



Understanding What Enables High Quality Professional Learning

A report on the research evidence

Centre for the Use of Research Evidence in Education (CUREE)
Pearson School Improvement



About the Centre for the Use of Research and Evidence in Education (CUREE)

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The Centre for the Use of Research and Evidence in Education (CUREE) is an internationally recognised centre of excellence in evidence-based policy and practice in education, and the closely related topics of professional development, learning, mentoring and coaching. CUREE has conducted systematic technical research reviews (it leads the research group for CPD) and a number of large and small research projects and evaluations. It advises national and regional governments and a range of executive agencies in England and elsewhere. It has applied its expertise in evidence-based practice, particularly in pedagogy and the curriculum, to the production of an array of services and resources supporting teacher education and development, and school and college improvement.

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About Pearson School Improvement

Pearson School Improvement is part of Pearson, the world's leading learning company. They are developing a whole school approach to school improvement that helps to develop, sustain and accelerate excellent schools. They have been piloting the model with five schools since September 2011 and are now entering an exciting research phase of the project.

The model is based on the latest research into school improvement along with feedback from school leaders, teachers and students. Pearson School Model places the student at the heart of the process and supports teachers to work more effectively using a technology-supported curriculum.

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Executive summary

This report draws on a range of published research and other evidence to address the question: “what are the characteristics of high quality professional learning for practitioners in education?” The main focus is the **features of professional learning, for teachers and their leaders, which lead to benefits for their pupils and students**, but the paper also examines the nature of the learning experiences of the teachers and leaders themselves. In addition, it explores the literature for evidence about the relative merits of professional learning delivered by direct, face-to-face methods in comparison to distance/online learning approaches.

This study was undertaken in a few weeks in the early part of 2012 and was constrained by the time and resources available. It does not purport to be a comprehensive, technical review of all possible sources. We were, nevertheless, able to draw on an extensive and international body of research including a number of comprehensive, systematic technical reviews which themselves evaluated in considerable depth hundreds of other studies in relation to a single aspect of our focus. As a consequence, we are able to say with some confidence that there is now a robust, settled body of evidence describing the characteristics of professional learning which leads to positive student outcomes. This would not have been possible ten or more years ago. Although we did not find reviews or studies exploring the professional development of both teachers and their leaders, reviews of evidence in both fields reveal many similarities and some interesting distinctions between them.

The evidence about the relative merits of different delivery modes is a much lighter touch and so exploration and conclusions are much more tentative.

Models of professional learning delivery likely to improve student outcomes

Taken together, meta-analyses of the evidence show that CPD for teachers is more likely to benefit students if it is:

- **collaborative** – involves staff working together, identifying starting points, sharing evidence about practice and trying out new approaches;
- **supported by specialist expertise**, usually drawn from beyond the learning setting;
- **focused on aspirations for students** – which provides the moral imperative and shared focus;
- **sustained over time** – professional development sustained over weeks or months had substantially more impact on practice benefiting students than shorter engagement;
- **exploring evidence from trying new things** to connect practice to theory, enabling practitioners to transfer new approaches and practices and the concepts underpinning them to practice multiple contexts.

CPD approaches which demonstrated the characteristics linked to effectiveness included:

- **collaborative enquiry** – peer-supported, collaborative, evidence-based learning activities taking place over an extended period coupled with risk taking (experimenting with new, high leverage, high demand approaches) and structured professional dialogue about evidence;
- **coaching and mentoring** – a vehicle for contextualising CPD and for embedding enquiry-oriented learning in day-to-day practice. Co-coaching in particular empowered practitioners to try out new things by providing a context of reciprocal vulnerability which speeded up the development of trust. Specialist coaches and mentors supported, encouraged, facilitated and challenged professional learners and demonstrated new approaches in action in their context. Effective coaching and mentoring also drew on evidence from observation and drew in other resources;
- **networks** – collaborations within and between schools depending upon and propelled to success by CPD. They draw on internal and external expertise, clearly focused on learning outcomes for particular student groups. The quality of the collaboration and the selection of a focus that can draw contributions from all members is more important than size;
- **structured dialogue and group work** – practised in pairs and small groups, providing multiple opportunities for exploring beliefs and assumptions, trying out new approaches and giving and receiving structured feedback.

Unsurprisingly, effective professional learning for leaders shared the above characteristics when judged against the test of achieving significant benefits for students. **Additional features** or emphases in effective leadership learning delivery included:

- greater importance of the availability of external sources of peer support and its role in extending and redefining the borders within which leaders conceive of their role;
- the availability of flexible and non-linear programmes of activity and support;
- the centrality of the programme recruitment and selection processes in identifying leaders' starting points and their orientation towards learning and shaping the selection of learning activities;
- the role of professional standards as a tool for strengthening the focus on the leadership of learning.

Perhaps the most important evidence is not about the features of the leadership provision itself but the impact of leaders' learning on and about their staff. The Robinson Best Evidence Review (see below) showed that leaders promoting and participating in teacher development was more than twice as effective (as measured by effect size) as any other leadership activity in improving student outcomes.

The professional learning experiences of teachers likely to improve student outcomes

There is, of course, a close relationship between the design and content of professional development delivery and the professional learning experiences of teachers, though the second focuses more on the work done by the teacher in generating his/her own professional knowledge.

