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Department for Education

Evaluation of the Science Learning Centre Network

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wellcome trust

This research report was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

Contents

Executive Summary

1. A team comprising SQW, GfK NOP and independent consultants, Professor Jack Jackson and Dr Martin Hollins, was commissioned in January 2009 by the Wellcome Trust and the Department for Children, Schools and Families (DCSF)[1] to undertake an evaluation of the national network of Science Learning Centres (SLCs).

2. The National Network of SLCs was set up in the context of a wide range of reports and strategies which called for the education system to provide more and better science literate people. To this end, the Network provides quality science-specific continuing professional development (CPD) to educators. It operates as a 'hub and spoke' model, with the National SLC (opened in 2005 and operated by Myscience.co. Ltd) being the lead centre, with nine Regional SLCs (opened in 2004) having equal status. Two related funding streams are available to support participation in CPD activity. Project ENTHUSE has been funded by the Wellcome Trust, Government, and seven industry funding partners, and provides bursaries to support educators to attend courses at the National SLC. Impact Awards have been funded by the Department for Education and they provide financial support to educators attending courses delivered at the Regional SLCs.

3. The main focus of this evaluation has been to understand the *effectiveness of the delivery mechanism* (i.e., the Network), the *impact of the CPD activity* that has been delivered, and options for *future strategy and sustainability* of the SLC Network.

Key findings

Network operations and performance (Chapter 2)

4. Usage of the Network is high and continues to grow. The National SLC achieved 60% growth in throughput since 2008/09, with 10,462 training days delivered in 2010/11. The Regional SLCs experienced growth in throughput of 23% over the same period, with 15,831 days delivered in 2010/11.

5. Awareness of the SLC Network increased between 2006 and 2010: from 73% to 85% for secondary science teachers, from 48% to 61% for primary science coordinators, and from 61% to 85% for technicians.

6. In 2010/11 the Regional SLCs engaged 73% of secondary schools, 18% of primary schools and 62% of post-16/FE providers. This suggests good coverage across the secondary sector (albeit with a hard core remaining out of reach) but also that a relatively large potential primary market remains untapped.

7. Repeat business is occurring to a reasonable degree. One-third (32%) of teachers attending the Regional SLCs have undertaken more than one course between 2008 and 2010, and 45% of National SLC attendees returned between 2005 and 2010.

[1] DCSF was renamed the Department for Education (DfE) in May 2010

8. The Regional SLCs are not all centrally located within their region. As a result, some teachers travel outside of their region to SLCs which are more accessible. At the same time, Regional SLCs have sought to offer ever more flexible models of delivery including in-centre courses, courses from satellite venues, school-based courses, as well as delivery from other external venues to make their courses more widely available and accessible.

9. The Impact Awards and ENTHUSE Bursaries were widely regarded (both within and outside the Network) as being an important 'hook' in engaging schools in science-specific CPD, but only where schools have bought into the need for CPD. Of the 2010 e-survey respondents, two-thirds (66%) that had received an ENTHUSE Bursary or Impact Award indicated they would not have been able to participate in the SLC CPD without it, however, one in five reported that their school would have paid for them to attend the course in the absence of this funding.

10. The main barriers to attendance at SLC CPD courses identified by teachers were around senior management commitment and a reluctance to spend time away from their pupils whom they feared will suffer.

Relationships within the Network and with wider stakeholders (Chapter 3)

11. The Network has matured over the lifetime of this evaluation with supportive relationships developing across SLCs. Relationships between the National and Regional SLCs have worked well around course development, sharing experiences and overall strategic direction.

12. There is clear differentiation between the National SLC and Regional SLC 'offers'. At present, schools and individuals tend to have relationships with one or other depending on their entry to the Network. There is potential for the 'offers' to be better integrated to give learners clearer pathways to continue their development.

13. The Regional SLCs have developed a number of strong operational relationships with other organisations (particularly local authorities) that are working in a similar policy or geographic space. The National SLC has increased the extent of SLC course delivery in the devolved nations over the last three years through delivery bodies, and there is the potential for this activity to grow and develop further. The vast majority of external stakeholders were very positive about their relationships with the SLC Network, and about the quality of CPD being delivered by the Network.

Satisfaction and impact (Chapter 4)

14. The quality of the SLC offer was considered good by teachers (92% of users reported being fairly or very satisfied). Furthermore, educators that had attended SLC provision were more likely to rate the overall quality of all available science training as good (63%) than those that had not attended a science training course at an SLC course (45%). This suggests the SLC Network is positively influencing teachers' views on the quality of science training.

15. Take-up of science-specific CPD is increasing and may be gaining momentum, supported by educators recognising the quality of SLC CPD provision. If this trend can be maintained then

the sector could be judged to have moved much closer to the culture change that was part of its aim.

16. The areas where educators felt their engagement in SLC CPD activity was likely to have had a 'major' impact, was on pupils' enjoyment of lessons (41%) and pupils' engagement with science (36%), stimulated by changes in teaching practice that followed a course.

17. Looking beyond students' enjoyment and engagement, there is a positive association between SLC usage and improvement in science attainment. Linked SLC usage and school performance data suggests that SLC-using schools have been improving their science attainment faster than the national average, and faster than wider attainment in the school. Moreover, training days at the National SLC was one of three interventions that the National Audit Office associated with increased pupil performance in science GCSEs.

Forward strategy (Chapter 5)

18. The extension of the Regional SLC funding in 2010 removed some of the immediate pressure and uncertainty over funding, but consideration of financial sustainability into the long term must remain a priority. Without the continuation of some degree of core funding it is unlikely the SLC Network would continue to run in its current form and scale.

19. Representatives of the SLCs were supportive of the existing Network model which was viewed as having a value greater than the sum of its individual parts. In part this results from the efficiency and effectiveness of a single brand and through shared investment in course development. Externally there was also support for the existing Network model, with the SLC brand being recognised as a mark of quality.

20. The external reputation of the Network was strong amongst the organisations and stakeholders that were interviewed as part of the evaluation, and it is well placed to respond to the changing education landscape. Indeed, its current secure funding means the Network is better placed than many to adapt and grow market share. Several suggestions were made to refine the existing model and ensure sustainability. These included:

- **expanding the existing target market** – retaining a focus on hard to reach secondary schools, but also reaching further into the primary sector
- **expanding work in the devolved administrations** – building on the progress in the last two years
- **diversification beyond the delivery of science-specific CPD activity** – with the potential to consolidate some of the many initiatives targeted at schools around STEM and create a single access point
- **increased outreach delivery** – could improve cost effectiveness as a result of greater take-up; and
- **revised charging structures** – there is scope to test different charging structures (e.g. full cost charges for high demand courses or increased incentives for schools that have not engaged with SLC CPD to date).

1: Introduction

1.1 A team comprising SQW, GfK NOP and independent consultants, Professor Jack Jackson and Dr Martin Hollins, was commissioned in January 2009 by the Wellcome Trust and the Department for Children, Schools and Families (DCSF)[2] to undertake an evaluation of the national network of Science Learning Centres (SLCs). This builds upon an earlier evaluation of the SLC Network focussed mainly on its setting up and operational elements.

Background

1.2 The Network of SLCs is composed of the National SLC (opened in York in 2005) and the nine Regional SLCs which opened in 2004[3]. It was set up in the context of a wide range of reports and strategies which called for the education system to provide more and better science literate people[4] [5] [6]. This need has continued to be identified in more recent years. [7] [8]

1.3 In part through classroom educators[9] subjects gain their reputation and the interest of young people. Educators can also reinforce the benefits from a wider suite of development activities. However, to deliver this impact, educators were thought to need greater skills and confidence to teach and discuss science, and at the heart of this, was the need to ensure high quality and regular subject-specific CPD. Educators arguably have a greater need to update their knowledge and to do so more frequently in science, technology, engineering and maths (STEM) subjects than for others in the curriculum, because the latest thinking changes rapidly.

1.4 To overcome these challenges, a need was identified for a high quality professional support system for science educators, and it is this gap which the Network of SLCs has sought to fill. Over the course of this evaluation there has been considerable change in education and schools policy, particularly resulting from a change of government in 2010. This report considers the performance of the SLC Network against its original objectives, and then considers the future direction of the SLC Network in the context of the new education landscape in which it is operating.

What is the purpose of this evaluation?

1.5 The main focus of this evaluation has been to understand the *effectiveness of the delivery mechanism* (i.e., the Network) and the *impact of the CPD activity* that has been delivered. In

[2] DCSF was renamed the Department for Education (DfE) in May 2010
[3] It should be noted that there was an open competition to host a Regional SLC. In other words, the decision on where they would be located was not a strategic and pre-determined one
[4] 'Set for Success: the supply of people with science, technology, engineering and mathematics skills' The report of Sir Gareth Roberts' Review, 2002
[5] Ten Year Science and Innovation Investment Framework 2004-2014, Department for Education and Skills, Department for Trade and Industry and HM Treasury (2004)
[6] Science Teachers: A Report on Supporting and Developing the Profession of Science Teaching in Primary and Secondary Schools, Council for Science and Technology, February 2000
[7] www.ofsted.gov.uk
[8] The STEM Framework, National Science Learning Centre 2008
[9] In this report we use 'educator' as a generic term to cover teachers and technicians.

the final year of the evaluation the DfE and the Wellcome Trust agreed that we place increased emphasis on *strategy and sustainability for the SLC Network*, with particular attention paid to the challenges and opportunities for the SLC Network in the short to medium term. A full list of the core research questions for the evaluation can be found in Annex A.

Figure 1-1: Overview of the Science Learning Centre Network

The Network has operated as a 'hub and spoke' model, with the National SLC being the lead centre but each Regional SLC having equal status. The National SLC is run by Myscience.co Ltd [10] and has funding from the Wellcome Trust, confirmed to 2013. In the first phase of the SLC Network (2003-2008), the Regional SLCs were contracted individually by DCSF. However, in phase two, the Regional SLCs were operated via a single contract which ran from 2008 until the end of March 2011 and was managed by Myscience.co Ltd. In early 2011, the DfE confirmed a further period of funding for the Regional SLCs to the end of March 2013, also managed by Myscience.co Ltd.

