



Improving Practical  
Work in science

# Getting Practical and the national network of Science Learning Centres

■ Georgina Chapman ■ Mark Langley  
■ Gus Skilling ■ John Walker

*The national network of Science Learning Centres is a co-ordinating partner in the Getting Practical – Improving Practical Work in Science programme. This article describes how the cascade model of training has worked and how the National Science Learning Centre (NSLC) has embedded the programme into one of its core courses for early careers teachers. The Getting Practical wiki site is also introduced.*

## Training of local trainers

The principle of training provision for the *Getting Practical* programme is a cascade model. Regional trainers employed by the national network of Science Learning Centres trained the cohort of local trainers at the regional centres. These local trainers have been working with local schools to deliver the training to teachers. The local trainer cohort is made up of Advanced Skills Teachers, Specialist Schools and Academies Trust (SSAT) Lead Practitioners, and independent consultants. The potential danger with such a long cascade model is that the key messages can be 'lost' or 'diluted' as recipients of the training at each level interpret it in their own way. *Getting Practical* has attempted to avoid this in two straightforward ways.

Firstly, and probably most importantly, the key message within *Getting Practical* is a simple one. In a nutshell, this programme asks teachers to think afresh about the *quality* of practical science teaching. Although some of the training tasks are quite specific, there are no complicated messages or routines to be

learned. Most participants experience their 'Eureka moment' during the course, and all take away the 'Staging or Planning Tool', which is a handy quick-reference guide to use whenever planning practical work. Secondly, because *Getting Practical* is such a simple concept, it matters little if trainers adapt the materials for their audience as long as the key message is preserved. In fact, this is actively encouraged as a means of seeking improvement and in the spirit of professional reflection. After all, it would be poor training that espoused a message it did not itself subscribe to and model.

A further important aspect of the training is the flexible delivery models offered. The course training is designed to be 6 hours long and can be delivered as a single 6-hour session, two 3-hour sessions, or three 2-hour sessions. The multi-session models do offer a

convenient gap during which participants can digest and reflect upon part of the training before continuing. Many participants have found this to be a useful feature. Others prefer to undertake the whole course in one day.

The cascade model and delivery methods are being considered as part of the programme evaluation. The results of this evaluation, being carried out by the Institute of Education, University of London, will be published later this year.

## Embedding *Getting Practical* in a National Science Learning Centre course

Research by Robin Millar (*SSR*, Sept 2009, 91, (334)) suggesting that teachers, particularly those new to the profession, are not embedding good quality practical work into their science teaching, led the National Science

## Electronic circulation for region newsletters

Alongside the major restructuring that is taking place, ASE HQ is re-examining everything that we do. Every opportunity is being explored to improve efficiency and modernise our communications. At present, most regions publish a newsletter up to five times per year. All the newsletters are currently submitted to ASE HQ and each is posted in the appropriate region area of the website from where they are freely available to download. Most, though not all, newsletters have also been printed and distributed as an insert with EIS.

After much consideration, this will no longer be the case. The printing and distribution of the paper versions are very time-consuming operations and expensive in terms of both financial and environmental cost. To make the best use of ASE's resources, and to take advantage of our new and more user-friendly website, we will no longer be producing paper copies of the region newsletters. The region newsletters enclosed with this April edition will be the final paper versions. In future, region newsletters will be published on the ASE website and an e-mail sent to members to advise them that they are available to view or download.

So that you don't miss newsletter notifications (and other ASE communications), please make sure that ASE HQ has your e-mail address by e-mailing [membership@ase.org.uk](mailto:membership@ase.org.uk) and requesting that your membership details be updated.

Learning Centre to develop a course targeted at teachers who have just finished their initial teacher training, but not yet started their first job.

The *Practical Work: Planning, preparing and practicing – new entrants to the profession* course is a week-long summer school at the NSLC in York, and involves 60 participants developing both a hands-on and theoretical overview of good science practical work. Many of the participants have limited experience of practical work in science, as they are often not exposed to the wide variety available, both during their training and in their placement schools. The participants often come with a very fixed idea of what makes a 'good practical activity', which very often stems from their own experiences of learning. During training, most practical work undertaken is very 'safe', with limited challenge in the learning for many students. Open-ended work, or even GCSE assessment practical activities, are not always covered, yet new entrants will be faced with these from the word 'go' once they begin teaching in September.