The research emphasised the value of:

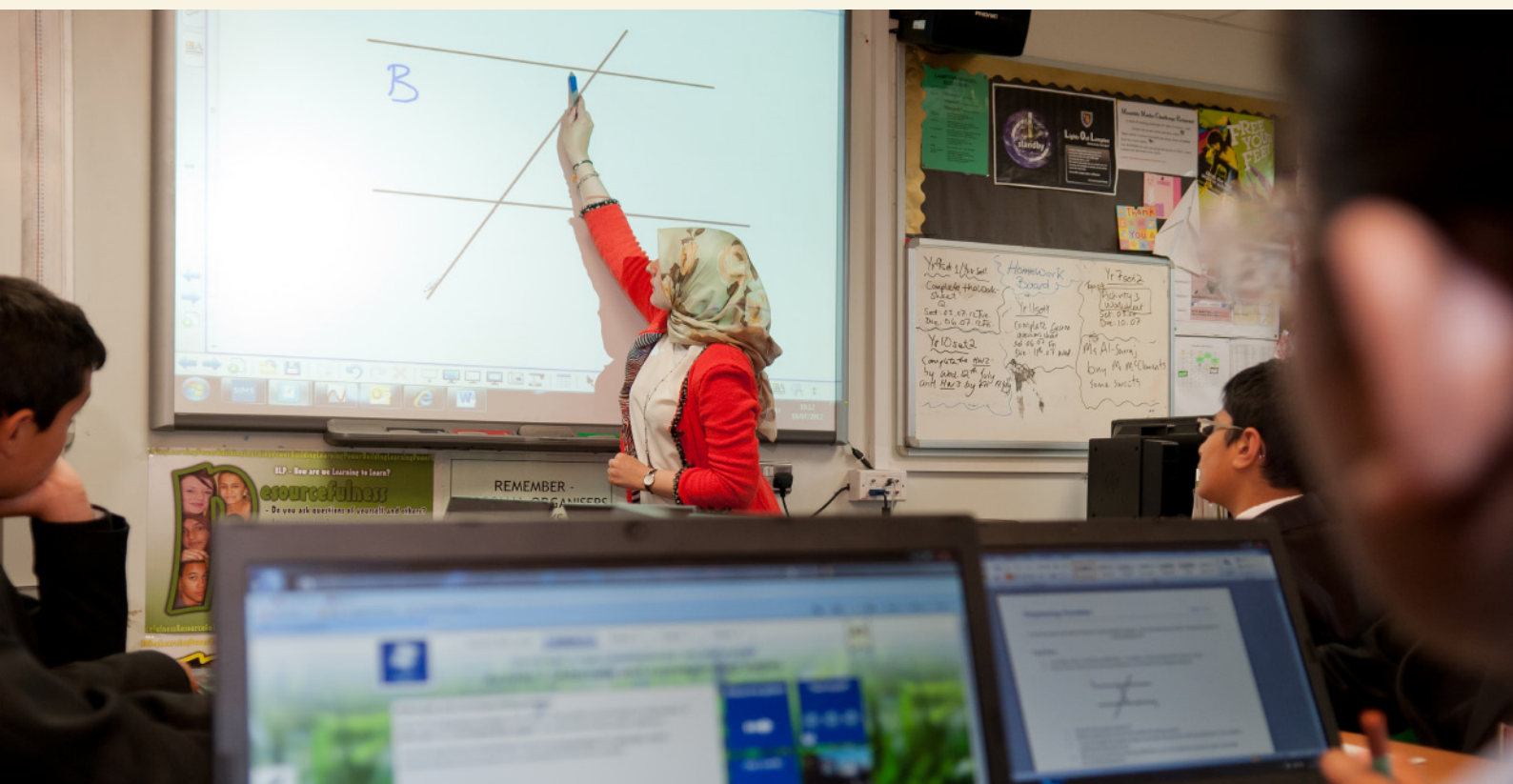
- learning to learn from observing teaching and learning exchanges;

- immersion in exploration of students' learning and teachers contributions to it;
- active engagement with the learning through collaborative problem solving and role play, practising, planning, experimenting, adapting, reviewing and debriefing;
- the synthesis of relatively generalised, context-free theories and concepts with the specifics of the teacher's working context;
- the development of practical theories or rationales;
- the need for support often via a mix of specialist and collaborative coaching.

Finally, the evidence relating to leadership development stressed the importance of professional identity; the willingness of people accustomed to leading to cast themselves explicitly in the role of learner.

Forms of CPD delivery more effective than others

The final section of the report addresses itself briefly to the relative effectiveness of different forms of provision and particularly the comparison of face-to-face to distance/online provision. We found no studies which set out directly to make that comparison, though some research into online learning included some comparisons with other approaches, including face-to-face. There was some evidence to suggest that participants responded best to the approach they were already comfortable with. But no consistent pattern emerges from the research, some of which finds positive benefits from online learning (particularly where face-to-face opportunities are logistically difficult). Other studies emphasise the interpersonal limitations of the online form for the often painful process of unlearning existing practices and assumptions. On the evidence available, the delivery vehicle (face-to-face, online or blended) was not identified as a significant factor in its success – in comparison to the factors identified earlier in this report.