The National SLC focus is on provision of multi-day (often residential) courses, while the Regional SLCs tend to offer one day courses delivered at one of the centres, or at an outreach location (e.g., a school). The Regional SLCs have a good deal of freedom in how they develop their structures, partnerships and service offers, but work collaboratively in relation to the management and planning of the Network through mechanisms such as development groups. All of the Regional SLCs except the South West (Bristol) are hosted by Higher Education Institutions.[11]

Two related funding streams support teacher participation in SLC CPD activities for educators in state maintained schools:

- **'Project ENTHUSE'** – this benefits from a £27 million funding package including £10 million from the Wellcome Trust, £10 million from Government, and £7 million from business partners (AstraZeneca, AstraZeneca Science Teaching Trust, BAE Systems, BP, General Electric, GlaxoSmithKline, Rolls-Royce and Vodafone). It provides bursaries to educators over the period 2008-13 to enable participation in courses at the National SLC. These bursaries cover course fees, supply cover, travel and accommodation. They also provide some additional money to allow ideas and learning to be implemented in the classroom post-training (schools across the UK are eligible to apply for ENTHUSE bursaries).

- **'Impact Awards'** – this scheme helps to pay for training days at the Regional SLCs, and is funded by the DfE and was valued at £4.5m between 2008-11. The DfE has provided a further £1.5m per year to support Impact Awards until March 2013. These awards are worth £200 per day for teachers and £100 per day for technicians and can be used to support the cost of the course and securing supply cover (only schools in England can apply for Impact Awards).

Source: SQW

Our approach

1.9 The 'theory of change' being tested in this evaluation was based on the premise that the SLCs aim 'to bring exciting contemporary science into the classroom, and to enable educators to refresh and extend their skills, so that young people gain the knowledge and understanding they need – both as citizens and scientists of the future'[12].

1.10 From the start of the evaluation the Wellcome Trust and DfE recognised the difficulties in measuring the success of the Network through outcome data related to attainment. Making the link between CPD and attainment is complex because it takes time for impact to occur,

[10] Myscience.co. Ltd was established in 2005 by the White Rose Consortium which comprises the Universities of Leeds, Sheffield, Sheffield Hallam and York. Myscience has also successfully attracted funding to run the National STEM Centre as well as other STEM related contracts.

[11] The Regional Centres and their host institutions are as follows: North West (Manchester Metropolitan University, East Midlands (University of Leicester), London (Institute of Education), East (University of Hertfordshire), South East (University of Southampton), West Midlands (Keele University), South West (@ Bristol) and North East (Durham University but off campus). The National Science Learning Centre is based at the University of York

[12] This was the common vision of the funders of the SLC initiative as reported in the GHK stage 1 evaluation

and identifying specific causal effects is not straightforward in a situation where many other factors are at play. In response, it was agreed that the evaluation would focus on more immediate and direct outcomes *(e.g., pupil engagement with science, enjoyment of lessons and pedagogic change within the classroom).* The premise was that if change was observed in the short term, it would be expected to improve pupils' attainment, with increased study of science post-16, in the medium term.

1.11 This approach is in line with a series of other studies around teacher CPD. Given the diversity of CPD, and the complex interrelationship between individual, structural and cultural factors, it has proved extremely difficult to quantify the impact of CPD alone. Nevertheless, various studies report that effective CPD impacts positively on:

- teaching practice[13]
- the way in which teachers learn more about their subject and develop new methods of teaching[14], mostly through changes in planning, teaching style and assessment practice[15]
- teachers' confidence in their own professional judgement[16]; and
- teachers' morale and commitment to teaching as a career .[17]

1.12 In terms of pupil outcomes the majority of evidence is impressionistic and anecdotal but there are more systematic examples in the research literature. For example, McGregor & Gunter[18] found that teacher CPD improved pupil outcomes compared with previous cohorts of the same age and ability. An international evidence (Grossman, 2009[19]) review of a number of studies examining the impact of professional development concluded that quality professional development can improve pupil achievement (as well as teaching practice). These more general findings support the approach taken here, that of focusing on the shorter term in the expectation that these will feed through to longer term pupil impacts.

Methodology

1.13 The research tasks that have been delivered over the lifetime of this evaluation can be summarised as follows (further information can be found in Annex B):

[13] MORI, (2004) *Mori Teacher's Omnibus Survey* National Education Research Forum (NERF), DfES
[14] Cordingley, Bell, Rundell and Evans, The impact of collaborative CPD on classroom teaching and learning [External website]. In: Research Evidence in Education Library. Version 1.1. London: EPPI-Centre, Social Science Research Unit, Institute of Education
[15] Boyle, While, Boyle (2004) A longitudinal study of teacher change: what makes professional development effective. Curriculum Journal 15 (1) P45-68
[16] Furlong, J., Salisbury, J. & Coombes, L. (2003) *Best Practice Research Scholarships: An Evaluation*
[17] EPPI CPD review group (2003) *The Impact of Collaborative CPD on Classroom teaching and learning: How does collaborative CPD for teachers of the 5-16 age range affect teaching and learning?*
[18] Changing pedagogy of secondary science teachers: the impact of a two-year professional development programme. (December 2006) *Teacher Development*, vol 5 no 1,P59-74
[19] State Policies to Improve Teacher Professional Development (2009). NGA Centre for Best Practice

- 321 interviews with key staff at the National and Regional SLCs and external stakeholders[20]
- two e-surveys of SLC participants in 2009 (461 respondents – 14% response rate) and 2010 (496 respondents – 17% response rate) sent to all those that had completed SLC courses in the last 6 months, complemented by in-depth telephone interviews of 30 respondents to each survey[21] - further detail can be found in Annex C.
- a national telephone survey (2010) of educators (1,402 respondents) - further detail can be found in Annex D.
- analysis of SLC management information and school performance data - further detail can be found in Annex E; and
- qualitative interviews conducted across 45 schools over three years[22].

[20] External stakeholders included local authorities and a range of other organisations with an interest in the field (e.g., Association of Science Education, Institute of Physics, Science, Technology, Engineering and Maths Network [STEMNET], and other training providers, amongst others) and interviewees were suggested by the National and Regional SLCs.
[21] E-survey participants were asked if they were willing to take part in an in-depth interview and from these the sample was split between low, medium and high SLC users.
[22] The National and Regional SLCs each provided names of schools that had engaged in CPD activity. These lists were used to generate a sample of case study schools which covered all regions, as well as primary, secondary and FE institutions.

2: Network operations and performance

2.1 In this chapter we consider operational aspects of the Network, describing how CPD is developed and delivered by the SLCs and analysing achievement against key performance targets[23].

What is the CPD 'offer' from the SLC Network?

2.2 The Regional SLCs deliver a programme of core- and non-core CPD activities. The core programme is a suite of courses that are common to all the Regional SLCs. Many of the courses delivered by the Regional SLCs attract funding that supports educators to participate (Impact Awards). The courses delivered across the Network have not usually been accredited, although a system is now in place to allow accreditation (up to 30 Masters level credits). As yet, only a small number of teachers are working towards accreditation of their CPD.

2.3 Over the period of this evaluation the Network (both the National and Regional Centres) has been refining its programmes in response to feedback from participants and topics it believes are wanted and/or needed by the sector. Much of the Regional SLC non-core programme is accounted for by courses that external partners have contracted the Network to deliver. Examples of this are the contemporary sciences courses funded by Research Councils UK (RCUK) and the Science Additional Specialism Programme (SASP) funded by the Training and Development Agency for schools (TDA). Other non-core programme content has developed as a result of local demand.

2.4 SLC courses (the Regional ones, in particular) are standalone in nature, however, progression routes are being developed and communicated to educators engaging in CPD, allowing them to build upon previous courses. This approach could become a route to accreditation and help emphasise the on-going nature of CPD.

How does the SLC Network deliver CPD?

2.5 The SLCs were established to provide high quality CPD, offered in high quality spaces, and using high quality materials. This focus on quality was intended to enhance educators' sense of professionalism. This approach influenced the initial (significant) investment in physical regional centres for the delivery of science-specific CPD. In addition to centre-based training, the Regional SLCs have developed a range of delivery models which include school-based delivery and the use of other satellite locations, and a relatively small amount of e-delivery of CPD activity. In 2010/11, centre-based delivery accounted for 41% of CPD (Regional SLCs), down from 52% the previous year, reflecting the growth of more bespoke and flexible delivery models that enable schools to engage with CPD activity (as requested by schools) and that provide opportunities to affect wider change within individual school science

[23] Please note that targets referred to in this report relate to those that formed part of the Regional SLCs contracts in the period up to 31st March 2011

departments. Collectively, the Regional SLCs delivered 8,232 days of non-centre based CPD in 2010/11.

2.6 Another important factor in the growth of regional outreach courses is the location of the Regional SLCs, which do not necessarily sit at the heart of their region, nor are they all easily accessible from all parts of the region (as illustrated in Annex F). As a result, most Regional SLCs have needed to take their offer out to schools by delivering courses from sub-regional locations (satellite locations) or via direct delivery in a school. In some cases, significant numbers of teachers travelled out of region to another SLC, largely due to natural travel patterns.

2.7 In contrast, delivery by the National SLC is overwhelmingly centre-based and reflects the longer and often residential nature of the courses delivered by them. Their non-centre based delivery is largely accounted for by courses in the devolved nations. That said, they were piloting an approach of working with clusters of schools by identifying a lead school that had engaged significantly with the SLCs and using it to attract other schools to attend courses held at the lead school.

