



National College for
Teaching & Leadership

Three greats for a self-improving school system – pedagogy, professional development and leadership

Teaching schools R&D network national themes project 2012-14

Research Report

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Section 1: R&D national themes project in context

1.1 Introduction

Over two-and-a-half years, teaching school alliances (TSAs) across England involved in the National College for Teaching and Leadership's (NCTL) research & development (R&D) network have engaged in collaborative R&D projects investigating three important themes:

- Theme one: what makes great pedagogy?
- Theme two: what makes great professional development which leads to consistently great pedagogy?
- Theme three: how can leaders lead successful TSAs which enable the development of consistently great pedagogy?

The alliances were supported by two national teams: the partners for theme 1 and 2 were University College London Institute of Education (UCL IOE) and Sheffield Hallam University (SHU), and the partners for theme 3 were Isos Partnership, with Robert Hill and Professor Qing Gu of the University of Nottingham.

This report, looks across the three themes' collaborative R&D projects, the national teams' reports (Nelson et al, 2015a; Rea et al, 2015a; Maxwell, Greany et al, 2015) and case studies (Nelson et al, 2015b, 2015c; Rea et al, 2015b) being published at the same time. It synthesises messages from their experiences and findings, then poses questions for schools, policy makers and research partners to consider.

1.2 Project context

These projects have taken place in a national policy context that is committed to evidence-based teaching in an autonomous and diverse but connected self-improving school system. Teaching schools, as system leaders, are leading the way.

Improving teaching quality through evidence use and disciplined innovation

Improving the quality of teaching is central to the national and international agenda. Furthering the white paper *The Importance of Teaching* (DfE, 2010) and international reports such as the Organisation for Economic Co-operation and Development's (OECD) call for 'teachers to be high-level knowledge workers' (Schleicher, 2012), the thrust is towards developing teaching as an evidence-based profession. Schools are increasingly expected to use evidence when selecting, implementing and evaluating their improvement efforts.

Goldacre's (2013) report on building evidence into education promotes randomised control trials, used at the Institute for Effective Education (IEE) at York University¹, and based on their use in healthcare. Many leaders use the Sutton Trust / Education Endowment Foundation (EEF) toolkit² to identify reliable and good value interventions with demonstrable impact. Similarly, in using the pupil premium³, school leaders are encouraged to draw on evidence-based approaches. More attention is also being paid to teachers using evidence in the classroom (Nelson and O'Beirne, 2014).

Innovation is also increasingly encouraged, with the caveat that this must be purposeful and disciplined (Hargreaves, 2011). EEF and other bodies now offer school leaders, and their partners, grants to support innovation and scale up of projects with a measurable impact on attainment. International initiatives also promote innovation to address new solutions to educational challenges; for example the OECD's Innovative Learning Environments initiative (OECD, 2013). With an increase in school-led initial teacher training (ITT) through School Direct, and an Ofsted inspection framework that only allows a school to be outstanding if its quality of teaching is outstanding, leadership has to ensure effective teaching and improved outcomes.

Partnership for improvement

School-to-school support and peer-to-peer learning are important strategies within the national agenda to raise standards and improve the quality of teachers and school leadership. The white paper set out an expectation that schools will work in partnership to develop a self-improving school system, and Ofsted's current framework inspects how effectively schools work in partnership. In an increasingly autonomous system where around 60 per cent of secondary schools and 15 per cent of primary schools are now academies or free schools, many formal and informal collaborative arrangements have developed, with increasing numbers of federations and almost half of the secondary academies which are part of multi-academy trusts (Ofsted, 2014).

Many partnerships have started to use evidence-based approaches eg research lesson study (Dudley, 2014) to interrogate teaching within an increased orientation towards joint practice development (JPD), as signalled in David Hargreaves' (2011) self-improving school system maturity model, and further NCTL work (Sebba et al, 2012).

A number of local and national partnerships networks and alliances have also designed their own peer review processes.

¹ <http://www.york.ac.uk/iee/> University of York IEE page

² [http://educationendowmentfoundation.org.uk/toolkit/Education endowment website](http://educationendowmentfoundation.org.uk/toolkit/Education%20endowment%20website)

³ <https://www.gov.uk/pupil-premium-information-for-schools-and-alternative-provision-settings.gov.uk/website>

Leading a self-improving school system

System leadership is a core plank of the self-improving school system, with a national network of teaching schools at the helm. Outstanding schools apply to become teaching schools, supported by an alliance of other schools and partners⁴. By January 2015 there were 598 teaching schools representing 487 alliances, with a goal of 600 teaching schools by March 2016. 32 per cent of schools in England are currently known to be part of a TSA.

Teaching schools have six important responsibilities - 'the big six':

- School-led initial teacher training (ITT)
- Continuing professional development (CPD)
- Supporting other schools
- Identifying and developing leadership potential
- Specialist leaders of education (SLEs)
- Research and development (R&D)

Leading R&D in a self-improving school system

The intention is that these already outstanding teaching schools will continue to learn and improve through engaging in R&D. In carrying out this aspect of their remit the NCTL expects that teaching schools will build on existing research as they contribute to alliance and wider priorities, base new initiatives on existing evidence and measure these initiatives, ensure that staff use existing evidence, and provide necessary time and support for staff to participate in R&D activities. This also needs to be done working with other teaching schools regionally and nationally⁵.

In support of this and other aspects of their remit, most alliances include at least one university as a strategic partner – although while encouraged, this is not mandatory. Some teaching schools are strongly engaged with research (Bubb, 2013); others are still developing this area.

1.3 Project origins and summary

At three national events held by the NCTL's national R&D network during November 2011, the three R&D themes referred to previously were proposed by teaching school leaders and their higher education partners as overarching network research priorities.

⁴ <https://www.gov.uk/government/policies/improving-the-quality-of-teaching-and-leadership/supporting-pages/teaching-schools> gov.uk website

⁵ <https://www.gov.uk/teaching-schools-a-guide-for-potential-applicants> gov.uk website

The NCTL funded 98 teaching schools to enable them to undertake collaborative R&D in their alliance within one of the themes, with one third focusing on each theme. To guide and support them, the two research teams referred to previously were commissioned to develop and implement an overall design to address the research question for each theme. The TSAs joined the project in three phases, cohort 1 TSAs becoming involved at the start, cohort 2 TSAs six months later and cohort 3 TSAs joining in September 2013 for the last year.

The aim was to produce robust evidence to disseminate more widely, while building the capacity and commitment of teaching schools in their use of R&D approaches and evidence.

Each cohort had a launch event with follow-up national events. In total there were three national learning events in 2012, 2013 and 2014. At the launch, national teams introduced their model of collaborative R&D, existing literature around the themes and further essential resources. As new cohorts came on board, they joined earlier cohorts at these national events. Joint activities at these events enabled those involved longer to share experiences with newcomers. Between events, a member of the national teams provided regular, regional, themed external facilitation support both face-to-face and by telephone. The project ended in November 2014 with a national celebration and sharing event at the NCTL.

The next section outlines the learning arising from this project.

Section 2: Learning from across the projects

2.1 The three themes

This section describes what the TSAs learnt about the three themes through their collaborative R&D projects.

Theme one: what makes great pedagogy?

At the core of all three themes is the need to ensure great pedagogy. Pedagogy, the topic chosen by the teaching schools, is not just teaching. It consists of the theories, values, evidence and justifications that underpin teaching: what you need to know, and the skills needed at your fingertips, to make and justify the many different decisions that teaching requires (Alexander, 2004).

An initial literature review for the theme (Husbands and Pearce, 2012)⁶ proposed nine claims, bringing together ‘what’s known’ about great pedagogy, which participating TSAs were encouraged to engage with to determine and refine their areas of focus, establish their starting points and consider their findings. The 33 TSAs’ projects tackled many aspects of pedagogy. Some were small, involving only 3 or 4 schools. Others had a wider reach. Richer detail of the TSAs’ efforts can be found in their case studies (Nelson et al, 2015b) with further examples in the theme 1 report (Nelson et al, 2015a).

Drawing across impact reports and case studies written by the TSAs and experiences of externally facilitated action learning sets (see section 2.2), the national team came up with 14 key messages about what makes great pedagogy which they asked participants at the final sharing event during November 2014 to verify. They broadly affirmed the messages, adding particular comments about the ‘primacy’ of assessment for learning (AfL), the importance of scaffolding, being attentive to pupils’ needs in different contexts, and being clear that pupil voice means seriously listening to pupils talking about their learning. The national team have summarised the key messages under seven headings. It is not surprising that the messages are in some ways similar to the external research literature review findings, given that the TSAs’ R&D activities were informed by this research.

⁶ See also table 2 (Nelson et al, 2015a).

Key messages about what makes great pedagogy

Talk with pupils about their learning, listen carefully, and involve them

- The importance of taking account of pupil voice comes through consistently. It means that teachers go beyond thinking about what they are going to teach and how, to consulting with students about their experiences as learners.
- Taking account of pupil voice appears to enable teachers to change or adapt their pedagogic approach and create a virtuous cycle of improvement.
- Taking account of pupil voice appears to help develop positive relationships. The engagement and enjoyment of pupils appears to be a positive consequence of this.
- Talking with pupils about their learning appears to enable teachers to make links between teaching approaches and their impact on pupil progress and attainment.
- Involving pupils in the planning and teaching of their lessons can increase their enjoyment and engagement in learning.

Be open to new learning and challenge and don't give up

- For teachers to improve their pedagogies they need to believe in their own capacity for growth and improvement and be prepared to be challenged in their beliefs about learning.
- Changing practices and behaviours requires teachers to have high levels of motivation and commitment and a resilience to manage the range of demands, challenges and priorities that are also part of their role.

Use a range of strategies flexibly to meet pupils' needs

- Effective pedagogies draw on a variety of techniques. Outstanding teachers can select appropriate strategies to meet the varying needs of pupils, adapting the topic taught according to a range of shifting variables.
- 'One size does not fit all' – there needs to be an offer of a variety of interventions for special educational needs (SEN) pupils.

Develop pupils' thinking and learning skills

- An increased access to metacognitive strategies developed through 'talk for learning' appears to improve longer term outcomes for pupils and raise expectations for teachers. The development of learning skills needs to be embedded in lessons.

Don't underestimate what pupils already know and can do

- Teachers often underestimate the prior knowledge and capability of pupils entering secondary school. When their expectations are raised, and they have a good understanding of 'where the children have come from', this can impact on pupil progress.
- Whilst pupils can enjoy giving feedback to each other they may have little understanding of their next steps or rate of progress. AfL methodology that employs a scaffolding approach can activate pupils as learning mentors for their peers.

Build in time for AfL and scaffold it

- Pupils need time to digest and understand teacher feedback and this needs to be built into lessons. Verbal and written feedback goes hand-in-hand.

Develop a common language to talk to colleagues about pedagogy

- Developing a consistent, shared language within and between schools and phases is important in relation to all claims and supports high standards.

Nelson et al (2015a)

Theme two: what makes great professional development which leads to consistently great pedagogy?

The second theme chosen by TSAs focused on exploring and stimulating high quality professional development that will lead to consistently great pedagogy within and across schools. Great teaching has a positive impact on pupils' learning experiences and outcomes (Coe et al, 2014). If so, great professional development that leads to consistently great pedagogy also leads to improved pupil learning, achievement and wellbeing (Timperley, 2011).

The 33 participating TSAs' project focus areas were also influenced by the research literature review findings on 'what's known' about great professional development which

leads to consistently great pedagogy (Stoll et al, 2012)⁷. These were shared with each cohort at the launch and returned to at various points throughout.

Given that this was an alliance-focused initiative, it is not surprising that TSAs overwhelmingly explored aspects of collaborative professional development; in other words, whether, how and in what ways working together with colleagues brings about improvement in pupil learning (*Research & Development National Themes Interim Report: Spring 2014*, Taylor et al, 2014). Many also came up with project questions which highlighted diverse aspects of collaborative learning, and most projects focused on several features of professional development.

Again, some only involved a small number of teachers and schools, while others spread their nets wider. Some alliances focused on a particular group of teachers e.g. newly qualified teachers (NQTs) or ITT students; others considered a particular strategy, such as lesson study or coaching. Forms of evidence-informed teacher enquiry were the focus for others, while many applied their efforts to one or more curriculum area, for example maths, literacy and computer science. A number chose a more systemic perspective in investigating and promoting generic professional learning skills and habits across schools in an effort to embed collaborative learning cultures throughout the alliance. Case studies of TSAs' interventions have been published alongside the main report from the project. Further examples are in the theme 2 report (Nelson et al, 2015a).

The national research team drew across impact reports and case studies written by the TSAs and experiences of externally facilitated action learning sets, to generate 16 key messages about what makes great professional development which leads to consistently great pedagogy. These messages were tested and verified with participants at the final sharing event, to check that they were robust for sharing with others. The project leaders concluded that the research claims "do stand up to the test", but embellished messages, commenting: "it's dynamic CPD that engages teachers in issues that matter"; "it can create disturbance that colleagues take account of"; "continuous development is a journey that does not end". One group commented that the enquiry process 'fuels' the process, but is not essential for every aspect of professional development. Also, they noted that clearly focused professional development which starts with the end in mind (starting from pupils' needs and considering intended impact) gets buy-in from senior leaders. The national team's report summarises the key messages under six headings.

⁷ See also table 3 (Nelson et al, 2015a).

Key messages about great professional development

Think about the pupils' needs and the impact you want to have

- Great professional development starts 'with the end in mind' and is specific about the relationship between pupils' learning needs and teachers' beliefs, behaviours and practices.
- 'Starting with the end in mind' also provides a clear structure for the professional development and its impact on teacher practices and outcomes for pupils.
- Effective professional development requires teachers to be forensically clear about their starting points in order to be able to evaluate impact – but to also be prepared for unexpected outcomes.
- Great professional development is rooted in the classroom and starts with an issue that is relevant for teachers and their pupils.
- Taking serious account of pupil voice helps teachers to genuinely understand the impact of new interventions / practices as a result of their professional learning.
- Enabling teachers to focus on the difference they want to make for their pupils is highly motivating and effective professional development.

Help colleagues to think seriously and differently about their practice

- Effective professional development requires teachers to challenge their existing practice and make connections between how they teach and how pupils learn.
- Great professional development requires teachers to truly look at their own practice and pre-conceptions about what they think students understand and what they actually do understand.
- The 'conditions for challenge' need to be in place eg trust, honesty and time for deep conversations.

Provide opportunities for colleagues to engage in deep collaborative learning

- Mentoring and coaching can be powerful when personalised, developmental and undertaken over time.

- Providing sufficient time for deep, high quality talk between teachers is beneficial for professional relationships and leads to deep learning.
- Working, planning, sharing and collaborating with colleagues is stimulating and enables teachers to engage in critical thinking about lessons and learning.

Ensure access to knowledge and skills from inside and outside

- Using both internal and external expertise can maintain drive and momentum and provide support at different stages, as well as build new expertise and leadership.
- Co-create knowledge - bringing together knowledge from practice and knowledge from research.

Use collaborative enquiry to stimulate professional learning – but not as a quick fix

- Collaborative enquiry is effective professional development but it is not a 'quick fix'. It's a long term approach that requires persistence.

