Supporting teaching and learning – Is there a future?

Warren Gilchrist
Emeritus Professor
Sheffield Hallam University and RSS Centre for Statistical Education (RSCSE), Nottingham Trent University
w.g.gilchrist@shu.ac.uk

The tradition of MSOR Connections articles is to deal with new developments in teaching and learning in mathematic, statistics and operational research (MSOR). All the evidence is that there is a real growth in this area, for example:

• there are the new Centres for Excellence in Teaching and Learning (CETLs);
• the Maths, Stats & OR Network (MSOR Network) has pioneered many new developments;
• internationally, there are new journals and conferences and emphasis on research;
• universities are now providing training in teaching and learning for new staff; and,
• there have also been major new initiatives in the USA with potential benefit to all.

From the Government’s and Higher Education Funding Councils’ viewpoint we are doing more than ever before to develop teaching and learning in the universities. We are really trying to provide the best education for the student body that is increasing in both size and diversity. In statistics, the Royal Statistical Society Centre for Statistical Education (RSSCSE), based on an MSOR initiative, has, for several years, been offering its RSS-accredited Certificate in Teaching Statistics in Higher Education. See, for example, www.rsscse.org.uk/activities/programme2.asp, where the course is described. There is a parallel activity in its final stages for the operational research (OR) community. Also, the mathematics team have developed many training activities and materials. A look at the web site of the Higher Education Funding Council for England (HEFCE) (http://www.hefce.ac.uk/learning) will show a range of initiatives centrally funded in the teaching and learning area; for example, the MoreMathsGrads project (http://www.moremathsgrads.org.uk) is funded by the Higher Education Funding Council for England (HEFCE) and is a collaboration between five MSOR organisations. It is believed, on good evidence, that many individual teachers have been encouraged and inspired by these initiatives. However, the initiatives are beginning to look like system components looking for a system. Some of the components are in the MSOR area, but many are beyond our influence.

Listed below are some of the issues that make this situation a matter of concern:

a) The Royal Statistical Society (RSS) has recently published a report on the staffing of the teaching of statistics [1]. From this, it is clear that the staff numbers in statistics groups with an RAE grade of less than 5 are dropping and only the 5 and 5* are recruiting new statistics staff. The latter groups have largely abandoned service teaching, sometimes this being forced on them, and focus on research as their significant source of funding. Thus the groups that support the bulk of basic
statistics teaching across the whole sector are weak and getting weaker. The strong would seem to have little incentive for funding staff development in teaching and the weak lack the resources and any new staff to develop. One long-term consequence of these trends is that future lecturers will have almost all come from backgrounds with a predominantly research, and not teaching, emphasis.

b) The experience of the statistics group of the MSOR Network based at the RSSCSE at Nottingham Trent University is worrying. Having developed learning material for personal use, for use in university new staff courses and for general staff development purposes, it has so far been used exclusively by individuals, mostly medical statisticians, as the RSS-accredited Certificate in Teaching Statistics in HE. No university has incorporated the materials into their generic course for new staff or used it for more general staff development, although some have considered it. These new staff courses are effectively funded as generic education courses, with no resources for discipline-based elements. The use in continuing professional development (CPD) of experienced staff seems to be some way into the future, particularly as CPD is seen almost exclusively in subject terms rather than in pedagogic terms.

c) The issues facing MSOR are not apparently unique. The Higher Education Academy (HEA) report “Formative Evaluation of Accredited Programmes” [2], is a very positive review of the work of the “accredited” programmes for the education in learning and teaching for new staff. However, it also implicitly raises the discipline specific problem, which the statistics team at the MSOR Network have met through their direct contact with universities. That there is a problem is evidenced by the comments in the report’s summary that there is “substantial variation in the way Departments see the programmes” and “the relationship between the generic aspects of teaching and the more discipline specific aspects is problematic”. This latter comment presumably relates to the answers to the only discipline related “question” in the study’s questionnaire, namely – “the programme has an appropriate balance of generic knowledge and discipline specialist support”, with which 39% of participants disagreed and 29% agreed. One problem is that, whilst generic elements for a programme can be taught to a class of new staff by a few suitable education staff, provision of subject specific elements is difficult within the resources of a single university. Though the HEA makes noises about incorporating subject specific training, the reality is that universities only fund generic courses. Weak solutions available at present are that staff may be directed to the HEA subject centres’ pedagogic web sites or workshops and to the Supporting New Academic Staff (SNAS) database [3] of subject specific pedagogic material on the HEA site. They may have a subject lecturer as a mentor, however compared with schoolteacher training, where subject specific pedagogy is a significant element, the weakness of this aspect of the programmes is both apparent and disturbing. Would other courses be allowed to leave such an essential element of their area to private study and usually provide no specialist assessment? All teachers know that no assessment implies no importance. The MSOR community has a significant knowledge base of discipline-specific pedagogic research and experience, with its own literature and journals. Such expertise resides in the HEA Subject Centres and now also the CETLs, but there is no requirement that universities make use of these resources.

d) The new CETLs are well funded, but only for a limited period. They are developing a wide range of excellent initiatives, see for example the “sigma - Centre for Excellence in Mathematics & Statistics Support” [4]. But the CETLs have to operate by best practice example and the new ideas and approaches will only be adopted in the rest of the university sector if there are the incentives and the resources. Financial pressures on subject groups are such that it is unlikely that best practice will be copied unless it can be done for free or at a perceived profit. The CETLs have to survive by self-funding after 2009 and one wonders where this funding will come from.

e) The study published by the RSS [1] has underlined the picture of university departments as research-based businesses with all the pressures and resources focused on matters other than the staff skills and development in teaching and learning. The RSS Centre for Statistical Education might itself be a victim of these pressures.

f) There are now far more teaching and learning support services in universities and more training opportunities available for staff; great strides have been made in this direction. The use of Virtual Learning Environments (VLEs) has in fact helped rather than hindered as some feared. As always, the enthusiasts are making their contributions and moving the boundaries forward. However, the pressures on the average lecturer are not supportive and many staff just seem overwhelmed with the research and administrative pressures.

g) The MSOR Network has developed several mechanisms for delivering staff development. Other HEA Subject Centres have also been working on this, but as there is no overall common policy in this area, there is no simple mechanism enabling a single university to imbed these varied initiatives in their programmes.

As is implicit in the above comments, and also a conclusion of the RSS report of (a) [1], there is an evident lack of a coherent system or strategy within university
education. There are many sources of provision for teaching and learning but no clear structure or resource by which the universities may systematically make use of this provision. It would seem reasonable that the providers and the universities co-operate more in finding ways for the effective use of the work of the providers in the development of discipline specific teaching and learning skills for both new staff courses and for CPD. Innovation is fine but at the end of the day the universities need a coherent provision across disciplines. We also need to think hard about the future funding of all the current activity in say five years time. The Maths, Stats & OR Network already acts as a forum for discussion and co-ordination of teaching and learning initiatives for the MSOR community; as part of developments of a new mathstore web site, soon to appear at: http://www.mathstore.ac.uk, there are plans to include an online forum for discussion, debate and sharing of your ideas on teaching and learning with the wider MSOR community. Please do suggest ways ahead or, better still, tell me I am worrying without cause.

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References