“ If you thought learning was confined to the classroom... ”





The bigger picture

Over the past ten years there have been a number of systematic reviews and analyses of the research evidence about teachers' continuing professional development and learning (CPDL). They have accompanied the growing consensus that the quality of teaching is the major influence on pupil achievement and the recognition in the 1990s that there was little rigorous evidence about professional development interventions and/or tools which were linked to positive pupil impact. A series of systematic EPPI reviews (Cordingley et al, 2003; Cordingley et al, 2005 a&b; Cordingley et al, 2007) identified the characteristics of CPD which led to positive pupil outcomes and a 'Best Evidence Synthesis' by Timperley et al (2007), which also calculated effect sizes, arrived at confirmatory findings. A later systematic review by Bell et al (2010) also identified the positive impact which teacher engagement with research had on pupil outcomes. The review identified the barriers teachers experienced in bringing research to bear on their work, including practical obstacles such as time and external support and a lack of research skills.

However, practice on the ground in England did not, for the most part, reflect these characteristics. The 'State of the Nation' review (Pedder et al, 2010) found that most teachers' approaches to CPD tended not to be collaborative, clearly contextualised in classroom practice, or research-informed despite the strong evidence in the literature that these kinds of approaches were effective. And despite the strength of the evidence about the efficacy of coaching, Ofsted (2006; 2010) found that approaches to coaching were generally very weak, often lacking close connections with pupil learning outcomes, or specialist content.

CUREE's evaluation of CPD for TDA (The Training and Development Agency for Schools) (CUREE, 2011) supported Pedder's findings and those of two thematic analyses of the effectiveness of CPD practices carried out by Ofsted (2006; 2010). As Timperley found in New Zealand and the USA,

very little CPD provision offered was sustained for long enough to be likely to benefit pupils and few providers undertook an initial needs analysis of the participants, so were not in a position to personalise learning. The evaluation suggested that needs analysis for teacher professional learning gets lost in most external CPD provision (including provision by other schools). It also seldom features in programmes of internal support for professional learning in schools that have not yet established a pedagogy for teacher learning that connects with their pedagogy for pupil learning. CUREE's more recent (SKEIN) work with schools is starting to build a picture of practices that are effective in this area, and in a number of other areas highlighted as shortcomings in the TDA evaluation (Cordingley & Buckler, forthcoming paper for BERA, 2012). Emerging strengths in specific schools include structuring collaboration as a strategy for embedding learning in everyday practice and ways of linking pupil and staff learning, both as a focus for professional development and for evaluating its impact on pupils.

This report describes what we know about effective professional development and learning for teachers and leaders. It is based on a synthesis of the literature reviews described above, and a synthesis of findings from a selection of other studies and international reviews of CPD relevant to practical questions raised by colleagues in Pearson exploring the design of a long term, far reaching approach to supporting professional development in schools. It therefore attempts to set alongside what we know about professional learning for teachers and school leaders, key messages about what we do and don't know about the relative merits of delivery media, including combinations of online and face-to-face learning. The evidence underpinning each of the three components is of decreasing strength, partly because research and practice in the three fields is of variable maturity, and partly because of what could be achieved with the resources available and timeframe. The evidence for the last theme, mode of delivery, is especially light touch and there is a need for further research in this area.

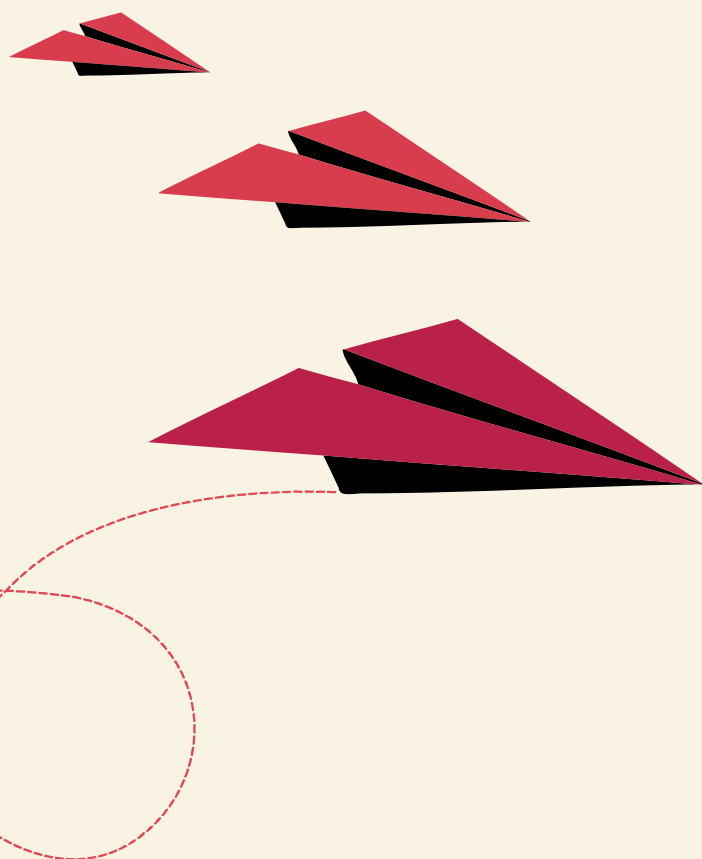
The report is structured around the questions posed by Pearson in relation to the strategic development of their work on CPD and distinguishes between the delivery of CPD (the offer made to professional learners by others in support of their learning) and the professional learning experiences of participants (what professional learners work through as part of their professional learning journey). Where we have indicated that more research is needed, this is because in the available time we took a connoisseurial approach to the literature searches rather than a systematic and comprehensive approach. That we discovered no reliable evidence through these means does not mean that there is none.