Facilitate the practicalities to encourage a learning culture

- When senior leaders provide the necessary conditions for effective professional development to take place e.g. time, resources, an open classroom culture is more likely to develop.

Nelson et al (2015a)

Theme three: how can leaders lead successful TSAs enabling great pedagogy?

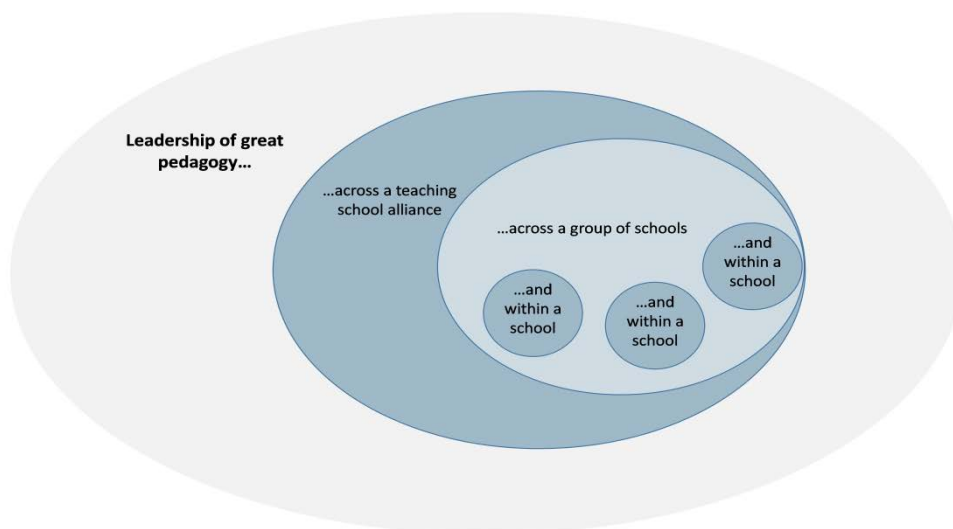
The teaching schools' third theme was leadership. In the move towards a self-improving school system, teaching schools are key system leaders. School leadership has been the subject of numerous studies and publications. However, the initial literature review for this theme (Gu et al, 2012, p2) highlighted that there was still relatively limited knowledge about successful leadership for learning and development in school-to-school networks which assesses their influence and impact upon the quality of educational provision. Since this literature review was written more research evidence exists around the benefits of TSA inter-school collaboration for organisational change, teacher development and improvement in teaching and learning (Gu et al, 2014). A study of federations highlights the impact of partnership structure and organisation on student outcomes (Chapman and Mujis, 2013, 2014). Analysis of the effects of academy chains (Hutchings et al, 2014) also suggests the key to success is strong leadership driven by a clear moral purpose, direction and mission and which creates appropriate and responsive structures and cultures for a sustainable approach to growth.

The 32 TSAs exploring and intervening in aspects of this theme utilised David Hargreaves's self-improving school system maturity matrix (Hargreaves, 2011), an intervention toolkit designed by the research team, an ongoing leadership learning log, and the literature review. Some TSAs used all four and some used different ones for decision making about project foci and interventions (Rea et al, 2015a).

Projects mainly clustered around several broad themes. Hargreaves's professional development dimension framed a number, which focused on aspects of JPD. These took the form of different approaches to professional development to improve curricular-related aspects of teaching and learning and/or transition from primary to secondary, mentoring and coaching interventions, using and developing specialist leaders of education (SLEs), and improving ITT. Some highlighted Hargreaves's high social capital (trust) strand, while a few enquired into aspects of the alliance's infrastructure such as virtual learning environments. Case studies show the rich detail of TSAs' efforts and findings (Rea et al, 2015b).

The national team's focus was on the leadership of projects, as this was the overall theme, and on collecting evidence through leadership learning logs and peer-to-peer discussions at regional cluster meetings (see section 2.2). Based on their analysis of evidence, including case study reports, the learning logs and school leaders' reflections at meetings, the national team built on the eight original modest claims to develop 13 firm findings in relation to three aspects of leadership: leadership of cross-school pedagogy projects, leadership to develop pedagogy within a school, and leadership of great pedagogy at alliance level (see figure 1).

Figure 1: Leadership of great pedagogy at three levels



Rea et al (2015a)

Key messages about leadership – firm findings

A Leadership of cross-school pedagogy projects

1. Select appropriate projects – leaders need to identify projects with a clear sense of mission and purpose.
2. Engage schools (and their headteachers) – leaders need to be able to communicate the project's purpose and secure support from headteachers in other schools.
3. Scope and plan – leaders need to ensure that a project's development is well-scoped (i.e. realistic and not over-ambitious) and that implementation is thought through.
4. Exercise flexibility – leaders need to be responsive to the particular context and needs of schools and open to flexing the project's nature to suit those needs.
5. Empower middle leaders – leadership of the programme across schools will take off when middle leaders (and student leaders) are empowered.

B Leadership within schools of pedagogy projects (related to cross-school pedagogy projects and programmes):

1. Ensure headteacher sponsorship – headteachers within the school need to be persuaded to own, support and champion a programme or project if it is to take root and be effective.
2. Designate senior leader champions – a senior leader (or ambitious middle leader) is needed to drive the project forward and make it happen.
3. Focus on development – leaders need to prioritise development over judgement in working on projects that involve classroom observation and teacher-to-teacher development activity on their pedagogical skills.

C Leadership of great pedagogy at alliance level:

1. Work to clear strategic priorities – alliance leaders need a clear strategy and set of priorities to act as a framework for commissioning and developing projects.
2. Draw on skills differently – alliance leaders need to utilise skills and behaviours differently to develop great pedagogy across an alliance compared to a single organisation (i.e. school or federation).

3. Align activity – alliance leaders need to align different strands of activity to ensure they are more than the sum of the individual parts.
4. Build trust and it will deepen and extend impact – alliance leaders should expect cross-school projects to help build social capital between schools and break down barriers between schools within a multi-academy trust or alliance.
5. Manage risks – alliance leaders may find that broader developments may destabilise or slow programmes / projects between schools.

Rea et al (2015a)

At the final national event, the national team asked participants if anything did not resonate or was missing, and invited them to add examples. Project leaders endorsed the findings. They thought that the message on managing risks needed elaboration, saying that there was still a way to go to be a self-improving system when many schools do not yet engage with teaching schools and some are involved in few partnerships. They raised the issue of teaching schools' capacity to meet schools that are turning to them because 'teaching schools are overstretched', and thought that greater expertise still needed to be developed in the system. The overarching findings from theme 3 appear in the national team's final report (Rea et al, 2015a).

Looking across the themes

The three themes are closely interconnected. Looking at project titles and questions, it is often hard to determine which theme was the focus. This overlap is inevitable for several reasons.

First, the word 'pedagogy' deliberately features in each theme's questions. The teaching schools' R&D mission is to investigate, learn about and ensure great pedagogy within and across alliances. Whether the focus was on pedagogy itself, or the leadership or professional development necessary to stimulate, promote and embed it, leadership and professional development for great pedagogy is the heart of the matter. Great pedagogy within a group of schools depends on professional development and leadership. Professional development and leadership cannot exist in a vacuum – you have to develop and lead something and developing or leading consistently great pedagogy that enhances pupil learning experiences and outcomes in all aspects of their schooling is at the core of educational enterprise.

This chimes with national and international school leadership evidence. The link between school leadership and pupils' progress and achievement is most powerfully demonstrated through attention leaders pay to promoting and participating in teacher development (Robinson, 2011) and developing professional learning communities (Leithwood et al, 2012), as they support, evaluate and develop teacher quality (Schleicher, 2012).

The literature reviews and other tools also guided teaching schools' project foci. The Hargreaves matrix model identified professional development as one of three dimensions of a self-improving system, thereby influencing many leadership projects. The theme 3 intervention toolkit (see section 2.2) also included examples of school improvement activities and interventions to improve pedagogy working across groups of schools, and many of the theme 2 professional development projects took pedagogical issues as a specific focus for their professional development eg a focus on problem solving in mathematics. There was also some elision between themes 1 and 2, for example in lesson study projects. As the theme 2 national team leader noted: "we have veered across all three themes. They have looked at collaborative leadership capacity and distribution. It's been a preoccupation in action learning sets and in the final impact report we asked questions about leadership".

Ten common messages across themes

The three themes' key messages contain 10 transversal messages about ensuring great pedagogy and the professional development and leadership to develop and embed it within and across alliances. These are drawn from across the three sets of messages, supported by other findings.

Be clear about the difference you want to make

Teachers have to understand pupils' needs and be absolutely clear about their starting points in order to be able to evaluate impact of their teaching. From a pedagogical perspective, this means knowing pupils well enough and then ensuring that every pupil's needs are met by offering a variety of strategies and interventions. Seeking pupils' insights into their own learning is a way to increase impact (Timperley, 2011). This requires having a baseline picture. Baselining is an essential feature of professional development where data is used to get right underneath issues in order to know where you are when you start and what specific problems need addressing. In scoping projects, leaders also need to ensure project leaders are capturing a baseline picture, and then hold the project leaders to account for assessing and ensuring impact.

Engage interest and commitment – involve others and distribute leadership

Gaining people's interest and commitment is fundamental. First and foremost, pupils' willingness to engage with their learning is critical to them achieving success. Successful pedagogy both takes account of pupils' experiences of learning and involves them in planning and teaching, which increases their engagement with learning. Hattie's (2009, p25) research endorses this, concluding that 'the more the student becomes the teacher and the more the teacher becomes the learner, then the more successful are the outcomes'.

Student voice research has received attention recently (Coe et al, 2014). Alliance projects have a deeper conception which aligns more with Hattie's view of learner agency

and similar work in British Columbia based on AfL concepts and well-being research (Guhn, Schonert-Reichl et al, 2012). This Canadian work highlights benefits from teachers asking pupils well targeted questions about their learning and schooling experience to uncover gaps (Timperley et al, 2014). Also, it is not just pupils' engagement that matters. Successful professional development is more likely when it starts with an issue that teachers consider relevant and when teachers quickly gain ownership of their change projects and development experiences. Similarly, in distributing leadership, middle leaders need to be able to co-construct and steer projects, and empowering student leaders also reaps benefits.

Talk about learning to build trusting relationships

A third motif is the vital importance of relationships to successful change. Taking account of what pupils have to say about learning helps develop positive relationships between pupils and teachers. Providing sufficient time for deep quality talk between teachers benefits their professional relationships as well as leading to deep learning. Developing a consistent, shared language within and between schools and phases is important, not only in cementing relationships, but in supporting high standards. Nurturing relationships also matters at every level of leadership. Good relationships and trust building involve strong interpersonal skills and seeking out diverse communication methods that help to maintain connections between alliance members. Discussion, co-constructing new knowledge and practice and reflection are also success ingredients for alliance leaders.

Embrace and persist with challenge

Doing what it takes to develop, improve and lead pedagogy is hard work. It needs persistence to convince leaders in other schools that being involved in such a project is central to their school's development and will address their priorities. Managing risks also requires resilience when unforeseen developments destabilise or slow down projects between schools. Equally, collaborative enquiry is not a 'quick fix' as a form of professional development. Attention to detail is needed over the long term, especially when involving colleagues from several schools; being able to 'stay with it' is crucial. This and other forms of great professional development throw up issues that require teachers to rethink their practice. They have to examine their pre-conceptions about what pupils do and do not understand, can or cannot do. They must seriously consider whether their expectations are high enough and if how they teach really helps pupils learn. Being prepared to be challenged in their beliefs about learning can be tough. In facing demands and difficulties associated with teaching, and in trying to change their practice, they have to keep motivated and stay resilient. They also have to believe in their own capacity to grow and improve, which is not easy for everyone to do.

Support peers' learning and growth

Irrespective of whether we are talking about pupils', teachers' or leaders' learning, having peers as mentors or coaches can be valuable. Using a scaffolding approach in AfL helps to activate pupils as learning mentors for their peers. Collaborating with peers is also stimulating for teachers and helps them think more critically about their teaching and

pupils' learning. In leadership, teachers and middle leaders can access many growth opportunities through coaching and supporting small groups of colleagues.

Be flexible and adaptable

Another composite message is the importance of flexibility. Excellent teachers are able to adapt topics and strategies as the situation changes. They are not fixed in their approach and open to learning. Being flexible in this way creates 'a virtuous cycle of improvement' (Nelson et al, 2015a, p 27). Forms of professional learning such as mentoring and coaching also need to be able to adapt over time to address the changing needs of teachers. Similarly, leaders have to 'flex' the nature of projects and programmes to respond to particular school contexts, needs and development stages. Being able to adapt projects and strategies in iterative ways as new learning is garnered about their successes, challenges and impact is crucial and can be valuable. Also, letting go sufficiently to let others – middle leaders and teacher leaders - co-construct and steer projects can bring new energy and ideas. Across themes 'careful balancing' (Rea et al 2015a) is necessary to ensure that core features of original projects and the rigour of the enquiry process are maintained as partner schools adapt them to their contexts and the project evolves to fit others' priorities and interests.

Emphasise development over judgement

Well-designed AfL provides pupils with important feedback that has a significant impact. Similarly, learning can be powerful when leaders take a non-judgmental approach to designing teacher-to-teacher development approaches and activity, such as mentoring and coaching and other forms of observation, eg lesson study. This leads to greater openness and different kinds of conversations. External accountability is also a fear that holds some leaders and teachers back from engaging or getting wholeheartedly involved in collaborative enquiry. Focusing on the developmental opportunities can inspire as well as reassure.

Take and make time

Bringing about deep change does not happen overnight. Pupils and teachers need time to internalise feedback and incorporate it into improved learning behaviours and teaching practices. Building time into lessons for pupils to digest and understand teacher feedback reaps benefits. Equally, teachers have to be given sufficient time to learn how to carry out collaborative enquiry effectively. The head of a teaching school reflected at the final event: "how did I improve as a teacher? I had time and space", and another leader added: "it takes time because we had hard and challenging conversations, but it was worth it". This means that headteachers have to invest the necessary time, ensuring cover is available for teachers and middle leaders to design, participate in and evaluate projects, visit and get to know each other's schools, especially when supporting colleagues.

Draw on external expertise – do not go it alone

Developing excellent pedagogy is enriched by outside expertise, in the form of teachers and school leaders from other schools but also external facilitators, subject specialists, researchers and other strategic partners. Independent facilitators and experts can provide support at different stages, inject energy and drive when momentum drops, offer and provide access to specialist knowledge and skills, and help keep the process on track. Effective professional development also brings together knowledge from practice and from research as participants put it to work in their context to design improved teaching and learning experiences for all pupils.

Work towards cultural change and sustainability

Seeing the prime goal as wide culture and behaviour change is fundamental to ensuring the ultimate sustainability of collaborative projects. Specific interventions or initiatives are critical to improving practice, but without the leadership conditions to support teachers' professional development and introduction of innovations, teachers are less open to the kinds of JPD that these projects spawned. Such a culture that is curious, research-oriented, and open to learning and feedback from others was created by many leaders across all themes.

An essential triad

In TSAs or other partnerships, pedagogy, professional development and leadership within and across alliances go hand-in-hand (see figure 2). They cannot be separated – they are mutually influential and interdependent. Pedagogy is at the core and leadership and professional development are there to ensure that pedagogy is great. But great pedagogy also challenges and inspires leadership and professional development to new heights.

