



National College for
Teaching & Leadership

What makes great pedagogy and great professional development: final report

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

Research Report

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Contents

List of figures	3
List of tables	3
Acknowledgements	4
Executive summary	5
Key messages about what makes great pedagogy	6
Key messages about great professional development	8
2. Background and introduction	10
Methodology for this report	11
Ethical issues and permissions	12
3. Evaluation	13
3.1 Theme 1: What makes great pedagogy?	13
3.2 Theme 2: What makes great professional development that leads to consistently great pedagogy?	30
3.3 Evaluation: what have we learned about collaboration and collaborative enquiry?	53
What conditions support effective collaborative enquiry?	57
Key messages about collaborative enquiry	63
4. Conclusions	66
5. Recommendations	68
References	69
Appendix 1: Impact report format	70
Appendix 2: Final case study guidance	75
Appendix 3: TSAs and their research questions	77

List of figures

Figure 1: C2L methodology	10
Figure 2: Strategic architecture for professional learning	67

List of tables

Table 1: What makes great pedagogy? Nine claims from research - linked to TSA case studies	14
Table 2: Great professional development which leads to consistently great pedagogy: nine claims from research - linked to TSA case studies	33

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Executive summary

The teaching schools research and development (R&D) network agreed the following three national themes as the focus of their research activities for 2012-2014.

- Theme 1: What makes great pedagogy?
- Theme 2: What makes great professional development that leads to consistently great pedagogy?
- Theme 3: How can leaders lead successful teaching school alliances which enable the development of consistently great pedagogy?

The University College London, Institute of Education (UCL, IOE) and Sheffield Hallam University (SHU) are the national research partners for themes 1 and 2. This final report is based on findings reported by the teaching school alliances (TSAs) working on these two themes. The Isos Partnership, working with Robert Hill and Qing Gu (University of Nottingham), is the national research partner for theme 3. The *Research & Development Network National themes interim report: Spring 2014* (Taylor et al., 2014) provides further background information as well as interim findings on themes 1, 2 and 3.

Alliances were asked to produce impact reports summarising the claims they were able to make in answer to their overarching question and detailing the evidence used to make these claims. The format for these reports is included in appendix 1. TSAs also produced final case studies in response to guidance provided by the research partners (see appendix 2). Ten case studies from each theme have been published separately (Nelson et al, 2015). These summative findings from alliances have been reviewed and analysed against claims made in each of two literature reviews which formed a starting point for the project (Husbands and Pearce, 2012; Stoll, Harris and Handscomb, 2012).

A clear aim at the outset was to develop and embed a sustainable model for deep professional learning through a rigorous and supported R&D methodology (Harris and Jones, 2011, 2012). Key to this has been finding ways to connect practitioners with the research base. The 'nine claims' literature reviews have gone some way in enabling this and TSAs and schools have drawn on a range of other research sources and/or higher education institute (HEI) support in addition to these. 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.

We also make the case that the context for the teaching schools R&D themes project has proved critical in determining both the pedagogical and professional development foci for TSAs. This project was timely in providing a purpose and a structure for alliances to begin working together at an early stage in their development. Not surprisingly, therefore, schools largely chose to investigate the collaborative dimensions of professional development (theme 2) and shaped their pedagogy questions based on areas of common and compelling interest to them within and across their schools (theme 1). Local contexts and strategic priorities therefore mattered as much as the steer provided by the bespoke literature reviews.

Our analysis of impact reports and case studies across theme 1 and 2 TSAs supports the view that engaging in collaborative enquiry, when enacted systematically and rigorously, can make a significant and positive difference to both pupil and professional learning and outcomes. We summarise our findings in response to what we have we learnt about the conditions necessary for effective collaborative enquiry, in section 3.3 in the form of key messages.

In the conclusion, we highlight the importance of school-led R&D combining what is known about effective professional learning with a structured and focused enquiry and evaluation process. We argue that where this is done effectively across groups of schools with appropriate leadership support, the outcomes are likely to include: increased school to school collaboration and trust; the development of new knowledge and the embedding of evidence-informed approaches among the staff involved (though extending these changes to wider staff requires further sustained professional learning and knowledge mobilisation effort); the identification of further areas for focussed enquiry; and the development of a culture and capacity for further evidence-informed development.

Our key messages in relation to great pedagogy and the kind of professional development that leads to it are summarised below.

Key messages about what makes great pedagogy

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

1. 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.
2. Taking account of pupil voice appears to enable teachers to change or adapt their pedagogic approach and create a virtuous cycle of improvement.
3. 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.

4. Talking with pupils about their learning appears to enable teachers to make links between teaching approaches and their impact on pupil progress and attainment.
5. 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 do not give up

6. 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.
7. 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

8. 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.
9. '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

10. 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.

Do not underestimate what pupils already know and can do

11. 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.

Build in time for assessment for learning (AfL) and scaffold it

12. Use a scaffolding approach within AfL methodology to activate pupils as learning mentors for their peers. This increases their understanding of next steps and rate of progress when they give and receive feedback.

13. Build in time in lessons for pupils to digest and understand teacher feedback. Verbal and written feedback go hand-in-hand.

Develop a common language to talk to colleagues about pedagogy

14. Develop a consistent, shared language within and between schools and phases to supports high standards.

Key messages about great professional development

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

1. 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.
2. 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.
3. 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.
4. Great professional development is rooted in the classroom and starts with an issue that is relevant for teachers and their pupils.
5. Taking serious account of pupil voice helps teachers to genuinely understand the impact of new interventions / practices as a result of their professional learning.
6. 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

7. Effective professional development requires teachers to challenge their existing practice and make connections between how they teach and how pupils learn.
8. 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.
9. 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

10. Mentoring and coaching can be powerful when personalised, developmental and undertaken over time.
11. Providing sufficient time for deep, high quality talk between teachers is beneficial for professional relationships and leads to deep learning.
12. 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

13. Use internal and external expertise to maintain drive and momentum and provide support at different stages, as well as build new expertise and leadership.
14. Co-create knowledge by bringing together knowledge from practice and knowledge from research.

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

15. Incorporate collaborative enquiry into professional development as a long term approach. It is not a 'quick fix' – it requires persistence.

Facilitate the practicalities to encourage a learning culture

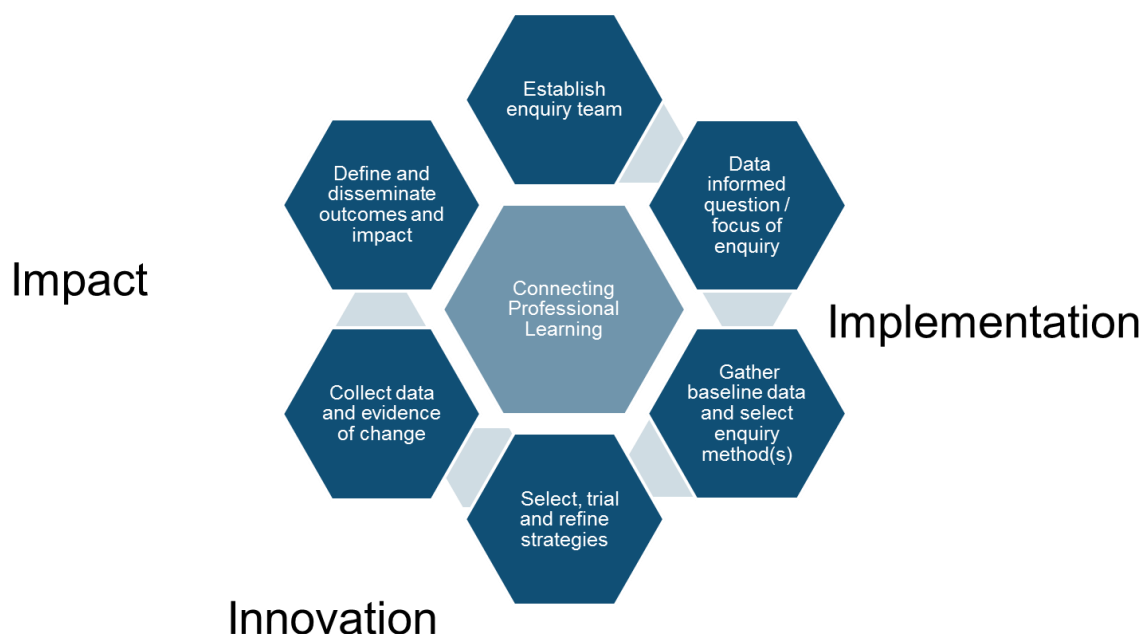
16. Make sure that senior leaders provide necessary conditions for effective professional development to take place eg time, resources, to facilitate an open classroom culture.

2. Background and introduction

Teaching schools joined the project in three cohorts beginning in April 2012, October 2012 and September 2013.

To support themes 1 and 2, Professor Alma Harris, with Michelle Jones, developed a framework called Connecting Professional Learning (C2L) to provide structure and direction for schools (Harris and Jones, 2012). The framework draws on the authors' research about effective collaborative learning and their experience of supporting schools through professional learning communities (Harris and Jones, 2011). C2L places an emphasis on how to facilitate effective collaborative enquiry and proposes three inter-related phases of practitioner research: implementation; innovation; impact (see figure 1). The framework was introduced at national kick start events for each cohort in April 2012 (cohort 1), October 2012 (cohort 2) and September 2013 (cohort 3). External facilitators (EFs) from UCL IOE and SHU supported understanding and use of the framework through the modelling of each stage of enquiry at termly regional action learning sets. Each lead school was also supported through regular, structured telephone conversations with their designated external facilitator. Teaching schools came together across all three themes in November 2012 and 2013 and for a final celebration and dissemination event in November 2014.

Figure 1: C2L methodology



Harris and Jones (2012)

The overarching framework included two literature reviews, one for each theme, (Husbands and Pearce, 2012; Stoll, Harris and Handscomb, 2012).

Each proposed nine claims, bringing together 'what's known' about great pedagogy and great professional development. Schools were encouraged to engage with these claims in a variety of creative ways in order to determine and refine their areas of focus and establish their starting points. The claims provided a firm and constant structure against which interim and summative findings have been brought together and analysed.

The enquiry cycle includes elements of an approach to evaluating impact developed at the UCL IOE over a number of years. Earley and Porritt (2013) define impact as:

...the difference in staff behaviours, attitudes, skills and practice as a result of the professional development in which staff have engaged. Ultimately, impact is also the difference in the learning and experience of the children as a result of the change in staff practice and the latter becomes possible once there has been impact from professional development.

They argue that to evaluate impact effectively, staff need to be clear about the intended outcomes before the onset of the professional learning activity. Earley and Porritt also stress that time must be taken to gather evidence about current practice and pupil learning at the very beginning, in order that change can be captured throughout and can be confidently evaluated at the end of the project.

If this occurs, it is more likely that practitioners will be able to understand and articulate the links between their own professional learning, changes in their practice and the resultant impact on pupil learning and outcomes. Making these connections explicit means they can then begin to further embed those practices with increased confidence.

The C2L methodology provides a common framework for tracking changes in professional learning, staff practices and strategies trialled against which the success of the entire project could be evaluated. A series of tools, designed using the three phases of implementation, innovation and impact, were also developed to prompt and support schools in capturing their baseline and final impact pictures in robust and rich ways using both qualitative and quantitative evidence. These tools are available in the *Research & Development National Themes Interim Report: Spring 2014* (Taylor et al, 2014).

Methodology for this report

The National themes interim report (Taylor et al; 2014) has a full list of participating TSAs from cohorts 1 and 2 and their specific research questions. This has been updated in appendix 3 to include cohort 3 and to reflect decisions made within TSAs about changes as the work progressed. Many TSAs also adopted a new name during the course of the project, to reflect the inclusive nature of a partnership and this is the name used in the list provided in appendix 3.

This final report is based on documentation returned to the national research partners in July and September 2014 by the TSAs: impact reports, on a template created by the UCL IOE and SHU and discussed with the external facilitator assigned to each project; and final case studies returned to the national research partners. These were written to a common structure, agreed with participating TSAs, which analyses activity and findings under the three C2L phases. Several partnerships provided additional material as appendices to impact reports and/or final reports. These appendices included additional evidence collected to support impact, such as extracts from teachers' reflective diaries, samples of pupil work and pupil attainment data. Findings based on analysis of documentation are compared with claims from the literature reviews which formed part of the framework for the research (Husbands & Pearce, 2012 and Stoll et al; 2012).

The next stage of drafting took into account feedback from TSA representatives and comments from external facilitators at the final end-of-project event held in November 2014. This revised draft was again circulated to external facilitators and to all TSAs, for further comment.

Ethical issues and permissions

At the beginning of the project, schools were asked to return ethics forms giving permission for evidence from their project to be used in publications. Where names of TSAs are used in this report, this permission has been granted.

3. Evaluation

3.1 Theme 1: What makes great pedagogy?

This section begins with an overview of the evidence base developed by TSAs for determining the impact of their pedagogical strategies investigated. Excerpts from impact reports are then used to exemplify the impact of the research projects in relation to *What makes great pedagogy? Nine claims from research* (Husbands and Pearce, 2012). Case studies, published separately, provide further detailed evidence.

Overall findings in relation to the overarching question are then summarised as key messages.

The evidence base

Husbands and Pearce introduce their summary of research literature with the critical link between good teaching and good learning, defining it as ‘what constitutes effective teaching, or, put differently, the behaviours and actions of good teachers: what it is that good teachers do to promote good learning’ (2012: 2). One way of identifying good learning is through the attainment of pupils in tests, and these were used by many partnerships in assessing the success of their projects. As well as using pupil progress measures based on the national assessment framework, schools devised internal assessments to gauge the understanding, skills and knowledge of pupils before and after pedagogic interventions to judge their effectiveness. Several impact reports warn that attempts to correlate interventions with specific improvements in test scores need to be treated with caution because of the number of uncontrolled variables. In addition, as changes in pedagogy frequently affected a whole year group, partnerships were often comparing the progress of different cohorts of pupils.

