



A resource with potential for all involved in supporting trainees and newly qualified teachers.

An exciting new section, **Sci-tutors**, is being added to the ASE website. The project, funded by the Teacher Training Agency (TTA), is developing support materials for tutors who are new to science teacher education. Although it provides support for tutors who are working with trainee teachers, the issues covered (such as those related to Ethnicity shown in the screen shot, Figure 1) are of direct relevance to all serving teachers. The concept of Sci-tutors was originally outlined in *Science Teacher Education* (No. 38, December 2003), but this article sets out in more detail the structure of the site and illustrates its potential as a resource for all teachers and tutors. We hope to continue developing the site over the coming years, so we invite you to use the materials and to give us feedback on ways in which it might be improved to meet your needs more effectively.

Background to the project

In December 2002 the TTA invited bids from subject associations for the production of a subject-specific 'Induction pack and programme' to support teachers from school who were entering teacher training as tutors:

'...to introduce new ITT trainers to current thinking, research and professional networks in their particular subject, both within the UK and internationally, and to a range of other material relevant to their area of work'.

The successful bid was put forward jointly by the Association of Tutors in Science Education (ATSE), ASE (through the ITT Committee) and

SCIcentre and work started in January 2003.

The aim of the project is to produce a web-based induction pack for tutors new to science teacher education. However, we see the site acting, additionally, as support for all those involved with the induction of new teachers and providing them with CPD and, indeed, for teachers themselves, wishing to re-examine their own practice.

The website

■ Main structure

We have used the standards for achieving qualified teacher status (QTS) to help us structure the site (see *Qualifying to Teach* (TTA/DfES) available at www.tta.gov.uk/php/read.php?sectionid=108). Figure 1 shows one of the sections, but along the top you can see the 'tabs', which correspond to the QTS standards: *Prof. Issues* covers how to teach (standards 1 and 3) and *Knowledge* covers ways we can help trainees develop their own subject knowledge (standard 2). The *Structure* section will be of particular use to tutors and mentors in science education – it provides help on how to *Interview* and *Assess* trainees, and gives guidance on how courses are structured, for example the balance between school and central provision. *Research* provides information about where research in science education is happening, how it supports teaching, how to get involved in research, and gives examples of current research programmes.

Figure 1 A section on the Sci-tutors website



■ The sections

Each entry (or 'section') has an index box at the top on the left – see the screen shot Figure 1 – allowing you to link directly to the various paragraphs that follow. Within each paragraph there is a brief description of the issues a tutor might share with their trainee teachers. A number of downloads in pdf are available for further or fuller details, and links to websites and other resources are also provided. Figure 2 gives the initial list of topics that will be covered, but we may modify this as we receive feedback from users. These sections should be complete by March 2005, but we are already exploring potential sources of additional funding in order to keep the site evolving and to enable us to modify and supplement material in the light of evaluation from users.

■ The bulletin board

We already have a thriving 'temporary' bulletin board in action at <http://sci-tutors.rosstech.biz>. This is open for everyone to read, but you need to register and then log-in to post material and download files. We are using this bulletin board to post our material prior to its incorporation onto the ASE/Sci-tutors site which is planned to take place in autumn 2004. We would welcome contributions from everyone involved with science ITE. When live on the ASE/Sci-tutors site the bulletin board will enable subscribers to ask questions, give responses and make comments about the materials and issues which relate specifically to science teacher education.

Forthcoming ATSE events

- ATSE day at the **ASE Annual Meeting in Leeds** on Saturday 8th January 2005.
- **ATSE Spring Day Conference** at the Docklands Campus of the University of East London on Wednesday 9th March 2005.

Please visit www.ase.org.uk/ and look under the conferences tab for further details.

Figure 2 Dropdown menus from Sci-tutors website

Professional Issues Professional values and practice Ethnicity and gender issues Working with adults Working outside the classroom SEN and science Sustainable development and citizenship History and philosophy of science and science education Teaching: Planning expectations and targets Teaching: Monitoring and assessment Teaching: Teaching misconceptions Active learning Resources Use of ICT in science	Laboratory management and safety Teaching: Class management Behaviour management Safety in the lab
	Knowledge Subject knowledge Sci 0, Sci 1, Sci 2 and Sci 3
	Structure Assessing against the standards OfSTED Patterns of School Experience Interviewing Patterns of University (Central) provision
	Research

■ Who can access the site?

We are building in a log-in system, similar to the one we have used for the temporary bulletin board, so we know who is using the site and contributing to the bulletin boards and allowing us to monitor its usage. ASE members who are also ATSE members can gain access to the site by entering their surname and ASE membership number in the ASE members' log-in (effective from summer 2004, when the affiliation of ATSE into ASE has been completed). Even then, ASE members will be asked, on their first entry, to fill in a few further details, but subsequently will be able to gain access to the Sci-tutors site by logging on to the ASE site as a member. Those who are not ASE members will be asked to register, then log in.