Figure 2: Three greats – an essential triad



2.2 Framing and supporting collaborative R&D

This section considers what can be learnt about the overall framing of collaborative R&D across alliances from the ways national teams designed and supported the TSAs.

Approaches to collaborative R&D across alliances

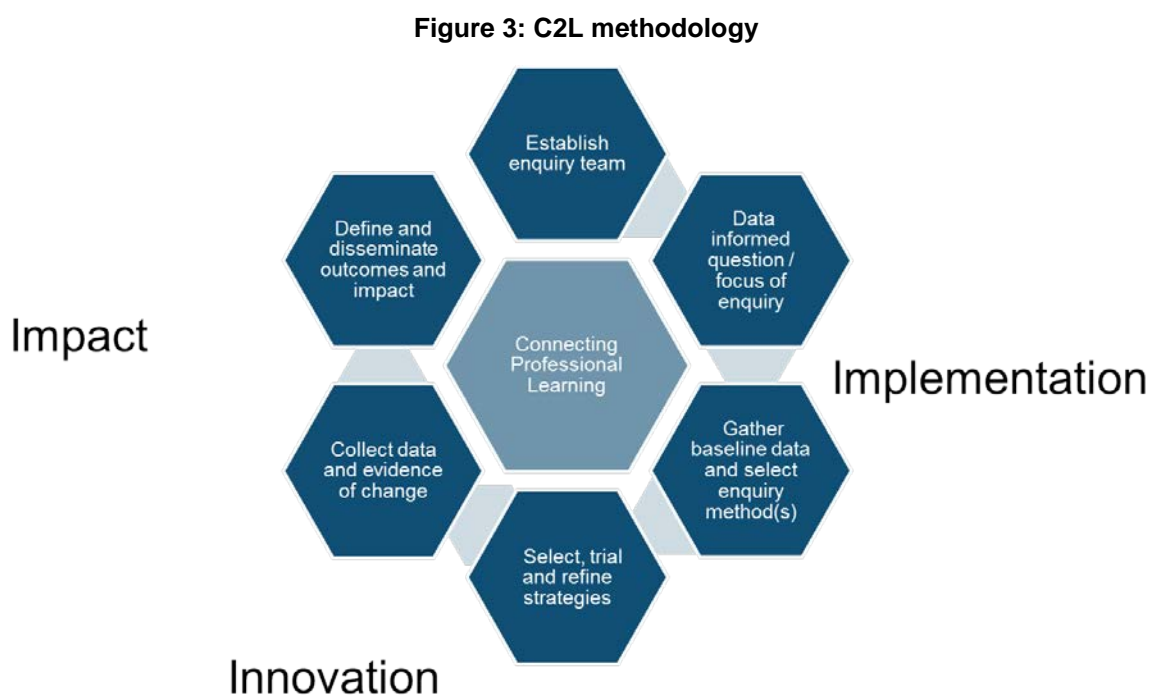
Individual teachers and school leaders have been engaged in research or enquiry for many years through higher degree study or projects working with universities. Some universities and other external facilitators have also worked with groups of staff or whole staffs and, particularly more recently, groups of staff across schools. Teaching schools have already designed and offered many examples of collaborative professional development opportunities and, prior to joining this project, a smaller number had already shown a particular interest in their R&D remit, showcased in examples in the *Impact of teaching schools report* (NCTL, 2014) and *Teaching schools national R&D network conference report* (Bubb, 2013).

Collaborative R&D across a group of schools is rarer, although school-to-school review is an increasing feature of networks and partnerships across England. This project employed two approaches.

While different, they share many common elements.

Themes 1 and 2 – pedagogy and professional development

To structure and support collaborative enquiry in TSAs, the UCL IoE and SHU used Connecting Professional Learning (C2L) (Harris and Jones, 2011, 2012). This model (see figure 3) involves cycles of innovation and enquiry, underpinned by use of research evidence to inform development of interventions. The team embellished C2L with elements of a research-informed approach to evaluating impact (Earley and Porritt, 2014). Nelson et al (2015a) provide details of the methodology.



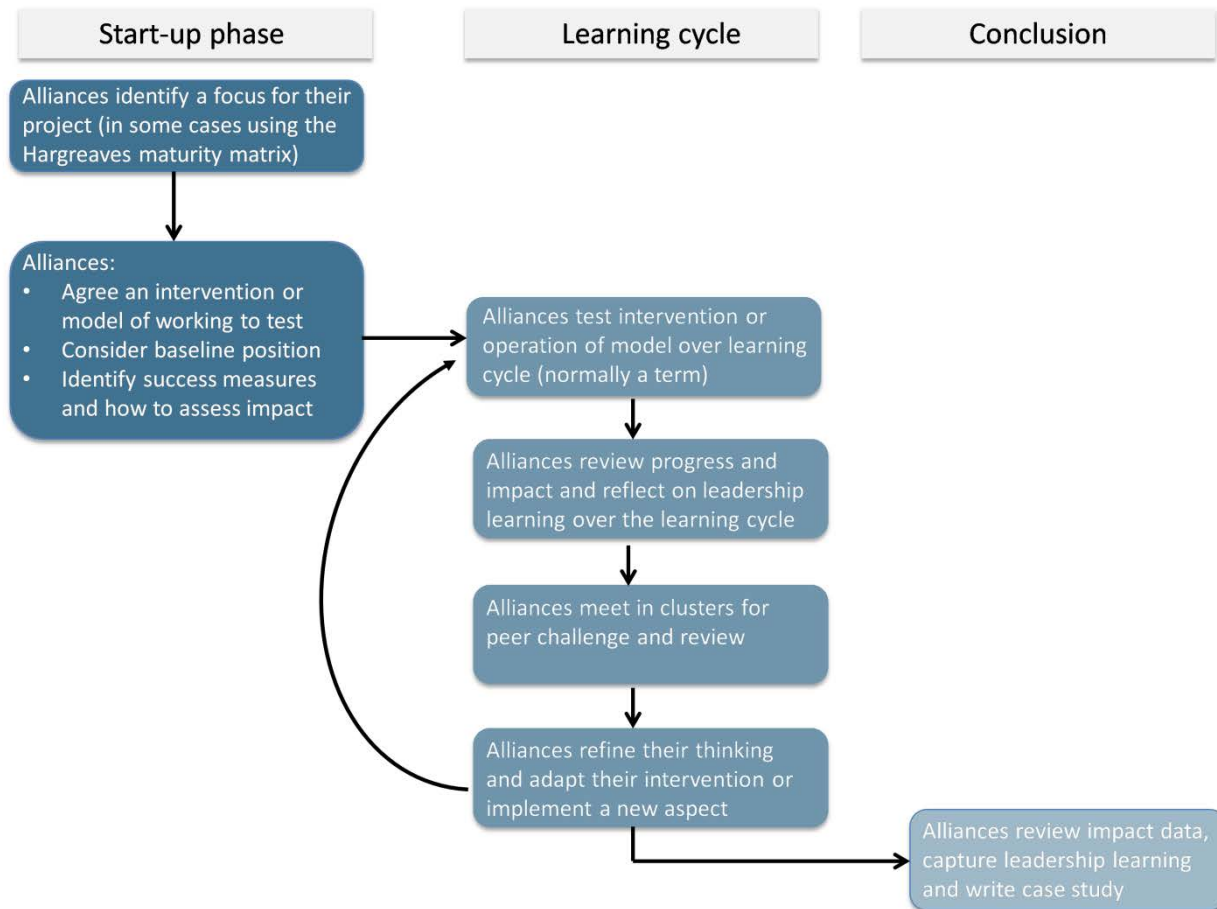
Harris and Jones (2012)

As detailed later in this section, the framework elements also included regular regional action learning sets and national events for peer-to-peer learning, facilitated by national team members and supported with resources, and check-up calls.

Theme 3 – leadership

The enquiry methodology used by the Isos Partnership, Robert Hill and Qing Gu had three phases: a two-part start-up phase, followed by a four-part learning phase, and a conclusion. As figure 4 highlights, regular cluster meetings were a feature of the national team's framework. These were facilitated by national team leaders who provided a range of supporting resources (see below) and also carried out telephone check-ins. Full details of the methodology can be found in the national team's report (Rea et al, 2015a, p10-11).

Figure 4: Enquiry methodology



Source: Rea et al (2015a)

Using external research

The R&D remit of teaching schools includes an expectation to draw on external research findings and other evidence. Having access to such evidence is fundamental to any school or partnership within an evidence-based teaching system.

All project leaders had access to a range of external evidence as resources for their R&D activities. Each was provided with a commissioned initial review of existing research to support their projects. For theme 3: ‘the summary served to help develop and support their reflections about the leadership of their alliances, and helped the school leaders consider the stages of development of their alliances’ (Rea et al, 2015a, p 12). Themes 1 and 2 national team facilitators also maintained a close connection with the research claims throughout the project, asking project leaders to reflect on them at various points.

The Hargreaves (2011; 2012) maturity matrix was another source of evidence for theme 3 projects. This tool played an important role, especially with earlier cohorts, to help support decisions on how an intervention should be led and implemented in order to move the alliance towards more mature phases of development (from ‘beginning’ to ‘leading’).

The role of other external research should not be downplayed. Across all themes, many alliances either sourced their own research findings related to their foci, or these were introduced by higher education partners and other partners, to refine interventions.

The degree to which TSAs engaged with all of this evidence varied. At different times and, across projects, the external research claims and maturity model played diverse roles. For a few leaders, it was profoundly influential, as in the case of **Cramlington TSA**, where encountering the professional development claim about ‘starting with the end in mind: “had a massive impact on the way we think about CPD – it was a game changer”’. At the other end of the continuum, where leaders were already clear about what they intended to do or study, a generic literature review may have added little or just helped them to endorse the previously selected focus area. In the middle, research claims or the maturity model helped shaped projects because they resonated with an alliance’s stage of development or activity. For example, in the **Camden Primary Partnership** where: “as our first joint practice project as a fledgling alliance, our Hargreaves priorities were building social capital and JPD”.

As projects progressed, external research was a touchstone for some. In writing interim and final impact reports, project leaders in themes 1 and 2 wrote about how their common focus or question for enquiry related to existing research, the nine claims or propositions (Nelson et al, 2015a). This is written about in detail in some case studies (Nelson et al, 2015b).

Two issues emerge out of using research and other evidence to inform these R&D projects and, indeed, any R&D.

What’s new? Did R&D projects come up with anything new or just mirror existing research findings? While both reports highlight links between project findings and initial claims, across all themes, TSAs have discovered much that is new for them. Themes 1 and 2 have their own ‘localised knowledge’ (Maxwell, Greany et al, 2015) about great pedagogy and professional development: ‘our evidence shows that TSAs have combined this external’ knowledge with their own experiential, practice-based knowledge to create insights and capabilities in ways which are new for them’ (Nelson et al, 2015a, p5). There are important contextualised differences in taking existing research findings and applying them to new situations. Similarly, theme 3 now articulates ‘firm findings’, as compared with the original research’s modest claims: ‘these firm findings represent the leadership practices that TSAs have found that work, and they advance our understanding of the ways in which TSAs can engage successfully with other schools’ (Rea et al, 2015a, p48, see also section 2.4).

Research engagement. External research findings are sometimes turned into tools in a process of animating the knowledge. The intention here is to help leaders and teachers engage with and learn from the research, as they combine it with their own prior knowledge to create new knowledge that will improve practice (Stoll, 2010).

Themes 1 and 2 literature reviews were turned into surveys, and influenced the design of alliance surveys in at least one project. Hargreaves also intentionally created a maturity model with levels to support alliances as they develop, using a set of self-evaluation metrics which help them judge progress.

Using other tools and evidence

Another important feature of R&D activity is having tools to support intervention choices and reflection on R&D activity.

Intervention toolkit – the theme 3 national team offered participants an ‘intervention toolkit’ (Rea et al, 2015a), a resource for TSAs when they selected interventions. This included examples of school improvement activities and interventions based on known practice by schools partnerships, federations and chains to improve (see also the Hargreaves’ maturity model from ‘beginning’ to ‘leading’, 2012).

Leadership learning log – the same team encouraged project leaders to use this log to reflect on the key skills and behaviours that they used to develop and lead projects. From this they developed a table of behaviours that are used differently by effective leaders of TSAs e.g. ‘understanding different organisations’ and ‘co-constructing solutions’ (see Rea et al, 2015a and section 2.3, p31-36).

Protocols for reflection and monitoring – theme 1 and 2’s national team also developed tools and reporting formats to prompt and support schools in capturing their learning and progress in robust and detailed ways: ‘development or acquisition and subsequent use of both intervention and enquiry tools was a crucial element in the success of all projects’ (Maxwell, Greany et al, 2015, p 37).

Facilitated regional support

A major feature of both national teams’ frameworks was providing regular regional support from a national team leader or member⁸. Purposes and essential processes of the two teams were fundamentally similar, each fitting with the national team’s cycle phases. For themes 1 and 2, the emphasis was on supporting each phase of C2L – implementation, innovation and impact – whereas theme 3’s cyclical model emphasises that changes, issues or improvements are broken into small chunks and their impact reviewed or assessed on a regular basis. This in-depth facilitation and peer support took place every term. Short external inputs were followed up with small group and whole group conversations. Importantly, project leaders also shared their data, approaches, results and learning. The aim was to ensure colleagues had the support, feedback and challenge they needed to progress.

⁸ These colleagues are referred to as external facilitators in the themes 1 and 2 report (Nelson et al, 2015a).

Support meetings always allowed time for each alliance to present an update, along with progress, successes and challenges. Colleagues were then invited to offer critical friendship. A quick starting activity in one regional support session was carried out in pairs who had five minutes each to share successes to date, remaining challenges, and a particular issue where they would value peer support. Teams devised and shared resources and used a range of coaching and more directive processes to help colleagues provide critical friendship to each other, while at the same time offering their own feedback on activity.

Between meetings, regular, structured telephone conversations focused on ensuring that colleagues were on track and providing necessary support.

At the final national event, some project leads commented that in addition to supporting sharing of progress and providing guidance on methodology, data analysis and resources, facilitators also helped in setting deadlines, sustaining momentum and dealing with issues. Some would have preferred even more externally facilitated sessions.

Having an external facilitator provides authority and a 'sense of difference.

The Hillingdon TSA

Your job has been vital. Local authorities (LAs) and higher educational institutes (HEIs) have always been seminal to school improvement and funding. How did I improve as a teacher? I had time and space with outside support.

Theme 3 head of teaching school to national team leader at final national event

Refining facilitation approaches

Over time, national teams refined their approaches. Although they drew on other models and frameworks, both R&D enquiry frameworks were newly designed for this project. Both external facilitators and many of the first cohort leaders were, in essence, learning together. This cohort was the first tranche of teaching schools. Although early adopters, and keen to be at the forefront of innovation in system leadership, they were new to the idea and finding their way in all of the 'big 6'. In a few instances, a headteacher attended national events, but leadership capacity was not planned in back in the alliance. National team leaders and members, although skilled in different forms of facilitation and consultation – some with considerable experience of cross-school partnership projects – were also new to working in this way with teaching schools.