What models of professional learning delivery for TEACHERS are more likely to improve student outcomes?

Collaborative enquiry oriented learning

Taken together the meta-analyses described above found that effective CPD involved:

- enquiry oriented learning activities spread over (usually) two terms or more;
- peer support to embed new practices and support risk taking;
- professional dialogue rooted directly in evidence from trying out new things and focused on understanding why things do and don't work in order to build an underpinning rationale (also known as 'professional reflection');



- carefully targeted (usually external) specialist expertise including the selection of high leverage strategies, modelling them, the provision of support via observation and debriefing and gradual transfer of control over learning to the teachers involved;
- learning to learn from observing the practice of others;
- ambitious goals set in the context of aspirations for pupils.

Such practices are found in many combinations under many different labels but at their best they tend to be configured under the labels of coaching and mentoring, collaborative enquiry and, more recently, joint practice development.

Additionally, we have found a number of international and UK-based studies which help to expand, build understanding or reinforce this knowledge base about effective CPD which impacts on student outcomes.

A focus on student outcomes

The importance of focusing on student outcomes is reinforced by Parr & Timperley (2010), Yoon et al (2007), Professional Practitioner Use of Research Review (2010) and Darling-Hammond et al (2007).

Action research

Action research is a powerful lens for reflective practice. It can be a successful mechanism for helping teachers translate their professional development experiences and project themes into their practice and to explore the impact on student achievement (Professional Practitioner Use of Research Review, 2010; Timperley, 2006; Crippen et al, 2010). But teachers need support in building their skills in collecting evidence about student progress (Parr & Timperley, 2010; Professional Practitioner Use of Research Review, 2010).

Coaching and mentoring

In the many guises described above, coaching and mentoring emerge as key variables in contextualising CPD for practice, especially for new teachers/leaders (Earley et al, 2011; Vanderburg & Stephens, 2010). Among other things, coaching helps develop a sense of agency by empowering practitioners to take risks and try new teaching practices. It also helps teachers focus on a curriculum driven by the needs of their students rather than a curriculum of 'coverage'. Coaches' support, encourage, facilitate, demonstrate and are accessible. Bolam & Weindling (meta analysis of CPD research, 2006) found mentoring and coaching to be a key component of effective CPD. Kretlow & Bartholomew (2010) found that coaching can promote high fidelity of evidence-based practices from training settings to real classroom settings. They emphasised the importance of using observations – including, teachers learning to learn from observing the practice of others – plus a combination of some sort of instructive training and individualised follow-up coaching. The importance of providing resources and materials is also highlighted (Lee et al, 2008; Robinson et al, 2009).



Networks

There is a long history of collaboration between schools to improve pupil outcomes in the UK and internationally (Lieberman, 2000; McLaughlin & Talbert, 2006). A number of evaluations of individual interventions have identified gains in pupil achievement, but many are small and thinly evidenced. Bell et al's (2006) systematic review found that networks can be highly effective vehicles for improving teaching, learning and attainment. CPD, together with the moral purpose that flows from a clear focus on particular outcomes for identified groups of students, was found to be the key to effective learning networks. The formulation of partnerships and use of external expertise, matched to network needs, directly supports the achievement of network goals, and thus impacts on pupil learning. Highly effective networks attended more to the quality of the collaboration than to the size of the network, and were organised and structured to include everyone who had a contribution to make to reach the network's goals.

The Excellence in Cities (EiC) programme was found to be linked with improvement for pupils in underperforming schools (Ridely & Benton, 2004). Ofsted (2003) found that the Education Action Zone (EAZ) and EiC programmes were linked with raised pupil aspirations, confidence and self-esteem in disadvantaged areas. The external evaluation of the NLC programme showed improved outcomes for certain pupils in specific areas of the curriculum (Earl et al, 2006). Recent examinations of federations, (Lindsay et al, 2007; Chapman et al, 2009) have also highlighted potential benefits for both pupils and staff.

Sustained over time

Since the meta reviews discussed earlier found sustained CPD to be a key characteristic of effectiveness, further strong evidence of the effectiveness of sustained programmes has emerged. Darling-Hammond et al (2007) found that an average of 49 hours spent on staff CPD

over a year boosted student achievement by 21 percentile points, whereas more limited time (5–14 hours) showed no statistically significant effect on student learning. Teachers who received 80 or more hours of professional development were significantly more likely to put the given teaching strategies into practice than teachers who had participated for fewer hours. This emphasis on sustained interventions is supported by many other studies, including Wasik & Hindman (2011), Yoon et al (2007) and Tabernik & Williams (2010).

Related to practice

Whilst earlier research focused mostly on the design of the delivery of the CPD, the more recent MTL Technical Research Report (2009) found that professional learning is more likely to take place when delivery models take account of the needs of professional learners in the context of the day-to-day concerns and aspirations of practitioners, the organisations they work in and the importance of the learning environment or context in which the work-based professional is set. Kretlow & Bartholomew's (2010) review also found that effective CPD needs to be strongly related to teachers' own contexts.