2.8 In the last couple of years the Network has sought to develop models of online CPD. As yet, this activity was fairly low level - 395 online training days were delivered as integrated with face-to face courses; and in addition 300 teachers participated in totally online courses (53 science teachers in Fresh Science; 247 D&T teachers in 'Lets make it move'). Some courses have also involved online discussion or networking groups. SLC staff reported that online CPD had been more successful when associated with longer courses such as SASP which provided a forum for participants to share experiences and learning over the duration of the course. This related to a view that interactions between participants and tutors are difficult to sustain through a virtual medium unless done over a longer period of time, or as part of a mixed package of face-to-face and online CPD support. At the Regional SLCs online CPD is now only offered as part of a longer course, rather than one day courses.

2.9 The National SLC commissioned research into science teachers' perceptions of online learning. This found that whilst science teachers had ready access to email and the internet, and regularly used these resources in developing lesson content, only 10% had taken part in online CPD activity[24]. Perceptions of online learning were considerably more negative than positive, although those with some experience of it were less negative overall. Therefore, promoting online learning will be challenging and introducing it as part of a taught course may be the best way forward.

Level of activity

2.10 In 2010/11 the National SLC had a core performance throughput target[25] of delivering 9,500 ENTHUSE funded days – it exceeded this, with 9,578 actually delivered[26]. Total throughput (all training days delivered) increased from 8,682 training days in 2009/10 to 10,462 training

[24] Science Teachers' Perceptions of Online CPD, Jocelyn Wishart and Sarah Eagle, Graduate School of Education (University of Bristol), for the National Science Learning Centre, 2011

[25] National SLC targets are set by the Myscience.co. Ltd Board. Regional SLC targets are specified in contracts agreed by DfE.

[26] The National SLC delivered 10,462 training days in 2010/10 (of which 9,758 were Enthuse funded)

days in 2010/11 – an increase of 21%. This increase was reported to result from improved marketing with earlier promotion of autumn courses and fortnightly monitoring of course bookings, with a proactive approach being taken to fill courses at risk of cancellation.

2.11 Table 2-1 highlights the throughput for Regional SLCs, in each of the last two years. It presents two forms of throughput. The first is throughput including out of region attendance calculated on the residence of the participant. These data indicate a strong performance with every Regional SLC exceeding its target. Together, the Regional Centres achieved 121% and 117% of targets in 2009/10 and 2010/11 respectively. Throughput between 2009/10 and 2010/11 increased by 11%.

2.12 The second throughput figure presented in Table 2-1 counts all attendances at the centre irrespective of where the participant lives - this provides an indication of where educators are choosing to access CPD[27]. The data suggest that the London SLC draws in more participants from other regions than it has London residents accessing courses elsewhere. The relative flow of attendance out of the region for the South East and East regions probably reflects their close proximity to the London SLC with good transport links.

Table 2-1: Regional SLC throughput

		2010/11		Net in/out flow
Region	**Target**	**Throughput including out of region attendances**	**Throughput (all attendances at centre**	
North East	992	999	1,024	+24
South East	1,852	2,153	1,973	-180
West Midlands	1,587	1,616	1,593	-23
Yorkshire & Humber	1,190	1,303	1,365	+62
London	1,719	2,244	2,790	+546
South West	1,587	2,021	1,910	+111
East Midlands	1,190	1,422	1,400	-22
East of England	1,587	1,965	1,745	-220
North West	1,852	2,108	2,032	-76
England	13,556	15,831	15,831	N/A

Source: SLC Annual Reports

Core versus non-core programme delivery

2.13 One of the performance indicators for the Regional SLCs is that a minimum of 80% of the target level delivery of 13,556 days (which equates to 10,845 days in 2010/11) should be core programme courses (these are courses that are common across the Regional SLCs). In practice, 11,576 days of core delivery took place, and so the target was comfortably achieved by the Regional SLCs collectively.

[27] It should be noted that the Regional SLCs' performance is not assessed against this measure and the key performance indicator is related to throughput including out of region attendances

2.14 Across the Network the target for core delivery was met, however, individual performance by the Regional SLCs against this key performance target varied and was not consistent across the Network. Indeed, five centres (North East, West Midlands, East Midlands, and the North West) did not achieve the target in either year with shortfalls of between 21 and 149 days each amongst this group in 2010/11. In contrast, the London SLC overshot its target considerably over the last two years – lifting the collective performance of the Regional SLCs.

Secondary versus primary school throughput

2.15 The Regional SLCs also had a target for at least 75% of core throughput to be from secondary schools. Collectively, the Regional SLCs exceeded this target for absolute secondary throughput in 2010/11 (11,335 days delivered against a target of 10,167). The National SLC which does not have such a target, recorded 74% secondary throughput days (based on ENTHUSE days) in 2010/11 compared with 87% in 2009/10, indicating an increase in primary courses being delivered.

Reach

2.16 Data are collected on an annual basis to understand the 'reach' of the Regional SLCs - the proportion of schools that engaged with the Regional SLCs in a particular year. In 2010/11, the Regional SLCs collectively engaged 73% of secondary schools in England, 62% of post-16 colleges and 18% of primary schools.

2.17 The 'reach' figure for secondary schools has increased by only 1% since 2008/09 (c.31 schools). Given the importance attached to the focus on secondaries more progress might have been expected in reaching non-attending schools. The 'reach' figure for FE colleges has increased by 3% since 2008/09 (9 colleges)[28]. Although the proportion of schools engaged remained largely static, it potentially masks progress being made in the absolute numbers being reached in the primary sector. For example, it is estimated that there are 16,971 maintained primary schools in England[29], and with an increase in 'reach' from 16% in 2008/09 to 18% 2010/11 this would imply an additional c.340 primary schools engaging with the Regional SLCs on an annual basis between the two periods. There is still a large potentially untapped market of nearly 14,000 primary schools.

2.18 The Regional SLCs now have a target list of priority schools (those where pupil performance in science GCSEs is low[30]) and are actively targeting these schools through face-to-face visits. Whilst this was reported to be fruitful it was also very resource intensive, especially as school engagement tends to vary over time.

2.19 The National SLC had different criteria for target schools – those schools that have not engaged with them as yet (i.e. no specific focus on schools with lower than average science attainment). Recent figures suggest that the National SLC had engaged with 49% of all secondary schools in England since the centre opened.

[28] Association of Colleges has recorded 314 FE colleges in England
[29] DCSF School Census (January 2010) indicates there are 16,971 maintained primary schools and 3,127 maintained secondary schools.
[30] Defined as <40% of pupils achieving two GCSE science passes at A*-C

Awareness of the SLC CPD offer

2.20 The growth in throughput and reach was supported by an apparent increase in general awareness about SLCs. The 2010 national telephone survey of educators revealed that levels of both spontaneous and prompted awareness of SLCs had risen significantly since 2006 among most educator groups (except primary school teachers): for secondary science teachers from 73% in 2006 to 85% in 2010; for primary science coordinators from 48% to 61%; and for technicians from 61% to 85% (Annex D: Fig D-3).

2.21 SLC participants responding to the 2010 e-survey indicated that they found out about CPD opportunities through a range of channels. The National SLC (45%) and Regional SLCs (47%) were identified as key sources of information through direct marketing material, along with line managers telling them about SLC provision (48%).

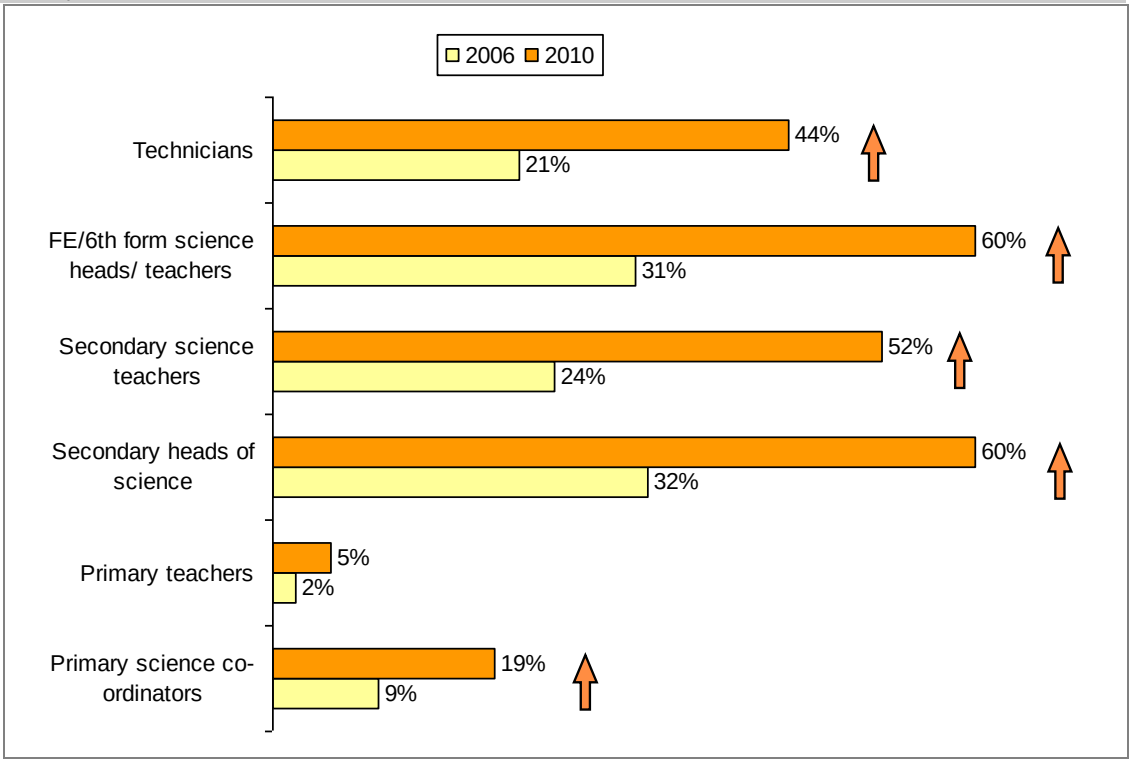
Usage of SLCs

2.22 The 2010 national educator survey asked respondents whether they had attended any courses at an SLC (Figure 2-1). There were significant increases in the proportions of all educator groups that had taken part in SLC courses and activities between 2006 and 2010 – generally speaking this had doubled (reflecting the increased attendance numbers reported above). The secondary science educator pool consists of approximately 35,000 individuals in England[31]. Over half of secondary heads of science (c.2,000 if applied to the whole population), secondary science teachers (c.15,000) and FE/6th Form science heads/teachers (c.2,000) had attended an SLC course or other event. The proportion of teachers attending SLC courses has increased, with 52% of secondary science teachers now reporting they have attended an SLC course and 60% of secondary heads of science having attended an SLC course (Fig 2-1). That said, the data indicate there are still large proportions of educators still to engage with the SLCs (most often from lower attaining schools and those with a higher proportion of pupils receiving free school meals), and secondary heads of science may be a particularly important group for the SLC Network as they may offer a means of engaging teachers more widely.