A shift had already occurred six months later when the second cohort joined the project. More sent their newly appointed TSA R&D leader and, a national team leader reflected "there was a sense that they were thinking about structures". Experience, as they got underway, led national teams to highlight different aspects. One national team leader explained: "We learnt to get to action more quickly, basing the project on an aspect of the alliance development plan and school development plan better".

Documents and processes were designed that were both monitoring and developmental, helping them to track progress, structure sessions and ask the right questions. The first two cohorts were combined in some themes 1 and 2 regional sessions and themes 1 and 2 TSAs met together, for regional purposes. A theme 3 national lead met one project leader 'half way' because travelling to regional meetings was frequently prohibitive in terms of time. This was greatly appreciated.

By the time the third cohort of alliances came on board, everyone was more confident. Some had already experienced and even led forms of collaborative enquiry and were able to act more quickly. The national teams' approach had to be more focused and modified to help them meet timelines. Some third cohort TSAs also required a more hands off approach and because some were 'research savvy', they needed less support.

Other external support

Project leaders found that their work benefitted from involving other external partners. NCTL had encouraged teaching schools to continue working with their HEI partner when they bid to participate. Some chose to do this. Others established a relationship with an external organisation or consultant. For example, **Eos TSA** worked on its alliance vision with the Innovation Unit, bringing to the project its commitment to exploring and innovating in the area of project based learning (Price, 2014) with four primary schools. The University of Leicester worked with three east midlands' alliances on lesson study, while **Royal Greenwich TSA** partnered with the University of Greenwich in focusing on the impact of digital literacy interventions. One alliance engaged a HEI partner to 'make sure that whatever they did was robust and held some water' (Maxwell, Greany et al, 2015, p 35). While some alliances brought in researchers to do literature reviews, more sourced their own.

In several cases TSAs described the benefits of working with an HEI and with national research partners to improve their capacity for R&D or research-informed practice. Many representatives attending the final national event agreed that expert support was essential for their projects: "external expertise to challenge ... how to research, what constitutes evidence".

National events

The three national events were opportunities to bring colleagues working on all three themes together to network, share and critique experiences and writing. National teams' frameworks were introduced then subsequently embellished and deepened. As new cohorts came on board, they had the opportunity to learn from colleagues who had started their R&D themes journey earlier. Project leaders were also guided to explore the extent to which their overarching theme questions could be answered. Further details of the first two events can be found in the *Research & Development National Themes Interim Report: Spring 2014* (Taylor et al, 2014).

At the final national event, table conversation facilitators asked project leaders what had excited them about colleagues' final presentations during a marketplace sharing experience. Their answers reflect deep engagement, comfort with and hunger for challenge, and passion and commitment to promoting collaborative R&D across schools.

What excited you?

Range of rich activities and numbers involved

- all the wonderful things that TSAs are doing / range of things that people had found to engage with
- the numbers of schools doing lesson study – good / the numbers doing transition projects and challenging practice
- I have been intrigued by the richness and complexity of the work, rather than a simplistic Ofsted picture

Conversations with and challenge from peers in regional and national fora

- this way of working – meeting at the NCTL with peers to discuss the two year project / having these continuing conversations nationally
- talking to peers and challenging them, picking up new ideas was incredibly helpful for everyone involved and will allow some of this to be sustained as people take back new ideas to their alliances
- challenging each other has helped make me realise what has been achieved and continued to grow in my project

Led by them but research-informed

- the quality of discourse / discussion, as it's in a research perimeter, so we're not just 'sharing good practice', it's more rigorous as rated in evidence and credibility
- that research around teaching and learning is at the heart of what we do, rather than top-down initiatives – that is exciting and for far too long that has not been the case
- it is about what happens now: I want to embed it and engage with HEIs

Final national event, November 2014

Common elements

The two national team approaches share many similarities which provide potential food for thought to those interested in designing collaborative R&D initiatives. While these following features are interconnected, they are outlined separately for clarity.

- **Cycles of enquiry and innovation** – the models emphasise repeated cycles of enquiry and innovation, or intervention. An initial phase involves the development of a focus or enquiry question, identifies intervention strategies, determines the baseline and considers success criteria for impact measurement. The next phase, described variously as innovation or the learning cycle, includes trials, progress reviews, guided reflection, peer challenge, refinements and continuation or adaptation of innovations or intervention. The final phase examines impact, reviewing outcomes and capturing learning, before focusing on how to ensure that new knowledge is shared with others. The cycle can repeat from one year to the next. In this project, experience in many cases was in staying with a particular project focus, although embellishing and refining it over time. Earlier cohorts also increasingly began to involve new people. It is a design choice around which model is preferred: both have merits.
- **An impact orientation** – although this is already featured in the cycle, it is worth repeating. Rigorous collaborative R&D across alliances is focused on making a difference and incorporates the necessary methodology into the enquiry cycle to be able to demonstrate this difference. Variation in the approaches to impact can be seen in national theme reports (Nelson et al, 2015a; Rea et al, 2015a), but achieving and demonstrating impact was fundamental for both teams. Despite different approaches, projects across all themes had much to demonstrate around the difference their R&D activity had made or was starting to make. This impact and surrounding issues are covered in section 2.4.
- **Resources in the form of external research and other evidence** –the R in R&D does not just mean that professionals ‘do’ research. They pay attention to external research and other evidence about their theme, their focus area(s) and successful innovations and interventions elsewhere. Theme projects were greatly enriched by access to a range of sources of evidence. This project suggests that schools do not already have everything they need to establish cross-alliance projects and that openness to learning from elsewhere is essential.
- **Tools and frames to support reflection and organise powerful story telling** – the project highlights how tools can help frame people’s thinking and guide reflection on their learning. Through this, project leaders were more able to articulate reasons why interventions were successful or otherwise, and think deeply about their own role in making the changes happen.

Reflection is fundamental: opportunities need to be built in for reflection on progress which can then be shared and further analysed during meetings before project leaders make decisions about whether to continue specific interventions, refine them and/or move on to new ones. Writing frames also help structure and deepen stories about projects, their processes and impacts, successes and

challenges. Potential audiences are drawn to stories, but these stories need to be honest, demonstrate the learning that has occurred and clearly outline impact.

- **Peer-to-peer learning, challenge and support** – a powerful element of this project was networking between project leaders in different alliances. Challenging learning conversations are fundamental to change, and relationships are quickly established among colleagues in the same boat: all trying to engage alliance colleagues in sustainable R&D activity. As in this project, peers can help each other with decision making and challenge each other to rethink interventions which are not proving effective. National teams crafted opportunities for leaders to make regional connections. If collaborative R&D is to be sustainable, it is likely to be supported by colleagues forging relationships across as well as within alliances, linking up locally, regionally and even nationally. Feedback after final event marketplaces (see blue box above) highlights how stimulating and valuable project leaders found deep conversations with other TSA leaders.
- **External facilitation** – this project highlights the benefits of external facilitation. Skilled national team research and process experts brought expertise, an independent and neutral voice and challenge. They helped ensure equal participation in meetings, provided many tools, resources and processes to enable reflection, peer-to-peer learning and develop R&D skills. The project findings suggest that alliances can benefit greatly from these kinds of critical friends.
- **Professional and leadership learning opportunity** – the models may be focused on impact but inherent in both, and articulated in C2L is that they offer a powerful form of development for those involved, and opportunities to develop leadership capacity (see also sections 2.3 and 3).

Having explored the framing of collaborative R&D across TSAs, attention now turns to the leadership of collaborative R&D across alliances.

2.3 Leading collaborative R&D

Theme 3's focus was leadership and its key messages (p16-17 and Rea et al, 2015a) provide firm foundations for understanding effective leadership of collaborative R&D. Its leadership learnings will be probed in further detail here. Themes 1 and 2 also have findings around conditions which support effective collaborative enquiry and related overall messages (Nelson et al, 2015a). These should also be considered because, inevitably, they are concerned with leadership. Here is a summary of these findings:

What conditions support effective collaborative enquiry?

1. A commitment to R&D as a strategic aim.
2. Shared understanding, expectations and commitment amongst partners.
3. A shared strategic vision supported by allocation of resources and efficient operational leadership.
4. Taking time to establish and build excellent professional relationships is crucial if the project is to be successful and sustainable. The quality of relationships and trust among participating schools would appear to be more significant than the size of the partnership.
5. Senior leaders who are engaged and supportive through distribution of leadership are also essential for sustainability. It is important to have a project leader within each participating school.
6. Skilled project leadership and facilitation is instrumental in supporting structured and rigorous R&D.

Nelson et al, (2015a)

Findings across the themes are complementary. Together, they provide a rich picture about what has been learnt about leading collaborative R&D projects.

Selecting the right project leaders

Both national teams conclude that selecting the right people to lead collaborative R&D projects is critical (theme 3 key message 2; themes 1 and 2 condition 6). Internal leaders of R&D theme projects had a range of roles and backgrounds. Some were headteachers, including a few heads of teaching schools. Many others included directors of TSAs, or leads for R&D, and other senior leaders. A few hired an external consultant to lead their project or work alongside the project lead. At one time some had been LA advisors or curriculum consultants, a few had worked in or closely with universities, some had a higher degree qualification, and a good number were experienced in designing and leading professional development within and, often, across schools. It helped if the role built on a previous cross-school role.

Using leadership skills differently

Leading R&D across alliances is not so much about using different leadership skills as 'drawing on them differently' (theme 3 key message 10). Theme 3 project leaders regularly reflected on what they were learning about necessary competencies to lead TSA R&D. The national team reported on commonly highlighted aspects. Their visual display (see figure 5) of different ways of using leadership skills depending on whether leading a school (left hand column) or alliance (right hand column) is reproduced here.

Figure 5: Drawing on leadership skills differently to lead an institution or a partnership



Hill (adapted, 2008), in Rea et al, 2015a

Most of the most frequently cited competencies used differently can also be seen in themes 1 and 2 case studies (Nelson et al, 2015b), although they may not be described using the same terms. Reflection and communication are particularly prominent. Promoting ownership, brokering and developing are also frequently mentioned. This emphasis on developing others is not surprising given that the themes were focusing on professional development and developing pedagogy. Two competencies also merit further comment:

Trust – the literature is replete with evidence on the importance of trust or ensuring social capital, an element in Hargreaves’s (2012) model.

This project wholly endorses earlier findings. Trust emerges as a pre-requisite but, notably, was also generated through productive collaboration. It may be more time-consuming to engage schools and their headteachers with a larger number of schools, but all themes have examples which demonstrate that this is feasible. Use of technology to facilitate learning also often helped to connect schools. **The Wroxham Transformative Learning Alliance** takes an invitational approach in reaching out to schools, aiming that their ethos for professional learning is built on trust, inclusion and co-agency (Swann, 2012, cited in Rea et al, 2015a).

‘Discernment’ (Rea et al, 2015a) – of other schools’ contexts and needs is also critical. Schools at “very early stages of their improvement journey” in **Ninestiles TSA’s** words, or as **The Medway TSA** described it ‘fragile’, sometimes find it more difficult or took longer to engage. **The Compton Barnet TSA** also highlighted

greater commitment of 'secure', committed schools and teachers. And across the themes, destabilising events (Rea, 2015a) occurred. Over a short space of time, complete commitment could switch to 'drop out'. The frequent reason for schools stopping collaborative enquiry was because of responding to new priorities following an Ofsted judgement, or de-designation of a teaching school. This will be picked up in the discussion about sustainability (section 3.3).

Sharing and distributing leadership for equity and commitment

To prevent what teaching school leaders described as a charge that it is all about a school trying to 'empire build' or defusing an 'us and them' syndrome (Rea et al, 2015a), it is essential to share and distribute leadership. Hargreaves (2010) warned that leading in a self-improving school system is not about being 'top dog', and alliance leaders at the final national event spoke of their concern that "in a collaborative of teaching schools there are a lot of egos" that get in the way. Although unrelated to their R&D project activity, a significant number of alliances adopted a new name over the two years of the project, reflecting recognition of the inclusive nature of a partnership. Case studies highlight many examples of sharing leadership around schools, or ensuring expertise was developed in all schools. Having a project leader in each school was common. Across all themes distribution of leadership, especially to middle leaders, was frequently pivotal to successful R&D and often a helpful marker of attention to sustainability of collaborative work (see section 3). Shared ownership among schools also seems important, to avoid negative reactions towards 'external imposition' (Nelson et al, 2015a).

Shaping collaborative R&D

Insights into different ways internal leaders chose to shape collaborative R&D projects are offered in Maxwell, Greany et al's (2015) case studies of five themes 1 and 2 TSAs:

- **Fully collaborative model for R&D** - collaboration was characterised by high-levels of cross-school collaboration, democratic decision making and joint activity.
- **Multi-strand partnerships for R&D** – with an overarching common project focus, although individual schools chose specific foci for their own activity and collaborative activity was primarily located within rather than across schools.
- **Single R&D project led by the teaching school** – sometimes small in scale and reach, this kind of project involved a specialist or expert and a small number of teachers from the targeted and specialist team across alliance schools.
- **Multiple models of collaboration for R&D** – where the internal facilitator set up separate collaborative groups, which may have characteristics of other models.

These models are underpinned by leadership decisions. As the theme 3 national team leaders noted, the models appear to depend on:

- Where the leadership of the overall project resides, how multiple schools are involved, and how the delegation of the leadership has been established (or not).
- What drives the decision about the project's focus.
- The extent to which other schools involved are running their own projects and testing their own interventions, or implementing a common set of activities.
- How decisions are taken, how the project(s) is/are coordinated, and how progress is reviewed.
- How trust is developed, how schools are engaged, and how communication works.

All of these issues need considering. They are highlighted in theme 3's key messages on leadership (Rea et al, 2015) and pervade themes 1 and 2 case studies and national report discussion of leading collaborative enquiry (Nelson et al, 2015a). Within these choices is one about the number of schools to involve. While overall project findings suggest there is no 'right' number of schools for collaborative R&D, feedback at the second national event suggested three or four schools was a comfortable size for communication and manageability. Despite this, impact findings show that many larger projects experienced success. As will be picked up again, it seems that getting relationships right, commitment to focus and supportive senior and strategic leadership are essential ingredients. These choices can also affect future sustainability (see section 3).

Leading professional learning

The international evidence is clear that promoting and participating in teacher development is a powerful way for leaders to have a positive impact on teachers' practice and pupils' learning outcomes (Robinson, 2011). Professional development was the focus of theme 2, but projects across all themes demonstrate plentiful opportunities for and examples of teachers and other staff engaged in professional learning. **Swiss Cottage TSA's** project focused on improving teaching and learning through self-reflective and analytic post-lesson dialogue in four schools using a coaching and mentoring process. **Barnsley TSA** was exploring and adapting strategies to accelerate writing progress of low attaining children, through enquiry observations, training on writing, active learning and scaffolding. **Fairfields TSA** explored how the development of the skills of a mentor can impact on the progress of an ITT student. Bespoke mentoring training was based on needs outlined in an initial audit.

Leading R&D skills development was also an important feature in this project, and is essential to sustainability. This is discussed in more detail in section 3.

