



# Pre-ITT Subject Knowledge Enhancement – proposal for 2013/14 and beyond

SCORE's response to the National College for Teaching and Leadership  
consultation

28 June 2013

## Introduction

1. SCORE is a partnership of organisations, which aims to improve science education in UK schools and colleges by supporting the development and implementation of effective education policy. The partnership is chaired by Professor Julia Buckingham and comprises the Association for Science Education, the Institute of Physics, the Royal Society, the Royal Society of Chemistry and the Society of Biology.
2. In summary:
  - SKE courses have helped boost the recruitment of teachers to the shortage subjects of physics and chemistry, and also support the recruitment of people who might otherwise not be able to enter, or return to, teaching.
  - The proposed changes to the allocation of ITT places will cause disruption and uncertainty for providers, who will be unable to recruit effectively. The results of this are likely to include a loss of provision and too little time for recruitment when places are confirmed.
  - Even with the success of SKE courses and the other measures put in place to improve recruitment to physics and chemistry, there remain shortages in these subjects; for example, even if the total recruitment to physics ITT were to be maintained at the record 2012 recruitment level, it will take at least twelve years to address under-recruitment in physics. SCORE fears that the proposed changes to ITT and SKE courses would jeopardise progress towards achieving this goal.
  - No consideration is being given to the geographical spread of SKE courses, which could well result in parts of the country having little or no provision. This will militate against achieving a sufficient, highly skilled and evenly distributed teaching workforce throughout the country, as well as the NCTL's stated preference for a regional model for ITT.
  - School Direct centres are unlikely to want to recruit students requiring SKE as the expectation of a permanent post means that they will strongly prefer a candidate with established subject knowledge. In the event that they do recruit students requiring SKE courses, School Direct (SD) centres will be commissioning SKE in the same way as they commission ITT, resulting in further fragmentation of provision.
  - Allocating SKE places in proportion to the size of the ITT allocation is not likely to prove an efficient model. Grade 1 providers with large ITT allocations will be very unlikely to be able to make use of their SKE allocation, and SD centres are unlikely to wish to, for the reasons outlined above. A better model would be to invite consortia to bid for an enhanced allocation for one or two lead providers. A similar model proved effective in the early days of SKE, and led to good regional provision.

- As it has indicated previously<sup>1</sup>, SCORE would like to see a much more consistent approach to data collection of the numbers of applicants for the different teacher training routes, to allow robust analysis of their success, including the number of acceptances and measures of quality such as degree class.

### **Why SKE courses are important**

3. SKE courses have had a very positive impact on recruitment to ITT in the shortage subjects of physics and chemistry. For example, in 2012, approximately 200 trainee teachers progressed from SKE to ITT in physics, out of a total of around 900.
4. SKE courses are particularly valuable in the sciences, for a number of reasons:
  - they allow graduates with related degrees in other subjects to teach what remain difficult subjects to recruit to;
  - in particular, they are useful for recruiting and training engineers (particularly mature candidates changing career); indeed, engineers constitute the largest recruitment pool for physics, chemistry and mathematics. And research shows that they make good specialist teachers;<sup>2</sup>
  - it is implausible that subject-based graduates could provide the numbers of new teachers needed (for example, in physics it would require about 30% of the entire output), so a means will continue to be needed to enable graduates with related degrees to teach the core sciences;
  - they give teachers who are often required to teach lessons in all three sciences the opportunity to enhance subject knowledge in physics or chemistry. This is highly valuable to the confident and thorough teaching of a rigorous curriculum;
  - they provide a supported route for applicants making a career change, or for those wishing to return to teaching after a long absence which again supports recruitment in shortage subjects.

### **Proposed changes to the provision of ITT places and the impact on SKE**

5. The proposed changes to the way in which ITT places are allocated means that all providers other than those classed as 'outstanding' will not know the number of places they have available until October 2013. This will make it very difficult to recruit to SKE courses, as places will either have to be offered provisionally, or recruitment will need to take place at very short notice between October and the start of SKE courses in January 2014.
6. It is anticipated that many graduates that might previously have applied to a teaching qualification through an SKE course will now be deterred by the length of time they

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<sup>1</sup> SCORE 2011 Assessment of School Workforce Statistics produced by the Department for Education. A SCORE response to the UK Statistics Authority's call for evidence on the publication *School workforce in England*. (See <http://www.score-education.org/media/8030/swf.pdf> )

<sup>2</sup> Working document from the Physics Enhancement Project, *Becoming an expert teacher: Novice physics teachers' development of conceptual and pedagogical knowledge*, Carl Angell, Jim Ryder and Phil Scott, available at <http://www.education.leeds.ac.uk/assets/files/research/cssme/pep-working-doc.pdf>

would have to wait for confirmation of a place and the beginning of their training. Students who apply between January and August and need an SKE course are likely to be told to re-apply later when places have been allocated, since providers are unlikely to want to offer deferred places. Some of the potential entrants will need to resign from their jobs and will not wish to do so until their place is secure.