2.23 The proportion of primary teachers attending courses remained low at 5%. However, it is important to note that this had more than doubled since 2006, and that in absolute terms this represents in excess of 9,000 teachers, making them a significant user of SLC services. That said, primary teachers remain a large untapped market given the scale of this group (180,000+ individuals). It should be noted that the SLCs are also engaging with primary schools in support of the Primary Science Quality Mark (PSQM)[32]

[31] Total educator population figures have all been taken from Edubase and used to derive absolute numbers
[32] Association for Science Education, SLC Network and the London Borough of Barnet – funded by the Wellcome Trust.

Figure: 2-1 Changes in the proportions who have attended any Science Learning Centre course or other activity



Source: GFK NOP Educator Survey (2010) Unweighted base sizes: primary science co-ordinators (2006: 244, 2010: 241), primary school teachers (2006: 153, 2010: 149), secondary heads of science (2006: 149, 2010: 161), secondary science teachers (2006: 226, 2010: 208), FE/6th form science heads/ teachers (2006: 173, 2010: 163), Technicians (2006: 179, 2010: 180)

Barriers to attendance

2.24 Through our interviews with SLC and school staff, we explored the challenges the Network faced in securing attendance in CPD. Mid-way through the evaluation there were significant concerns about the potential impact of the introduction of the 'rarely cover'[33] policy which restricts staff from being released from school to take part in CPD. Whilst this appeared to have an impact on attendance in one particular term when it was first introduced, the effect appeared to have lessened over time.

2.25 The national educator survey (2010) explored reasons for not attending SLC courses, amongst those that were aware of the SLC Network but had not attended a course as yet. The most common responses were as follows:

- not needed (33%)
- location/distance/too far away (25%)
- time constraints (21%)
- not a priority (21%).

2.26 The Network recognised the constraint of time and distance and sought to address many of these concerns by taking a flexible approach to CPD, with the delivery of school-based CPD,

[33] 'Rarely Cover' means that teachers are no longer expected to provide cover for absent colleagues unless they have been specifically employed to do so

twilight sessions and INSET days. These actions will remove barriers, but will not address issues of prioritisation or perceived need. Notably, the cost of attending training was not highlighted as one of the main barriers to participation in CPD, possibly influenced by the availability of awards to support attendance at SLC courses.

What has been the effect of the Impact Awards and ENTHUSE Bursaries?

2.27 The SLC Network is able to provide two types (Impact Award and ENTHUSE Bursary) of funding to participants wishing to undertake CPD activities as described in Figure 1-1. The National SLC had a target to deliver 9,500 ENTHUSE funded days in 2010/11 and exceeded this (9,578).

2.28 The Regional SLCs had an annual collective target to make 7,500 awards. There was a shortfall against this target in 2008/09 (3,012 awards made) and 2009/10 (5,017 awards made). In 2009/10 there was a change in the application procedure for Impact Awards which meant they were payable on attendance at courses, rather than on the submission of a post-course feedback form. In the last year the Regional SLCs collectively hit their target for the first time (7,615 awards made), and this was related to the change in the procedure for claiming the awards.

2.29 Interviews with Regional SLC staff also suggested several other reasons for the increase in take-up of Impact Awards. In part, the increase was seen as a sign of growing awareness of the Network and increased throughput more generally. Furthermore, the increase in outreach CPD being delivered to large groups of staff in a single school had supplemented this growth. In other words, schools were seeing a financial benefit to having school-based CPD as they could claim awards for their participating staff on eligible courses, although there is now a cap on the number of bursaries a school can claim for in-school delivery of SLC CPD activities.

2.30 An additional factor that was reported to have contributed to the upturn in the number of awards claimed in 2010/11 was the uncertainty around future funding. Towards the end of the last financial year the Regional SLCs did not know if funding would be forthcoming to continue their work beyond March 2011, or if it was, whether funding for Impact Awards would continue. As a result, schools were made aware of the need to sign up to courses before the end of March 2011 if they wanted to be certain of accessing an Impact Award.

2.31 The majority (59%) of respondents to the 2010 e-survey of SLC participants had received some form of financial assistance for the course. Three-quarters (76%) of those attending courses at the National Centre received an ENTHUSE Bursary and one quarter (26%) of those attending courses at regional centres received an Impact Award. It is likely that these figures are an under-estimate of the proportions that have actually received an award as, for example, some schools have centrally co-ordinated in-house SLC courses and the participants may not have been aware that an Impact Award had been made.

2.32 Those responding to the 2010 e-survey highlighted the significance of funding to support attendance at SLC courses. The importance of financial assistance was widely felt with 66% of those receiving assistance reporting that they would have been unable to attend courses

without such funding. Funding to support attendance was more important for the National SLC attendees (77%) than Regional Centre attendees (57%), probably because their courses were longer and more expensive.

2.33 Despite the majority (66%) of 2010 e-survey respondents indicating they would not have attended courses without the availability of funding, there was also some deadweight with one in five of the survey respondents that had received funding, stating that their school would have paid for them to attend the course anyway, even if the award were not available. Furthermore, the increase in the number of Impact Awards claimed in the last year (52%) is not matched by a similar increase in throughput days (11%).

2.34 Feedback from teachers interviews in the 45 schools we visited and in the context of the barriers to attendance noted above, indicated that the availability of Impact Awards and ENTHUSE Bursaries do help to encourage engagement in CPD activity but only where the need for, and value of CPD is recognised. In other words, if teachers or schools do not value CPD, it is unlikely that the availability of incentives alone will encourage attendance.

3: Relationships within the Network and with wider stakeholders

3.1 In this chapter we describe the nature and effectiveness of relationships within the SLC Network, as well as with external organisations. The evidence is drawn from the interviews we have conducted with SLC staff and external stakeholders in the last three years.

How effective are working relationships within the SLC Network?

3.2 Internal relationships across the Network were positive and have developed over the lifetime of this evaluation. Relationships between Regional SLC Directors were mutually supportive and there were various groups in place to co-ordinate activity across the Network, including the Primary and Secondary Development Groups.

3.3 The relative autonomy of individual centres was viewed as positive and centres generally felt they had some autonomy as well being part of the larger Network. The ability of the Regional SLCs to develop an approach that meets the needs of their region, within a wider network model, continues to be valued and is something that centres wish to maintain.

3.4 The Regional SLCs were generally content with the work undertaken by the National SLC in relation to stakeholder engagement and strategic positioning. A notable area of concern for the Regional SLCs in our earlier rounds of fieldwork interviews with staff, was the role of the National SLC with regard to direct marketing. There were complaints from the Regional SLCs about difficulties tailoring marketing materials to local need and about the centralised approach being unresponsive and causing delays in materials being despatched to schools.

3.5 In response to the concerns of the Regional SLCs, when the regional contracts were extended in April 2011 (for a further two years) it was agreed that marketing responsibility would pass back to each Regional SLC. This was welcomed, but several Regional SLCs indicated an ongoing concern that the additional budget they had been allocated for this task was insufficient.

3.6 More generally, relationships between the Regional SLCs and the National SLC were positive. There was a degree of uncertainty as to what the recent change in the Myscience Director might mean for the Network and its future direction. That said, in practice this uncertainty appeared to be as much a sign of respect for the previous Director and natural uncertainty generated by the discussions about funding, as well as the introduction of a new Director who was leading thinking within Myscience about possible future directions of travel.

3.7 The Regional SLCs were also working with their host organisations to look at sustainability and income generation, but were feeling some constraints in doing this because of uncertainty as to what they should be planning for (e.g., retention, partial reduction or complete removal or core funding).

3.8 The last year had been challenging for the Regional SLCs because funding was not confirmed until very close to the end of their existing contract which left many staff with notices of being at risk of redundancy. The primary reason that activity was able to continue in the absence of confirmed contracts was because the host institutions agreed to underwrite SLC activity until the end of the summer term. The benefits of relationships with the host organisations have also been more widely felt and several of the host institutions indicated that the presence of the SLC helped raise the profile of their organisation.

Relationships with external stakeholders

Devolved administrations

3.9 Project ENTHUSE funding via the National SLC has been used to support the delivery of SLC courses in the devolved nations.[34] A Memorandum of Understanding has been signed between Scottish Schools Equipment Research Centre (SSERC) and the National SLC, and this is a longstanding relationship. This allows for funds to be transferred from the National SLC to SSERC for specific purposes. It effectively recognised that in Scotland, SSERC is the main point of contact for the National SLC and that they will deliver franchised courses to meet the needs of teachers in Scotland (quality assured by, and delivered on behalf of, the National SLC).

