
WORKSHOP REPORT

Offering Training to Postgraduates who Tutor in Mathematics Support Centres

(Report of a workshop held on Monday 23 July 2012, University of Birmingham, UK)

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Abstract

This report summarises the deliberations which took place during a workshop held to discuss issues to consider when recruiting and training postgraduates to work in mathematics support centres. It distils the current wisdom of a group of mathematics support professionals with experience of managing and tutoring in mathematics support centres. There exists an active national network (the sigma network) for those involved in university mathematics and statistics support; this report concludes by identifying how members of the higher education community may participate in this network.

Keywords: mathematics support, postgraduate tutors

Increasingly, mathematics support centres are employing postgraduate students to offer one-to-one and small group help to students who drop in for assistance. In many important ways, the nature of this help is different from that provided in traditional tutorials for which the postgraduates may well have had some training. For example, in a traditional tutorial the postgraduate tutors will know in advance which students and which courses they were tutoring. On the contrary, in many support centres students on any course, perhaps at any level, in the university might drop-in for assistance. The postgraduate students needs to be aware of the demands of the role and the expectations placed upon them, and particularly the importance of contributing to a welcoming, non-judgemental and supportive ethos. When delivering a traditional tutorial the obvious source of help for the postgraduate tutor is the module lecturer – a person with whom they are most likely already liaising closely. There is no obvious person playing a similar role when working in a mathematics support centre.

In conjunction with the National HE STEM Programme, sigma has run several training events for postgraduate students and, with the increase in the number of mathematics

support centres within universities, demand for such training is expected to continue. From experience gained delivering these training events a publication has been produced specifically for the use of postgraduate tutors – Tutoring in a Mathematics Support Centre – a guide for postgraduate students – multiple hard copies of this resource are freely available upon request (contact: a.c.croft@lboro.ac.uk). The guide is also available on-line: <http://www.mathcentre.ac.uk/resources/uploaded/46836-tutoring-in-msc-web.pdf>.

On 23 July 2012 a workshop was held at the University of Birmingham, not for the postgraduate tutors themselves, but for those who employ, work with, or are responsible for training them, for example support centre managers. The aim of the workshop was to provide an opportunity to share experiences of managing or working in mathematics support and to explore how local postgraduate training needs can best be met.

The day began with a brainstorming session to identify themes for later discussion that would be of particular interest to those present. These were:

- Recruiting and advertising for postgraduate tutors; producing a job specification and a person specification.
- The role of a postgraduate tutor; what can/should postgraduates do? What should they not do?
- The role of undergraduate ‘tutors’ in a support centre.
- Administrative issues.
- Training; access to university qualifications, certificates of attendance, potential for Higher Education Academy (HEA) recognition.
- Supporting the postgraduate tutors.
- Documentation, data collection, quality assurance and evidence which might be required for institutional audits.
- Statistics support.

Thereafter, the workshop focussed on as many of these themes as time permitted and these discussions are summarised later.

Recruiting postgraduate research students as mathematics and statistics support tutors

The discussion on recruitment of postgraduate research students centred on recruiting students with the appropriate skills for working in the mathematics and statistics support environment.

The advertisement for the post would better achieve its purpose if it were transparent and specified the *target audience for mathematics support* and their possible level of need. Recruitment was also carried out through recommendations from peers, lecturers, supervisors and staff, with an interview process of some kind. Sample advertisements, job and persons specifications were shared amongst those present.

Tutor qualities or specifications for the tutor role could comprise of mathematics and statistics qualifications and teaching experience. It was acknowledged that a certain level of mathematical and statistical knowledge and abilities can reasonably be assumed for science based postgraduates, but it was recognised as being equally important that learning and teaching skills were either present or that there was a potential for developing these skills with appropriate guidelines, or through nurturing and mentoring. Skills thought

to be important were the ability to recognise students' needs, that is, to identify support needs beyond the need perceived by the student themselves, in particular helping students identify their own actual need by unpicking the problem and through clever questioning.

Although teaching experience is desirable, tutoring in a support centre requires particular skills, hence recruiting tutors with the potential for development as well as qualifications and experience is important. It was felt that the statstutor video on unpicking the research process would be a good means of training the tutors (see <http://www.statstutor.ac.uk>).

Possible questions to help in the selection process were discussed. *Why do you want to work at the support centre? State what knowledge, qualification and/or skills make you ideal for this work?* These are purposeful questions. As working in a mathematics support centre is different from other forms of teaching, it is important postgraduates have an appreciation of this difference, and a genuine desire to work within the mathematics support environment.

Chetna Patel reported that, at the University of Sheffield, tutors are recruited through recommendations by peers and staff and interviewed by the centre's manager. Andrew Mead reported that the University of Warwick is introducing formal recruitment of undergraduate and postgraduate mentors via advertisement, application and group interviews. Student mentors are recruited because they are thought, in some cases, to be better communicators and are appropriately skilled to deal with students' requests and hence provide support within the disciplinary context and with empathy.

What can/should/shouldn't postgraduate tutors do in drop-in centres?

Firstly, it was thought to be good practice that the role of postgraduate tutors should be focused on tutoring and interacting with students. Apart from necessary tasks like recording student attendance, administrative duties should be avoided, or failing that, kept to a minimum. In interacting with students, tutors should be encouraged to help students develop approaches to tackling their mathematical problems for themselves rather than solving the student problem and providing the solution. Where possible they should encourage group work and learn how to manage group work, though it was recognised that the ability and confidence to do this comes with experience. This not only makes the session less taxing for the tutor but also benefits the students academically and socially.