Theory and practice

The MTL (2009) report highlighted that CPD delivery needs to create opportunities for drawing on a wide range of sources of knowledge to develop the understanding of the thinking that underpins new practice. Building the theory and practice together was also emphasised by Timperley (2011) and Cordingley (2007).

Kuijpers et al (2010) and MTL (2009) stressed the importance of recognising that professional development models are not linear structures and that they need to conceive progression in different ways, as an iterative rather than a linear practice, whereby teachers master the practicalities of teaching and learning as well as increasing their reflective skills and control over their learning and commitment to it.

Structured dialogue and group work

Kretlow & Bartholomew's (2010) review found that for CPD to be successful (and impact on student outcomes) it needs to be delivered in small groups, to provide multiple opportunities to practice and discuss feedback. Wasik & Hindman (2011) also emphasised the importance of using evidence-based group work techniques to structure reflective dialogue.

CPD should align with school improvement priorities and goals (Cordingley, 2007; Darling-Hammond et al, 2007).

What models of professional learning delivery for LEADERS are more likely to improve student outcomes?

As would be expected, the characteristics of effective professional development delivery for leadership development bear many similarities to those for pedagogic development. Most notable differences are to be found in the evidence about the importance of external sources of peer support for leaders, the evidence about leadership dimensions which have a positive impact on student learning and the flexibility/non-linearity required of such programmes. In general, the literature on professional development for leaders tends to be less detailed on the design of learning experiences and to concentrate more on structural aspects of programme design.

Leadership capacities

After classroom teaching we know that school leadership is the second most important factor in student achievement (Leithwood et al, 2008). We also know (Robinson et al, 2009) that the most statistically significant aspect of school leadership which impacts positively on student outcomes is promoting and participating in teacher learning and development.

Other aspects of leadership impacting on student outcomes: (As a general guide, anything below ES (effect size) 0.2 shows a weak or no effect, and anything greater than ES 0.6 reveals a significant impact.)

- promoting and participating in teacher learning and development (ES 0.84);
- planning, coordinating and evaluating teaching and the curriculum (ES 0.42);
- establishing goals and expectations (ES 0.35);
- strategic resourcing (ES 0.34);
- ensuring an orderly and supportive environment (ES 0.27).

Three dimensions are not assigned an effect size, but are nevertheless derived from descriptions of leadership activity in studies of professional learning interventions which had a positive impact on student outcomes. These were:

- creating educationally powerful connections;
- engaging in constructive problem talk;
- selecting, developing, and using smart tools.

Although Robinson's findings relate to the nature of effective leadership actions, the strength of her evidence about the leadership of professional development and learning has important implications for the design and content of professional learning for leaders. In effect Robinson's evidence suggests that for school leaders, it is important to approach their role as though their teachers are "their class". In that case, many of the findings about effective delivery of CPD are likely to also apply to leadership learning about the leadership of CPD.

Pre-programme planning

Darling-Hammond et al's review (2007) found that recruitment and selection were central to effective programme design rather than incidental activities. They found that the knowledge and skills of those who enter a programme determine to a great extent what kind of curriculum can be effective and what kind of leader will emerge. Kochan et al (2002) also emphasises the learners' motivation in leadership professional development programmes, and the need to give school leaders a role in directing their own professional development.



Both Darling-Hammond et al (2007) and Kochan et al (2002) draw attention to the use of effective professional development standards when designing and delivering professional development for school leaders. They suggest that professional standards can provide an important tool for strengthening the focus on the leadership of learning.

Drawing on external support

- networking

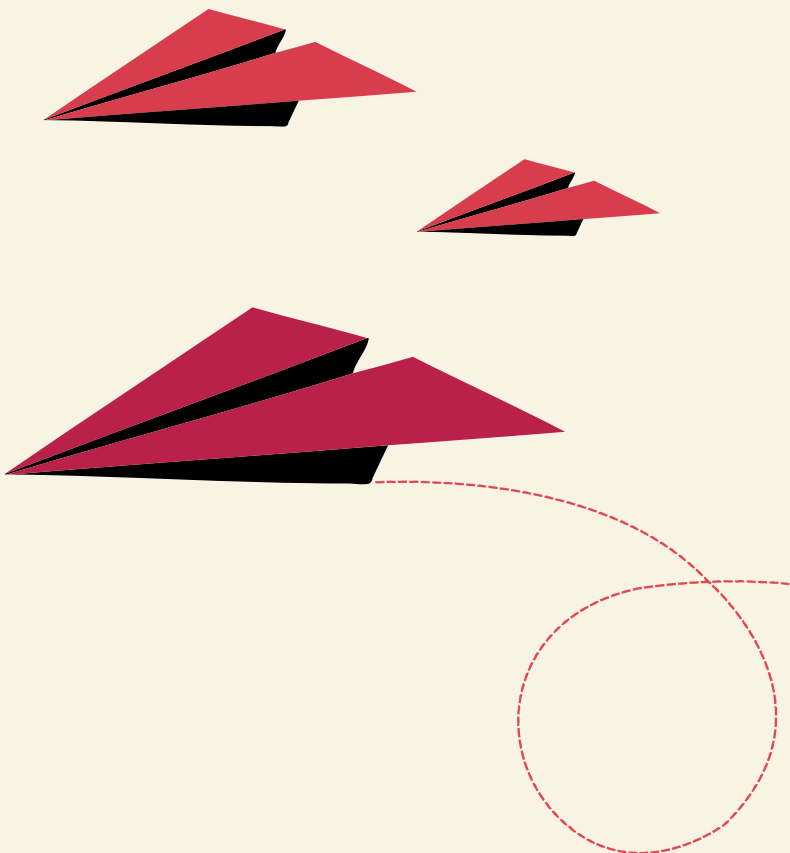
Networking is a common theme in studies of effective leadership CPD. MacBeath's (2011) Scottish research cites the importance of collaborative networks which focus on the development of practice, problem solving and sharing learning. This is supported by Earley et al (2011). Existing research into collaboration in the UK and internationally has demonstrated positive impacts on individual leaders, leadership approaches and leadership capacity, ranging from improved capacity to manage change (Ofsted, 2003), greater experimentation with leadership approaches (NFER & LSE, 2004) and augmented leadership opportunities (Lieberman & Grolnick, 1996). Negative impacts of networking include additional workload and pressure (Hadfield & Chapman, 2009). The research also highlights failures amongst many collaborations and the contributory role of leadership.