As well as test data, pupil questionnaires and pupil work, lesson observation, feedback from teachers and parents were used to provide rich, narrative evidence, both at the outset, as a baseline, and summative, to evaluate impact. These approaches to collecting data were more often used in enquiries focused on pedagogies to improve pupil learning such as developing independent learning skills, meta-cognition, engagement or motivation. Where changes in pedagogy were found to be successful, they were embedded into school practice in the participating schools and disseminated more widely, both within the TSAs and through local authority, regional and national events.

Schools draw on a range of approaches to capture pupils’ feelings and opinions regarding their own learning. Methods include interviews, focus group discussions and pupil voice surveys.

Indeed, one of the most notable points about the theme 1 impact reports is the frequency with which the importance of acting in response to pupil voice is cited, with the engagement and enjoyment of pupils noted as consequences, alongside improvements in academic progress and attainment. In most cases the changes in pedagogy were with groups of pupils and group feedback was collated but one of the most striking examples in the impact reports is at an individual level and was reported through a teacher's individual learning log.

Examples of impact

It would seem that by focusing on a pedagogic intervention and in paying attention to the feedback from their pupils, many of the teachers in this research have been able to enter a virtuous circle of improvement, whereby pupils engage with their learning more and are able to contribute as partners to further develop the pedagogies through which they learn. This means that teachers go beyond thinking about what they are going to teach and how they are going to teach it to consult with pupils about their experience as learners (claim 1). They use the feedback from the pupils to change or adapt their pedagogic approach (claim 8). Overall the enquiry projects in this theme confirm what Hattie (2009) concludes in *Visible Learning*:

‘When teachers seek, or at least are open to, feedback from students as to what students know, what they understand, where they make errors, when they have misconceptions, when they are not engaged – then teaching and learning can be synchronized and powerful’ (2009: 173).

Nearly all of the research projects tested more than one innovation in their pedagogies. In some cases, the use of a combination of pedagogies is given as the reason for the impact on learning of the pupils. In other projects, a different pedagogical focus in different strands of the project enabled evidence for one or more of the nine claims to be clearly demonstrated. The final case studies for each theme published alongside this report have been selected to show the richness and variety of the collaborative enquiries into ‘what makes great pedagogy?’ Their relationship with the overarching nine claims is shown in table 2 below. Examples included in the report are also drawn from projects where case studies are not included.

Table 1: What makes great pedagogy? Nine claims from research - linked to TSA case studies

Theme 1 claim	Examples of approaches and strategies used	Case studies where claim was a strong element
1. Effective pedagogies give serious	<ul style="list-style-type: none"> • intervention designed using pupil input 	Stourport High TSA

Theme 1 claim	Examples of approaches and strategies used	Case studies where claim was a strong element
consideration to pupil voice	<ul style="list-style-type: none"> • pupil feedback used to amend approach and to gauge success • pupil input into the content of topics and lessons • pupil feedback used to change timing of units on writing in Y7 • improving use of written feedback and student dialogue in books • development of approaches to purposeful and exploratory talk to increase pupils' participation 	<p>Bishop Challoner Catholic College TSA LEAD Teaching Alliance</p> <p>Wednesbury Learning Community Trust TSA</p> <p>Westdene TSA</p> <p>Harrow Collegiate TSA</p>
2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and belief (why teachers act as they do)	<ul style="list-style-type: none"> • use of a toolkit to modify teachers behaviour, knowledge and belief • developing teachers' subject knowledge • deepening teachers' understanding and knowledge of transition • changing teachers' expectations about what pupils can achieve 	<p>Esher Teaching Alliance</p> <p>Westdene TSA</p>
3. Effective pedagogies involve thinking about longer term learning outcomes as well as short-term goals	<ul style="list-style-type: none"> • paired coaching within a school, including lesson observations, to improve the quality of teaching to enable the trial of a specific approach to address identified barriers to learning in the participating schools • introducing information, advice and guidance (IAG) to Y10 students to help make explicit the link between GCSE grades, college courses and careers 	<p>Royal Greenwich TSA</p> <p>Esher Teaching Alliance</p> <p>Bishop Challoner Catholic College TSA</p> <p>Westdene TSA</p>

Theme 1 claim	Examples of approaches and strategies used	Case studies where claim was a strong element
4. Effective pedagogies build on pupils' prior learning and experience	<ul style="list-style-type: none"> • development and use of a thinking skills model for mathematics that encourages students to consider what they already know around the problem and make connections as a strategy. • new approaches to teaching writing in Y6 and Y7 to improve transition • use of a Y6 to Y7 bridging project in mathematics • aligning methods taught for written calculation in Y6 and Y7 	<p>Esher Teaching Alliance</p> <p>Stourport High TSA</p> <p>Westdene TSA</p>
5. Effective pedagogies involve scaffolding pupil learning	<ul style="list-style-type: none"> • use of writing scaffolds linked to assessment criteria • strategic use of higher-order and higher level questioning skills to enable purposeful feedback from pupils • use of explicit modelling in problem solving activities • use of guidelines and prompts in focused activities • use of an assertive 'thesis' to focus reading for evidence in an introductory text • using iCan¹ resources to model language use for young children 	<p>Denbigh TSA</p> <p>Stourport High TSA</p> <p>Bishop Challoner Catholic College TSA</p> <p>LEAD Teaching Alliance</p> <p>Northern Lights TSA</p>
6. Effective pedagogies draw on a	<ul style="list-style-type: none"> • varied techniques mobilised to address a pupil learning issue 	<p>Bishop Challoner Catholic College TSA</p>

¹ Further information about iCan materials can be found on the [iCan website](#)

Theme 1 claim	Examples of approaches and strategies used	Case studies where claim was a strong element
<p>range of techniques, including whole class, structured group work, guided learning and individual activities</p>	<ul style="list-style-type: none"> • memorising text and saying it out loud to improve use of vocabulary in writing • reducing use of text books and increasing opportunities for collaborative work and problem solving in mathematics • use of a range of methods to build a whole school reading environment for all students at all levels • investigating the extent to which the pedagogy of outstanding teachers is adapted to context 	<p>Westdene TSA</p> <p>LEAD Teaching Alliance</p>
<p>7. Effective pedagogies focus on developing higher order thinking and meta-cognition, and make good use of dialogue and questioning in order to do so</p>	<ul style="list-style-type: none"> • developing pupils' use of language to talk about their learning • developing pupil peer and self-evaluation • developing sustained thinking skills in young children • using Building Learning Power (BLP) to enhance student learning and metacognition) • Use of Thinking through Philosophy to develop purposeful and exploratory talk 	<p>Stourport High TSA</p> <p>LEAD Teaching Alliance</p> <p>Bishop Challoner Catholic College TSA</p> <p>Wednesbury Learning Community Trust TSA</p>
<p>8. Effective pedagogies embed assessment for learning (AfL)</p>	<ul style="list-style-type: none"> • developing use of self-assessment by pupils • use of assessment tools matched to learners • use of a learning mat to underpin peer and self-assessment core skills 	<p>Bishop Challoner Catholic College TSA</p> <p>Harrow Collegiate TSA</p> <p>Wednesbury Learning</p>

Theme 1 claim	Examples of approaches and strategies used	Case studies where claim was a strong element
	<ul style="list-style-type: none"> • improving use of written feedback • use of pupil improvement partners • dialogic teaching • written feedback tailored to individual pupils in the sixth form referencing advanced level performance system (ALPS) grades 	<p>Community Trust TSA</p> <p>Northern Lights TSA</p>
<p>9. Effective pedagogies are inclusive and take the diverse needs of a range of learners, as well as matters of student equity, into account</p>	<ul style="list-style-type: none"> • trials of specific approaches to teaching children with special educational needs (SEN) • pedagogical approach adaptable to different needs • pedagogies to address readiness for learning, such as pupils ability to manage their emotions and behaviour • encouraging appropriate language to help autism spectrum disorder (ASD) / SEN pupils to access the curriculum • strategies to improve resilience and physical writing ability with behavioural emotional and social difficulties (BESD) pupils • improving progress for low attaining entrants in English and humanities in key stage (KS)3 • use of technology to improve engagement of pupil premium pupils in reading 	<p>Bishop Challoner Catholic College TSA</p> <p>Royal Greenwich TSA</p>

Claim 1. Effective pedagogies give serious consideration to pupil voice

In order for pupil voice to be taken into account, there needs to be a culture in which pupils feel able to express their views honestly and with a belief that they will be listened to. **Springwell Community Special School's (Barnsley TSA)** impact report commented on the crucial importance of positive relationships between teachers and students. It was to the improved relationship, developed by listening to a pupil and paying attention to her needs, that the learning log of one teacher attributed progress from an F to the target C grade, together with an improved attitude to writing. Other examples of the use of pupil voice show that it was most frequently used to get feedback on a teaching approach and to modify an approach as well as to judge its effectiveness. Less frequent were projects in which pupils were actively involved in selecting the topics used in learning as in the example from **Bentley Wood High School (Herts and Bucks TSA)**.

However the importance of involving pupils in the selection of content that interests them is shown in the impact reports from other partnerships, so that, for example changing the novel studied in year 7 made a difference to engagement and progress in **Balcarras Teaching School Partnership (TSP)**.

Harvills Hawthorn Primary School (Wednesbury Learning Community Trust TSA), in their project on dialogic teaching and exploratory talk with pupils in the foundation stage and key stages 1 and 2, point out that "to have a voice pupils need to have access to the types of language that facilitate both transactional and intellectual activity". Their case study shows how they encouraged young children to develop a language for talking about their learning. The examples below demonstrate how effective it can be to act on the views of pupils.

Example: Herts and Bucks TSA

In this project, pupils were asked to select a topic and activity for a lesson starter, which they delivered to their peers. Baseline data from student surveys showed that although two thirds of pupils had never been asked to take on responsibility for teaching part of a lesson, those who had done so “overwhelmingly stated that it had helped them enjoy the lesson more and helped them learn more”. Impact data, collected through a further student survey and through staff feedback, showed that the majority of pupils enjoyed choosing the topic and delivering part of the lesson and felt it helped both them and their peers learn. Teachers confirmed this, adding that it was particularly beneficial for those leading the activities, but that there was a need to provide greater guidance to some pupils.

Example: Stourport High TSA

The design of a ‘thinking steps’ model to improve mathematical problem solving was informed extensively by pupil voice, using feedback on what able problem solvers find useful (for details of the model, see the case study published separately).

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. Following the initial trial, further improvements have been suggested: ‘the model was originally developed through listening to what pupils said were the most effective strategies for problem solving. At each stage of the research, we have developed the model in the light of feedback from the students.’”

Claim 2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and belief (why teachers act as they do)

Great Sankey TSA points out in its impact report that the role of the teacher is vital. For teachers to improve their pedagogies, they need to believe and be confident in their own capacity for growth and improvement.

The effort required to challenge one’s previous beliefs about learning and to change classroom practices and behaviours as a result, requires high motivation and commitment, particularly when teachers are experiencing numerous challenges and competing demands on their time and energy.

Example: Great Sankey TSA

This project was based on the belief that “the defining characteristic of an outstanding lesson is the teacher”. It follows that the behaviour, knowledge, understanding and beliefs of teachers, including in relation to pedagogies for learning, are pre-eminent. Appropriate pedagogies will be selected by outstanding practitioners to meet learning needs which vary on the group, the topic being taught and other variables which may shift according to the time of day, year or mood of the pupils etc. Outstanding practitioners were brought together to develop thinking around the pedagogical claims to build a toolkit for raising standards. Impact of the work has been shown in teachers moving from ‘good’ to ‘outstanding’ observation gradings and improved pupil progress in year 11 geography and English classes, whose teachers have been involved in the project since its inception.

Example: Westdene TSA

This transition project addressed teachers’ beliefs and expectations about what pupils could achieve in mathematics. Baseline data showed that teachers underestimated the prior knowledge and capability of pupils entering secondary school. As part of their approach, year 6 and year 7 teachers observed one another, lesson plans and materials were shared and a new approach to data transfer was introduced, in which pupils were much more involved. Impact data showed that teachers’ expectations had been raised and so had the progress of their pupils. 93 per cent of year 7 pupils were at or above target compared with 73 per cent in the year 9 cohort who had not been part of the new approaches to transition.

Claim 3. Effective pedagogies involve thinking about longer term learning outcomes as well as short-term goals

Below is an example of a primary school partnership in which the language development of pupils had been a significant barrier to progress in learning, with both short term and long term consequences. Examples included in relation to claim 7, the development of higher order thinking and metacognition, may also be seen in this way, as pedagogies to develop capacity for lifelong learning.

Example: Wednesbury Learning Community Trust TSA

The choice of a project to encourage exploratory talk was linked to a shared desire of all participating schools to address language development, “a significant barrier that we have long wrestled with in our area” in a way that would be enjoyable for pupils and teachers. Schools believe that increased access to metacognitive strategies developed through ‘talk for learning’ will greatly influence longer term outcomes for children and will raise the expectations of teachers. Teachers have been committed and motivated and “no school has fallen by the wayside”. Although the programme has only been in place for a relatively short time, videoed observations show that pupils are more confident in participating in dialogue with each other and with their teacher about their learning, with some early evidence of impact on assessments of mathematical problem solving.

Claim 4. Effective pedagogies build on pupils’ prior learning and experience

There were a number of projects which focused specifically on transition between primary and secondary education which are particularly relevant to this claim.