3.10 In Northern Ireland the relationship with the National SLC has progressed and a Memorandum of Understanding was signed in 2010 between a consortium of the five Education and Library Boards and the National SLC (but there is no specified lead contractor). The courses being delivered have been quality assured by the National SLC to ensure they meet necessary standards of delivery. The Northern Ireland team received National SLC funding to cover 600 teacher days. However, they actually managed to run 950 teacher days within their agreed budget as a result of all the courses being oversubscribed. The only limiting factor to delivering even higher throughput was the number of staff available to deliver the courses.

3.11 In recent years it has proved difficult for National SLC staff to establish contact with key individuals or groups in Wales. However, the National SLC provided funding to allow Welsh teachers to access science CPD in Wales, facilitated by Techniquest (a science centre located in Cardiff). Techniquest has been working with representatives from the Welsh Government, the All Wales Science Advisors Group, science teachers, WJEC and ASE to identify the CPD needs of science teachers in relation to the new curriculum in Wales. There have been some capacity issues experienced in Wales with a lack of suitable trainers and the National SLC has responded to this by delivering 'train the trainer' courses.

3.12 A clear message that came through the discussions in the devolved nations was that they all report that courses with ENTHUSE Bursaries had been over-subscribed and that a limiting factor was the availability of core staff in the devolved nations to deliver the necessary CPD. Those operating in the devolved administrations expressed an interest in greater representation and dialogue at the National SLC level.

[34] Note that whilst educators in an UK school can apply for an Enthuse bursary, the Impact Awards are restricted to schools in England

National stakeholder relationships

3.13 A consistent view from the group of national stakeholders was that while quality overall was very good, the effectiveness of different centres in the Network varied. For example one organisation which was funding the delivery of courses through the Regional SLCs noted that there was wide variation between the success of the individual centres in marketing these courses and filling the places. However, there was no consistent view on which Regional SLCs were better or worse, and much appeared to depend on the nature of the relationship between a funder and a particular centre. A small number of national stakeholders had long standing relationships with one or more of the Regional SLCs and they tended to be more positive about these centres. This in part appeared to reflect the importance of relationships between key individuals working across organisations, especially as most of these relationships were pretty informal. As such, they are subject to change over time as staff change.

3.14 During the course of the evaluation, several external stakeholders voiced a concern that whilst they had been open in sharing ideas and providing advice to the Network, this had not always been reciprocated and the relationship was felt to be largely one-sided. In the most recent round of interviews with stakeholders a concern was raised that the Network was at risk of being perceived as too focused on pursuing relationships which would generate income, rather than considering the wider strategic benefits of relationships. This may well reflect the Network prioritising income generating activity to secure its long term future and similar pressures elsewhere, but care needs to be taken to ensure longer term, mature relationships.

3.15 Similarly, we were also told of several cases where the National SLC had wanted to deal with certain people in external organisations, or have certain of its own people as the link specific to individuals in external organisations, when this was against the wishes of the external organisation. In most cases, personal relations had allowed these issues to be overcome, but there was some external frustration that the situation had been allowed to arise in the first place.

3.16 National stakeholder organisations were able to highlight examples of the SLC Network providing added value. The Network had been involved in the delivery of training to support teachers' role in assessing pupil progress through science CPD, complementing national policy messages in this area. The Network was also regarded as having been successful in working with external partners to bring together expertise in the development of new materials and courses.

Regional stakeholder relationships

3.17 Over the lifetime of the evaluation, relationships between the Regional SLCs and local stakeholders continued to develop and strengthen, and regional stakeholder feedback on the Network was consistently positive. Several SLCs reported progress in developing new relationships – primarily with local authorities. There was a perception amongst SLC staff in several regions that the Network was initially seen as a threat by some in local authorities, given that many local authorities had National Strategies Consultants (Science Advisors) in place and/or were delivering their own in-house CPD for teachers. The SLCs were viewed as

potential competitors. The SLCs have worked hard to develop relationships with local authorities and wider stakeholders over time.

3.18 Relationships between particular local authorities and the SLCs in any given region varied, and they continue to evolve. For many SLCs the relationship with National Strategies Consultants had been important. These consultants established links to local schools and acted as gatekeepers to SLCs, by promoting and referring people onto SLC courses, and in some cases commissioning SLC provision for schools in their local authority.

3.19 The demise of the National Strategies and changes in the education environment (e.g. more schools becoming Academies, Free Schools opening and the advent of Teaching Schools) means that local relationships are continuing to change. In some instances there were no longer Science Advisors in post (because the National Strategies funding has ended), and where they were still in place, there were fewer or they had a wider remit. The changes have presented challenges and opportunities for the Regional SLCs, with opportunities to 'plug' gaps left by Science Advisors no longer in place, but challenges from Science Advisors that have established relationships with local schools becoming freelance and competing with the Regional SLCs. Furthermore, many of the remaining local authority Science Advisors now operate on a traded model basis (i.e. schools pay for this service) and they need to generate income from schools to cover their cost. This could make them less willing to work with the Regional SLCs in the future.

3.20 The extent to which these changes will impact upon the Regional SLCs is difficult to assess as the landscape continues to evolve. In practice, a mixed model is likely to emerge based on past behaviours and local personalities. However, it is clear that the Regional SLCs have recognised these changes and are seeking to identify potential opportunities. For example, many Regional SLCs are trying to bring former Science Advisors on board to deliver CPD courses on behalf of the centre.

3.21 Relationships with other regional stakeholders continue to develop and embed. The range of relationships varies across SLCs, but much effort has been made to engage with key national and local players in science and CPD. Key stakeholder relationships include the Science, Technology, Engineering and Mathematics Network (STEMNET), the Association of Science Education, Research Councils UK, the Institute of Physics, Royal Academy of Engineering, museums, exam boards and private sector organisations. These relationships varied from networking/influencing relationships such as membership of regional STEM Cohesion through to formal partnership and joint-working.

3.22 Given their now more secure funding position, the SLCs may be well placed to strengthen their role, especially give the financial uncertainties faced by many other organisations working in this field. This uncertainty may also create market opportunities as other provision declines.

4: Satisfaction and impact

4.1 In order for the SLCs to achieve their aims, educators need to engage with the offer, have a positive experience, and then make improvements to practice. This chapter considers: the drivers behind educators' participation in SLC training; the experience of attending SLC training; and the subsequent impact that the training has in the classroom and throughout the science department and school. The evidence is drawn from several sources including the national telephone survey of educators, the e-surveys of SLC course participants and qualitative interviews in 45 schools.

How do educators identify CPD opportunities and what are their motivations for participation?

4.2 The 2010 e-survey of SLC participants suggested that their decision to participate in CPD courses was often driven by educators themselves within the context of typically informal training needs assessment and review. About sixty per cent of participants (59%) had the initial idea to attend themselves and 29% were prompted by their manager or Head of Department; the remainder stated that another contact in or outside school informed them of the course.

4.3 The most frequent reasons cited by SLC participants (responding to the 2010 e-survey) for choosing the most recent SLC course that they attended were:

- developing knowledge in a specific area (43%)
- developing new skills (32%)
- gain confidence as a teacher/technician (20%)
- improve attainment of dept/school (19%)
- freshen approach (18%).

How satisfied are teachers with CPD activities delivered by the SLC Network?

4.4 Overall satisfaction with the SLCs was very high amongst course participants, with 92% of the 2010 e-survey respondents reporting that they are fairly or very satisfied with the training received. These high levels of overall satisfaction were consistent across primary and secondary teachers and support staff and those attending National and Regional SLCs. However, respondents attending courses at the National SLC were significantly more likely to say they were 'very' satisfied than those attending Regional SLCs (71% compared with 64%). Those respondents receiving an ENTHUSE Bursary or Impact Award were significantly more satisfied than those who did not (70% compared to 60%).

4.5 The 2010 national educator telephone survey also explored levels of satisfaction amongst those who had attended SLC courses or events. Again, satisfaction with SLC courses and events was very high (82%) and had increased since the 2006 survey (62%). Educators that had attended SLC provision were more likely to rate the quality of *all science training* as 'good' (63%) than those that had not yet attended a course or event at an SLC (45%). This suggests the Network has positively influenced teachers' views on the quality of science training.

4.6 The e-survey of SLC participants also probed respondents on satisfaction against a wider range of specific course-related indicators. Satisfaction with different aspects of the courses did not vary significantly between primary teachers, secondary teachers and support staff Unsurprisingly the 'convenience of location' rated less positively amongst those attending the National SLC than the Regional SLCs (73% satisfied compared to 85%). Attendees at the National SLC reported higher overall satisfaction levels with regards to 'value for money including cover' and 'follow-up support' than attendees at the Regional SLCs.

4.7 Further analysis of the responses[35] revealed that the key drivers of overall satisfaction were areas that the SLCs were already securing high levels of satisfaction with:

- overall quality of the training presentation
- relevance of content
- course materials
- materials given to take away.

4.8 One area where satisfaction levels were lower was in relation to 'follow-up' support which had a greater overall influence on satisfaction than timing of sessions or convenience of location. Feedback through the qualitative interviews in the 45 case study schools also suggested a need for improved follow-up of course participants.

4.9 The teachers we interviewed in the case study schools mirrored the views of respondents to the two surveys with regards to high levels of satisfaction, and with provision regarded as high quality. Indeed a few stated they no longer used other providers as they did not believe the quality was as consistently strong. Where schools were using other providers for science-specific CPD it was largely linked to exam board courses.

What is the impact of SLC delivered CPD activity on educators and pupil performance?

Impact on educators

4.10 The most direct effect from SLC attendance was to the teaching practice of the attendees. In around half of cases, each effect detailed in Table 4-1 was cascaded to other colleagues to some extent. It is also noticeable the impact of the National Centre appears slightly but consistently above that of the Regional centres.