Ensuring headteacher and senior leadership backing

Buy-in and support of senior leadership, notably headteachers of participating schools, is crucial to success (theme 3 key messages 6 and 7; and themes 1 and 2 conditions 3 and 5). Agreement among senior leaders about the focus of the project and provision of operational support are imperative. With their emphasis on exploring leadership for collaborative enquiry, themes 1 and 2 project leaders also suggested that senior leaders who create and value a culture of enquiry set the stage for this kind of rigorous and generative activity where distributed leadership takes hold:

... as long as school leadership creates the culture for collaborative enquiry, then the teachers can become autonomous and do without leadership from the top.

Catalyst TSA

Alliance-wide strategic commitment

At an alliance level, shared strategic priorities, understanding and expectations are vital as a starting point for engaging in collaborative R&D. Agreement on TSA-wide priorities and aims which the enquiries then address help to ensure commitment at alliance leadership level (theme 3 key message 9, themes 1 and 2 condition 2). This can be given an extra push from agreement around a long-term strategic priority of embedding R&D as a way of working (themes 1 and 2 condition 1). Many successful partnerships across all themes had a shared and specific pedagogical or professional development focus.

For example, **George Abbot TSA** focused on peer-to-peer planning, observation and coaching to support good and outstanding practice, and teachers working in 'JPD couples' across schools in **Harton TSA** were all developing skills in AfL or collaborative learning. The shared vision of what's most important is also supported by resource allocation and efficient operational leadership to ensure that things happen. Further benefits are derived from engaging in other projects which provide additional funding and impetus to use the R&D model over time (themes 1 and 2 condition 5), as long as this activity is carefully aligned (theme 3 key message 11).

2.4 Ensuring impact through collaborative R&D

National theme R&D TSAs were focused on making a difference. Their collaborative enquiry was disciplined through testing out their interventions and innovation in cycles of activity and reflective check-ins with colleagues and external facilitators who provided challenge and critical friendship to keep them on track. The ultimate goals were enhanced pupil learning and social outcomes and many projects targeted these directly. Others focused on putting into place and evaluating the conditions necessary to ensure the great teaching and learning experiences that would lead to that impact. Here, we look

at what has been learnt from the projects about collecting baseline, achieving impact at different levels, enriching the original research claims and evaluation issues.

Collecting baseline

The methodologies for each theme guided project leaders towards considering their baseline position to help them understand issues and focus their projects. These data were then available to return to in assessing impact, although project leaders were also encouraged to identify success measures and how they would assess impact. In the **Central Bedfordshire Teaching School Partnership (TSP)**, initial activity helped to determine the project focus using the following criteria:

The research should be structured around a project that links the CPD sessions to challenging teacher thinking and practice in their normal classrooms in 'real time'. The research project must be linked to measuring impact on real students in lessons as the vehicle to focus teacher thinking and practice.

Central Bedfordshire TSP case study

External facilitators provided technical assistance to support baseline data identification, gathering and interpretation. Some TSAs found it especially challenging and it took some time to establish. Sometimes this was because of a difficulty in coming to a clear and agreed focus. At other times: "It's hard for people to see the purpose of baseline until they see the change" (external facilitator).

Others were more confident around monitoring and evaluating the quality, consistency and impact of their enquiry projects. For example, **George Spencer TSA** introduced Guskey's (2000) five-level CPD model and the EEF / Sutton Trust evaluation toolkit to assess and measure to what extent and how their collaborative enquiry projects might have made a difference to their students' learning outcomes.

The example of **Stourport TSA** shows how baseline data on pupils' ability in solving mathematical problems identified the project topic. The project was then informed by listening to pupils talking about the most useful and effective strategies. Testing on the ability to solve similar sets of problems before and after being taught the 'thinking steps' showed an increase of more than 30 per cent in scores. "At each stage of the research, we have developed the model in the light of feedback from the students" (impact report).

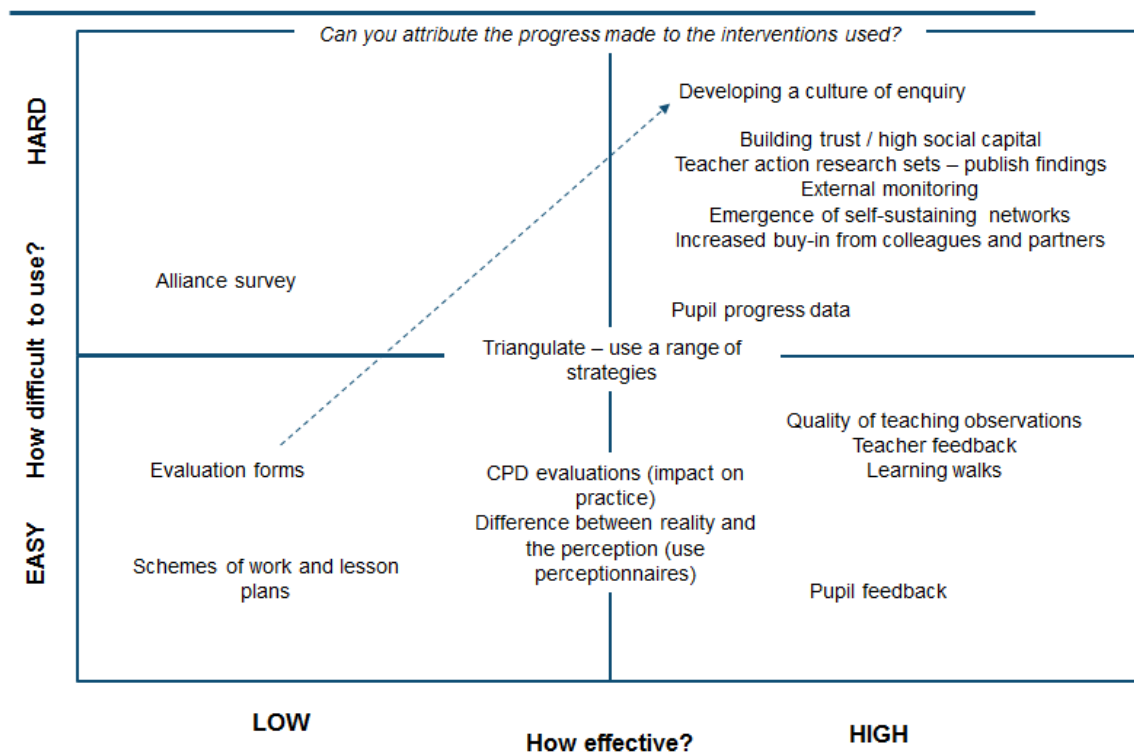
Evaluation methods

Various methods were chosen to evaluate the impact of projects. National team reports (Nelson et al, 2015a; Rea et al, 2015a) and case studies (Nelson et al, 2015b; Rea et al, 2015b) outline the diverse range. The ideal seemed to be finding methods that were both effective in identifying issues, answering questions, establishing a baseline and assessing impact, and were also not too difficult to use. For example, obtaining direct

feedback from pupils about the impact of the school-based enquiry was a powerful strategy which was achieved relatively easily. A simple two-by-two grid (figure 6) provided by the theme 3 national team as a stimulus for discussion at the November 2014 national event is a useful visual aid to help consider these two criteria when measuring impact.

Figure 6: How to measure impact

Workshop discussion: how to measure impact (2)



R&D national themes interim report: Spring 2014 (Taylor et al, 2014)

Impact at different levels

Impact was demonstrated at four levels. Importantly, many projects across themes which targeted pupil learning both directly and indirectly were able to show a range of impacts on these pupils. Impact on teachers and other staff, though, was also critical. Changes to whole schools and their leadership provided a third level of impact, with impact on the alliance as a fourth level. Case studies and the national teams' final reports (Nelson et al, 2015a, 2015b; Rea et al, 2015a, 2015b) offer specific detail. Highlights and illustrative examples follow.

Impact on pupils

Project evaluations identified positive effects for pupils in a range of curriculum outcomes e.g. literacy skills, mathematical problem solving, attitudes to reading, etc. Improved engagement and confidence, increased independent working, managing self-behaviour, mindfulness, and improved orientation to learning were other positive outcomes.

Cambridge TSA – Focus: cross-phase, cross-curricular triads focusing on extended writing. Some outcomes: Visible improvements in students’ writing – increased national curriculum levels, students motivated to value writing more.

Wednesbury TSA – Focus: use of higher order thinking skills through exploratory talk. Some outcomes: more evidence of children questioning each other, more evidence of children engaging in dialogue which involved cause and effect, predicting, seeking and verbalising patterns.

LEARN alliance – Focus: middle leaders enabling great pedagogy to improve reading. Some outcomes: average gain in pupil premium students’ reading age of 24 months in 7 months, year 7 study group showed average increase of 2 sub-levels in reading levels; previous year group made no progress in same time span.

Impact on teachers

Collaborative R&D projects had positive effects on many involved teachers and other staff. Case studies and final national event marketplace posters contain plentiful examples of enhanced classroom practice, increased confidence, better planning for effective assessment, and increased subject and pedagogic knowledge, with ability to articulate this clearly. Teachers reflected more, as the **London West TSA** case study [Nelson et al, 2015b] demonstrates. They were also using a wider range of strategies, with greater inclusion of students in designing resources. Staff now worked more closely with colleagues, readily seeking and sharing pedagogies, engaging in improved professional dialogue, and being more involved in and enjoying R&D. Examples also exist of improved staff morale and self-esteem.

The Kennal Academies Trust TSA – Focus: peer mentoring and student ambassadors’ programme. Some outcomes: improvements in teaching and learning – notably from grade 3 to grade 2, where 76 per cent of teachers previously graded as ‘requires improvement’ improved to ‘good’ in internal quality assurance undertaken, and in external monitoring from Ofsted and the Department for Education (DfE).

Westdene TSA – Focus: effective pedagogy and transition in mathematics from KS2 to KS3. Some outcomes: KS3 teachers saying coaching pairs “encouraged me to take risks with my teaching”, “raised my expectations of calculation without calculators” and led to “more discussion and more class input to a topic”. KS2 teachers report much better understanding of subject knowledge and progression leading to greater confidence in how to teach more able pupils.

School impact including leadership capacity

The most significant shifts were the growth of new cultures, e.g. a research, coaching or lesson study culture. One headteacher wrote in an end of project survey on collaboration following a lesson study focus: “we’re going to change the way we do things”. People

showed less tolerance for traditional continuing professional development (CPD) methods and reported more collaborative activity.

Growth in leadership capacity resulted from opportunities offered to teachers engaged in leading and working with small groups of colleagues, and promotions were gained, for example at **Trent Valley TSA**. Positive impacts on pupils led to more widespread staff confidence.

Fylde TSA – Focus: coaching to raise attainment and address transition issues. Some outcomes: leadership competences developed as a direct result of involvement, success evidenced in the percentage of coaches and coachees promoted following their involvement with the project, 70 per cent of coaches gained senior leadership positions, 50 per cent of coachees promoted into middle leadership.

Jurassic Coast TSA – Focus: developing teacher researcher trios to fit within a broader use from ITT to leadership training. Some outcomes: trio methodology helped teaching school to develop a new professional model for teachers, ‘research’ work done in trios is proving to be a much more simple, yet powerful way of encouraging teachers to see themselves as pedagogical explorers.

Impact across schools

Many TSAs also provided examples of whole-partnership impact across participating schools and for others in the alliance.

West Essex TSA – Focus: strategies to improve independent learning and collaborative working practices. An outcome: West Essex TSA has now set up a R&D focus group which has met to share findings of projects and to propose further research across the alliance.

Blackfriars TSA – Project: how leaders can have an impact on the quality of teachers by working with ITT, with Associate Teachers (ATs) on extended placements in special schools. Some outcomes: many more schools and teachers now interested in hosting ATs on placements, alliance now works closely with ITT to shape training for Special School practitioners.

Enriching research claims and the maturity model

The NCTL charged the alliances with producing robust evidence. It is interesting to see how R&D theme activity shows evidence of how they have achieved impact through operationalising research claims and the Hargreaves (2012) maturity model. Project findings do not contradict this prior evidence, but add to it. They do so by contextualising previous findings, illustrating them in new, partnership contexts, and adding helpful nuances. Both reports (Nelson et al, 2015; Rea et al, 2015) present the TSAs’ own

findings based on their R&D. Here are some ways in which TSAs enriched research claims and the maturity model.

- **Bringing the maturity model and claims to life** – It is often hard for research findings to capture the rich reality of what they look like in schools and learning environments. Similarly, the detail within the Hargreaves maturity model is not designed to describe accurately how each strand appears in practice but to stimulate interventions that will help those using it and others understand this. **Jurassic Coast TSA's** use of teacher research trios is a case in point. The project leader describes in the case study how their work 'illuminates' the JPD dimension of the maturity model. Illustrations of research claims from one theme can also be found in another theme's project. A powerful demonstration of the professional development research claim about the importance of challenging teaching as a part of changing practice (Stoll et al, 2012) comes from a teacher involved in a pedagogy theme project. The teacher, in **Great Sankey TSA**, reflected in a learning log:

...having to explain what, how and why you do something really forces you to truly look at your own practice and be honest with how successful it has been and relook at mistakes you have made along the way. This process is consolidating my own learning journey and aiding me further with my development... This is a long term, no quick fix approach but one that once established is proving vital to personal development within our practice and maximising impact with learners.

- **Combining research claims to create new understanding and insights** – The themes 1 and 2 national team's tables of projects in relation to research claims (Nelson, 2015a, pp 14-18, pp 32-35) show that the TSAs rarely focused exclusively on one claim. For example, **The Arthur Terry TSA** linked up prior research on scaffolding pupils' learning and AfL (Husbands and Pearce, 2012) to produce a message around employing a scaffolding approach in using AfL, so that it activates pupils as learning mentors for peers, helping them to understand next steps or rates of progress better. From **Torbay TSA**, we see how blending different claims about effective pedagogies in projects helped deepen participants' insights and enrich their learning. The enquiry was related to five research claims. Analysis following each of two cycles of lesson study showed that the process had 'opened some teachers' eyes to how many children were learning to calculate without necessarily understanding the structure behind what they were doing. Using manipulatives had enabled teachers to get an insight into the pupils' understanding...' (Nelson et al, 2015a, p 36).
- **Demonstrating that applying research findings can help in improving outcomes** – If prior research identifies a feature of pedagogy, professional development or leadership that has demonstrated links with better learning for pupils and teachers, it is worth alliances trying to put this into practice or study it

further. That is what some of these alliances did. For example, they took a claim about developing higher order thinking and meta-cognition, making good use of dialogue and questioning in order to do so (Husbands and Pearce, 2012).

Their evidence shows how pupils were helped to develop the language and skills for sharing higher order thinking and for metacognition, and demonstrates impact that it had on the pupils. This particular kind of R&D, of course, does not set out to study causal connections (see table 1 section 2.5) but adds value to understanding how to apply research findings effectively to make a difference.

- **Qualifying claims from a practice perspective** – The national teams' R&D models are, themselves, forms of professional development described in the theme 2 initial literature review (Stoll et al, 2012) and highlighted in the connecting professional learning model (Harris and Jones, 2012). Theme 2 project leaders offered a reminder that while enquiry is a powerful form of professional development – and may even be a starting point for further professional learning (Timperley, 2011), it is not the only form.

Benefits of collaborative R&D across alliances

In summary, there have been many impacts and benefits for TSAs across all themes.