Westdene TSA and **Esher Teaching Alliance** organised a conference to share their experiences and produced a summary of outcomes from their projects on transition, as follows:

1. Production of a bridging or transition unit delivered at one or both phases.
2. Build in challenge and high expectations at KS3.
3. Use common language; check what it is.
4. Use the same scaffolding techniques used at KS2 to support all students initially.
5. Consider how to continue to support the level 3 students in year 7.
6. Know the students’ existing knowledge and strengths and weaknesses
7. Transfer work from the primary to the secondary phase.
8. Stress the idea of a ‘continuing journey’
9. Progression of skills
10. Do not underestimate the students
11. Change the preconceptions and misconceptions of staff at both phases.

More detail of **Esher Teaching Alliance's** transition project is given below.

Example: Esher Teaching Alliance

The aim of the project was to use the expertise from both primary and secondary practice to improve the teaching of writing skills in year 6 and 7. Teachers in the participating schools (two primary and one secondary school) agreed on the use of common language to use with pupils when introducing activities and more complex extended writing tasks were introduced to both year groups. Some pupils also completed a transition task. The progress of year 7 pupils during the course of the year 2013 to 2014, following the interventions was tracked and this was compared with a baseline of year 7 pupil progress in the previous year, before the project started. The data showed improvement in attainment at the beginning of year 7 and this was sustained during the course of the year, suggesting that the pedagogy changes in both year 6 and in year 7 had made a difference. They also found that the transition project did not affect the progress of pupils, further strengthening the evidence that it was the changes in pedagogy that made a difference. Teacher interviews reported that, "...greater understanding about where the children have come from and where they will be going has enabled student attainment to rise".

Claim 5. Effective pedagogies involve scaffolding pupil learning

The example here from **Denbigh TSA** involves a tool which helps to scaffold the learning of pupils when working independently. In **Pickhurst Infant School (Early Years Early Learning Association (EYELA))**, iCan resources were used to model use of language for young children. The case study from **Bishop Challoner Catholic College TSA** (Nelson et al, 2015) shows how group activities helped to scaffold the learning of pupils.

Example: Denbigh TSA

The focus for this alliance, within a collaborative enquiry on raising engagement and attainment in literacy, was the use of writing scaffolds to make students more aware of the components of good examination answers. Baseline data indicated that pupils were underperforming in extended answers demanded in business studies and history. Paragraph acronyms were devised linked to assessment criteria and these were explained to pupils, with models and exemplars provided. During the course of the year, progress improved in both history and in business studies compared with the previous year. Pupil questionnaires showed that 17 out of 25 felt that their confidence had improved in history.

In business studies, 85 per cent of year 12 and 13 students 'always' or 'often' refer to the acronyms and 87 per cent always or often find it useful in marking. More than half of these students had begun to extend their use of the acronyms to other subjects. The impact report concludes, 'the use of scaffolding has had a significant impact on helping students to structure their writing. The use of acronyms enables students to build essay writing skills'.

Example: EYELA

Intervention strategies using iCan resources were introduced to scaffold the pupils' learning and support their language development. Impact evidence includes that of a six year old boy who was unable to read or write and was very reluctant to participate in activities. 'After two weeks of being on the intervention programme he asked the TA "when can I come to the talking club"? Over the following weeks he started to put his hand up and answer questions in class...the child's attitude and confidence improved being much more engaged with activities'. The impact report provides a further example with another teacher reporting that she 'put one of her autistic pupils onto the programme... because his behaviour could be quite disruptive, she wasn't sure how much he would engage with the materials. At our research meeting in the summer the teacher reported that this child had made eight points of progress with his language, more than any other child in her group. The child was less disruptive and was more willing to interact with others'.

Claim 6. Effective pedagogies draw on a range of techniques, including whole class, structured group work, guided learning and individual activities

The impact reports and case studies provide ample evidence of the range and variety of techniques used by schools to improve pedagogy and the demonstrable impact this has had on pupils' learning. The examples below focus on reading and provide brief illustrations of the variety of techniques trialled.

Example: The Morley Academy (Leeds City TSA)

Schools participating in this project used a variety of strategies, all with the aim of increasing the enjoyment of reading in school and within families. They say that this variety is essential, “no one approach suits all circumstances or contexts” and “the mix of approaches... trialled has illustrated the benefit of using a range of approaches that incorporate both formal and informal strategies”. Assessing a shift in a long term aim of increasing reading for pleasure was a challenge for the partnership, but evidence from staff, student and parent questionnaires, as well as anecdotal evidence, confirmed that the use of technology in class, including e-readers, had been particularly successful.

Example: Weydon School (i2i alliance)

I2i Alliance used a range of strategies to encourage reading. At one of the partnership schools every student is tested for reading ability at the start of year 7 and at 10-weekly intervals after that. Students choose books (from the library) appropriate for their ability and, having read them, take an online test. The report says ‘reading becomes quite competitive as classroom displays show how many books students have read. Students read during the daily form period and, each week, all students in years 7 and 8 read silently for 30 minutes at one lunch time during the week. The learning support department plays an important role in supporting students who have difficulty with reading. Students say that they are now reading more than at their primary schools and that they enjoy the challenge of reading a wider range of books. Data show that their reading ages are moving up faster than their chronological ages’.

Claim 7. Effective pedagogies focus on developing higher order thinking and meta-cognition, and make good use of dialogue and questioning in order to do so

The example here shows how pupils were helped to develop the language and skills for sharing higher order thinking and for metacognition. Case studies from **Stourport High TSA** and **LEAD TSAs**, published separately, provide further examples of projects which developed higher order thinking skills.

Example: Bishop Luffa Church of England School (Blue Flag TSA)

Among the strategies trialled by the alliance was consistent use of 'I am SMART', with increased awareness among pupils and staff of how the brain processes and retains information. Pupils were taught how to develop group thinking and learning skills and parents were included by setting tasks to be completed jointly at home. Progress data, pupil and parent questionnaires and work samples were used before and after the intervention, supplemented by video evidence. The quality of written work has improved in both secondary and primary classes participating in the work and there has been a 'marked improvement in pupils' attitudes and behaviour'. The impact report states, 'the group agrees that if pupils are informed and involved in planning their learning journey, their engagement and ownership of work improves significantly... also critical is the higher order questioning skills, deployed strategically by the teachers... this is vital for purposeful feedback from pupils, as it is with pupil voice, we believe, that the process starts.'

Claim 8. Effective pedagogies embed assessment for learning

Using a research-based approach to develop AfL techniques provided surprises for **Latchmere School (LTS Alliance)** which enabled them to improve the strategies used. Interim data collected from pupils showed that although they enjoyed giving feedback on what they had learned, they had little understanding of their rate of progress. Strategies were amended as a result and scaffolds for feedback were developed. In the example below interim findings were also used to make improvements.

Example: Bishop Challoner Catholic College TSA

The pedagogical strategies to raise progress in English and humanities while simultaneously raising standards of literacy were devised and trialled in the lead school before being shared with other partners. A series of activities, known as 'Devil's Advocate' could be adapted for any aspect of the subject and was accompanied by a laminated learning mat that established peer and self-assessment protocols for reading, writing and oral communication. The activities were devised as a 'scaffolded, enriched AfL methodology that tries to activate pupils as learning mentors for their peers', with peer and self-assessment supported by the learning mat. The target group for the intervention was those pupils who entered secondary school at level 4C in English, based on baseline evidence from within participating schools and nationally that rates of progress from KS2 to GCSE make less progress than the rest of the cohort. At the end of the project, 81 per cent of the targeted group met or exceeded national expectations of progress, compared with 69 per cent nationally with attitudinal surveys used to judge the pupils' views about the pedagogical approach. The impact report concludes from the evidence collected that, "Improvements in extended writing are attributable to greater pupil awareness of necessary next steps and continual reinforcement of key skills across the curriculum. The individual pupil assessment portfolios would support this strongly... simple marking 'tick box' grids of the same core extended writing skills seem to be a very effective way of creating a non-onerous but very effective progress dialogue with pupils'.

Claim 9. Effective pedagogies are inclusive and take the diverse needs of a range of learners, as well as matters of student equity, into account

Example: Altrincham Grammar School for Girls (Alliance for Learning)

One strand of this project was to introduce 'mindfulness' in a primary and a secondary school, with the aim of improving pupils' ability to engage with learning and to manage their emotions and their behaviour for learning. Neither pupils nor teachers had prior experience of 'Mindfulness' techniques, so impact was assessed through pupil and teacher feedback on the extent to which the mindfulness course had been used and had been felt to make a difference.

80 per cent of year 9 pupils gave a positive response to the likelihood of using the techniques learnt, with several exemplar comments given from students and their teachers: "I used to feel extremely panicked when made to take an exam... since the course I can safely say I feel calmer and, therefore, more confident"; "...a short

mindful practice (even if this is just a few deep breaths before they sit down) can be effective in grounding the students, bringing them back to the present and allowing them to focus on the learning in hand”.

Example: Palmerston Inclusive Alliance (PIA Support)

PIA Support, led by a special school, focused on the needs of pupils with profound and multiple learning difficulties (PMLD), in both special and mainstream provision. Part of the project aimed to test the benefits of the product Quest for Learning for pupils working at P-levels 1 to 3. Observations and feedback from teachers collected in visits to schools by the project coordinator, supplemented by discussion of resources at termly special educational needs co-ordinator (SENCO) meetings, has shown that this is an effective way of tracking progress of pupils who do not move through a full P-level.

Example: Barnsley TSA

This project looked at identifying the interventions that would have most impact on low achieving pupils making accelerated progress in writing. Through participation in the project teachers began to unpick what was ‘at the heart of’ the lack of progress that some of their children were making and began to focus in on the needs of individuals. Strategies used were adapted or changed as the project developed. Poor motor skills were identified as a barrier for four of the pupils involved and fine motor skills games and the use of special handwriting pens was trialled:

... the four pupils involved were willing to write at greater length and were more willing to engage ... evidenced in samples of written work and observation of learners’ pencil grip and their performance in their activities. It is not possible to define which had more impact from the fine motor skills games and the pupil involvement in trialling different handwriting pens but both may have contributed to the change in attitude to writing and outcomes.

Key messages about what makes great pedagogy

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

1. Go beyond thinking about what to teach and how, to asking students about their experiences as learners.
2. Listen to what pupils have to say about their learning to understand links between teaching approaches and their impact on pupil progress and attainment. Use this to change or adapt teaching approaches to create a virtuous cycle of improvement. This also helps develop positive relationships, which lead to greater engagement and enjoyment.
3. Involve pupils in planning and teaching of their lessons to increase enjoyment and engagement in their learning.

Be open to new learning and challenge and do not give up

4. Belief in one's own capacity for growth and improvement and being prepared to be challenged in one's beliefs about learning are fundamental to great teaching.
5. High levels of motivation, commitment and resilience help teachers as they try to change their practice and manage demands, challenges and priorities that come with their role.

Use a range of strategies flexibly to meet pupils' needs

6. Draw on a variety of techniques. Select appropriate strategies to meet pupils' varying needs, and adapt topics as necessary.
7. Offer a variety of interventions for SEN pupils – 'one size does not fit all'.

Develop pupils' thinking and learning skills

8. Improve longer term outcomes for pupils and raise expectations for teachers by developing metacognitive strategies through 'talk for learning'.
9. Embed the development of learning skills in lessons.

Do not underestimate what pupils already know and can do

10. Raise expectations about and understanding of the prior knowledge and capability of pupils entering secondary school. When this happens, it can impact on pupil progress.

Build in time for AfL and scaffold it

11. Use a scaffolding approach within AfL methodology to activate pupils as learning mentors for their peers. This increases their understanding of next steps and rates of progress when they give and receive feedback.
12. Build in time in lessons for pupils to digest and understand teacher feedback. Verbal and written feedback go hand-in-hand.

Develop a common language to talk to colleagues about pedagogy

Develop a consistent, shared language within and between schools and phases to support high standards.

3.2 Theme 2: What makes great professional development that leads to consistently great pedagogy?

This section begins with an overview of the evidence used as the basis for determining the impact of the approaches to professional development investigated by TSAs. Extracts from the TSA impact reports and case studies are then used to exemplify the impact of the research projects in relation to the findings in *Great professional development which leads to great pedagogy: nine claims from research* (Stoll et al, 2012). Case studies, published separately, provide further detailed evidence. Overall findings in relation to the overarching question are then summarised as key messages.

Evidence of impact

The enquiry projects had a variety of ways of evaluating the impact of their work. All partnerships were asked to establish a starting point or baseline and to identify how they would collect evidence to show impact in relation to the baseline. This was challenging for some partnerships and took some time to formulate. For the professional development projects in theme 2, many partnerships used questionnaires at the beginning and later points of the enquiry to assess changes in teacher beliefs, attitudes, skills and knowledge. Pupil progress data, pupil work, classroom observation, interview and questionnaire responses also contributed to baseline and impact evidence.

The majority of projects involved teachers who had volunteered to participate, because of identified issues in relation to pupils' progress, achievement or engagement. In those cases where teachers were targeted for the research project, they may have belonged to a particular group, such as in the specialist leaders of education (SLE) initiative developed by **The Mead Community Primary School**

(Collaborative Schools Ltd), or been identified through performance management processes. Baseline and impact evidence here often featured feedback from school leaders and colleagues in addition to the evidence from teacher questionnaires, interviews and from pupil data.

In order to provide more detailed insight into the impact of professional development on teachers' behaviour and beliefs, learning journals and individual case studies or evaluations of classroom change were collected as evidence. Lesson plans and resources produced as part of the project were scrutinised for evidence of change. Lesson observation, including use of video evidence, was frequently used, both as part of the professional development process and as a way of identifying impact on teaching and learning. Some projects used a structured lesson study methodology. More informally, perceptions of participants were collected in group discussions and focus groups and leaders were asked for their perceptions of change.

