Research for Teachers

Teachers' professional learning

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CPD is high on the school improvement agenda. It's also a vital ingredient in the development of teachers' careers and an important aspect of school leadership. Our TLA research summary in February 2004 explored the evidence from a systematic review about effective professional development for teachers - at the time national interest in CPD was growing fast.

For this summary we have summarised and synthesised the findings of two further systematic reviews concerned with CPD conducted by the same review group, which were published online by the Evidence for Policy and Practice Information (EPPI) and Co-ordinating centre in summer 2005 . The General Teaching Council for England supported each of the reviews. One review compared the nature and impact of individual and collaborative CPD. The other compared studies of collaborative CPD that focused only on teachers with studies that explored the effects of CPD on pupils. The aim was to explore similarities and differences between the two and how far evidence about pupils can be inferred from evidence about teachers' responses to CPD.

Evidence from the studies included in the reviews showed the importance of teachers working together to support and sustain the development of their own and their colleagues' practice. The vast majority of the collaborative CPD studies reviewed offered evidence of improvement in pupil learning, often accompanied by positive changes in either pupil behaviour, or their attitudes, or both.

The reviewers concluded that positive teacher, pupil and school outcomes are likely when schools and CPD leaders structure CPD so that it integrates in-school learning with specialist expertise, develops through peer support and provides teachers with opportunities to interpret externally mandated CPD collaboratively in their own contexts.
Practitioners and policy-makers at a number of levels have been using the findings from the first CPD review for some time. Knowing what works best in CPD has been influential in informing the policies underpinning a number of national initiatives in recent years.

Because a large number of studies were included in the two reviews, in each section we've tried to use those

examples that best illustrate the main patterns.

About the terms used
'Collaborative CPD' refers to programmes where there were specific plans to encourage and enable shared learning and support between at least two teacher colleagues on a sustained basis.

'Individually orientated CPD' refers to programmes where there were no explicit plans for the use of collaboration as a learning strategy and/or no activities explicitly designed to support or sustain such collaboration.

'Sustained CPD' refers to programmes that were designed to continue for at least twelve weeks or one term. One-off, one-day or short residential courses with no planned classroom activities as follow-up and/or no plans for building systematically upon existing practice were not included. (This is not to say that these have no impact, of course).

Notes
The National Framework for Mentoring and Coaching framework document can be accessed on the Teacher Development Agency website (see further reading section)
All three systematic reviews of continuing professional development can be found on the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre website (see further reading section).

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Overview

Why is the issue important?

Continuing professional development (CPD) is high on the school improvement agenda. It's also a vital ingredient in the development of teachers' careers, as exemplified by recent national initiatives in coaching and mentoring, and workforce remodelling etc.

What did the research show?

There was strong evidence of the positive impact of collaborative CPD on teaching and learning in terms of:

- positive changes in teachers' practice, attitudes or beliefs
- improvements in pupils' learning and positive changes in either their behaviour, attitudes
- positive changes in teachers' attitudes to their professional development.

By contrast, individually-oriented CPD showed only some evidence of changes in teachers' practices and beliefs, and a modest impact on behaviours and attitudes of pupils rather than on learning outcomes.

How was this achieved?

Many different CPD processes led to positive outcomes, including: specialist support for teachers, peer support or coaching for teachers, identifying CPD focus, encouraging professional dialogue, and sustaining CPD over a long period of time. These core areas include a wide range of associated activities, such as joint planning and curriculum design.

How was the research designed to be trustworthy?

The reviewers sifted systematically over 19,000 titles and abstracts for the reviews. They analysed the reports that both addressed the research questions and met the inclusion criteria using the EPPI Centre's 'data extraction' software. Fourteen studies (11 collaborative and 3 individually oriented) of CPD with pupil outcomes, and 11 studies of collaborative CPD with teacher only outcomes were judged to have a high

enough weight of evidence for synthesis in respect of the research questions.

What are the implications?

The study showed the importance of:

- teachers working together and with experts, to sustain CPD and provide a safe environment for taking risks
- creating opportunities for teachers to engage in shared learning and reflection - in pairs or small groups in their own school contexts.