- coaching, mentoring and peer support

Coaching and mentoring opportunities form another common theme in the research about leadership development (Kochan et al, 2002; Vanderburg & Stephens, 2010).

Mackenzie & Marnik (2008) highlights the benefits for support in developing expertise in planning, reflecting, problem-solving and decision making. MacBeath (2011) highlights opportunities to review, reflect and develop personal leadership practice and learn from practice in other organisational contexts, including formal programmes and frameworks to support progression and research projects which contribute new learning. Programmes with fixed starts, end dates and linear timetables are increasingly seen as inappropriate for leaders working in relentless pressure environments. Earley et al (2011) cited the effectiveness of a personal mentor (experienced head) for the first few years of headship and of a culture of coaching and mentoring, especially for new teachers/leaders.

Critical friends, partnerships and groups are also highlighted in the research. MacBeath (2011) emphasises that leaders benefit from a source of ongoing [peer] support which is able to enter into their intellectual and emotional frame of reference and is able to help extend and redefine the borders within which their experience is conceived. "Headteachers benefit from a listening ear, a trusted source and a degree of challenge which pushes them beyond their comfort zone to a new level of awareness and self-consciousness."



Relating learning to context

In 2008, a consultation between NCSL and school leaders on future leadership development emphasised the demand for more practical and work-based development in four core curriculum areas: the leadership of learning; outward facing leadership; growing leaders and the leadership of change.

Levine's (2005) review of school leadership CPD programmes found few strong programmes in the US. He found NCSL programmes in the UK to be strongest because:

- their purpose is explicit, focusing on the education of practicing school leaders;
- goals reflect the needs of today's leaders, schools and children;
- success is tied to student learning;
- the curriculum is rigorous and organised to teach the skills and knowledge needed by leaders at specific types of schools and at the various stages of their careers.

As with the research into teacher CPD, the leadership research also highlights the importance of tools, routines and structures and of building theory and practice together (Timperley, 2008; 2011).

What types of professional learning experiences for TEACHERS are more likely to improve student outcomes?

Timperley et al's (2007) Best Evidence Synthesis distinguishes between professional development (processes and activities designed to enhance the professional knowledge, skills and attitudes of educators to improve the learning of students) and professional learning (an internal process through which individuals create professional knowledge). However, many of the design elements in the delivery of effective CPD are closely linked to the learning experiences of the participants. These include listening to/watching presentation or instruction; immersion in inquiry, analysis and synthesis; problem-solving and role play; planning, practising, experimenting, adapting, reviewing and debriefing.

Neuman & Wright (2010) describe CPD as a "dynamic process" that requires teachers to be reflective and open to new practices with the overriding goal of improving instruction for children. Kretlow & Bartholomew (2010) lists some of the learning experiences in acquiring new skills as deriving from modelling and systematic prompting, guided practice and active engagement.

Research for the 2009 MTL Technical Report found that professional learning experiences should:

- be embedded in teachers' practice;
- incorporate a synthesis of workplace learning which is context specific and of learning from other sources which are relatively context-free theories and concepts;
- be supported, for example through coaching.

The report highlighted how teachers' identities and dispositions have an impact on their learning and commitment to it, as does the culture of the organisation which creates the learning environment for work-based professional learning. Experiences which help teachers progress in their learning and practices include:

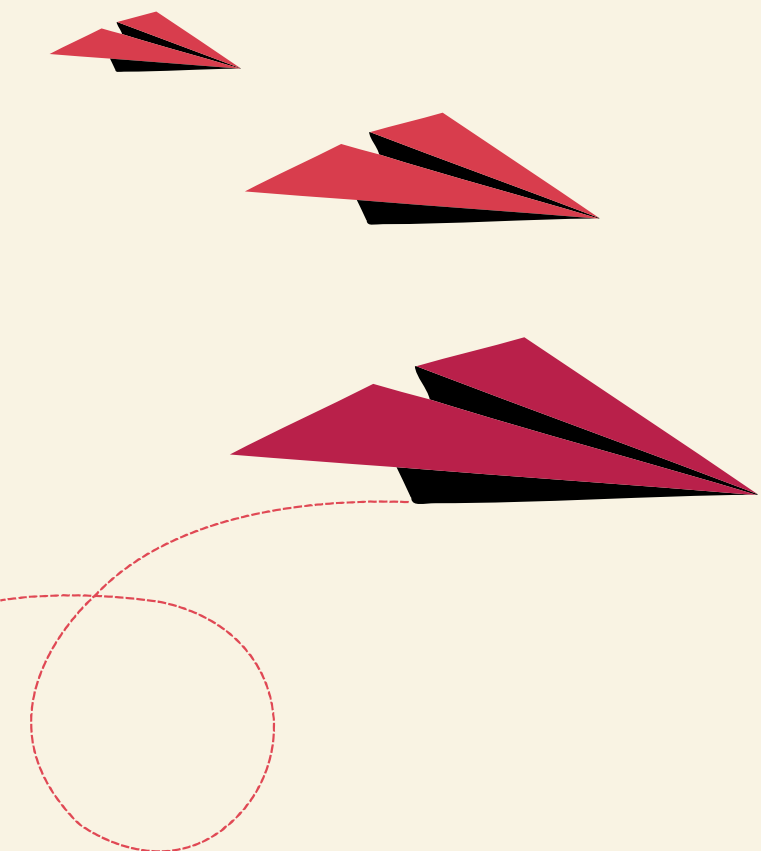
- experimenting and taking appropriate risks;
- analysing and critically reflecting on the evidence and on practice. (Reflecting on practice does not mean talking. It includes teachers experiencing peer observations, focusing on pupil impact; inquiry/experimentation and analysis);
- collaborating with others, including specialists. The positive environment of professional learning communities and other networks of collaborating professionals encourages and supports teacher learning.

Learning experiences in context

MacBeath (2011) found that school leaders both need and benefit from professional programmes attuned to their immediate needs, but of a quality that is intellectually challenging and emotionally satisfying. Day et al (2000) highlighted the need for opportunities for leaders to reflect on their own values, beliefs, competencies and strengths, areas for improvement, and professional goals. Kochan et al (2002) found that leaders' learning was promoted by learning opportunities that engage their creative, critical and reflective capacities in ways that strengthen their own practice and that of other educators. As for teachers, this should include reflection on their practice, review of data-based indicators of school effectiveness and action research.

Professional identity

Kochan et al (2002) emphasised that a leader's disposition toward learning and growth is an important factor in their learning. What principals bring to their learning experiences (personal biography, prior knowledge, experience, values, desire, habits of mind and innate curiosity) greatly influences the quality and outcomes of their professional development. Timperley (2006) also found that leaders often found it difficult to engage with learning for themselves, because they are accustomed to leading rather than learning. This links to Darling-Hammond et al's (2007) emphasis on the importance of recruitment and selection and reinforces the finding from the CUREE CPD evaluation for TDA about the importance of accurate and detailed pre-programme information.



Are some forms of CPD delivery more effective than others for TEACHERS?

The previous sections of this report identify, *inter alia*, those features of CPD provision showing a positive impact on student outcomes. The form of delivery, particularly whether face-to-face or distant/online, did not emerge as a significant feature so we looked for studies which explicitly set out to compare these two main approaches. We found very little work designed specifically to address this comparison, though some studies examining online methods included some measure of comparison with other approaches. We were not able to find in these studies any consistent findings showing that one approach was better than the other in its impact on either the outcomes for the teachers as learners, or the benefits for the teachers' students.

Lebec & Luft (2007) examined student attitudes towards online learning and the influence of the online environment on motivation. Students who indicated a strong inclination for either online or traditional learning reported using resources that reflected this preference. Not only did they find these study aids to be more engaging, but also more valuable in making sense of course concepts.

Those preferring face-to-face learning opportunities cited the lack of an immediate response, as they typically had only short periods of time available and needed immediate feedback/answers, or they had difficulties using the online tools. Motivation was a big issue in encouraging students online, including extrinsic motivation such as credits etc, as was a perceived lack of personal accountability i.e. someone to answer to or consequences for inadequate performance. The research suggests that the 'stress' of face-to-face learning causes students to perform more productively than in an online environment.

The Metiri Group (2009) found mixed and non-conclusive results in studies comparing student achievement of teachers

in test and control groups – online and face-to-face. By contrast, O'Dwyer et al (2010) conducted four randomised trials and found statistically significant evidence of greater impact on teacher practice and student achievement for the Online Professional Development groups (participating in three co-ordinated OPD workshops) than the control groups.

Cady & Rearden (2009) examined the impact of online learning communities in rural schools. They found that teachers cited positive aspects of the online courses as being: able to hear each other talk; listening to others explain problems and being able to interact face-to-face with people from their site. Participants cited not being able to see faces and body language as a negative to the online environment. They also found evidence that online courses can enhance collegiality and reduce isolation for rural teachers.