There were several partnerships in which an Ofsted inspection had taken place in one or more participating schools during the course of the projects and inspectors' comments were used as additional evidence of impact.

Many of the research partnerships were also able to provide examples of whole-school or whole-partnership impact in both participating schools and for others in the alliance. The research project provided a model that would be sustained and undertaken in other areas of the school or in other schools. There were many examples where the impact of the professional development which had been a focus of the research was so successful that it has become embedded as part of an overall continuous professional development (CPD) strategy and where the pedagogies and resources developed as part of the enquiry project have enriched the teaching and learning approach of the schools involved. For example in **Kibworth Church of England Primary School (Affinity TSA)**, lesson study will be built into one school's CPD programme and budget and included in teachers' performance management CPD objectives. One indication of the success of projects is in the extent to which the approaches tested will continue to be used to support professional development within the alliance, as in the examples below.

Example: Cramlington TSA

This project devised and tested a newly qualified teacher (NQT) development programme focused on four teacher behaviours: classroom management; classroom climate; interactive teaching and learning style. The success of the programme means that it will be continued and expanded to other schools in the alliance. Presentations on the success of the project have been shared at national events

Example: Chesterton Primary School (Wandle TSA)

Wandle TSA's impact report states, 'the key strategy of embedding Joint Practice Development Groups (JPDGs) across the alliance has been achieved. The strategies which have emerged from the JPDGs' work are varied and many are being introduced into school systems at present and are also planned for September 2015. Many groups will be carrying on with their research and investigations in the next phase'.

Impact reports and final case studies nearly always reported on the combined effect of factors within their collaborative enquiry projects. As in the example quoted below, evidence for **all** of the claims overlap and can be hard to disentangle.

Example: Brooke Weston Academy TSA

'As a study, there is not one claim we haven't justified... the whole idea of lesson study works well with the nine claims because we are addressing areas of challenge and working through them collaboratively and this is becoming seen as something that is work based improvement and development rather than more traditional forms of CPD that work more theoretically. The strength of partnerships is also something that has been crucial, so we are developing research communities where we can support and encourage in a non-threatening way... to effect real change there does need to be an element of top-down leadership even though a lot of the decision making can be made in a distributed way. This distributed leadership to teachers is a tool for empowerment, it makes the teacher feel valued'.

All of the enquiries were collaborative (claim 7), with 'an end in mind' (claim 1) established through a research question, a baseline and measures of progress. Overall, the impact reports show that focused collaborative enquiry is a powerful approach which leads to change in teachers' beliefs, attitudes and pedagogy. In many cases, the impact of the change on the achievement and engagement of pupils is clearly demonstrated. For example, in **Lightwoods TSA**, '100 per cent of staff observations have moved from being graded 'good' to 'outstanding'. In KS3, learners improved their levels by at least 2 sub-levels and, in some cases, a whole level. KS5 (A level) improved their grades by one whole grade, with some by two whole grades'.

The projects show how collaborative working is challenging for teachers (claim 2), but that it can be extremely rewarding and motivating when teachers are engaged with working on a focus that is relevant in relation to individual and school needs (claim 3). Professional development activities used to contribute to enquiries were

varied and tailored by each alliance to fit the needs of individual projects (claim 5). Expertise from outside the alliance was often used to run relevant training sessions or as a source of research on pedagogic practice (claim 4). Many projects reported on the support they had received from partner HEIs in developing a rigorous research approach (claim 6) and also in supporting project leaders in maintaining drive and motivation.

In several projects, the establishment of professional learning communities was an intrinsic element (claim 8). Leadership (claim 9) emerged strongly, both as a positive factor and in relation to some of the challenges faced in this theme. Support and commitment from senior leaders, in providing the time and other resources necessary, were essential, as was efficient operational leadership and regular communication from the overall project leader. Sharing leadership responsibilities, particularly by ensuring that there was a committed project lead in each participating school, was also an essential factor in contributing to success.

Evidence from this project confirms the importance of all nine claims, **in combination**, as contributing to great professional development.

The C2L model used to support enquiry acknowledges its strong links with joint practice development (JPD). In considering the work of theme 1 and theme 2 partnerships in relation to specific claims it must be noted that use of the model leads to considerable overlap in schools' interpretation and usage of the terms action research; collaborative enquiry; JPD; professional learning communities, particularly in their reporting of findings related to claims 6, 7 and 8.

Despite overlaps, however, most impact reports presented evidence which related more strongly to one or more specific claims. Table 3 below links selected final case studies to specific claims. These are contained in the case study report published separately. The following section also contains examples taken from enquiries whose case studies are not featured in the annex.

Table 2: Great professional development which leads to consistently great pedagogy: nine claims from research - linked to TSA case studies

Theme 2 claim	Examples of professional development approaches and strategies used	Case study examples where this was a strong element
1. Effective professional development starts with the end in mind	<ul style="list-style-type: none"> professional development aimed at testing the effectiveness of specific pedagogies in improving pupil progress and engagement 	The Compton-Barnet TSA Torbay TSA

Theme 2 claim	Examples of professional development approaches and strategies used	Case study examples where this was a strong element
	<ul style="list-style-type: none"> professional development aimed at improving the quality of teaching of targeted staff 	Collaborative Schools Ltd
2. Effective professional development challenges thinking as part of changing practice	<ul style="list-style-type: none"> paired coaching of volunteer coachees by outstanding teachers joint observation and analysis of teaching practice use of evidence from research on learning and on successful pedagogy in other countries lesson study or peer coaching with a specific focus on changing beliefs about the way in which children learn and how teachers teach 	Torbay TSA Devon TSP Collaborative Schools Ltd Cambridge Teaching Schools Network
3. Effective professional development is based on assessment of individual and school needs	<ul style="list-style-type: none"> paired coaching within a school, including lesson observations, to improve the quality of teaching professional development to enable the trial of a specific approach to address identified pupil learning issues in the participating schools Use of subject audits and self-assessments in self-efficacy 	Fylde Coast TSA Devon TSP Affinity TSA
4. Effective professional development involves connecting work- based learning and external expertise	<ul style="list-style-type: none"> External expertise and training bought in as part of the project, for example to train coaches in the chosen model use of teacher experts to design and refine training 	Devon TSP Torbay TSA

Theme 2 claim	Examples of professional development approaches and strategies used	Case study examples where this was a strong element
	<ul style="list-style-type: none"> • programmes for teachers combining external facilitation with ongoing support from a lead teacher within the school • use of HEI expertise to support the measuring of impact • use of mathematics subject knowledge audit and research resources from the National Centre for Excellence in the Teaching of Mathematics (NCETM) 	
<p>5. Effective professional learning opportunities are varied, rich and sustainable</p>	<ul style="list-style-type: none"> • mixture of professional development approaches in combination to support the enquiry • carefully constructed cycle of training for School Direct trainees, initiated by lesson observation and group discussion: building to team teaching; focused workshops on use of resources; training in lesson study; participation in a lesson study cycle • use of independent study and gap tasks • use of cloud storage for ideas and examples to be shared by all staff... hashtagged twitterfeeds... to monitor discussions that happen prior to, during and after Teachmeets • sharing of learning in a teaching and learning working group using approaches selected from: reading relevant research / articles; visits to other schools; peer observation; external 	<p>Collaborative Schools Ltd</p> <p>Devon TSP</p> <p>Cambridge Teaching Schools Network</p>

Theme 2 claim	Examples of professional development approaches and strategies used	Case study examples where this was a strong element
	INSET, with interactive feedback to a working group	
6. Effective professional development uses research and enquiry as essential tools	<ul style="list-style-type: none"> • collaborative working on the planning, implementing and reviewing of specific pedagogical interventions • individual school-based enquiry included within a programme for teachers in need of improvement with collaborative discussion on findings • using an engagement and training day on research skills and asking all teachers in the school to carry out a mini project with their tutor group 	Devon TSP Collaborative Schools Ltd. Affinity TSA
7. Effective professional development is strongly enhanced through collaborative learning and JPD	<ul style="list-style-type: none"> • lesson study • learning triads, including discussion and lesson observation across schools • research triads, with groups of NQTs asked to read research, visit each other's schools and report back at larger event • sharing findings from professional learning accessed in a variety of ways but linked to a school focus, through a voluntary teaching and learning working group 	Torbay TSA The Compton-Barnet TSA Harton TSA London West Alliance Brooke Weston TSA Devon TSP

Theme 2 claim	Examples of professional development approaches and strategies used	Case study examples where this was a strong element
		Cambridge Teaching Schools Network
8. Effective professional development is enhanced by creating professional learning communities (PLCs) within and between schools	<ul style="list-style-type: none"> • using PLCs to conduct the collaborative enquiry • PLCs established through the project ensuring sustainability • use of a voluntary and self- directed teaching and learning working group 	Harton TSA Collaborative Schools Ltd. Devon TSP London West Alliance
9. Effective professional development requires leadership to create the necessary conditions	<ul style="list-style-type: none"> • support of senior leaders • project leadership • operational arrangements • distribution of leadership • leadership development to build sustainability 	Torbay TSA Harton TSA Collaborative Schools Ltd Devon TSP Cambridge Teaching Schools Network

Claim 1. Effective professional development starts with the end in mind

The intention was that all partnership projects should be guided by a clearly formulated and specific research question, with a plan for evaluating the change from a clearly established baseline. In a number of projects research questions took some time to emerge. Some were less well constructed and lacked a clear plan. However, several projects were successful in being very specific about the relationship between pupils' learning needs and the changes in teachers' beliefs and behaviours that were the focus of development. In some projects, a common focus

had been determined following the analysis of whole-school data. In others, the focus had been determined by a small team of teachers using data from the pupils in their own classes and their own perception of where there was a need for improvements in their practice.

However, although a clear aim for a particular enquiry is important, the final report from **Bonner Primary School (Teach East London)** reminds us that professional development as a whole is open-ended, “professional development does not have to have a fixed end point. It is about reflecting on past and new learning and considering how to implement it in practice for the benefit of pupils.”

The following examples illustrate the effectiveness of professional development with a shared aim based on detailed analysis of pupil and teacher data.

Example: Cramlington TSA

The starting point for the enquiry ‘what are appropriate professional development activities to support NQTs to develop effective teacher behaviours?’ was, “...we asked the question ‘where do we want the new teachers (and learners in the care of them) to be?’”. This resulted in a development programme focused on four teacher behaviours: classroom management; classroom climate; interactive teaching; and learning style. Baseline evidence used an analysis of pupil performance taught by NQTs in previous years in all four participating schools. A common classroom observation pro-forma was developed so that tracking of development of desired behaviours would be consistent across the participating schools. Consistency was further supported by common training events and mentor networking. Impact data was collected every term on pupil progress with residuals assigned to each student based on their actual grade and their target grade. An average residual calculated for students and classes in the care of the NQTs, which were compared with parallel data from the previous year’s NQTs. Shifts in observed teaching behaviours were identified using the agreed pro-formas. A positive impact was noted on both the effectiveness of teaching and on pupil learning compared with the previous cohort of NQTs. Having the ‘end in mind’ not only supported a clear structure for the development programme and its evaluation, but participating schools agreed that a shared language to describe effective teacher behaviours was one of the most effective strategies used in the enquiry.

Example: Oldway Primary School (Torbay TSA)

The ‘end in mind’ for Torbay TSA’s enquiry was that of improving pupils’ arithmetic proficiency in year 3 and 4, using lesson study as the chosen form of collaborative development. The precise focus for their enquiry enabled them to identify relevant research and practice to inform the approaches trialled, ‘an important feature of lesson study is that it is rooted in the classroom and starts from an issue that is relevant to the teachers and pupils who are involved...’ Baseline data collected through teacher perception questionnaires and analysis of calculations completed by pupils, showed that pupils were often unsuccessful in trying to apply a learned procedure, and that teachers saw their role as primarily about teaching fluency rather than deepening understanding. Analysis of teacher interviews and questionnaires following each of the 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...” and had enabled them to introduce standard algorithms earlier.

Example: Southfields TSA

This project developed a new approach to professional development for teachers whose teaching had been identified as in need of improvement, 'the intended outcomes were that participants would show progress with teaching and learning within the span of the course, as they are observed prior to the course and at the end and are required to do a formal presentation of their research before graduation. We would expect in the final observation to see improved learning, participation and focus by the pupils'. The course devised went through four cycles, each of which was rigorously evaluated against the intended outcomes using the UCL IOE impact model, with adjustments made based on evaluation findings.

Claim 2. Effective professional development challenges thinking as part of changing practice

A point made in several impact reports was that trust is a necessary pre-requisite for effective challenge in collaborative work, 'giving staff the opportunity to discuss and really drill down what is happening in the classroom without feeling judged' (**Lightwoods TSA**). Time needs to be allowed for honest and open relationships to be established, 'you need to feel comfortable with the people you are working with as it's only valuable if you are completely honest with each other' (**Leicester TSA**). Protocols and structures to support dialogue are found helpful, such as those used in some coaching or lesson study models. When the conditions for challenge were in place, teachers' comments included in many impact reports provide vivid illustrations of professional learning.

Example: Great Sankey TSA

Research findings on great pedagogy were used within the TSA to build a toolkit to support teachers in their journey to outstanding, in combination with joint observation and coaching. One teacher is quoted in the impact report as follows, '... 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.