[35] Additional regression analysis was undertaken by GfK NOP to enhance the survey findings

Table 4-1: Outcomes from participation in SLC course

Which of the following happened as a result of attending the course	All	National Centre Attendees	Regional Centre Attendees
Base:	*493*	*131*	*337*
I have changed the way I plan and prepare for lessons	28%	34%	27%
My colleagues have changed the way they plan and prepare for lessons	11%	14%	11%
I have implemented new teaching or technician approaches	53%	60%	50%
My colleagues have implemented new teaching or technician approaches	20%	29%	17%
I have brought in outside speakers to the classroom	5%	6%	6%
My colleagues have brought in outside speakers	3%	2%	3%
I have taken students outside the classroom to learn in different environments	13%	16%	12%
My colleagues have taken students outside the classroom to learn in different environments	6%	9%	5%
Other staff have signed up to CPD at SLCs	18%	24%	16%
I am more engaged in CPD than I was	27%	33%	25%
The aims of my school's/college's or departmental improvement plans have been supported	28%	31%	26%
I have recommended the SLCs to colleagues	60%	85%	53%
None of the above	9%	2%	11%

Source: GFK NOP esurvey of course participants (2010) All respondents (493) Unweighted

Impact on pupil performance

4.11 The areas where 2010 e-survey respondents felt their engagement in SLC CPD activity was likely to have had a 'major' impact on pupils, was on their enjoyment of lessons (41%) and their engagement with science (36%).

4.12 Looking more widely at attainment, we undertook secondary data analysis to look at emerging patterns between attendance at SLCs and school performance. Our analysis (see Table 4-2) would suggest that SLC using schools have been improving their science attainment faster than the national average, and this despite beginning from a higher base (although this higher base may have reduced the scope for improvement in high-use schools). Further detail on the methodology we adopted for assessing the relationship between science attainment and attendance at SLC courses can be found in Annex E.

Table 4-2: Change in school attainment by SLC usage

	Change in % of pupils achieving two grades A* - C in science, 2007-10	Change in % of pupils achieving two grades A* - C, 2007-10
All England mainstream schools	10%	7%
High use schools	12%	7%
Medium use schools	16%	8%
Low use schools	17%	8%

Source: DfE performance tables data

4.13 The National Audit Office report "Educating the Next Generation of Scientists" (November 2010) sought to assess progress in increasing take-up and achievement in maths and science up to age 18, and the extent to which specific programmes or interventions were contributing to this. The report findings suggest that there was a statistically significant increase in the numbers of pupils achieving grades A*-C in GCSE sciences which can be associated with teacher training days at the National SLC. It also reported that "there may be diminishing returns when schools access larger numbers of interventions with similar objectives", which would be consistent with Table 4-2 above where low and medium attending schools appear to gain more than higher attending ones.

4.14 However, it should be noted that it was one of three interventions[36] associated with increasing pupil performance. Nevertheless, the model overall has relatively low explanatory power. The key factor associated with take-up of and performance in science subjects, was a school having a specialism in science, technology, engineering, maths or computing. Hence while encouraging, these results are not overwhelming, but this may reflect the previous discussion about the challenge of linking CPD activity directly to attainment.

4.15 A recent Ofsted report *Successful Science* (2010)[37] evaluated science education in England between 2007 and 2010. This report indicated an improving trend in science education over the period, particularly in secondary schools. Where schools were showing a clear improvement in science subjects, the key factors influencing this were more practical science lessons and the development of scientific enquiry. These are areas where the SLC Network has sought to make a difference to classroom teaching through the engagement of teachers in CPD activity. The report also notes that secondary teachers have benefited from attending the high quality courses offered by the SLC Network.

4.16 It seems fair to surmise that due to the rising scale of SLC activity, the change in practice reported by teachers and recognised by Ofsted, we can be confident that SLCs are leading to improved quality teaching. Moreover, taken together our data analysis and teacher feedback, alongside the NAO and Ofsted reports, suggest that schools and teachers that engage most with SLCs will see improvements in pupil attainment, especially where there is sustained activity through more than one teacher and event. This would suggest therefore the SLCs will have the types of long term impact originally envisaged for the Network.

[36] Enhancement and Enrichment Activities, STEM Ambassador Activities
[37] http://www.ofsted.gov.uk/resources/successful-science

Is the SLC Network having a wider influence on the culture and take-up of CPD

4.17 The 2010 educator survey indicated high levels of awareness of the SLC Network, which have risen since the previous survey in 2006, and the same survey also highlighted an increase in the proportion of all educator groups that have attended an SLC course over the same period. Interviews in the 45 case study schools emphasised the importance of enthusiastic head teachers, senior leadership teams and heads of science in promoting a culture of CPD in schools.

4.18 We used data collected by the SLC Network to review the frequency of attendance at National and Regional SLC courses between January 2005 and March 2010. Consistent data for the Regional Centres had only been collected in the last three years, therefore, it would be expected that repeat visits for the National SLC would be higher. Despite this, over 32% of Regional SLC attendees had participated in more than one course, coupled with almost one in two people attending the National SLC.

4.19 We also reviewed the number of days participating schools spent on SLC activities in each year. Across the five year period, at least one-third of schools participated in only one day of SLC CPD per year, but the numbers in this category have fallen over time. The proportion of schools taking part in 10 or more days of SLC CPD has increased significantly over the same period. For example in 2006/07 a total of 3% of schools engaged in 10-19 days of SLC CPD activity, but this doubled to 7% of schools in 2010/11. There was an even greater rise in the numbers attending for 20-49 days per year, which rose from 0.8% in 2006/07 to 4.7% in 2010/11.

4.20 The 2010 national educator telephone survey probed respondents on which providers they used for science-specific CPD. With the exception of primary school teachers, there were significant increases in the proportion of each educator group receiving the majority of their science-specific training through SLCs in 2010 compared with 2006. In the case of secondary heads of science there had been a seven-fold increase in the numbers reporting the SLC as being their main provider (Annex D: Fig D-2).

4.21 Although technicians tended to receive fewer days CPD than teaching staff, the mean number of days of science specific training undertaken had increased between the two surveys (from 1.4 to 2.3 days per year). The number of days of science-specific training undertaken by secondary heads and primary teachers per year remained unchanged between the two survey points. More encouragingly, the remaining three educator groups experienced a small increase in the amount of science specific CPD undertaken:

- primary coordinators (increase from 1.3 days to 1.6 days)
- headteacher and teachers in FE (increased from 2.9 to 3.4 days)
- secondary teachers (increased from 2.7 to 3.1 days).

4.22 In summary, there was an increase in throughput across the SLC Network, as well as awareness of the Network amongst educators, and evidence that the SLCs are becoming the first port of call for science-CPD for many schools. There was also an increase of around

25% in the number of days that many educators are spending on science-specific CPD activity. This is encouraging, especially as it appears to be being sustained and perhaps momentum is growing, which in turn is being supported and encouraged by the positive experience educators have at SLCs. The challenge is to ensure that this occurs across the sector, and not just in the currently enthusiastic schools.

5: Conclusions and forward strategy

5.1 In this chapter we draw together the main findings from the research conducted over the lifetime of this evaluation, under each of the key research themes (see Annex A). The conclusions are presented in Fig 5-1 below. We then go on to identify the challenges for the SLC Network and explore the opportunities that might support its long term development and sustainability.

Figure 5-1: Summary evaluation conclusions

(1) Impacts

SLC using schools have been improving their science attainment faster than the national average. In a similar vein, training days at the National SLC was one of three interventions that the National Audit Office associated with increased pupil performance in science.

The areas where educators felt their engagement in SLC CPD activity was likely to have had a 'major' impact, was on pupils' enjoyment of lessons (41%) and pupils' engagement with science (36%), stimulated by changes in teaching practice following a course.

(2) Relationships (internal and external)

The Network has matured over the lifetime of this evaluation with supportive relationships developing across SLCs.

The Regional SLCs have developed a number of strong operational relationships with other organisations (particularly local authorities) that are working in a similar policy or geographic space. The vast majority of external stakeholders were very positive about their relationships with the SLC Network, and about the quality of the product being delivered by the Network.

The extent of SLC course delivery in the devolved nations has developed over the last three years, and there is the potential for this activity to grow and develop further.

(3) The model, autonomy and delivery

Relationships between the National and Regional SLCs have worked well around course development, sharing experiences and overall strategic direction.

There is clear differentiation between the National SLC and Regional SLC 'offers'. At present schools and individuals tend to have relationships with one or other depending on their first entry to the network. There is potential for the 'offers' to be better integrated to give learners clearer pathways to continue their development.

(4) Impacts of the funding mechanisms

The Impact Awards and ENTHUSE Bursaries were widely regarded (both within and outside the Network) as being an important 'hook' in engaging schools in science-specific CPD, but only where schools have bought into the need for, and value CPD.

Two-thirds (66%) of the 2010 e-survey respondents that had received an ENTHUSE Bursary or Impact Award indicated that they would not have been able to participate in the SLC CPD without it, although a fifth reported their school would have paid for them to attend the course in the absence of this funding.

(5) Marketing

Awareness of the SLC Network has increased between the 2006 and 2010 national educator surveys for: secondary science teachers from 73% in 2006 to 85% in 2010; primary science coordinators from 48% to 61%, and technicians from 61% to 85%.

(6) Market and attendance

Annual throughput continued to grow and both the National SLC and Regional SLCs achieved their targets in

2010/2011. The National SLC saw a growth in throughput of 21% over the last year (60% growth since 2008/09), with annual growth of 11% across the Regional SLCs (23% growth since 2008/09).

In 2010/11 the Regional SLCs achieved a 'reach' figure of 73% for secondary schools, 18% for primary schools and 62% for post-16/FE providers. This suggests good coverage across the secondary sector (albeit with a hard core remaining out of reach) but a relatively large potential primary market remains untapped.

There was a substantial rise in the proportion of schools (as a proportion of all users) that have engaged in 10-19 days of SLC activity a year between 2006/07 (3.3%) and 2010/11 (8.5%) as well as the number attending for 20-49 days of SLC activity (from 0.8% in 2006/07 to 4.7% in 2010/11). At the same time the number of schools attending for fewer than 10 days per year had declined.