1. The process of structured and rigorous collaborative R&D can be transformational for individuals involved, frequently with clear evidence of impact on pupils' progress and achievement.
2. Structured collaborative R&D provides a methodology for schools and partnerships to test proposed interventions against existing research and other evidence and to trial innovations before making recommendations to influence both school and alliance policy and practice.
3. Adopting an R&D perspective as part of a long term vision of can be transformational for the school, and partnership, as a whole.
4. Engaging in collaborative R&D and enquiry provides opportunities for leaders at all levels to develop knowledge and skills in how to improve pupil learning.

Adapted from Nelson et al, (2015a)

2.5 Addressing challenges

During the two and half years project, the national teams were collating challenges raised by the TSA R&D project participants and actions that project partners were taking to address them. Table 2 lists and groups these challenges and solutions. Anyone establishing a similar collaborative R&D initiative with partner schools should consider

them seriously. Many of these challenges would also apply to developing collaborative R&D projects and cultures within a school.

Table 1 Challenges and solutions

Challenges	Solutions and possible benefits
Early stages	
<p>Readiness and willingness of schools to engage:</p> <ul style="list-style-type: none"> • Getting partners to engage, whether school-to-school focused projects or whole alliance activities – “how do you develop a genuine common question/area for investigation across schools in very different contexts in large alliances?” • Relative immaturity of alliances in early days delaying ability to move forward with the project. • Basic communication issues eg variable effectiveness of some methods, particularly e-mail, significant stumbling blocks. • Culture in some schools making proper enquiry difficult. • Teaching school being perceived as ‘the big cheese’ or as empire builders. • History of competition between local secondary schools leading to senior leaders’ resistance to engaging in collaborative R&D. • Large secondary schools already with their own in-house R&D. 	<ul style="list-style-type: none"> • Ensure that projects are relevant to schools’ as well as alliance needs. • Develop necessary partnership communication architecture. • Build trust. • Work with schools to identify colleagues who will benefit from involvement and become potential advocates. • Be humble, open and honest, listen, and take time to visit other schools and understand their context. • Quickly distribute leadership throughout partnership for different parts of the project.
Ongoing challenges	

Challenges	Solutions and possible benefits
<p>Time</p> <ul style="list-style-type: none"> • Allocating and creating sufficient time for R&D activities including observations, visits and planning/review meetings. • Particularly demanding across larger alliances. Difficulties in finding time to complete the work in the face of other pressures. • Practical difficulty of freeing people up with cover to work on the project. • Where relationships not established (cohort 3), timescale often insufficient. 	<ul style="list-style-type: none"> • Distribute funding to partners so they are responsible for and manage teacher release. • Ensure projects are manageable in scale and tightly organised. • Increase capacity and expertise by using effective external consultants and/or HEI partners who can support with resources, methodology, and data analysis. • Use digital technology to support observations and communication. • Plan effectively so commitment and expectations are clear. • Build R&D time into regular meeting structures.
<p>Leadership of R&D:</p> <ul style="list-style-type: none"> • Changing R&D lead over the course of the project. R&D leads in deputy head roles seconded to support neighbouring schools and not replaced. • Changing personnel, especially with longer projects, leading to loss of momentum or, if project insufficiently up and running, being curtailed. 	<ul style="list-style-type: none"> • Distribute leadership of R&D across the alliance with skilled R&D leads embedded in individual schools or hubs. Especially helps if school has a change of leadership later on. • Appoint senior leaders with specific R&D / CPD responsibilities to manage the project (cohort 2 and 3 schools tended to do this). • New energy can be brought to a project by a change of leadership.
<p>Teacher understanding of, and anxiety about engaging in, R&D</p> <ul style="list-style-type: none"> • Not having worked in this way before 	<ul style="list-style-type: none"> • Build a team of teachers who are

Challenges	Solutions and possible benefits
<p>so some staff need confidence to do it and carry out joint observations,</p> <ul style="list-style-type: none"> • Accessing research that is appropriate. • Battling sense that R&D is not important or urgent – “Oh no, the project coordinator’s coming in and will want to see data” 	<p>confident in R&D, identifying impact and in working with others (lead R&D practitioners who can support and provide additional capacity).</p> <ul style="list-style-type: none"> • Teachers seem to prefer term ‘enquiry’ to ‘research’. • Invest time in developing R&D expertise. • Develop a virtual learning environment (VLE) to share resources and outcomes.
<p>Maintaining buy-in and momentum around collaborative activity</p> <ul style="list-style-type: none"> • Teacher interest and commitment is flagging. • Key links in partnership schools are less engaged. 	<ul style="list-style-type: none"> • Ensure facilitation is effective so teachers are involved in determining precise foci of enquiries and how these relate to pupils in their classrooms. • Ensure responsibility for aspects of R&D design and reporting are shared. • Devote time to relationship building and encourage ‘infectious enthusiasm’ for R&D. Be honest about issues and challenges. • Build on evidence of improved engagement in, and motivation for, professional development and positive changes in teacher ‘mindset’ around culture for professional learning. • Invested time in early stages and trial pilot enquiries to build understanding and confidence helps

Challenges	Solutions and possible benefits
	<p>maintain initial 'buy-in'.</p> <ul style="list-style-type: none"> • Use subject based networks to help maintain momentum.
<p>Competing priorities</p> <ul style="list-style-type: none"> • Reduced engagement or commitment and/or drop out, sometimes leaving only one or two schools involved. • Alliances are “very rarely operating as one cohesive alliance with a stable and consistent set of member schools”. • Schools and alliances dealing with multiple initiatives. 	<ul style="list-style-type: none"> • Anchor purpose of project in key priorities of schools or alliance, secure headteacher commitment and understanding to prioritise this, regular communication methods, clarity of research focus. • Integrate a number of different networks within the overarching umbrella of an alliance dealing with multiple initiatives – huge potential to draw on support from different places but must link up complex and overlapping strands / align them.
<p>Tension around external accountability</p> <ul style="list-style-type: none"> • Barriers presented by national context of accountability in which schools work and “reticence due to external (Ofsted) pressure”. Depends on where a school is in accountability stakes. • Pressures on schools in current climate so how implant R&D in current climate. Some of this is seen as taking risks. • When under pressure to show improvement, this initiative would take too long. Benefits will not always be shown in two years across a population. 	<ul style="list-style-type: none"> • Use a non-judgemental approach. • ‘Comment only’ lessons, “keep any Ofsted focus in the background”. • Do not link development activities to appraisal, and focus on supportive approaches with challenge in the form of critical friendship.

Challenges	Solutions and possible benefits
<p>Turbulence</p> <ul style="list-style-type: none"> • Loss of outstanding designation/teaching school status, reorganisation of staffing, schools forming multi-academy trust. 	<ul style="list-style-type: none"> • Use succession planning, including going for joint designation or adding a newly designated teaching school to an existing alliance. • Take on core responsibilities across alliance.
<p>Maintaining rigour</p> <ul style="list-style-type: none"> • Not watering down approaches as they spread. • Inconsistency amongst partners, sensitivities where project lead suspects things not quite carried out as anticipated. 	<ul style="list-style-type: none"> • Commonly agreed approaches to data collection and analysis across the schools. • Ensure frequent sharing and peer feedback. • Set up mutual quality assurance processes.
<p>Measuring and demonstrating impact</p> <ul style="list-style-type: none"> • Measuring impact still a big challenge whether gathered enough data or clarity in thinking. • Getting right baseline was sometimes challenging and took time to establish. • Ensuring valid data before making claims and not over-claiming. • Drawing general conclusions from a wide and varied range of research activity. 	<ul style="list-style-type: none"> • Be clear about focus. • Identify starting points and success criteria. • Carefully consider balance between quantitative and qualitative data – quantitative data is not the only thing that counts! • Be honest about claims made and careful about making causal connections. • Be able to convince yourself, a friend and a sceptic whether it is worth continuing, deepening and extending. Consider whether it would be interesting and worthwhile to someone not involved in your

Challenges	Solutions and possible benefits
	alliance to get involved in.

R&D national themes interim report: Spring 2014 (Taylor et al, 2014), final reports of two national teams (Nelson et al, 2015a; Rea et al, 2015a), Approaches to R&D for great pedagogy and great CPD in TSAs (Maxwell, Greany et al, 2015) and final national event, November 2014.

Also, as Rea et al (2015a, p45) note in their final report on leadership of great pedagogy (theme 3), 'where projects made slower than expected progress or failed to engage participating schools as they had expected, many of the reasons were the obverse of our key messages about successful leadership of great pedagogy'.

Further challenges related to sharing the findings, engaging new colleagues and sustainability are addressed in the next section.

Section 3: Mobilising and sustaining collaborative R&D

Results of the national R&D themes project are very encouraging. Many TSAs have set up and run successful collaborative R&D projects and programmes which have had an impact in their alliances. What next? The issue is one of sustainability: that is, ensuring that collaborative R&D to promote great pedagogy supported by great professional development and great leadership within and across alliances:

- is deeply embedded in those who have already participated so that they develop expertise
- is spread increasingly widely to others throughout their schools and others in their alliance
- is not a 'flash in the pan' but a lasting feature of a self-improving school system

3.1 Deepening and extending participants' learning

For all those involved in TSA projects, the question is 'does it stop here'? As well as being able to answer initial project questions, going deeper would mean exploring and intervening around new topics that have arisen in the course of this project's R&D activity. It also means deepening their knowledge of and skills in collaborative R&D and enquiry and being able to apply all their knowledge to other situations in and across schools. Useful learning included "insisting on pairs of delegates really supports development back in schools (team teaching, joint CPD, coaching...)" (**Camden Primary Partnership**). Several alliances were intending to continue to work with an HEI to embed this way of working, but it was not always clear how those already involved would develop greater expertise in their theme project focus or methodology. Developing expertise takes time (Stobart, 2014) and time is a transversal message arising out of the three themes' R&D. Illustrative examples follow of partnerships as they deepen their project work:

Wandle TSA – Project: creating and supporting 14 JPD groups across five secondary schools and one primary school. In a second cycle of peer reviews, many groups are continuing with their themes and new groups are starting. Groups are encouraged to communicate with each other. A core group of lead facilitators meet regularly, and group facilitators also meet as a support group.

Latchmere TSA – Project: a collaborative action research approach to teachers' professional development to bring about outstanding innovation in classroom assessment practices which enhance pupils' progress, attitude to learning and reflectiveness. R&D is now being embedded into other areas and streamlined with school priorities e.g. when the school considered changing a year group from streamed maths to mixed-ability mathematics, they analysed all related research evidence to best inform the school's decisions.

Projects spawned many examples where the impact of the R&D focus led to it becoming embedded as part of an overall professional development or leadership strategy and where teaching and learning strategies and resources developed in the project have enriched involved schools' approaches. For example, lesson study is being built into one Affinity TSA school's professional development programme and budget and included in teachers' performance management objectives. It is also important that successful approaches will continue to be used to support professional development across the alliance. An example here is that, as a result of **Brooke Weston TSA's** research, lesson study continues to grow and develop among the three participating schools, and associated research modules will be embedded within ITT and NQT programmes.

Developing enquiry cultures

Some TSAs took a more systemic focus from the outset with the rationale that focusing their projects on developing enquiry and learning cultures within and across alliance schools would create the right conditions for ensuring great pedagogy is generated, nourished and that its impact is constantly evaluated. Three broad patterns can be seen, although sometimes an alliance used more than one of these.

Developing R&D skills and leaders

Choosing to develop R&D skills across the alliance is not only helpful to specific projects but also develops capacity for future R&D. This is more likely to speed up the cultural shift towards embedding curiosity and commitment to R&D. Some alliance projects paid particular attention to developing R&D or collaborative enquiry skills. For example, **Collaborative Schools Ltd** knew from baseline data gathering that its SLEs' knowledge about teacher research strategies was limited and they had little or no experience of facilitating colleagues' collaborative teacher enquiry. They developed the role of the SLE as a research mentor, along with creating a digital research wheel, a form of maturity matrix which integrated research with appraisal and performance management, and establishing research hubs. In **George Spencer TSA**, middle (and senior) leaders were developed to become 'enquiry champions'. They then led, facilitated and coordinated school enquiry groups. Supported by HEI partners, the teaching school arranged training workshops for these champions to develop their research skills and conduct and evaluate enquiries (Rea et al, 2015a). A history of involvement in R&D seems to help here. Some partnerships and project leads already had research experience or a long history of R&D activity.

Developing leadership capacity

Another feature of many projects was developing leaders to extend the approach beyond the project. **Devon TSP's** work to develop the skills of primary computer science coordinators was initially led by a secondary master teacher, but two more master teachers were developed from within the initial group, who then took on the leadership of the training sessions.

Two further coordinators shadowed the master teachers and were appointed as SLEs for computing science, to support succession. In Devon, two 'learning hubs' have also been established to continue to share resources and learning among the schools and succeeding cohorts.

Several professional development and leadership projects built into their design the development of teachers to lead and sustain the project focus after it had completed, by working with other colleagues in their own and other schools, such as encouraging initial teacher trainees to become self-sufficient in leading their own professional development.

Developing commitment and advocacy among headteachers and senior leaders

A third strategy involved working with headteachers and other senior leaders. Remember that clear project findings are that these people are essential to the success of collaborative R&D, even if they are not leading the projects. **The Wroxham Transformative Learning Alliance's** half termly learning fora for headteachers and for deputy and assistant headteachers to discuss research is an example that focuses on marshalling the championship and support of leaders who fundamentally influence the success of their colleagues who are involved in R&D projects.

Where to start?

The question is whether starting small and thinking big or immediately going for broad culture change will ultimately lead to the most powerful and sustainable outcomes. In his panel comments at the final national event, Toby Greany, Professor of Leadership and Innovation at the UCL IOE asked whether it was better to follow some alliances' approach and keep it very small and focused in three schools with six leaders or take a much more strategic approach, for example having SLEs as research leaders across an alliance: "you can't say which is more effective. The challenge of the big picture is making it stick with teachers but the challenge with the small project is scaling it up". One theme 3 project leader reflected on his marketplace experience at the final national event: "I suspect the small scale projects will get more depth - how performance feedback impacts on the quality of writing. Mine is about the impact of system leadership on developing pedagogy. That won't influence Simon in year 7. It's hard to affect ethos change in one school, never mind 14".

3.2 Sharing and spreading the learning

As Nelson et al (2015a, p60) caution: 'Mobilising learning from school-led collaborative enquiry to influence wider staff across a school or alliance is challenging and often neglected'. Bringing about change among a relatively small group is difficult enough, but spreading the change and hoping it goes viral is altogether another challenge. Participating TSA project leaders knew up front that a key goal was to ensure that their efforts were not confined to the initial participating schools.

As time progressed, many were increasingly thinking how best to widen the reach of and engagement with their project activity.

How did the TSAs choose to communicate their findings, enhanced practice and learning from their experiences in order to get others on board and up to speed? At relatively early stages after the end of the project, how is knowledge and new practice generated through this project being diffused in ways that it will catch hold and can be used to develop others' practice in order to have a wider impact? These questions are answered below.

Ways to move learning across schools

The alliances were using a range of methods to communicate their findings and learning and to engage new colleagues in cross-alliance collaborative R&D. These methods serve different purposes and may lead to different levels of awareness, engagement with and use of findings and interventions.

