

Specialist Diploma in Science – is there a need?

Members of the Science Council met on the 8th November 2006, to discuss the need for a Specialised Diploma in Science. To promote discussion and debate presentations were given by Rebecca Edwards (QCA/Specialised Diplomas), Dr Bernard Capaldi (SEMTA/Engineering Diploma) and Andrew Hunt (Nuffield Curriculum Centre/ 21st Century Science).

From the presentations given and the existing QCA material it is understood that the aims of a specialist diploma in science would be to:

- Improve take-up of science post-16 where there are shortages
- To prepare students better for Further and Higher education
- To provide better skills for direct employment and/or apprenticeships
- To strengthen links between schools, university and industry

The Science Council's Education Advisory Group (membership attached) considered the issues raised and the following observations and recommendations were made:

There is strong agreement that the current provision at Level 1 and 2 provides sufficient choice and flexibility to accommodate a range of interest and student ability. Especially in view of the new GCSEs which have not yet been established long enough to evaluate impact. A Specialist Diploma at levels 1 and 2 would create an additional layer of qualifications which inevitably will require significant resources from schools to implement. The inevitable additional burden placed on teachers to implement a new qualification could be harmful to existing qualifications.

It is possible that a Level 3 specialist diploma in *laboratory sciences* may describe better an employment sector where there is a need for good vocationally trained individuals. It is very difficult to envisage what a specialist diploma in science would look like, especially given the difficulty in defining a specific employment sector for science. It should be noted that in this context "laboratory" refers to scientific sampling and analysis that may take place in a laboratory but could also take place in the field.

It is not clear what progression opportunities for further science study would be available to students choosing to take the diploma route. There is concern that the type of student attracted to the diploma route will be those who are unable to progress through A-levels as it is unlikely that a diploma running alongside A-levels will be attractive to high achieving students. This has

implications for the aspirations of those students encouraged to pursue the diploma route, especially as it is unclear how the content of a science diploma would meet the academic requirements for specific degree programmes at HE.

- **Lack of data / supporting evidence**

It needs to be established whether the science diploma will add significant value to the educational experience of students and to the needs of employers before committing to the development and implementation of a new qualification.

There is a distinct lack of real data, particularly from the employment sector, regarding the need for a specialised diploma in science; consequently the consultation is relatively uninformed. Current anecdotal evidence is insufficient to justify adding to current provision.

It is clear that at present the content of a specialised diploma in science is unknown and as such cannot have a clearly defined audience. If the purpose of a diploma is indeed to attract all students, it must first be determined what it is about current qualifications that dissuade some students from continuing with science education. If in fact it is aimed at a subset of students, that subset has yet to be defined.

Further clarification is required on how a specialised diploma would fit with current provision, for example Applied Science qualifications at GCE A-level or indeed whether parts of current qualifications should be in the diploma.

Work placement opportunities would be required to provide the best student experience. It would therefore be vital to have a clear commitment from Industry to make these available. The full extent of resources required needs to be established, including teaching support costs, curriculum material and industrial placement provision.

- **Support for teaching**

There is strong agreement that the curriculum alone cannot enhance the learning experience of students, in particular curriculum change can only be effective if teamed with quality teaching. The Science Learning Centres were set up to develop teachers' ability to deliver the curriculum more effectively. Industry, government and professional bodies have a role to play in supporting the teacher development opportunities the Science Learning Centres provide.

There are a number of drivers for student choice, one of them being awareness of career opportunities from studying particular subjects. It was strongly agreed that whilst there was a need to raise awareness of career opportunities from studying science, a specialist diploma should not be set up for this purpose alone.

The Science Council would be prepared to work with the Sector Skills Councils with science in their footprint, in exploring the need for a Specialised Diploma in science, subject to sufficient and appropriate funding.

If research establishes that there is a gap in provision, exploring how a combination of current provision could fill that gap should be undertaken first.

Dr Kristy MacDonald
Deputy Chief Executive / Registrar

Education Advisory Group Members on 8th November 2006

Professor Sir John Enderby	Chairman
Marianne Cutler	Association for Science Education
Dr Peter Davies	Institute of Materials Minerals and Mining
Professor Ian Haines	Royal Society of Chemistry
Nicola Hannam	Science Council
Sir Roland Jackson	British Association for the Advancement of Science
Dr Richard Latto	British Psychological Society
Dr Kristy MacDonald	Science Council
Alisdair Orr	Science Council
Dr Colin Osborne	Royal Society of Chemistry
Roger Porkess	Royal Statistical Society
Professor Chris Robson	London Mathematical Society
Neil Roscoe	Institute of Biology
Dr Hazel Rymer	Geological Society
Daniel Sandford Smith	Institute of Physics
Prof Nigel Steele	Institute of Mathematics and its Applications
Miranda Stephenson	Science Learning Centres
Vanessa Thorogood	Institute of Mathematics and its Applications