It was also felt that tutors can sometimes address more generic academic skills such as time management and study skills from a mathematics perspective where appropriate. They should be aware of other relevant services (Disability, Counselling, Careers, etc.) that they can alert students to (but see the caveat later). It was considered useful for tutors to log the problems seen – e.g. topic/module/programme so that any recurring problems can be highlighted. Additionally, it was regarded as important to have a senior member of staff available (e.g. on call) who can provide the postgraduate tutor with additional support in case of a crisis (e.g. distressed students, etc.). It was also suggested that the postgraduates could be provided with a named mentor – someone not necessarily a part of the mathematics support centre but who has an affinity to mathematics support more generally. Such a person will then be able to offer informal advice and support to the postgraduate tutor if necessary.

There were some definite no-no's clearly identified!

The postgraduate tutor should be made aware that no-one expects them to know all the answers. Don't be afraid to say 'I don't know how to do this'. (It's ok to be outside of one's comfort zone!) Treated carefully, this can be a useful learning exercise for the student too.

The postgraduate tutor should not do coursework questions for students.

Postgraduate tutors should avoid, by and large, giving out non-mathematical advice. For example, they are not trained as counsellors to help students in distress, nor do they have the skills to diagnose conditions such as dyslexia. If students themselves raise such issues the role of the postgraduate is to direct the student to other more appropriate channels, or refer the matter to a responsible member of university staff.

Tutors should try to act professionally at all times, and avoid casting aspersions on colleagues, for example, if they identify mathematical inaccuracies within any lecture notes or materials that the student may bring with them.

It is particularly important postgraduates are aware of the ethos of a mathematics support centre and that they try not to judge students – rather they are there to help students to achieve their potential as far as they are able to.

Access to university qualifications, certificates of attendance, potential for HEA recognition

Professional recognition for postgraduates for the time spent in training and the experience gained in a support centre was thought to be highly desirable. Not all postgraduate tutors may be interested, but it was felt that some, particularly those who have aspirations to work in university teaching might find formal recognition valuable. Certificates of attendance at training events can be produced quite easily.

Rob Wilson (Cardiff University) drew the group's attention to a development within his institution. The University Graduate College at Cardiff established a pilot scheme in Spring 2012 to enable postgraduate research students with teaching responsibilities to achieve associate status recognition from the HEA. The scheme allowed selected postgraduates to be supported in their submission of an individual application on the basis of their experiences in teaching and learning in higher education. To increase the success rate of submissions, postgraduate research students were paired with a mentor to read and advise on their application before submission. The cost of submission was a one off fee of £100 which includes lifelong membership of the Academy; this has to date been paid by Cardiff for postgraduates wishing to participate. If an applicant is unsuccessful at first submission, the HEA accepts a re-submission without incurring further fees.

Details of the criteria and the process for achieving associate fellow status can be obtained from the HEA (<http://www.heacademy.ac.uk/associate-fellow/applying-to-become-an-associate-fellow>), but typically applicants provide a description of their professional practice, and obtain supporting statements from two referees; the application must also be endorsed by an institutional signatory confirming the application has institutional approval. Applicants have to demonstrate that descriptor D1 of the UK professional standards Framework is satisfied: *'Demonstrate an understanding of specific aspects of effective teaching, learning support methods and student learning'*. At the time of the workshop two students, who had been tutors in the Cardiff Maths Support Centre and who had undertaken other teaching/demonstrating duties within School of Mathematics, had applied. The group agreed that this was a positive element that could be offered to postgraduates who assist in mathematics support centres but the following considerations are required:

- Would the mathematics support centre itself be willing, or indeed able, to contribute to the cost of submission?
- Who would act as mentors for the postgraduate tutors? This responsibility ought not necessarily to fall solely on the centre manager.

- Should any additional support be made available for such students who wish to apply for accreditation?

Other themes

It was felt particularly important that good records be kept of training events (the names of the postgraduates who attended and the nature of the training they received). Clear protocols regarding expectations, duties, mentoring, etc., were considered particularly valuable – and may well turn out to be useful evidence should the support centre come under scrutiny during internal and external audits.

The day whizzed by, and contributors had so many ideas, and so much enthusiasm and wisdom to offer it was impossible to capture everything. Some of the themes need to be explored in more detail in the future – but that is for another day!

Getting more help

The mathematics support community is a highly collaborative one and a huge array of resources that others have already produced is freely available. Many members of the community have shown over the years that they are happy to share their experiences and offer advice to those new to the field. If you contact the coordinator of your local sigma regional hub, they should also have information on experienced members of the community who will be willing to offer advice, assist in or direct a training session. There are several people involved in the sigma network who are experts at providing training opportunities. Some hubs also organise central tutor training sessions which can be attended by individuals from institutions across that region.

The sigma network now has a JISCmail mailing list. The address is sigma-network@jiscmail.ac.uk. This list is for anyone involved in cross-university mathematics and statistics support, including those working in mathematics support centres, and anyone with an interest in innovative teaching and learning support in mathematics and statistics. The list will be used to:

- send out announcements of events, resources and other items of interest to the sigma-network community;
- seek help or advice from other members of the sigma-network community on general issues relating to the organisation, provision and evaluation of mathematics and statistics support;
- share experiences of good practice or seek collaboration on new initiatives.

Further information about the sigma network can be obtained from David Bowers, University Campus Suffolk, (d.bowers@ucs.ac.uk), Chair of the sigma network for cross-university mathematics and statistics support (www.sigma-network.ac.uk).