Writing case studies

National teams created frameworks for case studies which were discussed during sessions and telephone check-ins with external facilitators. Conversations in facilitated sessions and telephone check-ins covered both the process and content of writing. Some project leaders needed little help to write case studies; others went through two or three versions. External facilitators noted that in the most developed case studies, writers:

- Used the guidance given when discussing the case study purpose, format and elements during external face-to-face and telephone facilitation.
- Stuck to the framework for the case studies – which most found helpful.
- Were keen to have their draft critiqued, questioned, open to suggestions from facilitators and colleagues for further development, expansion, honing, clarification or improvement following this, and acted on this feedback.
- Provided evidence to support any claims.
- Were more analytical in their approach and drew out their learning.

A selection of case studies from each theme have been published alongside the main reports.

Other strategies to communicate findings

TSAs were using many other strategies to communicate findings, gain colleagues' attention and extend their influence's reach within their own schools, across their alliance, across their locality, nationally and, sometimes, internationally.

Presentations at conferences or national forums were a common feature, with several establishing annual conferences and other regular events. Specific groups were targeted, such as headteachers, other leaders, new teachers, specific subject teachers and organisations. Publications included summaries of projects, short research literature summaries, reports to organisations, papers for conferences and published articles. Use of school and alliance websites was frequent and a number made use of social media communication strategies. Many of these strategies are designed to raise awareness.

At the final national event in November 2014, participating TSAs shared their progress, learning, impact, good practice, successes and challenges. During 'marketplaces' for each theme, project leaders found out more about each other's projects. To facilitate conversations, all had prepared a one-page poster, summarising their activity and findings, framed by the answer to four questions: What did you do? What was the impact? What have you learnt? How are you sharing the learning? Some project leaders brought materials developed during or as outcomes of their projects. A couple developed the poster template into a fold-over booklet that was now the first in a series of leaflets they plan to write to share all future R&D project findings. Posters and other visual displays offer an alternative medium for conveying findings.

Strategies to animate and engage others in learning

Some strategies are more likely than others to promote interest and engagement moving other people towards taking on and using findings and designing their own related disciplined interventions and innovation. Some TSAs developed materials, tools, protocols and frameworks and thinking about other ways to animate their findings and project learning, by refining and then replicating their projects through JPD approaches that involved colleagues in co-constructing next steps. In essence, these forms of sharing project findings and experiences appeared to be more focused on ensuring other colleagues' learning as part of the process of extending their reach, rather than just disseminating the outcomes of their efforts.

Two examples of how TSAs shared their findings follow.

Palmerston Inclusive TSA – Project: determining if new assessment initiatives undertaken by special schools were impacting on learning and achievement for pupils with profound and multiple learning difficulties (PMLD). Sharing strategies include: feedback to the headteachers in the Merseyside special schools and all PMLD co-ordinators. The alliance will be running training for interested schools and already seminars have been given to teaching students at two universities and to schools direct students.

KYRA TSA – Project: how digital technology and web 2.0 tools could enhance the impact of feedback for children and make JPD more personalised, manageable and effective.

Sharing strategies include: holding teach meets three times a year and continuing conversations and relationships using social media; holding CPD sessions to develop R&D skills and for support staff and ITT to lead and evaluate their own action research projects; key pedagogies using digital technology and web 2.0 tools to be available on members' area of TSA website.

Two alliances pursuing a similar theme joined together to reach a wider audience.

Westdene and **Esher TSAs** organised a joint conference to share experiences, and produced a summary of project outcomes on transition. Some alliances had a defined group of colleagues who were engaged throughout the project, testing emerging thinking and approaches during regular meetings (Maxwell, Greany et al, 2015).

Across all participating alliances, however, there were some who had still shared little by November 2014. This was particularly so for some cohort 3 TSAs whose R&D national theme project activity had only started one year previously. Ensuring that the learning from this project is mobilised is a key feature of sustainability.

Using knowledge from elsewhere

Raising awareness and generating interest is important, but is only a first step. The ultimate goal is that others will be involved in similar types of R&D projects themselves or benefit from using findings of these TSAs' theme projects to enhance their own practice. It may be too early to see many examples of the TSAs' findings being used in other places, but **Bishop Challoner TSA** describes how its project work is influencing practice elsewhere. The project involved a trial of an enriched literacy AfL pedagogy that scaffolds pupils' learning. Already, this has been replicated and adapted in partner schools which have both adopted aspects of the pedagogy and a policy of teachers routinely sharing a discrete 'literacy' objective.

Members of the themes 1 and 2 national team caution that it may be too soon to judge whether teachers more widely will benefit if they have not had direct experience of participating in a project and generating the learning (Maxwell, Greany et al, 2015). Although it is early days, it seems that those projects that have taken more systemic approaches to developing capacity through professional development strategies such as JPD and coaching seem able to engage other colleagues more easily. They are doing this by attending to the transversal themes (section 2.1), such as personalising and adapting approaches, empowering them, providing trusting environments for collaborative development opportunities and realising that this takes time.

3.3 Towards sustainable collaborative R&D

To realise the goal of being an evidence-based, self-improving school system, collaborative R&D across alliances has to be sustainable across that system long-term.

Many teaching schools had put considerable thought into how they would deepen and spread their efforts within their schools and alliances. Some had connected up across alliances, supported by externally facilitated networking sessions. But will this be sufficient? Bringing the R&D national themes project leaders together to talk about how to progress across the system, sustainability was also an aim of the final national event in November 2014. Learning conversations near the end of the day focused on how to maintain momentum and ensure great practice is sustained. In a panel session, Toby Greany posed the question: “For people involved, it’s powerful professional learning, but how do you mobilise it? How do you share it across a self-improving school system when a lot of the architecture from years gone by has disappeared?” How do you reach a tipping point (Gladwell, 2000)?

Need for collective vision, voice and action to ensure a ‘mindset shift’

In welcoming project leaders to the final national event, John Stephens, Deputy Director, Teaching Schools & School Improvement at NCTL, reminded them that R&D will always be part of the core work of TSAs but that progress in this had been slower than in others of their ‘big 6’ responsibilities. More recent systemic engagement in R&D he thought was “not least because of your work which has led to a growing momentum.” But sustainability has to be the next goal:

Being able to articulate your work based on a rich understanding of your work through disciplined enquiry would change the landscape completely. We are just on the brink and part of today is how we make that step change.

And Margaret Mulholland, Director of Development and Research at Swiss Cottage Special School and TSA, another panel member, told fellow project leaders: “we feel R&D is now more central to what we do. It’s more core; it’s progress. It now needs to be seen as a driver to school improvement.”

Several other colleagues were insistent that it was important at a national level to capture and maintain what happened – “to be trail blazing and proactive” – in order to stimulate a “mindset shift” as a result of this initiative. This requires creating cultural change to support teacher engagement in R&D in schools. As Robert Hill a panel member and a national lead for theme 3 elaborated: “what we’ve encapsulated is about culture change. It’s about taking teachers back to be learners, including professional development through enquiry”. Another panel member, Sean Smith, Vice Principal of Bishop Challoner Catholic College TSA project lead, told colleagues that the ultimate answer lies “within the four walls of the classroom” and that this offers great opportunities for R&D because “every teacher has a classroom which is a working laboratory”.

The commitment to engaging in and with research was strong: “research is part of what we are as professionals”. And John Stephens also reminded colleagues that during ITT “you are doing both – you are a teacher and a researcher – your approach has to be underpinned by disciplined enquiry – this is the way we do things”.

If this is to work, a project leader argued, “going beyond politics is what sustains it”. This was supported by Dame Alison Peacock from The Wroxham Transformative learning alliance in her end of day panel comments. She posed the challenge: “It’s how to take the burgeoning energy, how to take the learning across the system and sustain it beyond a political agenda. How do we hold on to what works well and collectively have a voice?” Several messages came through for ways forward to develop such a ‘strategic architecture’ (Nelson et al, 2015a, p63).

Practical suggestions were offered around ‘spreading the word’ and engaging new colleagues in cross-alliance collaborative R&D. These included: every school being linked with a partner school (ideally outside of an alliance); more opportunities for experienced teaching schools to share their experience, issues and challenges with new teaching schools; creating a teaching and learning consortium; and developing website platforms for professional sharing, which had been the focus of some projects eg **Chimney House Teaching School Foundation**. With a mind to overload, colleagues also suggested that collaborative planning could help in avoiding duplication of research, and a reminder that sustainable interventions for teachers are likely to be those that don’t increase workload. Practice changes need to be ‘time smart’.

R&D infrastructure and support

A system-wide R&D infrastructure needs to be developed. Ideas here included R&D advocates and lead coaches. One alliance’s strategy of having research leaders in each school, research assistants, like in medicine, and continuing the research forum. Project topics were proposed, including longer-term projects. Potential themes included an overall project theme for cohorts 4 and 5 at key stages, with schools then taking their own theme and making it relevant to their needs. Exploring the impact of the pupil premium was another suggestion: “maybe use a baseline, and be more clever with the money the schools already have rather than thinking more is required”. One project leader spoke about how the original research claims on professional development contain underpinning themes that are pertinent when using research to support practice but was concerned that: “we are not training staff in [these]. There’s work to do on developing skills as self-developers of practice. We hone practice skills but this is an omission. There are vehicles to help this – lesson study, coaching conversations etc.”.

Project leads believed that this would need support. John Stephens spoke about the national team partners – UCL IOE, SHU, the Isos Partnership, Robert Hill and the University of Nottingham, reminding colleagues that school-led does not mean that schools have everything they need to carry out R&D successfully: “The strength the

partners bring can't be underestimated". Most colleagues present agreed, as reflected in these statements and in personal comments made to the national leaders and external facilitators:

This controlled approach – helps 'steer' and 'keep on track' – we need something to keep it together – what happens when we all go – danger of innovation but no 'follow through'.

HEI role is important as a critical friend and supporting schools to get the message out – they have a crucial role to play in the current climate.

Enable and support the profession and invest in partnership with HEIs.

R&D capacity and skills

Development of R&D skills has already been covered in terms of deepening the learning of project participants, but it also has an eye on spreading R&D knowledge, skills and mindsets more widely. Some TSAs started the projects with more developed research capacity than others. Although all projects required the development of research skills, some alliances were more confident that they had grown their skills and capacity for R&D as a result of the project, and that this work would be sustained. This was particularly true for those whose project focus was on developing the alliance's research culture. For example, as a result of their project, **Collaborative Schools Ltd.**'s SLEs had been "empowered, equipped and excited to facilitate research groups, modelling research engagement themselves and demonstrating a growing knowledge and understanding of research methodology and its application to managing school improvement priorities."

Ensuring leadership capacity

Again, this topic has already been introduced, but distributing leadership is essential for sustainability of any systemic collaborative work. This comes through in all themes' findings. Many projects built the distribution of leadership into their projects as a strategy for continuity and a few focused on developing the leadership capacity of students, such as **The Kemnal Academies Trust TSA** and **Academies Enterprise Trust TSA**. Leadership development was an impact for a number (see section 2.4) although, surprisingly, this was sometimes unexpected. Looking ahead, a few of the project leaders specifically articulated leadership development plans related to sustainability.

3.4 Sustainability challenges

TSAs were facing several challenges in relation to mobilising and sustaining collaborative R&D across partnership schools.

Length of project

For some cohort 3 schools – those who had under a year for their projects – the timescale was demanding. As one project lead wrote the necessary ‘cultural shift’ takes longer, even though they were aware of the project timeline.

Another project lead wrote:

We wanted this project to be the benchmark for future projects and involve all of our alliance partners, making it a truly collaborative project. We felt that strong foundations were of vital importance before taking forward any meaningful work and spent several months establishing structures, policies and processes... we hoped to begin to change local culture and move teaching further towards an evidenced-based profession.

North Somerset TSA

Having cohort 1 and 2 schools to support them at national and regional events had been helpful, as these colleagues had one year or more experience.

Funding

At the final national event different views emerged around funding. A small but significant number took the line that “it’s not about money – but making a difference”; “it’s a red herring to pay”, and one project leader explained how all the headteachers had put in money: “they had a vested interest – they wanted to know the outcomes. You have to make it valuable enough for them to want to put money in”. Considerably more, however, argued that “funding does matter”. Many projects used funding for staff release and travel, some brought in external support or a co-facilitator, and in a few, staff had been given a small remuneration to carry out an enquiry and/or write it up. One project leader was very clear that “Funding drove the project and when the funding goes it won’t be sustainable. These things can’t be done on good will alone”. Another was “interested in paying people up front if you want them to take research seriously. They are professional people”. While there was not total agreement, the challenge, as one leader articulated it, was how what has been established can be captured at a national level without having to pay for it to happen. Concern was expressed that “we’re asking staff to do more”.

Wednesbury TSA’s poster also addressed the issue:

The main challenges for us are probably resources of time and funding. Our alliance schools are assured of the value of collaborative enquiry but also have many other demands made on their limited resources. It is important that we choose our areas of work very clearly to ensure they are focused on those that will have the greatest impact on desired outcomes.

Equality in relationships and no ‘egos’

If the system is to be truly self-improving, with a disciplined collaborative enquiry approach underpinning R&D activity, relationships need to be much more equal throughout the system.

Project leaders think there is currently insufficient parity in terms of recognition of school leaders, HEIs, HMI, and Ofsted – “the fluidity to ensure learning across and within”. Such parity would require a shift to mutual accountability, rather than the current system.

Implications for peers were also clear. First, heads of all schools, and their governing bodies, need to become involved and there is either insufficient knowledge or reluctance to do so at present. Second, there is no room for egos or empire building in a fully supportive self-improving system. One project leader noted: “school ego’ appeared to be a blocker... some schools still want to own their part of the alliance and be accredited for what they individually contribute. They see themselves as an individual within the alliance rather than an integral part of it.” Others commented: “the ‘superhead’ concept is undesirable” and “we need more humility”. Attempts have been made to address this, for example **Portswood TSA**, whose case study notes its sensitivity to not being seen as being “about ‘high sale’ techniques and touting for business” (Portswood TSA case study). Their way of dealing with this challenge was by developing a coaching culture across the alliance based on steady growth in word-of-mouth support and development of trust between schools.

‘Destabilising’ forces

A key message of theme 3, and one which was discussed at the final national event, is the risk of de-designation of teaching schools if they lose their outstanding status following an Ofsted inspection. This had already happened in a small number of cases. It has an implication for succession planning, and teaching schools were attentive to this. Nonetheless, it also serves as a de-motivator for putting in the attention and effort that is required to ensure sustainability of collaborative R&D across alliances. It relates to the previous challenge and suggests that forms of peer review and accountability, with a developmental orientation, may lead to greater commitment and energy to make this work across the system.

Communicating findings and learning in compelling and engaging ways

Writing clear, compelling and honest case studies based on rigorous collaborative R&D is not easy for everyone, especially when they are extremely busy. Very few project leaders were unable to do justice in writing up excellent projects, but a number were concerned about who might read them, whether they would be anonymous and whether they should share difficulties they had faced.

Other colleagues and external facilitators felt that it was important that anyone else trying to lead and support such an initiative needs to understand the challenges. This form of deep and rigorous storytelling is not an automatic part of most leaders' repertoire.