I feel like I have already made an impact with the teaching and understanding of physical education (PE), through discussions and the ideas they are now generating, along with further questioning of the process in general. 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'. The illustrative quotation on the importance of challenge is taken from a learning log used to support professional development and to contribute to evidence of impact. Quantitative shifts from baseline data are demonstrated in this TSA by improvements in lesson observation gradings, 'two being graded as outstanding by Ofsted in June 2013, and two moving from good to outstanding during in-house observations March 2014' and in pupil progress in those classes taught by participating teachers'

Example: Affinity TSA

The focus of enquiry was the use of lesson study to improve teachers' subject knowledge and pedagogy and to raise pupil attainment within an area of mathematics. Baseline data included evidence from pupil work, lesson observations, learning walks and a teacher questionnaire and focus groups to identify the area to be developed. Positive impact on subject knowledge and pupil progress was demonstrated through scrutiny of pupils' work and lesson observations, together with teacher interviews and written reports. Evidence from research on learning and of successful practices in Shanghai and Singapore were used to challenge teachers' thinking about what could be achieved in their own classes, with the impact report noting that, '...schools have taken evidence from a number of sources (including baseline data) and used it to... think about the impact this could have on pupil progress and attitudes. This thinking has helped towards challenging subject specific thinking (use of Singapore bar) and within pedagogical thinking (use of growth mindsets)'

Claim 3. Effective professional development is based on assessment of individual and school needs

Research projects varied in the extent to which the specific focus of work within an overarching research question was determined by the partnership as a whole or by small groups of teachers. Where an overarching question was chosen, impact reports on successful interventions made it clear that this had been recognised as a high-priority issue for each participating school. Projects also varied in the extent to which participating teachers had chosen to work on a significant whole-school focus or had volunteered for the enquiry and then selected a specific focus for their own improvement.

Thus in several of the coaching projects, individual coachees discussed with their coach the particular area in which they sought to improve their practice. What seemed to be most important to the success of a project was the extent to which participating teachers were engaged and motivated by finding the work relevant to their needs. The small number of projects in which teachers had not been volunteers, or where the focus of work did not provide a sense of ownership for the individuals concerned, tended to be those that found it more difficult to sustain motivation among all participants.

Example: Swiss Cottage TSA

This project, in two special and two primary schools, used a rigorous mentor-coaching approach to improve pedagogy in areas which participating teachers identified for their individual development. Mentor-coach training was provided by an external trainer and the process was based on lesson observation by two people, with a pre-meeting and a post-lesson dialogue. Pupil questionnaires, as well as teacher questionnaires were used to establish the baseline and area of focus, with teacher and leader questionnaires, and Ofsted lesson gradings, providing evidence at the mid-point and at the end of the project. Long term impact was identified on teachers who became more reflective, target setting and more able to improve independently. The impact report states, 'the mentoring-coaching approach has proved to be highly personalised, showing a wide variety of development areas identified and worked on over the time of the project, helping to develop individual strengths and address development areas which are individual to that particular teacher'.

Example: Pound Hill Infant School (Southern Collaborative Learning Partnership)

The focus for this project was a whole-school priority in each of the participating schools to improve attainment and engagement in reading, particularly among

boys. The schools' shared priority which emerged from an analysis of pupil data, and baseline discussions with teachers showed that they were 'professionally driven and enthusiastic to find a more engaging way of teaching reading and the love of books'. Pupil data has shown that targeted groups of boys have achieved improved attitudes to reading since engaging in the project, with verification of improvement from Ofsted. In addition, interviews with pupils and parents recording greater enthusiasm for reading, verified by observations, parent comments in home reading journals and pupils' comments in their AfL documents. Teachers also recorded increased engagement in class discussions. All of the targeted year 5 boys for whom baseline data showed as either 'can read but doesn't read' or 'struggles with reading and doesn't read' had moved to 'can read and does read'.

89 per cent of all pupils following the intervention were categorised as 'can read or does read' compared with 81 per cent at the start. Teacher assessment also demonstrated accelerated improvement for many of the boys. Participating teachers now model the use of theatre and drama and a greater variety of visual images, music and artefacts to stimulate reading.

Example: Fairlawn Primary School (Education TSA Lewisham)

In this project, a maths subject knowledge audit and a self-efficacy audit were used in combination with evidence from mathematics planning to identify specific areas in relation to use of mathematical vocabulary and use of resources by School Direct trainees. A varied menu of professional development was provided to target these concerns. The audit exercises were repeated at the end of the school year and showed clear gains, with teachers' baseline scores ranging from 64 per cent to 79 per cent and final scores ranging from 86 per cent to 98 per cent. Although the project leader judges that trainees are still at the 'novice' stage, planning scrutiny shows that trainees understood the importance of highlighting both vocabulary use for children and the use of resources. Importantly, 'the audits allowed teachers to pinpoint specifics of their understanding and practice in mathematics. All the trainees decided to focus on specific areas that derived from the audits, specifically: using manipulatives, specifically around algorithms and developing vocabulary. In meetings teachers began discussing mathematics teaching using terms such as 'manipulatives', 'algorithms', 'procedure', 'reasoning'. They were unaware of these terms in context prior to the professional development'.

Claim 4. Effective professional development involves connecting work-based learning and external expertise

One of the features of enquiry projects is that they are rooted in classroom practice and that collaboration with colleagues, particularly in lesson observation, provides an

external perspective which supports learning. For example, **Lampton Academy (London West TSA)** noted how stimulating it was for their own practice to see colleagues implementing critical thinking in their lessons, “seeing it in a real live lesson”. Many projects also brought in expertise from outside the school at different stages in their project or used prior expertise and experience within the partnership, as in **Torbay TSA**.

When professional development is targeted at a specific change in pedagogy, external expertise may be particularly important as was noted in one partnership: ‘essential contributions from external expertise at the start of the project on how to use talk partners effectively, effective questioning or even talk partners and SEN children would have been invaluable in giving staff a better understanding of how to implement talk partners... we believe that effective CPD for a whole school project needs initial input from an ‘expert’ practitioner followed by senior leaders maintaining its high profile’.

The partnership with an HEI was mentioned by many TSAs as a major factor in their success, both for “the extra support with more academic aspects” (**Brooke Weston TSA**) and for helping to maintain momentum.

Example: Marwood School (Devon Teaching School Partnership)

Computer science coordinators from 12 primary and infant schools formed the first cohort of a professional development programme which aimed to improve the subject and pedagogical knowledge of participants and also develop their capacity for training staff within their schools. The programme was extremely successful, with audits of knowledge, skills and attitudes at baseline and at the end of the project showing substantially increased confidence and skills in teaching a new curriculum. The programme will be repeated with a new cohort of coordinators in 2014-15. The impact report states:

fundamental to the success of this project was the use of external expertise and the growth of new expertise and leadership within the schools...

- The use of a secondary master teacher in computing at the outset enabled the group to see quickly what the central issues were, to have modelled some initial training sessions and to then have access to an organisation, Computing-at-Schools who provide a wealth of resources.
- The ITT programme manager was used to support the planning of adult training sessions and the design of the research project...

Example: Torbay TSA

Rather than using external expertise in direct training, this project began with the project leader ensuring that all school project coordinators had a shared understanding of lesson study. In the project impact report, she reflects on how external expertise contributed to the project's success:

A feature of lesson study is that it is rooted in the classroom and starts from an issue that is relevant to the teachers and pupils who are involved.

However, I don't believe we would have learned as much if we had not been influenced by input from NCETM and evidence from practice in high performing jurisdictions worldwide. An example of the impact of NCETM input is of a session on the use of place value counters which particularly challenged our thinking.

Claim 5. Effective professional learning opportunities are varied, rich and sustainable

Several partnerships used varied approaches to professional development, each of which contributed to the overall enquiry. For example, the partnerships which used coaching as an overall strategy, such as **Swiss Cottage TSA**, often included training courses for coaches facilitated by external experts. Furthermore, as **Ashton on Mersey TSA** noted in its impact report on its coaching project, "coaching is CPD in itself, plus it signposts to other CPD" and the diagnostic tool developed for the project "has potential beyond this project and may be used as a central tool for identifying CPD needs for all staff". Built into the design of several projects was the development of teachers to lead and sustain the professional development after the project had completed, through working with other colleagues in their own and other schools. In the project from **Education Teaching Alliance Lewisham**, sustainability is being built by encouraging trainees to become self-sufficient in leading their own professional development.

Example: Collaborative Schools Ltd

The aim of this project was to enhance the effectiveness of SLEs and aspirant SLEs within the TSA. This was achieved through a combination of professional development approaches. A structured and on-going professional learning programme was devised, with modules on: leadership of research and enquiry; the spiral learning journey; ethics; coaching/mentoring; impact evaluation; dissemination. Training was supplemented by 1-1 coaching / mentoring of SLEs as they put their learning into action through leadership of specific professional learning communities or 'learning setts' in early years, mathematics, digital learning, early reading and behaviour for learning. Within each learning sett, additional, relevant professional development activities were introduced, such as discussion of an Ofsted report on improving girls' attainment and of a lesson video in the mathematics learning sett. Although baseline data, collected through pupil data and Ofsted finding and analysis of teacher perceptions, showed that the SLEs were all outstanding teachers, they had a limited range of knowledge about teacher research strategies and little or no experience of facilitating collaborative teacher enquiry of other colleagues. Learning logs, leader observations and interviews demonstrated that the 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'.

Example: Education Teaching Alliance Lewisham

This project was specifically designed to equip School Direct trainees to become more self-sufficient in their professional development. Subject knowledge and self-efficacy audits were used to identify training needs in the use of mathematical vocabulary and use of resources in mathematics. The results of the audit were discussed with trainees and demonstration lessons, group discussion, team teaching and focussed workshops were used to address their concerns. The trainees' professional development also included training on the use of lesson study and participation in a lesson study cycle, to help develop their reflection skills and their ability to lead their own professional development in the future. 'Collecting data allows teachers to be able to 'know what they don't know' and bring these areas up for enquiry and discussion... developing a teacher's toolkit for their future teaching rather than fixing a lesson grade of a lesson taught in the past empowers teachers as individuals to reflect on their own practice and focus on how to improve it'.

Examples of impact for the next three claims are inter-linked.

Claim 6. Effective professional development uses research and enquiry as key tools

Claim 7. Effective professional development is strongly enhanced through collaborative learning and JPD

Claim 8. Effective professional development is enhanced by creating professional learning communities within and between school

Without exception, TSAs reported that collaborating with colleagues to improve professional practice had formed a valued and significant part of their learning, “collaborative learning is the most powerful form of CPD: bringing together small groups of staff to work together on a common theme... over a period of time” (**Cambridge TS Network**). This was reported whether teachers were working in pairs, in coaching projects, in triads or other small groups, as for lesson study, or in larger professional learning communities. Collaborative discussions following lesson observations were very frequently noted as being extremely powerful, so that the discussion was rooted in specific points of practice. However, bringing larger groups together to share ideas and to learn from each other’s collaborative work was also found to be an important contributor to success, not least in maintaining motivation and drive. As **Torbay TSA’s** impact report notes: ‘it has been important to schedule regular meetings to draw together learning across the schools and set clear expectations for the next stages of the project. Otherwise it is easy for the project to drift as time can move on quickly with very little activity’. The following two examples demonstrate the impact on students’ learning of collaborative activity through enquiry in professional learning communities in two schools. In the first example from **Collaborative Schools Ltd** a professional learning community made up of all members of staff in an early years (EY) team met as a group. In the second example, each community is divided into smaller working groups, in addition to its regular meetings.

Example: Collaborative Schools Ltd

As part of their project to develop the role of SLEs, professional learning communities were established with a particular focus and each used a school-based enquiry methodology to investigate an issue.

The example below is based on the case study report from the 'early years learning sett', consisting of the EY team in one of the schools.

Discussion among the team had identified a need to improve opportunities for child-initiated learning and also to improve the documentation of children's learning journeys. The group decided to introduce a space, 'the hub' within the unit where child-initiated learning would always be available to children and to document their learning using photographs, written and video observation records, the school pupil tracker and discussions with parents and visitors. The learning sett discussed the analysis of the data collected about children's learning in the hub as well as sharing their thoughts and questions about relevant research articles on child-initiated learning. Various models of documentation of learning were trialled, discussed and improved before "we finally developed a system which was manageable and effective for all". The percentage of children achieving / exceeding Early Learning Goals at the end of year against lower baseline attainment than previous years increased following the interventions, with improved child confidence, ownership of learning and peer co-operation (as evidenced against Leuven scales¹). Feedback from children, parents and visitors to the school has been extremely positive and the success of the interventions has been further verified by Ofsted, who are using video footage from the school to support the training of Ofsted inspectors. The impact report quotes from one visitor to the school: 'the children were highly motivated and keen to be part of this exciting learning... the children were extremely focussed and engrossed... the level of cooperative learning which was completely child-initiated was astounding'.

Example: London West TSA

This project involved more than thirty teachers, in three 'learning sets' of 10–12 participants each. The focus for collaborative enquiry for these three professional learning communities was: co-operative learning, with dialogic learning and extended questioning aimed at improving written outcomes; differentiation to support challenge for all; and critical thinking within a subject specific context. All three learning sets used an enquiry approach based on Kolb's learning cycle (Kolb, 1984): concrete experience; reflective observation; abstract conceptualisation; active experimentation. Slightly different models of working were adopted within the three learning sets, with projects 1 and 2 broken down into subsets of learning 3s and coach training included in projects 2 and 3. Peer coaching and regular meetings of the learning set, were a feature of all groups.

Student attainment was determined at baseline, together with data from teacher interviews and a questionnaire and analysis of school evaluations, Ofsted reports and exam specifications.

This data suggested that pupils superficial understanding of lesson content impacted on exam performance, that there was insufficient differentiation, challenge and pace to meet the needs of all students and that there was concern about students' progress from key stage 4 to A level. Data on impact from teachers' self-reports and interviews, combined with lesson observations, video evidence, pupil progress and attainment data, pupil interviews and pupil questionnaires showed that all three learning sets have been successful, with particular value found in focusing on one area of skill over a period of time.