Herrington et al (2009) examined a CPD model which involved online learning about the intervention/practice, then planning and delivering lessons, refining the lessons and submitting examples of student work to the project manager. The researchers concluded that successful online professional learning is facilitated by and most likely to occur when accurate and descriptive information about the methods, purpose and requirements of the PD programme is available to potential participants.

Accurate description of approaches, methods and programme demands was found in the TDA funded evaluation of the CPD provision of 75 English CPD providers ranging from exam boards and local authorities through to universities, other schools, charities and freelance consultants (CUREE, 2011) to be an important aspect of all CPD programmes, not just online ones. Researcher designed CPD programmes usually pay very close attention to recruitment information and participant needs. This was very often not the case for the CPD provision in the evaluation.





Herrington et al (2009) concluded from their examination that well-designed online modules need to be regularly updated and evaluated, and allow for different backgrounds and prior knowledge of participants. Sufficient time release is needed for learning and evaluating the module, planning the lessons and reflecting on learning. Professional development support should be provided by expert online facilitators.

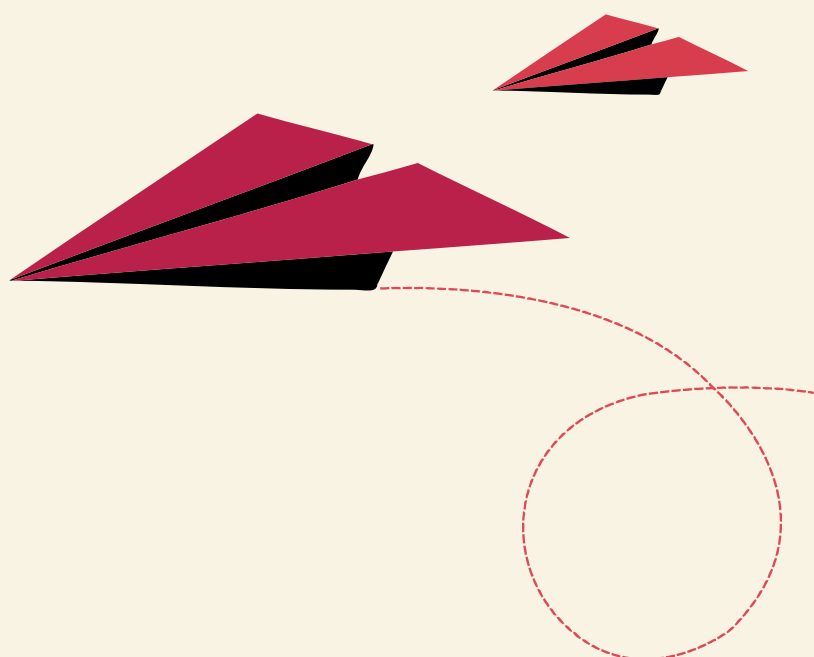
Conclusions

Reading across the different bodies of evidence, and connecting the evidence about both teachers' and leaders' learning in particular, highlights some strong threads and resonances. Just as evidence about the effective facilitation of the learning of young people connects with the evidence about learning for teachers, evidence about teacher learning connects with evidence about leadership learning. The evidence about the role of collaboration, enquiry, structured dialogue and building on learners' starting points are all recognisable in each context even though power relations have profound effects on how such opportunities need to be facilitated.

Reading across the different bodies of evidence explored here also raises interesting questions about synergies and alignment between leadership and teacher development. For example, isn't the care and attention to recruitment and induction into CPD that is highlighted as essential for leaders, also important for teachers? It could certainly be used to advantage in tackling the weak approaches to needs analysis in CPD programmes that is highlighted in the evaluation of National CPD provision for TDA explored above. Similarly, isn't the time and attention given to the integration of new and existing approaches for teachers to ensure effective transfer not also important for leaders? The devolution of powers and responsibilities for leadership development in England at the time of this study provide an important opportunity for exploring this issue.

Pearson's desire to draw together evidence about CPD, professional learning, support for and learning by school leaders and the impact of all of the above on pupils

as a means of preparing for developing a long term and far reaching CPDL offer is timely in other ways. Each of these fields has been effectively researched, analysed and synthesised internationally in recent years. This paper attempts to read across such technical reviews and a number of relevant, complementary high quality studies to answer a series of practical, sometimes operational questions. It would simply not have been achievable ten years ago when the art and science of systematic reviewing of quantitative and qualitative research evidence was only recently settled and researchers had yet to complete the job of technical and systematic weighing and synthesis of the evidence. It is a tribute to their work and to the foresight of many different research review funders that it has been possible to carry out this interpretive synthesis and we are very grateful to all the funders, policy makers, practitioners and researchers on whose shoulders this practically oriented enquiry stands.



“Whoever you are, wherever you are, learning is the best thing you can do to improve yourself. And the best thing we can do to improve learning is to shape it around you to make it work harder for you, to make it fit ”



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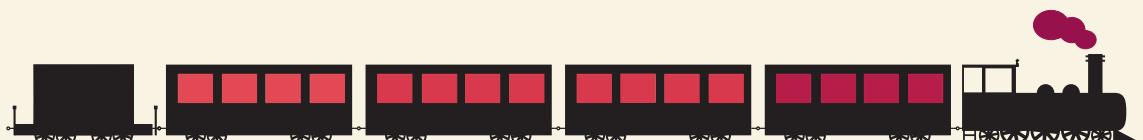
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