In addition, while some of the alliances had considered the three facets of sustainability carefully (p46), others were still at much earlier stages, or their thinking and action did not yet seem to have gone much further than using the forms of communication that are useful to attract attention and may promote interest but do not necessarily help stimulate engagement and use or contextual adaptation of interventions. In particular, while time is an issue, the ultimate goal of an evidence-informed profession is that teachers and leaders are gathering their own evidence, guided by external evidence which would include the TSA theme projects' findings as well as external research findings and other colleagues' examples of successful interventions.

Section 4: Conclusions and strategic questions

Ninety eight alliances involved in the teaching schools R&D network national themes project carried out projects focusing on three interlinked network priorities: pedagogy, professional development, and leadership within and across alliances. The project aimed to produce robust evidence for wide dissemination, while building the capacity and commitment of teaching schools in their use of R&D approaches and evidence. Learning from this two-and-a-half year project has been rich, with many implications for practice, policy and other stakeholders in a self-improving school system.

This section draws conclusions from looking across this learning. Questions are then posed for key stakeholders interested in the role of teaching schools in leading R&D activity in a self-improving school system.

4.1 Conclusions

National themes

- Key messages and firm findings have been generated about what it takes to develop great pedagogy and the necessary associated professional development and leadership within and across TSAs. Valuable messages are offered for each, but ensuring great pedagogy is most likely when all three are considered as mutually influential and interconnected. Cross cutting messages reinforce this.
- The messages and firm findings re-affirm prior research claims but they go further. Project evidence does not only support prior research findings. It complements, enriches and contextualises these findings as practitioners engage with and co-construct meaningful interventions which they then test out and find out what is successful in their own contexts.

Collaborative R&D across alliances – enquiry and innovation

- Collaborative R&D across an alliance can operate with different methodologies. Common elements that lead to successful outcomes include repeated cycles of enquiry and innovation or intervention, with regular reflection with peers and facilitators on progress, successes and challenges. This reflection leads to necessary refinements, enhancements and addition of new elements to increase chances of success.
- Different forms of collaborative R&D exist ranging from those totally co-created, through ones with a common theme across all schools but individual areas of focus, to more discrete projects with elements of collaboration. Decisions around the form depend on school and alliance needs, the alliance's stage of development, relationships, and decisions about delegation of leadership.

- Participating in collaborative R&D can be energising, motivational and developmental for those involved. It can build trust and relationships where colleagues are able to engage in deep conversation about teaching and learning and are not afraid to challenge each other's practice. To achieve this requires persistence and commitment. This is more likely if teachers are involved at an early stage in decisions, helping to construct the projects, and taking the lead as they are ready.

Research, other evidence and tools

- Connecting practitioner enquiry in collaborative R&D with what is known from academic research about the project focus and the overall theme helps augment understanding, provides helpful leads and can provide insights that led to creative interventions.
- Other evidence about successful interventions and tools that can aid decision making, monitoring of progress and reflection on learning deepens and enriches projects, thinking and ability to articulate reasons for successes and challenges.

External support

- External facilitation and support helps provide structure and challenge, and offer additional capacity and access to new knowledge. HEIs and other researchers can provide guidance on how to maintain rigour of enquiry, enable access to relevant research material and provide advice on ethical issues.

Peer-to-peer challenge, support and learning

- Critical friendship and challenge is essential to successful collaborative R&D. Cross-alliance links between peers sharpens thinking, provides further options and can help create the connections regionally and nationally that are more likely to promote system-wide change.

Leadership

- Collaborative R&D benefits from strong internal leadership and facilitation. Alliance R&D requires these leaders to use skills differently to develop trusting, collegial relationships, engage partner schools, keep them on board, maintain momentum, navigate difficult territory, and manage risks.

Leadership commitment and support at alliance level and among headteachers of all participating schools is critical, sponsoring teacher participation and providing practical resources, including time. Distributing leadership to senior and middle leaders across participating schools and teachers involved is a way of ensuring commitment.

It also creates leadership capacity and provides a safeguard if there are changes in internal project leadership.

Impact

- Well focused, led, facilitated and supported collaborative R&D across alliances can have a positive impact on people at all levels of an alliance. Most important, well-targeted projects make a positive difference to pupils' learning experiences, academic progress and other outcomes, including their orientation to learning and sense of wellbeing. Collaborative R&D also has a range of benefits for participating teachers, including enhanced teaching practice, greater reflection, new patterns of thinking, higher expectations, increased motivation and enjoyment of collaboration, with greater openness towards colleagues. Schools benefit from a move to more powerful forms of professional learning, more learning-oriented and enquiry-hungry cultures, and an increase in leadership capacity. Alliances reap the benefits of more trusting relationships and openness to sharing and critiquing practice.
- Tracking and determining impact is challenging. Ensuring rigour, making sure to collect a baseline picture and getting the right balance of assessment and evaluation methods are among the issues faced. Not going beyond what the data has to say is another. It is important to be careful about attributing success to one intervention or project when it is only one of many concurrent activities. Its impact needs to be disentangled from the multiplicity of initiatives that are part of school life.
- TSAs need the necessary support to evaluate their own projects. The diversity of these projects, and their orientation towards innovation, requires a creative, flexible and contextualised, as well as rigorous, approach.

Mobilisation and sustainability

- TSAs use a range of strategies to share their outcomes and learning with colleagues within their schools, across their alliances and more widely. Many of these approaches are likely to raise awareness, but it is unclear to what extent other colleagues will be sufficiently engaged to 'jump on board' and whether the knowledge that is generated will have a wider impact. A rich body of knowledge has been developed, along with excellent practice that demonstrates impact, and yet it is not always easy or guaranteed that this will be used elsewhere.
- Writing about project experiences, findings, impact and learning can be a challenge and requires support and guidance.
- Some TSAs show a strong learning orientation in their approach to mobilising their new knowledge. This applies especially to those which have used a form of collaborative professional development or development of enquiry skills within or as the focus for their projects, taking this forward as a mechanism to engage more

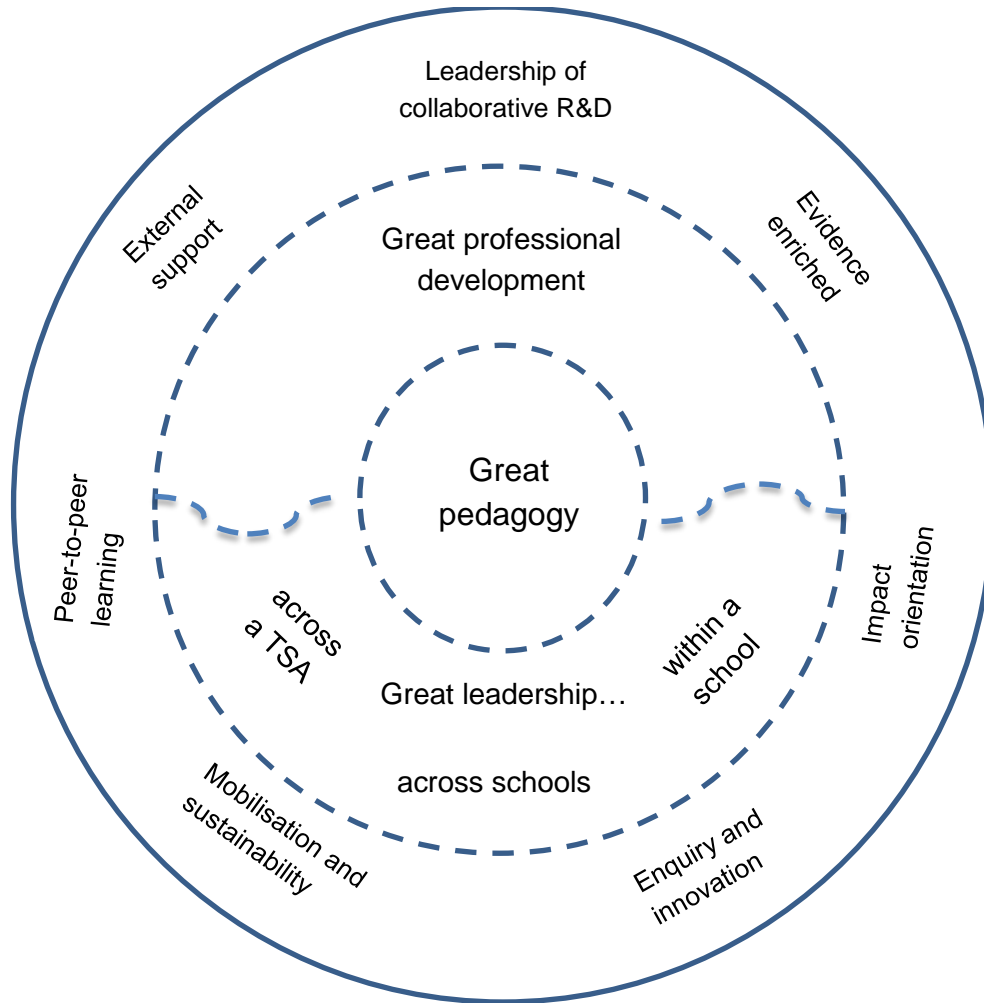
colleagues across their alliance. Particular attention is being paid by several alliances to using former project participants as leaders of project extensions.

- Project processes and development techniques are being built into several schools' and alliances repertoire to be adapted for use in other situations
- Smaller, more narrowly focused projects may lead to greater depth and practice change but may be harder to replicate and transfer with other teachers. Larger projects with a focus on culture change – e.g. research, enquiry or learning culture – may touch more schools but may not have a quick impact on pupils' learning and progress.
- Collaborative R&D across alliances requires a range of practitioner research skills. Leading these kinds of projects is considerably easier if alliances already have a strategic emphasis on enquiry and research, and development of these skills is part of the alliance's professional development strategy. Lack of research capacity and skills are significant barriers to sustainability.
- An element of the project's success has been the provision of time for participation and reflection on learning. TSAs received funding for their projects, this may not exist for continued project activity, and teaching schools receive reduced funding on the expectation that they become more sustainable over time. Lack of funding is therefore a challenge.
- Top down accountability systems can be an obstacle to sustaining collaborative R&D across alliances in a self-improving system. Being fearful of engaging in or leading R&D is a de-motivator. Destabilising risks need managing but may also need rethinking. Relationships need to be much more equal. A development rather than judgement mentality is vital.
- There is no room for egos, empire building or an 'us and them' mentality in a self-improving system that promotes collaborative R&D across schools.

Collaborative R&D across a self-improving school system

The findings of the teaching schools R&D network national research themes project, and these conclusions, suggest that a number of elements are fundamental to ensure great pedagogy through collaborative R&D across a self-improving school system (see figure 7).

Figure 7: Collaborative R&D across a self-improving system



4.2 Questions for dialogue

At the final national event, John Stephens described research as “a lens through which you view the world. You see things differently. You approach things differently. You problematise differently, and seek efficacy. But it’s also the sharing and openness which is essential.” Realising a vision of collaborative R&D across alliances which ensures great pedagogy in self-improving school system is a challenge. The national teams have made their own recommendations (Nelson et al, 2015a; Maxwell, Greany et al, 2015 and appendix 1) and posed strategic questions (Rea, 2015a and appendix 2). These will not be repeated, but all are important to consider. As the focus is on R&D and enquiry in a self-improving system, the following additional thoughts are framed as questions rather than recommendations.

Questions for teaching school and other alliance leaders

- What do the messages about each theme (pp 10-11, 13-14, 16-17) and cross-cutting messages (pp18-21) add to your understanding about ensuring great

pedagogy across your TSA or partnership? What resonates and what challenges your thinking? How might you take this knowledge forward in your own R&D?

- Which elements of collaborative R&D across a self-improving school system (figure 7) are currently in place in your own context? Are they successful and embedded? How do you know? What needs to be done next to develop other elements?
- Is it better to start small with a few teachers and schools working on narrowly focused projects, or go for immediately for systemic, cultural change? Is it either / or? How might both be achieved at one time?
- In succession planning and leadership capacity development, how can TSAs and other partnerships ensure that new leaders gain the experience and learning experiences they need to use leadership skills differently in leading R&D projects?

Questions for policymakers

- What support can government provide to help TSAs develop new projects, create capacity to ensure sustainability and mobilise knowledge in ways that will promote deep learning and extend impact?
- Should and can teaching schools be expected to bear the entire responsibility for developing a R&D culture across the system? What incentives might there be for other partnerships, chains and federations to become (further involved) in order to widen the reach of collaborative R&D across partnerships that ensures great pedagogy?
- What changes could be made to the existing accountability framework that both maintains standards and quality while creating a culture that genuinely values collaborative, evidence-based improvement?

Questions for universities and other research partners

- How can universities and other research partners best support TSAs and other partnerships in a self-improving school system? What support and guidance can they provide in how to design and implement evidence-informed R&D projects and practice? What toolkits and frameworks could they develop and offer to help with basic research issues?
- What does a sustainable and genuine alliance-university partnership look like? What needs to change from both sides' perspective? How can research councils and higher education funding bodies support universities in fulfilling this aspect of their remit?
- How can universities and researchers bring to bear what they know about knowledge exchange and professional learning to support TSAs in finding powerful ways to engage others with their findings?

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Appendix 1

Themes 1 and 2 recommendations

To promote the conditions for such strategic architectures to develop leaders in and across schools at all levels, an organisation needs to:

- Understand that collaborative, pupil-centred, evidence-informed professional learning must involve co-creation – bringing together knowledge from practice and knowledge from research to create knowledge that is new to everyone in the room.
- Ensure that R&D underpins the strategic planning and improvement process within and across schools so that findings and outcomes are shared, celebrated and sustained in practice on a cyclical basis.
- Create then convert a strategic vision for R&D into practical, operational structures and frameworks and find a way of resourcing it so that staff can work effectively and efficiently together within and across schools.
- Develop and support key staff as evidence or research advocates so they have the skills, knowledge and aptitudes to broker, facilitate and promote staff engagement with and in research.

Nelson et al (2015)

Three priorities for future development

- i. It seems helpful for the Teaching Schools Council to consider whether and how Alliances could be encouraged to engage in larger scale work under common themes since this seems essential for wider impact.
- ii. Teaching School leaders should focus on how to make R&D work stable and strategic. A thoughtful investment of time and effort in a well-structured and facilitated R&D process would appear to be key to achieving benefits for staff, schools and Alliances.
- iii. Universities might want to review their existing R&D work with Teaching Schools and consider whether more could be done to generate sustainable school-university partnerships in this important area.

Maxwell, Greany et al (2015)

Appendix 2

Strategic leadership questions

Five questions about the future role of TSAs in leading research and development activity.

1. How can the Teaching School Council and TSAs articulate and lead a clear strategic vision for the role that TSAs will play in R&D over the next five years?
2. How can the role of TSAs in leading R&D complement TSAs role in developing and leading a school-led system?
3. How can government and TSAs create the necessary time and capacity to enable practitioners involved in or co-ordinating R&D activity to both carry out the work and have the time to reflect on their learning?
4. How can the leaders of TSAs use the opportunity of R&D activity to engage the currently un-engaged schools
5. How can the leaders of TSAs make the most effective use of a variety of partners in developing this role?

Rea et al (2015)



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