A new finding from the learning sets was the importance of pupil voice as a feedback tool to find out how successful an intervention is. JPD within each learning set had been important to the professional learning, 'teachers reported that working with other staff from different departments was motivating and teachers inspired each other. The emphasis on collaboration and non-judgemental feedback was very important to the group'.

Example: Dilkes Primary TSA

The project explored how a collaborative dimension to professional development could bring about pedagogical change. This was achieved through a combination of approaches to CPD such as peer teaching enhancement involving observations by lead teachers; JPD with lead teachers facilitating school-based enquiry; one to one support that included coaching and achievement leader meetings that focused on encouraging partner teacher(s) to have a positive can do attitude.

Dilkes TSA also developed a high impact teaching course to provide support for teachers to link research evidence to high impact strategies. Real success was noted in both lesson observations and SATs results. In one of the project schools the impact on teacher practices, as measured by observed lesson grading was, at the start of the year: 58 per cent requires improvement and 42 per cent good. At the end of the year no lessons required improvement, 55 per cent were judged good and 45 per cent outstanding.

In terms of impact on pupil outcomes this was recorded as also significant with: writing from 62 per cent in 2013 to 82 per cent in 2014 and mathematics from 69 per cent in 2013 to 85 per cent in 2014. Staff involved believed that the collaborative approach enabled teachers to share experiences and practice from across a range of contexts. Staff also felt that whilst the JPD approach to professional development required a willingness to take risks, because trust was strong it made a significant difference to the culture of learning and to outcomes for teacher practices and for pupils.

Claim 9. Effective professional development requires leadership to create the necessary conditions

It is perhaps through the challenges, as well as the successes, faced by partnerships that the significance of leadership can be seen most clearly. Support and commitment from senior leaders in participating schools is mentioned in many impact reports as critical to success, such as in those from **Affinity TSA** and **The Compton-Barnet TSA**. On the other hand, a lack of sustained headteacher support was cited as a factor in the limited success of the project at another TSA. With a timescale that extended over more than one year, changes in staffing proved a challenge for some TSAs. In **Sheffield TSA**, both of the original project leaders left and, in addition the headteacher of the lead school moved post. However, two teachers took on a leadership role and were able to refocus the project successfully. Project leadership and good management of operational issues, such as planning meetings well in advance, providing common proformas to guide the enquiry and maintaining regular communication were also considered very important, both across and within schools and this is discussed further in the next chapter of this report.

The most common challenge, mentioned in nearly all impact reports, was that of lack of resources, usually difficulties in finding time to complete the work in the face of other pressures. For example, **London West TSA** reported, “teachers found it difficult to keep trying innovative strategies and give extra time for coaching when they had a lot of pressure on their time. The challenge going forward would be to consider how to fit [in] challenging CPD when teachers are asked to go beyond their comfort zone with the challenges of school life.” Looking forward, the impact report from **Harrogate Grammar School (Red Kite TSA)**, in discussing the challenge for school leaders of enabling sufficient time for the lesson study approach used, suggests that the deep learning about pedagogy resulting from this approach leads to benefits in professional relationships, the creation of a more open classroom culture and improvements in practice that extend well beyond the focus lesson. The **Red Kite TSA** report also suggests that these benefits are not available to the same degree from other types of professional development.

Another aspect of leadership that features in many of the projects is that of developing leaders to extend the enquiry approach to professional development beyond the project. **Devon TSP's** work to develop the skills of primary computer science co-ordinators 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 co-ordinators shadowed the master teachers and were appointed as SLEs for computing science, thereby ensuring succession.

Finally, **Cambridge Teaching Schools Network** drew on a past history of collaborative engagement thus pre-empting potential capacity and management

issues. Leadership was carefully distributed through R&D leaders in schools across the three alliances in the network. These R&D lead teachers maintained contact with the main R&D lead throughout the project. Termly R&D steering group meetings allowed progress and strategies to be shared across the alliances. In addition, they were able to maintain the momentum of their work by:

- carefully considering which staff to involve and how to group them in triads
- providing a focus to collaborative work (extended writing)
- providing clear timelines (eg how frequently groups should meet)
- providing agendas to structure each discussion
- providing time for teachers (eg meetings during directed time and cover provided to allow observations)

Key messages about great professional development

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

1. Start professional development 'with the end in mind' – be specific about the relationship between pupils' learning needs and teachers' beliefs, behaviours and practices.
2. Motivate teachers by focusing on the difference they want to make for their pupils through engaging in professional development.
3. Provide a clear structure for professional development and its impact on teacher practices and pupil outcomes.
4. Be forensically clear about starting points to be able to evaluate impact – but be prepared for unexpected outcomes.
5. Root professional development in classrooms and start it with an issue that is relevant for both teachers and their pupils.
6. Seek and listen seriously to pupils' feedback to genuinely understand the impact of new practices developed through professional learning.

Provide opportunities for colleagues to engage in deep collaborative learning

10. Personalise mentoring and coaching, and make sure it is developmental and ongoing.
11. Provide sufficient time for deep, high quality talk between teachers to enhance professional relationships and promote deep learning.
12. Offer collaborative development opportunities to stimulate teachers and enable them to engage in critical thinking about lessons and learning.

Ensure access to knowledge and skills from inside and outside

13. Use internal and external expertise to maintain drive and momentum and provide support at different stages, as well as build new expertise and leadership.
14. Co-create knowledge by bringing together knowledge from practice and knowledge from research.

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

15. Incorporate collaborative enquiry into professional development as a long term approach. It is not a 'quick fix' – it requires persistence.

Facilitate the practicalities to encourage a learning culture

16. Make sure that senior leaders provide necessary conditions for effective professional development to take place eg time, resources, to facilitate an open classroom culture.

3.3 Evaluation: what have we learned about collaboration and collaborative enquiry?

Overall, impact reports and case studies from TSA networks provide convincing evidence of the power of collaborative working within and between schools. At the same time, alliances are mindful of the challenges involved in building and sustaining effective partnerships to support enquiry. One external facilitator commented that “collaboration is difficult, posing its own particular challenges... successful collaboration requires conscious and sustained commitment by its partners”. In this section, we highlight the benefits identified by TSAs of engaging in and with research through collaborative enquiry and explore the conditions necessary to help it grow and thrive. This section concludes with a summary of key messages about

collaborative enquiry emerging from impact reports and case studies, modified by feedback from TSA representatives at the national event in November 2014.

What are the benefits of collaborative enquiry?²

1. The process of structured and rigorous collaborative professional enquiry is transformational for individual teachers involved, with clear evidence of impact on pupils' progress and achievement.

A number of teachers provide strong testimony of the actual and potential gains to be had from participating in collaborative enquiry.

The project has been a profound learning experience for all of those involved in it... as we became more research-informed practitioners we were then able to drill down and apply this (research) to our thinking more closely, and to our actual classroom practice and to begin to actively research how changes in our practice affected change in learner practice and outcomes.

Harrow Collegiate TSA

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 ...development within our practice and maximising impact with our learners.

Great Sankey TSA

Feedback at the national event confirmed the power of the experience of enquiry-based learning: “collaborative enquiry can change teachers’ beliefs, attitudes and pedagogy” and “it’s the **experience** (of the structured enquiry) which is transformative. Not just having the findings disseminated”.

² *Approaches to research and development for ‘great pedagogy’ and ‘great CPD’ in teaching school alliances* (Maxwell et al, 2015) complements the findings in this section. It captures the learning from a parallel study of five teaching schools that participated in this project and focuses on **how** they undertook their R&D projects.

2. Structured collaborative enquiry provides a methodology for schools and partnerships to test proposed interventions against existing research evidence and to trial innovations before making recommendations to influence both school and alliance policy and practice.

The collaborative methodology provided a process through which schools related findings to the original literature claims about pedagogy and professional development, engaging with these in collaboration with colleagues. Although it might be argued that teachers were not identifying new knowledge in the field, it was apparent that the **process** through which they engaged with findings, enabled true ownership of the learning and the tools and capacity to extend their learning.

Collaborative enquiry is seen as a testing ground for promising ideas that are likely to inform key aspects of school and alliance policy. (An) inner... group of interested partner schools prioritise a focus... training staff in research methodologies that establish a causal link between expenditure actions and improved pupil outcomes... chimes so well with the need to devise pupil initiatives that satisfy governance scrutiny.

Bishop Challoner TSA

... embedding R&D into other areas and streamlining it with school priorities that already exist. For example, when the school wanted to consider changing a year group from streamed to mixed-ability mathematics we carried out an analysis of all related research evidence to be best informed of the school's decisions.

Latchmere TSA

In several cases, partnerships reported the benefits of working with an HEI and with national research partners to improve their capacity for research-informed practice. Partnership representatives attending the national event agreed that expert HEI support was essential for their projects, "external expertise to challenge... how to research, what constitutes evidence".

HEIs provided guidance on how to maintain the rigour of the enquiry, facilitated access to relevant research material and provided advice on ethical issues. Several partnerships stated an intention of continuing to work with an HEI to embed this way of working.

The alliance is very committed to collaborative enquiry and as a result of this successful project will embark on two substantial research projects – funded by the alliance next year in partnership with the University of Greenwich.

3. Adopting an R&D perspective as part of a long term vision can be transformational for the school, and partnership, as a whole.

Several partnerships were able to report that R&D had been absorbed into the culture of the schools within the partnership. This may have been noted most strongly in a few of the partnership schools or, in some cases, just in the lead school. However these partnerships were optimistic about developing a sustainable R&D model in the future.

This project has been a game-changer for the schools participating... we have shared the practice within our own TSA as we seek to develop a culture of R&D...

Cramlington TSA

The research findings and strategies have also been added to the teachers' toolkit which is now a 'tight' principle across the... secondary schools within the alliance. Many new classroom strategies developed as a direct result from the R&D project have been observed in numerous formal lesson observations and are becoming 'normal or de-fault' practice for many teachers... R&D has now become an established part of the school culture and ethos within Tuxford Academy and is gaining a significant foothold within other schools within the alliance and this process, and its future impact upon student progress, has been a direct consequence of being involved in the NCTL R&D themes project: 'what makes great pedagogy'.

Trent Valley TSA

4. Engaging in collaborative enquiry provides opportunities for leaders at all levels to develop knowledge and skills in how to improve pupil learning.

Several partnerships reported on the growth opportunities afforded for teachers engaged in leading and working with small groups of colleagues. Working across subject areas, across schools and across important stages has clear potential for building leadership capacity across a system, although this was not explicitly identified in impact reports. However, leadership development was specifically mentioned as a positive outcome by some partnerships and was noted in feedback at the national event "it enables teachers to step up and lead from all layers in the school with a powerful impact on others who start to listen and take note".

The leadership competences which have been developed as a direct result of involvement with this project... include: self-awareness; integrity; resilience and emotional maturity; conceptual thinking; delivering continuous improvement; modelling excellence in teaching; learning focus; serving others; inspiring others; partnership working; relating to others; and developing others... success is evidenced in the percentage of coaches and coachees who were successful in gaining promotions following their involvement with the project. 70 per cent of coaches gained senior leadership positions and 50 per cent of coachees gained promotion into middle leadership.

Fylde TSA

What conditions support effective collaborative enquiry?

Below are factors reported by TSA project leaders as underpinning effective collaboration.

1. A commitment to R&D as a strategic aim

It was evident from impact reports and case studies that some partnerships and project leads already had research experience prior to participating in this project. For example, in **Wednesbury TSA** there is “a long history of R&D work”. With this history, some alliances noted that this supported approach brought added rigour and / or enabled them to test specific approaches:

R&D has, for some time, been seen as a valuable aspect of our teaching schools’ work. This project has allowed specific structures to be tried and tested. These structures and associated strategies will continue to be used by alliance schools.

Cambridge TS Network

The nature of collaborative enquiry has brought rigour to the process. It quickly developed a shared ideology or practice and gave the opportunity for questioning and discussion for greater understanding.

South Farnham TSA

Without this experience, **West Essex TSA**, as a cohort 3 partnership, acknowledged that staff leading mini-action research projects initially “found difficulty in clarifying the difference between sharing practice and JPD”. They believe that they are in a first phase of developing professional development through the model with embedding planned for the coming year. Some partnerships are taking advantage of other project work, or research networks, to support embedding and sustaining of a rigorous research approach to change. For example, **Denbigh TSA** intends to link

the work of participants to a city-wide MA programme and **The Compton-Barnet TSA** will apply the JPD approach on a literacy project as part of the London School Excellence Fund.

The value of taking time at the outset to establish common strategic aims across a group of schools is highlighted here.

Maintaining the drive from other institutions has proved difficult due to divergence in strategic priorities. This would suggest that the collaborative dimension of any project is dependent on sharing strategic priorities from the very beginning, and ensuring on-going commitment to shared aims.

Tudor Grange TSA

2. Shared understanding, expectations and commitment amongst partners

Many of the successful partnerships for both theme 1 and theme 2 had a shared, specific and often jointly generated pedagogical focus. For example, teachers working in 'JPD couples' in a theme 2 project across schools in **Harton TSA** were all working to develop their skills in AfL or collaborative learning. However, a shared pedagogical focus across all participating schools did not appear to be always necessary. In **Blue Flag TSA**, each school chose their own focus, but met together regularly to share their findings, as did the 14 groups in 6 schools in **Wandle TSA**.