People and the website

Eight people are intimately involved with the project: the project director, Keith Ross, (University of Gloucestershire), who also acts as a group leader; the administrative assistant, David Manohar, a research student at the University of Gloucestershire. Four more group leaders who are researching and developing the production of 'the Pack': Tina Jarvis (University of Leicester and SCICentre); Gordon Guest (UWE, Bristol); Aftab Gujral (St. Martin's, Lancaster); and Neil Herrington (UEL, Greenwich) – each group leader will be responsible for preparing six sections of the Pack; a web master who will advise on the overall shape of the website and who will enter data, files, links, etc. onto the web to create the induction pack – currently this is being handled by IWS (Interactive Web Solutions) at Stafford who also authored the ASE website; and an evaluator, Alan Goodwin (immediate past chair of ATSE), who is monitoring the material we post on the website for relevance, completeness and accuracy.

To help with the creation of the Pack an initial questionnaire has already been sent to science tutors in institutions providing ITE science (including primary providers and SCITTs) to identify their interest in contributing. If you have not completed the questionnaire and would like to offer your expertise, please go to <http://www.rosstech.biz/sci-tutors/Questionnaire.html>

Vignette 1 Extending personal knowledge

I have been asked to teach the unit on electricity for the first time. Although I have been given the notes for pupils and have looked at several books, I would really like to have some idea about the things that pupils might find difficult or confusing. Thinking about these issues will also help me to get a better understanding of the ideas involved.

Sci-tutors is useful here because instead of simply setting out to 'explain electricity' it considers some of *the barriers to understanding magnetism and electricity*. For example in relation to the electrical circuit it highlights, *The big confusion here is the idea that although **electrical energy** is transferred from the cell to the bulb, **electrical current** travels round 'transferring' the energy. When students say electric current is 'used up', what they are saying is that electrical energy is being degraded – energy stored in the cell, or 'generated' at a power station is transferred to light and heat at the bulb. If you want to light the bulb again you must 'use up' more of the energy stored in the cell.*

Vignette 2 New teacher in the department

We have a new teacher who has just started and has asked me for some advice on working with other adults in the laboratory. I have explained how I work with teaching assistants but felt the need for some other perspectives.

Sci-tutors deals with this issue for both primary and secondary schools and emphasises the importance of being clear on the roles of both teacher and teaching assistant.

To perform well you need to know what it is you are supposed to be doing. Clarity is therefore needed in the deployment of any member of staff. Because the role of the teaching assistant has been evolving, and as it varies according to the school and the experience and qualifications of the teaching assistant, the task may well require more thought than it does for other members of staff whose role is better established.

It has a particularly pertinent 'cautionary tale', which underlines the importance of preparation for both the teacher and the supporting adult.

Vignette 3 Professional development session

For our next departmental day, I have been asked by the head of department to do a short input on Citizenship and how we might make links in science.

Sci-tutors provides an overview of the statutory requirements and provides examples of some of the ways in which links between science and citizenship might be used demonstrating how science is relevant and useful in society. There is a particularly useful list of sources including:

- Teachers' resource and handbooks;
- Children's fiction and non-fiction for key stages 1–3 on environmental issues; and
- Organisations providing support on Citizenship and Sustainability.

The group leaders are drawing on the information in the questionnaires to find tutors able to support each of the sections they are writing. Additional questionnaires will be sent to those willing to support the project, for example by answering questions about the books and resources they use to support their science trainees.

The induction courses

Face-to-face meetings play an important role to support distance learning materials obtained from a website. The project has already held the first of what we hope will be many induction courses for tutors new to science ITE. This was at St Martin's College in August 2003. The content of the first course was linked to the five sections of the induction pack that were available at the time. The induction course familiarised new tutors with the website and as further sections are written they will be able to receive further support. The second induction course was run in parallel with the Annual ATSE meeting at DeMontfort University, Bedford earlier this month. TTA funding enabled a number of new tutors to attend the conference free of charge.

Tapping into the potential

As we have worked to develop the materials we have increasingly recognised what a potentially valuable resource this can be for everyone in science education, even if they have no explicit responsibility for trainee teachers. The three vignettes (adjacent) illustrate some of the potential.

Summary

As noted at the beginning of the article, Sci-tutors is still under development and material is constantly being added. Through this TTA-funded project, we are building a resource that will not only support tutors new to science teacher education, but will also provide a resource and discussion forum for us all. We would be very pleased to hear your comments and suggestions as to how we can continue to enhance the site.

For progress to date and to keep in touch with developments, please register at www.ase.org.uk/sci-tutors

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