With this background of the participants in mind, the course aims to provide information, resources and support from a range of science education providers, including CLEAPSS, the Royal Society of Chemistry (RSC), the Institute of Physics (IoP), the National Centre for Biotechnology Education (NCBE) and Science and Plants for Schools (SAPS). Issues such as health and safety, working with technicians and a lack of confidence in specific practical skills are addressed. The course, as a whole, aims to increase the confidence of the participants across all the areas of science that they will be teaching. This course, therefore, provides the perfect platform for the participants to engage with the key messages of the *Getting Practical* programme. By embedding some of the training into this course, teachers at the start of their career can consider the effective ways to teach practical work before 'bad habits' can develop. Participants are encouraged to bring their schemes of work along and 'action plan', using all that they have learned during the week, including the input from the *Getting Practical* programme.

### Why a wiki, why Wikispaces?

Why are we using a wiki site to support the *Getting Practical* programme delivery?

There were two challenges to overcome with the *Getting Practical* programme: the first being the number of people involved in the development of the materials and their geographical locations; and secondly, the potential numbers of teachers and trainers who would need access to the materials not only from around the UK but also from overseas.

So how have these challenges been addressed? Using a website would allow the materials to be stored centrally and be accessed by everyone involved. However, with up to six lead consultants developing the materials, which all interlink, the person uploading the materials centrally would face a large task. A more effective way to share the training materials was required, one that could later be used by the *Getting Practical* trainers for contributing their adapted materials.

In 2009, wikis were starting to become more popular and people were finding that, once you had used a wiki site, you wondered why you have never used one before. It is a great collaborative tool and is far less confusing than playing e-mail table tennis!

If you 'Google' wikis, you will be confronted with many pages of different wikis to choose from, so which one do you choose? We looked at several different wikis. All had some very good features, but we struggled to find one that suited our needs, had an 'easy to upload documents' function and did not use too much wiki 'jargon'. The LSN Triple Science Support Programme introduced the use of wikispaces as part of their e-learning package being delivered to schools across the country by the national network of Science Learning Centres:

<http://www.triplescience.org.uk/elearning>  
We concluded that this was by far the most intuitive and easy to use wiki that we evaluated. It uses plain language, what you write is what you get, and it is easy to upload and download files, a function that is one of the main features we require. Wikispaces also offer a free upgrade to educational institutions, which gives some very useful additional features.

The wiki has proved to be an excellent launch pad for *Getting Practical* and is being used by visitors from across the UK and Europe. The national network of Science Learning Centres use it to deliver the 'Train the Trainers' courses. The teachers and consultants that have

taken on the role of a *Getting Practical* trainer and are delivering training have also been using the wiki in their training courses, where it supports them in delivering the *Getting Practical* professional development. The wiki currently has in excess of 600 members and membership is growing, with 5 to 10 visitors to the site every day.

The *Getting Practical* programme is also supported by a website ([www.gettingpractical.org.uk](http://www.gettingpractical.org.uk)), providing information on how to get involved in the programme and where to find good quality practical activities. *Getting Practical* courses are being offered locally and free of charge across England. For more information and to find out what is on offer in your region, please visit the website.



## Getting Practical

Getting Practical is funded by DfE with co-ordinating partners: ASE, CLEAPSS, national network of SLCs, CSE at Sheffield Hallam University; and contributing partners: the SSAT, IoP, Society of Biology, RSC, Gatsby SEP, National STEM Centre and the University of York; with support from: SCORE, the Royal Society, Gatsby SAPS, the National Strategies, LSIS, The Wellcome Trust, the Nuffield Foundation and the YSC at the Ri. The independent evaluators are the IoE at the University of London.

**Mark Langley, Gus Skilling** and **John Walker** are all based at the National Science Learning Centre. Mark is involved with the 'Practical work: Planning, preparing and practising' course. John was part of the development team for the *Getting Practical* programme and is a *Getting Practical* trainer. Gus set up and runs the *Getting Practical* wiki site.

**Georgina Chapman** is the Programme Manager: Communications for the *Getting Practical – Improving Practical Work in Science* programme and is based at the ASE.