The following statement from **Lightwoods TSA** is typical of comments made in relation to commitment and engagement of all concerned:

What I have learned about collaborative enquiry is that everyone **must** be on board. All need to invest time and money to make it happen effectively. Practitioners need to have a genuine interest in improving their practice ie pupil outcomes. Policy makers need to allow staff time to do this effectively, by giving opportunities to plan and implement. Most importantly give them the freedom to explore and see what's going on outside their own context and make connections (networks) with other schools by harnessing that relationship.

Lightwoods TSA

'Secure', committed schools and teachers are noted as a factor by **The Compton-Barnet TSA** and in **Medway TSA** it was noted that 'fragile' schools found it more difficult to engage. Elsewhere, a frequent reason for schools dropping out of collaborative enquiry was because of a need to respond to new priorities following an Ofsted judgement. Where collaboration had been less successful, differences in understanding or approach may have led to resistance to sharing ideas, with one partnership noting a "dislike of external imposition". The data suggests that teachers

in some of the less successful projects were less likely to be volunteers. Shared ownership among schools appears to be important, for example, uptake in a partnership which aimed to transfer use of the lead school's diagnostic and coaching model for teachers who needed to improve was “hard to drive”.

3. A shared strategic vision supported by allocation of resources and efficient operational leadership.

In successful projects, it is clear there has been high commitment from the partnership project leader and from project leaders within each participating school, with effective operational management to keep everyone on track.

Also implicit is the authority of project leaders to get things done, with support from senior leaders. Project leaders needed to have the authority, status and skills to work across schools effectively.

Even in successful partnerships, reports nearly always emphasised the challenge of finding sufficient resourced time in order to sustain collaboration, both within and across schools. Some impact reports mention the critical role of middle or subject leaders. This can be a strength, as in the projects where mathematics, SEN or information and communication technology (ICT) co-ordinator networks helped to maintain project momentum, consistency and enthusiasm (as in, for example, **Devon TSP**, **Torbay TSA** and **Palmerston TSA**). On the other hand, some partnerships reported that subject leaders struggled to find the time to contribute as expected and there were hints in some reports that more subject-based development might have been preferred to the generic pedagogical approaches tested.

The time-consuming nature of collaborative enquiry as a form practice development was mentioned in almost every impact report and case study: “it is a challenge to access research literature and provide support for research- engaged individuals and find the capacity to do this properly” (feedback at national event). Although, within individual schools, senior leaders might feel that “lesson study is worth every penny” (**LeTS Alliance**) the same report notes the major commitment needed to “create the space and dedicated coordination time to reap the full benefits of lesson study as a strategy for improving professional learning activity in schools”.

Efficiency in planning meetings well in advance and maintaining communication were found to be important features. Several TSAs pointed to the need for common structures and processes supported by shared documentation, as in the “timelines, agendas, common questionnaires etc for the collaborative work” mentioned by **Cambridge Teaching Schools Network**. In schools where there had been difficulties in maintaining collaboration, operational issues such as timing of meetings for everyone to attend; turnover of staff; lack of sustained support from senior leaders were explicitly mentioned. The report from one TSA said “I have relinquished

the role of R&D lead because of an unwillingness of the school I work in to provide the time to do the job”.

The national themes interim report (Taylor et al; 2014) noted that several partnerships had introduced virtual learning environments (VLEs) to ‘share resources and outcomes’. VLEs were mentioned infrequently in impact reports and there are a mix of views. **Bishop Challoner Catholic College TSA** reported that the VLE established for the project was essential to the success of the collaboration. However, **Cramlington TSA** found that their VLE was little used. The interim report also noted that digital technologies were being used to support observations and communication when staff could not be freed at the same time. In the impact reports use of tools such as video tools and email were frequently mentioned as useful in contributing to the success of the collaborative activity.

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.

Some projects, such as those in **Torbay TSA** (6 schools), **Greenwich TSA** (10 schools) and **Palmerston TSA** (16 schools) were able to build on a history of good working relationships among participating schools. In **Devon TSP** the project focus, to develop the skills of computer science leaders in primary schools, was sufficiently motivating for a successful initial project with 12 participating schools. Furthermore, two ‘learning hubs’ have been established in Devon to continue to share resources and learning among these schools and the succeeding cohorts. Trust and good working relationships appear to be sufficient to overcome the challenges faced by schools which need to improve rapidly.

The majority of partnerships were of four or fewer schools working together and feedback at the national event suggested that an optimum number of partners is three or four. In engaging partners, some projects (**Esher Teaching Alliance, Balcarras TSP**) noted that it was easier for secondary schools to engage with feeder primary schools than with other secondaries. Those partnerships where there was not already a history of collaborative activity found that it was better to begin with “small and tight projects” (**London West TSA**). Most partnerships intended to build on the success of their projects with a small group of schools and engage more schools in future development.

5. Senior leaders who are engaged and supportive through distribution of leadership is essential for sustainability. It is important to have a project leader within each participating school.

Without exception, it was agreed that there must be full engagement and commitment from senior leaders in the partnership, both during the project and beyond, in order to embed a research approach into the way of working of the school. There must be agreement among senior leaders both for the focus of the specific project enquiry and on the long-term strategic priority of embedding R&D as a way of working. Prior experience of research-based approaches may help, as can engagement with other projects which provide the additional funding and impetus to continue to use the model in future years.

... 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

The national themes interim report (Taylor et al; 2014) found that schools had responded to changes in (R&D) leads by distributing leadership across the alliance with leads embedded in individual schools or hubs. Changes of personnel, both in leadership and in teacher participants, continued to be a challenge throughout many projects. In some cases, particularly if there was a change before the project had become embedded, changes of personnel or leadership had curtailed what had been achieved. However, successful transition to new leadership, or new energy brought to a project by a change of leadership, were also noted. Change of personnel was more easily managed at a later stage, with distribution of leadership and leadership development built into many projects as a strategy for continuity and sustainability (for example, in **Herts and Bucks TSA, Dilkes TSA, Swiss Cottage TSA, Tudor Grange Academy Solihull TSA**).

Project leads or 'champions' (**Cambridge Teaching Schools Network**) within each participating school eased communication and helped to maintain momentum. Project steering groups were mentioned in several reports such as **Wandle TSA** where there is a "steering group with representatives from each school, who meet regularly and keep things on course".

6. Skilled project leadership and facilitation is instrumental in supporting structured and rigorous R&D

Effective collaborative enquiry focussed on bringing about change makes significant demands on the TSA facilitator. In particular it calls on the facilitator to manage and progress the three inter-woven elements of

enquiry, collaborative engagement, and the change / improvement process.

external facilitator

Project leads at the national event said that it was particularly difficult to manage the tension between maintaining the rigour of the enquiry process and allowing the project to evolve to fit contextual priorities and interests.

Several partnerships noted the importance of operational leadership skills to securing and maintaining collaborative engagement:

effective operational leadership is key to the development of collaborative enquiry in terms of protocols, initial buy-in, creating a spirit of enquiry and driving the mechanics of collaboration.

collective response at national event

Any collaborative learning requires a designated coordinator to ensure participants fully understand their role within the collaboration and their responsibility for achieving specified outcomes... the meetings cycle and structured questionnaires providing prompts and signposts to intended outcomes provided an appropriate structure in which participants could collaboratively explore pedagogical practices that would impact significantly on their practice.

The Compton-Barnet TSA

External facilitators, each of whom worked with several partnerships, noted that those projects which were led by an experienced, confident and skilled leader were also more likely to stay on track and to achieve greater success across the alliance. Feedback at the national event added that projects needed “passionate leaders... accountability, deadlines”. In some cases, the project leader’s role and accountability was clearly assigned to the partnership as a whole rather than within the lead school and this was felt by external facilitators to bring added credibility to cross-school work. It was particularly advantageous if the role built on a previous cross-school role, for example in leading within a school centred initial teacher training (SCITT). Where project leaders were less experienced, or had less credibility across the partnership schools, the external facilitators noted that projects were more likely to experience problems and required more support from outside. The role of external facilitators in providing support and help to maintain the momentum was recognised by partnerships. At the national event, project leads reported that the external facilitator, in addition to providing guidance on methodology and data analysis also helped in setting deadlines, sustaining momentum and with regional events, supporting sharing of progress. Some reported that even more action learning set work would have been valued.

Having the support of an external facilitator to move the project forward and support the line of enquiry is key (feedback at national event). The support of the external facilitator in promoting collaboration across schools was also valued “Having an external facilitator provides authority and a ‘sense of difference’.

The Hillingdon TSA

Key messages about collaborative enquiry

Collaborative enquiry and great pedagogy

- Collaborative enquiry across school networks / alliances can be inspiring, empowering, engaging, and challenging for staff in participating schools.
- Collaborative enquiry can change teachers' beliefs, attitudes and pedagogy.
- Enabling teachers to centre an enquiry on the difference they want to make for pupils in their classrooms is highly motivating and effective - and helps ensure the motivation and engagement of teachers is sustained over time.

Collaborative enquiry and professional development cultures and practices

- Effective facilitation is key and benefits from a clear model for professional learning as well as a strategic approach to identifying, implementing and evaluating improvement focussed interventions.
- A shared understanding of, and commitment to, developing evidence informed practice is vital to the success of the approach.
- Trust is a necessary pre-requisite for collaborative activity and enables effective challenge.
- Mobilising learning from school-led collaborative enquiry to influence wider staff across a school or alliance is challenging and often neglected.

Collaborative enquiry and leadership

- Senior leaders must create a culture which allows for experimentation and vulnerability as a starting place for JPD.
- Distribution of leadership within and across schools as part of a collaborative enquiry process appears to be important for sustainability and building leadership capacity.
- A shared strategic vision for school-led collaborative enquiry together with the allocation of resources and effective operational leadership and management appear to be key features of successful collaborative enquiry.
- In order to influence local policy and practice, collaborative enquiry needs to be structured around a systematic and rigorous methodology which includes a clear focus on assessing impact and which is informed by the existing research base.

- processes, shared documentation, shared agendas, and agreed timelines for the collaborative activity are important, as is developing a shared language.
- Having external support can increase the capacity for research informed practice and help maintain motivation and drive, as well as providing an external perspective and / or support with academic aspects.

4. Conclusions

Our findings show that the context for the teaching schools R&D national themes project has proved critical in determining both the pedagogical and professional development foci for TSAs. This project provided a purpose and a structure for alliances to begin working together at an early stage of their development. Not surprisingly, schools chose to investigate the collaborative dimensions of professional development (theme 2) and shaped teaching and learning foci of common and compelling interest within and across their schools (theme 1). Local context and strategic priorities therefore mattered as much as the steer provided by the bespoke literature reviews.

Our analysis of impact reports and case studies across the theme 1 TSAs indicates that engaging in collaborative enquiry has made a difference to pupil learning and outcomes in a number of studies. Where enacted systematically, the collaborative methodology, C2L, has promoted the gathering and analysis of evidence about pupil learning and attainment at the outset against which improvements in learning can be evaluated. The adoption of lesson study by several TSAs adds further rigour to evidence gathering and enables staff to scrutinise even more closely the relationship between changes in pupils' learning and their progress and attainment.

The theme 2 schools have explored how professional collaboration leads to changes in teacher practices and how this impacts on pupil learning and outcomes. Beginning with the end in mind has supported schools to place pupils at the heart of professional learning and plan their development strategies in the light of specific, desired outcomes. Evidence indicates that many TSAs have created an enhanced and positive culture for collaborative professional learning as a result of engaging in this project.

A clear aim at the outset was to develop and embed a sustainable model for deep professional learning through a rigorous and supported R&D methodology. Key to this has been finding ways to connect staff with the research base in new and accessible ways. The 'nine claims' literature reviews for themes 1 and 2 (Husbands and Pearce, 2012; Stoll, Harris and Handscomb, 2012) have gone some way in providing a basis for TSA development and schools have drawn on a range of other research sources and / or HEI support in addition to these. 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.

At the final national event in November 2014, TSAs shared their learning and the impact of their investigations with each other. Many had plans for continuing with enquiries either by deepening their investigations into a particular area or widening the scope by involving new partners in their studies.

At the event, representatives were asked to describe the landscape of collaborative enquiry in their own alliance currently and compare this with how it looked at the outset of the project. Although all reported positive movement, the descriptions and metaphors used indicate that further development and support is needed for R&D to be embedded as the ‘norm’ across alliances.

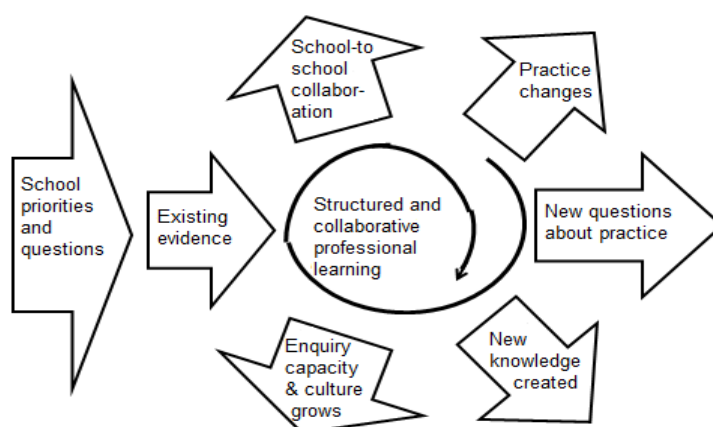
In conclusion, we have sought to capture the learning about collaborative enquiry from this project in figure 2. This highlights the importance of school-led R&D combining what is known about effective professional learning with a structured and focussed enquiry and evaluation process. This combination was at the heart of the C2L model used to underpin the work on themes 1 and 2. Thus it suggests that schools should:

- identify a strategically-focussed enquiry question which reflects both data-informed school improvement priorities and existing research evidence; and
- address this enquiry question through a structured process which also involves facilitated professional learning for the staff involved.