Repeat business (i.e., an educator returning to undertake more CPD) is occurring to a reasonable degree. One-third (32%) of teachers attending the Regional SLCs have undertaken more than one course between 2008 and 2010, and 45% of National SLC attendees returned between 2005 and 2010 - a considerable achievement given the length of courses and personal commitment required for national courses.

(7) Course delivery and development

The products being delivered by the SLCs are tried and tested and tweaked accordingly over the last couple of years. Therefore, there is now a core offering of different products rather than on-going radical change. This can be viewed as a strength, as the time invested in development has resulted in positive feedback on quality, and strong performance against throughput targets.

The Regional SLCs have developed ever more flexible models of delivery including in-centre courses, courses from satellite venues, school-based courses, as well as delivery from external venues.

The Regional SLCs are not always in a central location within their region. As a result some teachers are happier to travel to Centres outside their regions which are more accessible.

The quality of the SLC offer was considered good by teachers (92% of users reported being fairly or very satisfied). A view backed up across the range of stakeholders consulted.

Although satisfaction with SLC courses was high, one area where satisfaction levels were lower was in relation to 'follow-up' support which has a greater overall influence on satisfaction than timing of sessions or convenience of location.

(8) Impact on culture, uptake and expectation of CPD

Educators that have attended SLC provision were more likely to rate the overall quality of science training as good (63%) than those that had not attended an SLC course as yet (45%). This suggests the SLC Network is positively influencing teachers' views on the quality of science training.

There has been an increase in throughput across both National and Regional Centres, and awareness of the Network amongst educators, as well as evidence that the SLCs are becoming the first port of call for science-CPD for many schools. The increase in science-specific CPD is encouraging and may be gaining momentum, supported by educators recognising the quality of SLC CPD provision. If this trend can be maintained then the sector could be judged to have moved much closer to the culture change that was envisaged.

A key challenge remains the disengaged schools. The main barriers to attendance at SLC CPD courses identified by teachers were around senior management commitment and a reluctance to spend time away from their pupils whom they fear will suffer. The cost of training was not identified as a significant barrier. The success of the National SLC in recruiting educators onto courses during the summer holidays suggests that barriers related to being away from the classroom can be overcome.

(9) Accreditation

Accreditation for participation in SLC CPD is now available but as yet has only been taken up by a small number of teachers. Generally, demand for accreditation appears limited.

(10) Policy, strategy and sustainability

The period up to the renewal of funding for the Regional SLCs in early 2011 was a challenging one and financial uncertainty caused difficulties in undertaking planning for the future. The extension to the Regional SLCs contract removed some of the immediate pressure and uncertainty but consideration of financial sustainability into the long term must remain a priority.

The National SLC (via Myscience.co Ltd) is focused on ensuring the sustainability of the Network as a whole. The

Regional SLCs are also working with their host organisations to look at sustainability and income generation, but are feeling some constraints in doing this because of uncertainty as to what they should be planning for (e.g., a retention of core funding at current levels, its complete removal, or a partial reduction).

Source: SQW

The new policy context

5.2 The 2010 Schools White Paper entitled the *Importance of Teaching*[38] set out a commitment from government to promote strategic curriculum subjects such as mathematics and science by providing support to increase the number of specialist teachers in these subjects and to improve the skills of existing teachers. In this respect there is a clear and continued rationale for a deliverer of high quality science-specific CPD for educators.

5.3 That said, the market in which the SLC Network is operating is changing as a result of policy changes heralded by the same White Paper, for example, the promotion of Academy schools, and the introduction of Free Schools and Teaching Schools. At the same time many of the partners and stakeholders that have worked with the Network in recent years are facing their own challenges in a changing education policy context. For example, funding for National Strategies Consultants (including Science Advisors) in local authorities came to an end in March 2011 and this has prompted a restructuring of education support services in many local authorities.

5.4 The SLC Network is seeking to position itself in the new education policy context, whilst at the same time securing its long term financial sustainability beyond 2013 (without knowing whether funders wish to continue to support the Network, and if so to what level and for what purpose). In response to this dual (but linked) challenge of developing the offer and pricing, in the final year of the evaluation we focused discussions with SLC staff and wider stakeholders on identifying the challenges and opportunities for the SLC Network. As a result we have identified a series of options for development and considered the extent to which these would be supported more widely.

Sustainability of the SLC Network in its current form

5.5 During our interviews with SLC staff and external stakeholders we explored views on the sustainability of the Network in its current form. Representatives of the SLCs were supportive of the existing Network model which was viewed as having a value greater than the sum of its individual parts. In part these come through the efficiency and effectiveness of a single brand and through shared investment in course development. Externally there was also support for the existing Network model, with the SLC brand being recognised as a mark of quality.

5.6 In discussing the sustainability of the existing SLC model without some form of core funding as is currently in place, it was clear that both SLCs and their host organisations did not think it would be possible for the Network model to continue in its current form. There was a degree of optimism that some income could be generated through the delivery of CPD activities but as a consequence of this, the focus of CPD and the target market might need to change, and

[38] https://www.education.gov.uk/publications/eOrderingDownload/CM-7980.pdf

that courses would need to be charged at full cost meaning that the existing SLC infrastructure and curriculum would need to be radically scaled back in size, to those that are commercially viable to operate – not necessarily the most strategically beneficial.

5.7 The overall view was that if core funding was withdrawn, schools would have more limited science-specific opportunities open to them because other providers would not step in to fill this gap as their focus is also on commercially viable courses. Therefore, the range of professional development activity available to science educators would likely fall without some subsidy or cross-subsidisation between different courses across the SLC Network.

5.8 In this scenario, it is unlikely that the SLC Network would remain as coherent or offer a common product, since the shape of individual Regional SLCs would largely be driven by the funding they could secure locally. There is a desire from host organisations to support their Regional SLC but this is difficult with uncertainty as to what funding will be available post-March 2013. One host institution indicated a need for at least 18 months lead-in time if funding arrangements are to change, in order that they can support their Regional SLC to develop effective and realistic sustainability plans. Whilst they had started to look at different options, the ability to progress with this was limited by uncertainty over the potential extent of any long term funding. In other words, should they be planning for the same level of core funding, a reduction in core funding or its complete removal in the future?

5.9 There were some tensions between planning for the sustainability of the National and the Regional SLCs given the different funding sources (Wellcome Trust and DfE respectively) supporting the two complementary but different streams of activity. The timing of the new Regional SLC contracts to end in 2013 brings them into line with the National SLC contract which may help to bring coherence to planning for the Network as a whole. Yet there is uncertainty as to whether one or both of the funders will continue their support beyond this which complicates planning. There is also uncertainty as to whether there will be any funding available to schools (such as the Impact Awards and ENTHUSE Bursaries) to support attendance at SLC CPD, beyond 2013. A single considered view from the key funders at an early stage would be helpful in enabling planning discussion to move to a more detailed phase.

Market conditions – challenges for the SLC Network

5.10 In the introduction to this chapter we highlighted the changing education landscape in which the SLC Network is operating. Below we explore in more detail the challenges that result from this.

Competition from existing partner organisations

5.11 Much has changed in the last year for schools, local authorities and other organisations that work with the SLC Network, including concerns regarding future funding and sustainability. It seems likely that there will be opportunities as well as threats for the Network resulting from the changing education landscape. In particular, the demise of the National Strategies in March 2011 has potentially left a gap in the provision of school improvement and support services. Being in a solid position to deliver while other provision declines could leave the

SLC Network able to further enhance its prominent role and grow the number of educators and schools which use it as their primary provider.

Pressure on school budgets

5.12 Both SLC staff and external stakeholders raised a concern about increased pressure on school budgets restricting their engagement in CPD. To some extent this has always been an issue, although it appears to be growing with perceived cuts to school budgets and devolution of more control to individual schools. The perception was that CPD activity would be a lower priority for school budgets in the future. For this reason, the continued provision of Impact Award and ENTHUSE bursaries was regarded as an important incentive to encourage participation because they help remove financial barriers to engaging in CPD.

5.13 That said, several interviewees raised a question as to whether the long-term availability of awards had created an expectation amongst schools that CPD activities will be funded. In other words if financial incentives were reduced, attendance may be lower than if there had never been awards or bursaries. Clearly the barriers to engagement extend beyond simple financial barriers, but higher incentives could provide an impetus for increased engagement amongst low or non-users, for example by offering them greater bespoke provision or the opportunity to work with SLC staff across a whole department. Where there is evidence of schools and individual teachers becoming regular users of the SLC Network, or where there are very popular well established courses, there is an argument for reducing the level of subsidy in order that more funding can be directed to incentivise engagement with the Network by schools and teachers that are non-users or less frequent users.

Teaching schools

5.14 The 2010 Schools White Paper signalled the establishment of a network of Teaching Schools. These are schools which will take responsibility for leading the training and professional development of teachers and head teachers. This implies that Teaching Schools will have a role in the development, commissioning and/or delivery of CPD activity. There is no 'blue - print' for Teaching Schools and applications are being reviewed from schools across the country offering different models (which could include leading on CPD within a particular subject area).

5.15 At the time of our interviews there was a good deal of uncertainty as to what the Teaching School model might mean for those involved in the delivery of CPD and support services to school. On the one hand there was a broad concern that the Teaching School approach could encourage schools (or groups of schools) to become inward looking in relation to CPD delivery, but more positively it could also provide an opportunity to deliver CPD to clusters of schools if they do commission support externally. It is likely both models will develop, and the challenge for SLCs is to be in place to provide flexibly to schools which seek external support, and to demonstrate to the other schools the value that can come from the cutting edge offer the SLCs are charged with developing and maintaining.

