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A reflection upon the *Getting Practical* programme: rethinking how we teach practical science

This article gives an overview of the Getting Practical training programme of professional development for all those involved with teaching practical science at primary, secondary and post-16 levels. The programme is being led by the ASE, working with its co-ordinating partners: the Centre for Science Education, Sheffield Hallam University; CLEAPSS and the National Network of Science Learning Centres and alongside several other important contributing and supporting partners. It is being delivered by over 200 experienced trainers across the country and will be properly evaluated by the Institute of Education, London.

An overview of the *Getting Practical* programme

The *Getting Practical* programme is introduced on its website with the comment: *'The UK is one of the leading countries in Europe for including practical work in its science education curriculum, so why as a country are we struggling to find young people who wish to continue their study of science past GCSE level?'* The programme is in part a response to a report by SCORE (the Science Community Representing Education) in 2008, *Practical work in science: a report and proposal for a strategic framework*. This report found that: *'There is a strong commitment to high quality practical work in science among teachers, technicians, and other stakeholders alike. There is a wide range of good practical work in science taking place across the UK but there are indications that the situation could be improved by extending good practice and focusing on the quality, rather than just the quantity, of practical work.'*

Effective pedagogy is at the heart of improving the quality of practical work in science. When well planned and effectively implemented, practical work stimulates and engages students' learning at varying levels of inquiry, challenging them both mentally and physically in ways that are not possible through other science education experiences.'

The *Getting Practical* website draws the following conclusion from the SCORE report 2008:

'Although there are a number of good quality practical science resources available, some practical work in schools and colleges can have a limited effect on a young person's engagement and learning.'

Most people involved in science education would agree that practical work can truly inspire, enthuse and delight students. However, the challenge is to move students away from simply 'following a recipe' to thinking about why they are undertaking practical work, and how observations can be explained by thinking about the science. Students can often leave a practical session being unclear as to the expected learning outcomes, even if they have enjoyed and completed the activity within the lesson. Sometimes teachers observe that their students complete practical work, obtain some great observations and may mark this down as a successful lesson. The question to ask is, did students really understand the science?

Delivering the training

I became involved with the programme after reading an ASE newsletter advertising for possible trainers. My own 'train the trainer' session was an intense day, ably led by John Walker from the NSLC. We were shown the course materials, which are designed to be delivered over six hours. The materials and delivery can of course be adapted slightly to suit the target audience. These 'train the trainer' courses have been run across the country, allowing the *Getting Practical* programme to be delivered nationwide. The programme is fully funded by the DCSF for two years. The cost of the course is free to all participants; however, there is an expectation that all participants attend for the full six hours. Costs incurred by trainers, photocopying costs and refreshments are also met out of these funds.

My sessions were delivered at Redborne Upper School, Bedfordshire, over two Tuesday mornings (9.00am until 1.00 pm). There was one week between the two four-hour sessions to keep up the momentum of the programme. The sessions were purposefully longer than 3 hours, to allow for a more relaxed schedule with plenty of valuable discussion time. Rather than a laboratory, we used a comfortable room in the training school at Redborne, with a range of quality refreshments: this may seem trite, but experience dictates that comfort leads to improved participation.

As trainers we had full access to the *Getting Practical* wiki, (not open access) and this was certainly invaluable in planning the sessions and allowing adaptation of the electronic materials to suit my own style of delivery (fewer slides, more discussion) and the participants. There is also a website for the teachers to access; however, at the time of writing, this has not been used by my colleagues (perhaps because I have been mailing material directly to them). I have used the site myself and will be adding some of the practical material and links to my own department site.

The training for 10 participants from eight different schools (Key Stages 2 to 5 (ages 7-19)) was remarkably well received. The evaluations were universally positive: *'this was truly a superb workshop.'* *'This course really helped me put a better perspective on how I carry out practical lessons in my teaching.'* In the evaluations, when the participants were asked: *'How likely are you to use any of the materials provided and/or share them with a colleague?'*, all answered 'very likely'.

The main points from the session

Although the idea of 'hands on, minds on' has always been key in my lessons, the pupil refrain during a practical lesson: *'so what should I do now?'* is still ever present. Delivering training on this

