range of potential experiences that influence GTAs' view about an academic career, the most positive factor being high-quality supervision as a research student. For those GTAs who aspire to remain in academia, as teachers and researchers, advice is available on a number of key themes, including preparation of a teaching philosophy statement (Ellis & Griffin, 2000), developing a professional reputation (Hinkle, 2001) and effective strategies for academic job searches (Formo, 1995).

The Preparing Future Faculty (PFF) programme outlined by Anderson *et al.* (1997) is a collaborative programme in the USA that brings together clusters of doctoral and partner undergraduate institutions to plan programs that introduce graduate students to faculty life in a variety of campus environments. Tice (1997) highlights key ingredients of successful PFF programmes, which include providing graduate students with the opportunity to work with mentors, access to advanced teaching assignments, opportunities to participate in academic service activities, access to professional development and career development programs, faculty involvement and leadership, and the establishment of partnerships with diverse institutions.

GTAs occupy a somewhat ambiguous niche, at the same time serving as teachers and students, employees and apprentices (Vaughn, 1998). Little wonder they are often seen by others, and often see themselves, as 'neither fish nor fowl' (Park, 2002). One North American response to this recurrent tension has been the unionization of GTAs, which began in the early 1980s (Rogow & Burch, 1984). Where it has occurred, it has inevitably changed the nature of relationships between the GTAs and their employers, but it has also brought GTAs benefits, including participation in collective bargaining agreements and strengthening of complaints procedures (Streitz & Hunkler, 1997).

## Conclusion

This article has sought to identify some of the more important lessons from at least three decades of North American experience of employing graduate teaching assistants to help with the teaching of undergraduate students, based on a review of published literature. HEIs in the UK have much to learn, but also much to gain from that experience. One key lesson is the need for a cohesive framework for the employment of GTAs, which should logically include the themes covered in this review (Table 1).

If appropriate institutional frameworks can be established, the gains could be numerous and enjoyed by the different groups of stakeholders (the department,

Table 1. Summary of lessons drawn from North American experience

*Overall*

1. A GTA is more than simply a postgraduate student who teaches—it is a recognized post, with a respected and clearly understood niche within the academic hierarchy
2. Universities in North America often have long experience of developing effective GTA systems, and HEIs in the UK have much to learn from that experience of GTA systems, most of which is very positive
3. Employment of GTAs to help teach undergraduates brings a range of benefits, including:
  - reduced teaching loads and increased research time for academics;
  - secure and sustained funding for postgraduate research students;
  - relevant teaching experience for the GTA;
  - an apprenticeship model for future professors
4. Carefully designed systems and procedures are required to ensure that GTAs are able to perform their teaching role in an effective manner
5. Appropriately trained GTAs can deliver teaching in a variety of contexts, including demonstrating in lab, practical and field classes, leading tutorials and seminar groups, and lecturing (particularly in introductory undergraduate courses)
6. The design of sustainable GTA models must recognize and take into account the recurrent tension for the individual graduate student, between time spent teaching and time spent on research. This has significance for job satisfaction, research completion, thesis submission and completion rates

*Selection and preparation*

7. The selection process for GTAs:
  - should be fair, transparent and consistently applied;
  - affects GTA effectiveness and thus student learning.
8. Selection criteria for GTAs:
  - should be appropriate to the task the GTA is expected to perform;
  - should include subject knowledge and previous training and teaching experience;
  - should include written and spoken language proficiency for non-native speakers.
9. The competencies expected of a GTA should be defined and included as part of the selection process
10. A thoughtfully designed GTA preparation programme:
  - can be of great help in preparing GTAs for duty;
  - might include compulsory and voluntary elements;
  - should be a multi-stage process, involving orientation, induction and assimilation;
  - can significantly increase self-confidence and thus potential effectiveness of international GTAs;
  - should aim to build and sustain supportive communication relationships.
11. Properly prepared GTAs can play a part in developing and sustaining an effective ‘teaching community’ in a department, which can add vibrancy and enhance learning experiences.

*Training*

12. Teaching can be learned, practiced and continually improved.
13. A thoughtfully designed GTA training programme:
  - can enhance the learning experience for both teacher and taught;
  - should include both generic and subject-specific elements;
  - should include active learning strategies, constructivist learning strategies, activities that foster social interaction, and motivational strategies;
  - should include both formative evaluation and summative assessment;
  - should be informed by a proper needs assessment process;
  - should make special provision for International GTAs, because of linguistic differences and cultural diversity and sensitivity;



- should involve ongoing activities and opportunities, not just the formal training programme;
  - should evolve through time, by adaptation and improvement.
14. Experienced teachers can be highly influential role models for GTAs being trained.
  15. Peer mentoring can greatly assist the GTA training process.

*Supervision and mentoring*

16. GTA supervisors:
  - are traditionally the course leader
  - should be properly supported and empowered
  - should meet regularly with their GTAs
  - should preferably have a collegial rather than a task-oriented style of supervision
17. Peer mentoring can provide a GTA with useful support and guidance

*Practical issues*

18. GTAs should have good knowledge of, and be able to advise students about, the availability of campus resources.
19. GTAs need to be able to deal effectively with conflict (particularly with the students they teach), and this should be an element in GTA training.
20. Many of the tensions confronting GTAs are related to communication issues, and these should also be an element in GTA training.
21. Communication issues are a particular concern to international GTAs.
22. Attention must be paid to striking the right balance for GTAs between teaching and research.

*Personal issues*

23. GTA effectiveness can be improved through self-reflection and reflective practices, which increase self-awareness
24. GTAs should be encouraged to evaluate the difference between their actual and theoretical teaching styles, using appropriate reflective activities
25. GTAs should be encouraged to continually redefine their personal goals in the context of department-imposed conditions
26. GTAs often confront issues relating to identity and notions of self-worth, particularly relating to gender, race and culture

*Professional development issues*

27. The GTA experience can be valuable preparation for aspiring academics
  28. High quality supervision as a research student can have a very positive influence on a GTA's choice of an academic career
  29. Preparing Future Faculty programmes can be very useful in encouraging and enabling GTAs to make the transition from students to academics
  30. GTAs sometimes experience difficulties arising from their ambiguous status as students and teachers, employees and apprentices
  31. Unionization of GTAs changes the nature of the relationship between the GTAs and their employers
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academic staff, graduate students and undergraduates). Benefits include delivering teaching to large numbers of undergraduate students, releasing teaching staff time for research activities, increasing funding opportunities for research students, and offering an apprenticeship for future professors.

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