The enquiry process is likely to involve capturing baseline and ongoing data and taking time to reflect and report on this. The professional learning process is likely to draw on external as well as internal expertise and to be extended over time, providing multiple opportunities for participants to work together to engage with, and reflect on, the emerging evidence and its implications.

Where this is done effectively across groups of schools with appropriate leadership support, the outcomes are likely to include: increased school to school collaboration and trust; the development of new knowledge and the embedding of evidence-informed approaches among the staff involved (though extending these changes to wider staff requires further sustained professional learning and knowledge mobilisation effort); the identification of further areas for focussed enquiry; and the development of a culture and capacity for further evidence-informed development.

Figure 2: Strategic architecture for professional learning



5. Recommendations

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

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Appendix 1: Impact report format

External facilitator report – impact phase

Where are you now?

Alliance / lead school: Please make sure you name the alliance as well as the lead school	Name of R&D lead:
Date of conversation:	External facilitator:
Cohort:	Region:

A. Summary of the project

In this section - please update the information below so it represents the project in its final form.

The project focus is: (max of 30 words to share with others)
The main project aims are to:
Research Questions Our overarching research question/s for the project as a whole is/are: If individual schools have additional, more individualised, research questions what are these?

The project focus is: (max of 30 words to share with others)

What were the intended outcomes of the project? Only complete those sections which apply to your project.

For staff (eg confidence, attitudes, knowledge, practice)?

For pupils?

For participating schools as organisations? (including developing R&D capacity)

For schools beyond those participating in the project?

B. The impact phase

1. The agreed strategies or interventions you have been trialling in relation to your collective focus or question of enquiry

What pedagogical strategies have you been trialling throughout the project?	
What approaches to professional development have you been trialling? (Theme 2 only)	

2. What evidence do you now have about the impact and effectiveness of these strategies and what is this data telling you?

In summary, what baseline data did you collect? What did it tell you? This may be data about:

- **teacher** knowledge, attitudes, skills and practice relating to the strategies / interventions you trialled
- **learner** knowledge, attitudes, skills, behaviours
- **your school**
- **other schools**
- **anything else** you gathered evidence about?

What evidence of impact have you gathered? You may want to note significant interim tracking data as well as summative evidence. Again, this impact data may relate to:

- **teacher** knowledge, attitudes, skills and practice relating to the strategies / interventions you trialled
- **learner** knowledge, attitudes, skills, behaviours
- **your school**
- **other schools**
- **anything else** you gathered evidence about?

<p>How does this impact data relate to your anticipated outcomes?</p> <p>Are there some challenges to your thinking?</p>	
<p>What strategies have been most effective? How do you know?</p> <p>What strategies have been least effective? How do you know?</p>	
<p>From the data collected, are you able to agree a shared, collective and clear view of what the trial is telling you? If so, what claims are you making?</p>	
<p>How do these claims relate to the original nine claims in the literature review(s)?</p>	
<p>3. Collaboration</p>	
<p>Have there been any changes in schools participating in the project since the interim report? If so:</p> <ul style="list-style-type: none"> • what have the changes been • why did they come about? 	
<p>To what extent have you been able to maintain and build the drive and collaborative dimension of your work?</p> <p>Note challenges and solutions here.</p> <p>What have you learnt about the nature of collaborative enquiry that brings about</p>	

improvement for learners, professionals and schools?	
<p>How have you been distributing the leadership of this work?</p> <p>If this didn't happen – why not?</p> <p>Moving forward, who will lead the next phase of enquiry of this work – or lead enquiry in your alliance?</p> <p>How will this be supported and resourced?</p>	
4. Embedding and sharing strategies and interventions	
<p>How is collaborative enquiry / R&D viewed within your alliance now as a result of your work?</p> <p>How effective have you been in embedding successful strategies across the schools involved?</p> <p>How have you shared your learning and promoted these strategies to others – and celebrated success?</p>	
5. Looking forward	
<p>What do you plan to do to ensure your learning is shared and sustained going forward?</p> <p>What are the main challenges for you from now on in further embedding collaborative enquiry?</p> <p>How are you intending to address these?</p>	

Appendix 2: Final case study guidance

Alliance name	
Alliance context	30 words. Region / location / size / socio-economic context
Schools involved in the R&D project	Name all schools and their phases. Identify lead school and / or teaching school if you wish.
Research focus Theme 1 Theme 2 (delete as appropriate)	30 words
Research question(s)	

The implementation phase

- How did you determine your focus or question(s) and how did this relate to the nine claims or propositions?
- How did you go about establishing your partner schools?
- What were the intended outcomes of the project (for staff and pupils)?
- What evidence did you gather at the baseline stage and what did this tell you?

The innovation phase

- What pedagogical strategies have you been trialling throughout the project?
- What approaches to professional development have you been trialling?
(theme 2 only)
- How did you maintain and build the momentum and collaborative dimension of your work? How did you distribute the leadership of this work?

The impact phase

What claims are you making about the impact of your work on:

- **staff** knowledge attitudes, skills and practice

- **learner** knowledge attitudes, skills, behaviours
- **your school, other schools** and anything else you gathered evidence about?

Ensure that you refer to your evidence base to support each claim.

How do your claims relate to the original nine propositions from existing research?

Final conclusions

- What have you found out about either what makes great pedagogy or what makes great professional development that leads to consistently great pedagogy?
- What have you found out about how to engage in collaborative R&D?
- What have you learnt about the nature of collaborative enquiry that brings about improvement for pupils?
- How will you ensure your learning is shared and sustained going forward?

Appendix 3: TSAs and their research questions

Theme one

Teaching school alliance	Research focus / question (s)
Alliance for Learning	To what extent does an in situ educational psychologist, working in five schools, have an impact on teaching and learning of pupils with EBSEN?
North Somerset TSA	What are the motivational factors that have the greatest impact on learning?
Balcarras TSP	How can secondary and linked primary schools collaborate to improve literacy provision specifically with regards to reading?
Barnsley TSA	<p>What are the strategies which lead to low attaining children making at least expected progress in writing?</p> <p>How can we adapt these strategies to accelerate learning in our school?</p>
Bishop Challoner Catholic College TSA	How can humanities and English teachers raise progress in their subjects while simultaneously raising standards of literacy?
Blue Flag TSA	Work with a team of schools on a classroom evidence-based project to address the question: what makes good pedagogy (peer- and self- assessment, metacognition, reading).
Brook TSA	How teacher questioning and feedback methods create more sustained independent learners in key stage 3 and 4.
Denbigh TSA	How can levels of engagement be improved to raise attainment?
Esher Teaching Alliance	<p>Cross phase barriers to literacy: fact or myth?</p> <p>An exploration of what makes great pedagogy in literacy, with a specific focus on writing, in years 6 and 7</p>
Early Years Excellence Learning Alliance	Extending children's oracy skills so they are able to express their ideas more effectively.
Great Sankey TSA	In lessons judged outstanding, does the pedagogy demonstrated by the practitioner differ according to school

Teaching school alliance	Research focus / question (s)
	context? What additionality, if any, is required to demonstrate 'outstanding' in schools in challenging circumstances?
Harrow Collegiate TSA	To understand how written feedback and student teacher dialogue in books can better support pupil progress by ensuring students have a better understanding of what they need to do to improve their work.
Herts and Bucks TSA	How can we harness student voice to effectively promote independent learning?
i2i Partnership	What are the effective pedagogies involved in developing a reading scheme?
Latchmere TSA	How can we bring about an improvement in the use of formative assessment? Investigating the impact, in terms of teacher practice and pupil efficacy, of embedding formative assessment and feedback strategies.
LEAD TSA	How can we use the development of approaches to purposeful and exploratory talk to increase pupils' participation and engagement with learning?
Leeds City TSA	What steps can be taken to increase and extend the engagement of pupils in reading for pleasure? What works and what impact does this have on attainment?
Northern Lights TSA	What makes great pedagogy in the sixth form?
Palmerston Inclusive Alliance	Which teaching methods, assessment tools or curriculum products impact on progress of pupils who are working at P-levels 1-3?
Royal Greenwich TSA	How can technology contribute to improvement in terms of attainment, progress and level of engagement in reading for pupil premium children and young people?
South Farnham TSA	<p>Is identified effective pedagogy transferable to a different context?</p> <p>A focus on the use of Bloom's Taxonomy and its impact on learner progress.</p>

Teaching school alliance	Research focus / question (s)
	A consideration of the place of Bloom's Affective domain in contributing to 'what makes great pedagogy'.
The Arthur Terry School TSA	How can we increase the use of BLP to bring about improved outcomes for students?
Stourport High TSA	The development and use of a thinking skills model for mathematics that promotes independence and success in problem solving activities.
Trent Valley TSA	How can we improve feedback to bring about higher quality learning?
Warren Road	Factors for teaching and learning that impact on the progress of SEND pupils in writing.
Wednesbury TSA	How can the use of higher order thinking skills, through exploratory talk, improve outcomes for more able pupils in mathematics?
Wellington College TSP	What is the impact of an online summer reading project on key stage 4 wider reading?
Westdene TSA	What makes for effective pedagogy and transition in mathematics from key stage 2 to key stage 3?

Theme two

Teaching school alliance	Research focus / question(s)
Affinity TSA	Can lesson study be used as a research/CPD tool to improve teacher subject knowledge/pedagogy and raise pupil attainment within an area of mathematics?
Brays Specialist Alliance	What impact does school-based enquiry, as an approach to professional development, have on teacher practice and outcomes for pupils?
Brooke Weston Academy TSA	To explore whether Lesson Study can be adopted as a tool for meeting the CPD needs of teachers and whether it can also be used as a means for shifting the culture of CPD in schools.

Teaching school alliance	Research focus / question(s)
Cambridge Teaching Schools Network	When cross-phase and cross-curricular teachers work together in a triad with a focus on the delivery of extended writing, what changes take place in classroom practice as a result and how does this impact on individuals' professional learning, students' attitudes towards extended writing and the quality of their extended writing?
Collaborative Schools Limited	What is the role of the professional development partner (SLE and aspirant SLE) in affecting change through research engagement?
Colmore Partnership TSA	What is the impact of an early professional development programme on the outcomes and progress for pupils and the quality of teaching?
Cramlington TSA	<p>What are appropriate professional development activities to support NQTs to develop effective teacher behaviours?</p> <p>What is the impact of these activities on NQT teacher behaviour and on pupil learning?</p>
Devon Teaching School Partnership	What is the most effective CPD to prepare teachers with the subject knowledge and pedagogical tools for outstanding teaching and learning in computing science?
Dilkes Primary School TSA	To what extent does the collaborative dimension of CPD bring about pedagogical changes which impact positively on the quality of teaching and what evidence is there that this impacts on teacher quality and pupil progress?
Education Teaching Alliance Lewisham	For trainee teachers to be actively involved in their professional development by engaging in their own mini lesson study project. Focus on subject knowledge and using this effectively in their teaching.
Fylde TSA	Cross-institutional coaching, using classroom coaching as a CPD method to improve teaching and learning.

Teaching school alliance	Research focus / question(s)
Harton TSA	To evaluate if JPD, focused on Egan's skilled helper coaching model, improves teaching practice and learning outcomes for students.
KYRA TSA	<p>Does co-coaching through JPD result in more comprehensive changes to classroom practice?</p> <p>Can new technologies provide children with 'just in time' feedback that helps them to secure and accelerate their learning in mathematics?</p>
LeTS Alliance	Exploring impact of lesson study on professional development culture and practices focusing on independent learning to improve literacy and numeracy.
Lightwoods TSA	How can we best utilise a JPD model across schools to help develop the practice of good teachers so that they improve the independent learning skills (and outcomes) of identified year 7 and year 12 pupils?
London West Alliance	To explore through three professional development projects the factors which influence changes in teachers' practice and to examine more precisely the role of peer collaboration within the context of such change.
Northern Alliance	Does the use of learning focus exchange as a vehicle for CPD improve pedagogy?
Red Kite TSA	<p>Is lesson study a valuable form of professional development?</p> <p>Can lesson study be used to promote student resilience?</p>
South Lakes TSA	Does a whole school 'kick start' launch of R&D change people's attitudes to research and improve their likelihood of engaging in future R&D tasks?
Southern Collaborative Learning Partnership	Which CPD activities have the greatest impact on improving good pedagogy?
Southfields TSA	To develop a programme to improve teacher practice in one main area, through a school-based enquiry model.

Teaching school alliance	Research focus / question(s)
Swiss Cottage TSA	Does rigorous coaching bring about measurable improvements in pedagogy?
Teach East London	How can voluntary professional development activities contribute to sustained, whole school developments in teaching and learning?
The Bishops Stortford TSA	Testing the effectiveness of joint practice research on both teachers and learners through the delivery and evaluation of parallel projects, including collaborative enquiry in special schools.
The Compton-Barnet TSA	Teacher collaboration, shared observation and structured, developmental feedback sit at the heart of great professional development and provide the experiential learning necessary to support effective pedagogy.
The Hillingdon TSA	What is the effect of coaching on staff professional development and on building capacity for developing outstanding teaching and learning?
The Medway TSA	In what ways can schools working collaboratively across an alliance add value to the development and impact of individual whole school R&D projects?
Torbay TSA	Assess the effectiveness of the lesson study process in improving the teaching of calculation in years 3 and 4, improving pupils' arithmetic proficiency
Tudor Grange Academy Solihull TSA	How effective is lesson study as a form of CPD?
Wandle TSA	How effective are joint practice development groups, using evidence-based research, in delivering great professional learning as defined by the nine propositions?
West Essex TSA	How will undertaking a staff led JPD project develop strategies to improve independent learning and improve the collaborative working practices of staff?



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