5.16 The level of risk posed by the Teaching School model to the SLC Network is as yet unknown but the Network would appear well positioned to develop relationships with such schools particularly if they have an initial 'hook' such as the availability of Impact Awards and

ENTHUSE Bursaries to part fund the delivery of courses. Incentives coupled with the positive reputation of the Network, existing relationships with schools, and experience in delivering across school clusters, could place SLCs in a strong position to take advantage of potential opportunities. One external stakeholder also suggested a role for the SLCs in training the trainers to support those involved in the delivery of CPD in Teaching Schools.

Location of Regional SLCs

5.17 The Regional SLCs were established through an open and competitive tendering process covering all nine regions. The successful host organisations were not necessarily sited within a central and/or widely accessible location within a region. This has resulted in movement of participants across regional boundaries, for example throughput at the London SLC increased when it was measured against actual attendances, rather than on attendances at an SLC by a London teacher. The central location of this SLC near major transport hubs means it attracts participants from the surrounding regions who may be able to get to this centre at least as easily as the one in their own region. The Regional Centres have responded to issues related to location, for example, the East SLC which is in the south of this region (and bordering London) has established a network of satellite bases in other locations within the region to make its courses as accessible as possible. It should also be noted that an educator might attend a course in another region because a particular course in not available in their own region or is not available on a suitable date. A map highlighting the locations of the Science Learning Centres within their regions, and their proximity to areas of high urban density can be found in Annex F.

5.18 Over the lifetime of this evaluation there has been increased growth in the proportion of SLC CPD activity that is delivered as outreach (i.e. not centre-based) and schools seem to be responding positively to this. In particular, school-based CPD delivered to groups of teachers is reported to have been beneficial for financial reasons (availability of Impact Awards) and accessibility reasons (easy to access and can be delivered at times that suit the school, e.g., INSET days or twilight courses). Furthermore, this model can be more appropriate in affecting wider change in a school as a result of CPD activity.

5.19 Through our discussions with schools and wider stakeholders we explored the importance of having a Regional SLC from which CPD could be delivered. There was undoubtedly recognition that the Regional SLC bases provide first rate facilities for the delivery of CPD activities and this was valued, as was having a team that was knowledgeable about their region. The preference is for the Regional SLCs to maintain these physical bases for the delivery of CPD if possible, however, for many schools and external stakeholders, the availability of local or school-based CPD activities appeared more important than a Regional SLC base from which training could be delivered.

5.20 There is likely therefore to be an on-going need for a number of high quality physical centres not least for some courses that require bringing people together across some distance to create sufficient scale, but possibly not the number of locations as at present. A reduction in physical bases could result in a reduced need for the current associated infrastructure and potential efficiency savings.

Importance of maximising throughput versus engaging priority schools

5.21 There was also a view amongst some SLC staff that there was a tension between increasing throughput (which might support sustainability) whilst at the same time being tasked with engaging a core group of priority schools, with less anticipated revenue. Faced with this, a choice effectively, between the wider public interest and the commercial. Interviewees understood the value of working with priority schools and were positive about the impact they could have if they could engage these schools.

5.22 It may be that popular courses could be run on a full-cost basis with other courses being pump-primed or participants (such as priority schools) having additional financial incentives to engage. Alternatively, funding could be directed at the achievement of outcomes (payment by results models) which might incentivise the SLC Network to focus on in-depth engagement with priority schools rather than throughput. However, external stakeholders and SLC staff noted concerns about the difficulty of devising and implementing an outcomes-based payment model. Therefore, the most likely options are around targets based on models of delivery, defined in a way which incentivise some models over others, most likely those which deliver in lower performing schools, and/or to groups of teachers from a single school or cluster over a period of time.

Wider opportunities for the SLC Network

5.23 Feedback from the schools and external stakeholders indicated that the reputation of both the Regional and National SLCs was strong and that that they are well placed to adapt and respond to the changing environment. Below we highlight several options that were suggested both within the Network and by external stakeholders to refine the existing SLC Network model and to secure on-going sustainability.

Working with the devolved administrations

5.24 As reported earlier, the National SLC's relationship and working arrangements with the devolved administrations have improved significantly in recent years. There are now lines of communication in place and formal arrangements relating to the delivery of CPD. Feedback from the devolved nations is that capacity is constrained by the ability of staff to deliver CPD. If this issue could be addressed there is significant potential for continued growth of SLC franchised courses in the devolved nations.

5.25 The key stakeholders in the devolved nations expressed a wish for regular and formal strategic dialogue across the nations with the National SLC. In effect, they are seeking to be viewed as strategic partners who also support and promote CPD development at a strategic level, and not just as routes to market for the delivery of the SLC courses.

Expand existing target market

5.26 The priority target market for the SLC Network has been secondary schools and good progress has been made in relation to the number of schools that have now engaged with the Network. However, annual 'reach' is already at 73% for secondary schools and further growth is likely to be linked to sustained relationships (i.e., schools engaging in SLC CPD

every year) and intensive activity to reach schools that have not yet engaged with the Network or have only done so sporadically, which is likely to be time-consuming.

5.27 A clear potential growth market within the scope of existing delivery is primary schools. In the last year 'reach' was 18% for primary schools. In part this reflects the fact they had not been the priority market but at the same time also reflects the absolute size of the primary sector (nearly 17,000 schools in England). There is growing evidence of primary schools expressing an interest in developing their science curriculum through engagement with the PSQM which could provide another route to promoting CPD activity.

5.28 The interviews with SLC staff suggested that there would be no objection to expanding work in the primary sector, indeed many would actively support this. However, two key challenges were cited. First, staffing in the Regional SLCs generally reflected the priority placed on secondary delivery and it might mean additional primary development staff/trainers need to be recruited. Second, there is less funding available to incentivise participation in primary courses with only a limited number attracting Impact awards. As such, a greater targeting of primaries would likely be at the expense of secondary activity, and this may not be supported by funders. At the very least a clear and early signal should be given to the Network about future expectations.

Diversification beyond the delivery of science CPD activity

5.29 Given the Network's National and Regional structure there could be opportunities to diversify into delivering other services which require or would benefit from national coverage, particularly because of their links into schools. This could include delivery of CPD in related areas such as maths and engineering, although a note of caution would be that some partner organisations are already involved in delivering this type of activity, which could create tensions. The benefit of such an approach is the opportunity to consolidate some of the many initiatives targeted at schools to create a single access point. A concern raised by some external stakeholders was that whilst expansion into other areas could be possible (and could be financially advantageous) it was important that SLC brand was not diluted and that the Network did not lose sight of its original purpose which still remains important.

5.30 Other options suggested in relation to diversification included a role in the development and delivery of initial teacher training courses, providing an advisory service to schools (e.g. undertaking a needs analysis and then developing an appropriate package of support) and more chargeable work being undertaken in the independent schools sector.

5.31 A more straightforward means of diversification might be the continued expansion of the delivery of contracts for other organisations, such as Subject Knowledge Enhancement (SKE) for TDA, or to develop new services and partnerships such as those developed by initiatives such as the Primary Science Quality Mark. One constraint identified with respect to diversification was internal capacity, with SLCs being encouraged to consider income generation on the one hand, but on the other, an expectation to deliver against their core aims and objectives. A Network approach to share effort, especially for larger contracts, may bring efficiencies and share the cost burden.

Increased outreach activity

5.32 There may be opportunities to consider more local methods of CPD delivery which respond to demand from schools. There has been an increase in the growth of courses being delivered at outreach locations over time (satellite venues or school-based) and there is the potential to grow this further. There are already some examples of cluster models developing both at a National SLC level (schools hosting CPD activity for groups of schools) and at a Regional SLC level (delivering CPD that has been commissioned for a group of local schools). These approaches provide opportunities to reach larger groups of schools, and could be fruitful in generating additional throughput.

5.33 Historically, the National SLC has been largely centre-based (with outreach activity focused on the devolved nations). There is a risk that if the National SLC delivers more CPD to clusters of schools in a region, the National and Regional SLCs are seen as direct competitors unless there is a clear differentiation between the types of courses on offer or, preferably, better integration in the outreach activities of the network as a whole. This greater integration would also fit alongside the suggestions above for better pathways between courses.

Revised charging structures

5.34 There is a great deal of uncertainty as to what schools might be willing to pay for CPD activities, particularly given the perception of schools having been subject to budget cuts. The availability of funding to support attendance has clearly helped encourage participation, however, the willingness of schools to pay for science-specific CPD from the SLC Network has not been fully tested as yet. There could be some merit in trialling charging for high demand courses to 'test' the market, perhaps by making them ineligible for Impact Awards or by reducing the value of awards for particular courses.

5.35 Many external stakeholders were confident that schools would be willing to pay for high quality CPD in the future but that the challenge would be around the types of CPD they want and are willing to pay for, and that this may not match what is currently being offered by the SLC Network or seen to be strategically important in the medium term. The feedback from external stakeholders and many schools themselves was that a greater focus was being placed on CPD that could directly impact upon school attainment (e.g., exam board courses). We also have evidence from the PSQM initiative that schools are willing to pay for a service if they recognise the value of it.

Concluding comment

5.36 The evaluation has consistently reported high quality delivery via the SLC Network and has built an evidence base to suggest that this is consistently leading to changed teaching practice. The Network is now at a point where it needs to evolve for the period beyond 2013. In the text above we have set out a range of options for consideration. In presenting these options for consideration we would make three final points.

- The stakeholders consulted externally would be broadly supportive of all the possibilities set out above. There was no strong resistance to any of the points.

Perhaps the bigger challenge will be for the funders and SLC Directors to agree a single vision.

- It is not likely that all of the options can be taken forward at the same time. Some initial high level choices need to be made, most likely informed by policy priorities and funding (e.g., the focus on primaries versus secondaries, full cost recovery versus a focus on hard to reach schools). An early signal about future priorities and likely funding would assist the Network in considering how to position itself.
- The time to 2013 provides an opportunity for the network to trial things. For example, the possibilities around charging or targeting could be tried in specific regions or courses. This would then provide learning to the whole Network which could be used to inform future models.

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