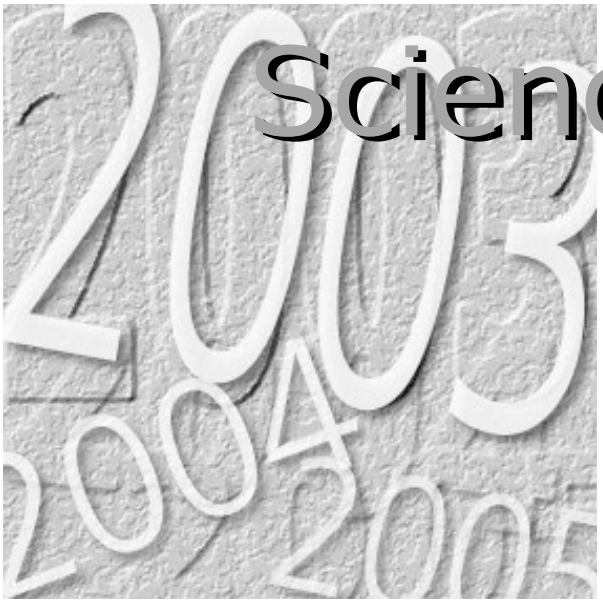

Science teachers

visibility good?

Roger Lock

In looking ahead to the coming year, Roger Lock finds that there are significant grounds for optimism in the world of secondary teacher education. After many years in which originality and innovation seemed to be discouraged, Roger takes heart that several developments are coming together to help put teacher education back on course.

The forecast for initial teacher education has frequently, of late, led some initial educators to feel pessimistic about the future. I feel, however, that there are grounds for optimism.

Let's start where it makes a significant impact, in the pocket. Training salaries and 'golden hellos' at the start of their second year in post have helped with recruitment of trainees and led to many feeling more positively about their pay. Repayment of student loans over early years of a teaching career may help to offset the wastage we are currently experiencing in this period.

The introduction of the new standards will make the nine-month period of initial teacher training via the PGCE, at least, seem more manageable to the tutors. The students themselves will not realise the benefits that come through not having to visit all elements of the 4/98 Standards, the ITT Curriculum for Secondary Science, the ICT in Subject Teaching Curriculum, etc. Yes, I know that the expectations that these documents raised are still embodied within the 'slimline' look that the new QTS Standards have, but these latter make fitting it all into a 36-week span seem much more possible. Another important point is that trainers, mentors and teachers have been both consulted and heeded with many of their concerns actioned in the standards – a significant step forward.

So, what about integrating the Key Stage 3 Science Strategy into our courses? Forward looking here too. For the first time in my experience, initial teacher trainers have been offered courses which help them to keep pace with developments in school. This Continuing Professional Development (CPD) has not only provided us with the same materials that are in use in school for the pilot phase and the national role out (itself a complete innovation – please take note Qualifications and Curriculum Authority, Examination Boards, et al), but also one or two members from each institution have been actively involved in up to three days training followed by the cascading system to colleagues back at base. Formerly, it would have cost us in both time and financial terms to keep abreast, never mind ahead, of the game as we currently appear to be. How welcome a similar approach to the introduction of the National Curriculum or AS/A2 level would have been. Full marks to the DfES for their vision. However, I don't think our courses need much, if any, modification to meet the strategy expectations, but it will help to enhance the credibility of some of the approaches our students take to schools, that might formerly have seemed a bit fuzzy.

I'm feeling positive about understanding of subject knowledge too, and not just because the Key Stage 3 Strategy is giving a long-awaited impetus in taking a constructivist approach more seriously. Science graduates take on a challenge, matched only perhaps by PE teachers, and that is to teach not just from the relative comfort of their own curriculum area, but also to embrace that of two or more other science subjects as well. Now while asking a biologist to teach about radioactivity is not exactly parallel to requesting a power lifter to lead a dance and movement class, we haven't exactly been spoilt for choice with resources to point our students towards for developing their subject knowledge. Where do you go after the Brunel website (www.brunel.ac.uk/faculty/ed/fls/)? Well, now there's an answer, or soon will be. The Institute of Physics is developing a multifaceted package, which will be designed to develop the confidence and competence of all those who end up teaching physics to 11 to 14 year-olds. In addition to

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helping with understanding of the physics concepts, the CD-ROMS that the project will produce will provide tried and tested teaching strategies which will help to make physics more interesting and engaging. Some challenge there! Specifically targeted materials such as these should ease the concerns that we and our students have about expecting to get subject knowledge across the sciences up to scratch in a single short course.

If we've got a bit jaded with 'two-page spread' science and wonder what happened to those innovative curriculum projects that help to welcome our protégés to the bright new world of science teaching, then they're there too. Unlike many innovations of the recent past these have been piloted, tried and tested before becoming widely available. I'm thinking here of Salters' Horner's Physics, Salters' Nuffield Biology, and GCSE Science for the 21st Century. It seems to me that the House of Commons Science and Technology Committee's Report on *Science Education from 14 – 19* was either ill advised or chose to ignore the innovative strategies that such developments embody. The novel approaches extend to assessment strategies as well. Strategies that have been enthusiastically endorsed by QCA. It is difficult to see how these could leave pupils bored and scampering for the arts and humanities!

The horizon is quite bright on the research front too. The DfES Best Practice Research Scholarships have helped more science teachers, frequently supported by teacher trainers, to get a first taste of education research. While we've yet to feel the benefits of such work impinging more broadly than the classrooms of those involved, that time will come. With work at King's College London, and the Universities of Leeds and York showing that science education research can have a formative role, it is likely that more such research will be funded. Indeed, recent announcements from the Wellcome Trust, regarding its financial support for education research and for the establishment of a nation Centre for Excellence in Science Teaching, show that such developments are already underway.

The CPD entitlement of teachers is already enhanced through the Key Stage 3 Science Strategy. This will develop even more significantly with the establishment of national and regional centres for excellence in science teaching. It's inconceivable that tutors in university departments will not be involved in this development in a major way.

It's not all fair weather and plain sailing, however. We are accustomed to gales approaching us from all directions: Fastnet, German Bight and Rockall! Now, as always, our approach will be to steer a course through the storm and safely deliver our NQTs at the doors of their expectant schools. A current key issue is that training teachers is a loss-making business and the extent of the loss is causing some of our establishments to reconsider their commitment to initial teacher education. I saw in the press recently that it costs £55,000 to recruit a single fast-track teacher. In contrast, most universities recruit candidates of similar, or higher, calibre at a mere fraction of that cost. Another challenge is that many of us struggle to attract schools and mentors who are prepared to be involved in initial training. As with previous gale warnings, we will persevere and continue to steer our customary true course. Despite the gathering of storm clouds, the visibility remains good.

Roger Lock is a lecturer in science education at the University of Birmingham.