7. Some ITT providers (primarily non-Grade 1 providers) base their provision of teacher training largely on numbers of applicants applying through an SKE course. Diminishing SKE applications are therefore likely to impact these providers' ability to provide ITT at all. This, coupled with the fact that many 'outstanding' providers do not offer SKE courses, means that there will be a limited number of places available against a background of increasing demand for SKE and similar courses.<sup>3</sup> There is also no consideration being given to the geographical location of SKE courses and breadth of specialist requirements, which could result in areas of the country having little or no provision of subject specialists, particularly where a dearth already exists. This is inconsistent with the NCTL's stated intention of matching provision to local needs.
8. It is unlikely that the proposed competitive and flexible market led model of SKE will emerge by allocating SKE places in proportion to the size of the ITT allocation. Grade 1 providers with large ITT allocations will be very unlikely to make use of their SKE allocation, and so will not outsource them from any provider. These SKE places will effectively be lost to the system. SD providers are likely to be in a similar position. Grade 2 providers with previously large SKE courses will be forced to slim their courses down, according to their ITT allocation, unless they can elicit places from other providers. If their nearest providers are Grade 1 or SD that will be very challenging. They may even have to shut courses altogether, due to the uncertainty of demand inherent in the proposals. As a result, SKE places will be inadequate in number, particularly to meet targets set for the recruitment of specialist teachers.
9. A better model would be to allow consortia to bid for a combined allocation, based on historic regional SKE course uptake, to be run by one or two lead providers in the region. This would avoid the wastage and instability created by the unused Grade 1 and SD SKE places. A similar model proved effective in the early days of SKE, and led to good regional provision, and collaboration. Providers who did not want to join a consortium would still be free to make use of their proportional allocation. A market model would still exist, but one in which there is less risk and greater stability for providers who have a proven appetite to run SKE courses.

### **Proposed changes to the structure of SKE courses**

10. The proposal that, if longer SKE courses are required, they should be completed alongside the ITT is utterly unrealistic, as it would put too high a burden on trainees. It is already difficult for trainee teachers to complete their studies in the time available, and this would be compounded if they were also required to undertake supplementary subject enhancement at the same time.

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<sup>3</sup> Numbers of participants in subject knowledge courses in science rose from 423 in 2006-2007 to 455 in 2007-2008 and to 555 in 2008-2009. (data from TDA)

## **Impact of School Direct**

11. SCORE has a number of concerns about the impact of School Direct on the recruitment of teachers in the sciences, some of which are related to the provision of SKE courses.
12. SKE courses are usually used by students who have degrees in subjects other than the one they wish to teach, and take the total training time, including PGCE, to around 18 months. In order for SD centres to recruit SKE students, those schools will need to know about vacancies a long time in advance. In addition, it is likely that schools will feel nervous about recruiting students who require this additional training, preferring to recruit those with a background in the subject. Therefore it is unlikely that SD schools will recruit teachers who need an SKE course, i.e. it is unlikely that many (if any) SKE places will be commissioned by SD centres.
13. Given the point above, it is likely that most of the demand for SKE places will come from provider-led recruitment rather than school-led recruitment. The proportional allocation of SKE places should be made on that basis, with most places being allocated to provider-led courses, and not restricted to Grade 1 providers.
14. The growth of School Direct is likely to have a negative impact on PGCEs in Physics with Mathematics, which have been very successful in recruiting student teachers to two shortage subjects that are often taken by the same students at A-level. Physics with Mathematics is a new joint specialism and management structures in schools are such that it is unlikely that a school would look to recruit to this course rather than to look for separate mathematics and physics specialists. They also may not be fully aware of the programme and its success.
15. We recommend that NCTL markets the existence of the SKE and the Physics with Mathematics courses to SD centres and persuades them of the importance and usefulness of these routes.
16. There is a proliferation of ways in which schools and higher education institutions are organising training, including SKE courses, with very little regulation from the NCTL, which will lead to variation in the quality of teachers entering the profession. SCORE recommends that further consideration is given to the closer regulation of provision.

## **The importance of subject knowledge**

17. SKE courses should be seen in the context of (i) a more general need to improve subject knowledge of teachers in the sciences and (ii) the need to help meet the national demand for subject specialist science teachers. The restriction or removal of SKE courses would be somewhat mitigated if there were greater funding and provision available for ongoing subject-specific CPD to enable teachers to enhance their subject knowledge throughout their careers.
18. This is particularly true given the changes to the curriculum and qualifications that will be introduced in schools over the next few years. It is also particularly acute in the sciences, given that the subjects need to reflect up-to-date developments, and the persisting severe shortages of certain specialist teachers.
19. Improvements to subject knowledge would be made easier if there were an agreed definition of the subject knowledge expected of teachers as they enter the profession.

This is not currently a priority for Ofsted, but SCORE would like to see it being given more consideration. The Institute of Physics and Royal Society of Chemistry are also working with the Gatsby Foundation to develop diagnostic tests that will help to define the subject knowledge required to be a specialist physics or chemistry teacher and allow teachers to identify gaps in their own knowledge<sup>4</sup>.

20. Although physics and chemistry have traditionally been seen as the subjects in greatest need of SKE courses, there are difficulties with biology as well. Degrees in the biological sciences vary greatly in terms of content (for example, ecological disciplines are very different from molecular), and graduates from different areas of biology will start their teacher training with very different levels of knowledge in each area, while still being expected to teach a school-level biology curriculum. In addition, many biology teachers are expected to teach other areas of science, which may be unfamiliar to them.
21. Although SKE courses are only provided for secondary ITT, subject knowledge at primary level is also an ongoing concern, particularly for science since the majority of primary teachers do not hold science degrees. SCORE would like to see a more coherent approach to the ongoing enhancement of subject knowledge in the teaching profession that includes primary teachers, as per the commitment the Government made in its November 2011 ITT Implementation Strategy.
22. In order for schools to make informed choices about teacher training models and provision of subject-specialists, there needs to be an accessible and public database on teacher recruitment figures that spans the range of entry options.

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<sup>4</sup> Further information can be found at <http://www.gatsby.org.uk/Education/Projects/Diagnostic-Subject-Knowledge-Testing.aspx>