What do the case studies illustrate?

The case studies explore, for example:

- the importance of professional conversations between teachers that include experimentation and generate reflection
- the use of specialist expertise linked to school based activity
- peer coaching which involved observation, feedback and follow up discussion to interpret shared learning experiences
- factors which influenced the extension and sustaining of CPD over the longer-term.

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Study

What were the main findings of the second and third CPD reviews?

The reviewers compared collaborative CPD (where teachers received support from other teachers from either their own schools or other schools) with individually oriented CPD (which did not use collaboration as a learning strategy). They found strong evidence of the positive impact of collaborative CPD on teaching and learning, including:

- all the studies of collaborative CPD found links between the CPD and positive changes in teachers' practice, attitudes or beliefs
- almost all of the collaborative studies that collected data about student impact reported evidence of improvements in pupils' learning and most also found that there were positive changes in either their behaviour, attitudes or both
- around half the collaborative studies provided evidence that changes in teachers' classroom behaviours were accompanied by positive changes in attitude to their professional development.

By contrast, the studies of individually oriented CPD showed only some evidence of changes in teachers' practices and beliefs, and a modest impact on behaviours and attitudes of pupils rather than on learning outcomes.

The findings from both reviews highlighted the importance of teachers as key players in supporting and sustaining the professional development of themselves and their colleagues through collaborative activities including:

- active experimentation with peer support to help sustain the CPD and to provide a safe environment for taking risks
- working together and with experts to link specialist expertise with day-to-day CPD activities
- creating opportunities for teachers to engage in shared learning and reflection - in pairs or small groups in their own school contexts.

Some interesting features about the studies themselves came to light when the reviewers compared the studies from the different reviews. Studies which evaluated CPD programmes in terms of teacher and pupil outcomes, tended to focus on development of teachers' practice, in the context of the evidence about the curriculum and/or pedagogy involved. They also focused, albeit to a lesser extent, on changes in their attitudes, motivation and beliefs. Where studies collected data only about teacher change, there was a sharper focus on changes in attitudes and beliefs, in addition to evidence of positive changes in teachers' practice.

We explore the findings about the impact and processes of the CPD in the pages that follow.

Which features of CPD were related to positive outcomes?

The characteristics of CPD the reviewers found to have positive outcomes included:

- the use of specialist expertise linked to school based activity
- peer support or coaching, including observation, to provide a safe environment for experimentation
- scope for participants to identify their own CPD focus and starting points
- processes to encourage, extend and structure professional dialogue, reflection and change
- processes for sustaining the CPD over time.

These core areas of CPD included a wide range of associated activities such as, observation and interpretation of shared experiences, joint planning, and curriculum design. There were many examples of these processes in the studies reviewed. The following selection gives a flavour.

Specialist support

This was a feature of all the studies in the reviews and took many forms, but usually involved enabling participants to choose from a menu of research-based approaches and specialists providing consultancy rather than making didactic presentations. One study compared the impact of specialist support (Shapiro et al) with the absence of such support. It found that teachers who did not receive specialist support were less successful 'in designing, implementing or evaluating interventions learned through an in-service program than teachers who had received support'. Once consultancy support was provided the majority of the teachers were highly successful.

What surfaced in many of the studies was the importance of continued support linked to in-school activities after the initial specialist input. These included observation and feedback to inform teachers' development, coaching in new strategies, shared planning, co-teaching, and discussion with teachers to identify starting points and identify areas for development. We explore these activities further below and in later sections of the RoM.

Peer coaching or support

All of the collaborative CPD in the studies involved teachers working to support one another. This helped to create trust, generate commitment, and provide a safe space for experimentation, and usually involved observation and interpretation of shared experiences closely geared to learning. For example, in the Swafford et al study, teachers improved their literacy teaching, grew in confidence and became more reflective about their practice. Collaborative working ran through all the studies except for the three studies of individually oriented CPD. The author of one of the latter studies (Ross) suggested that the absence of collaborative opportunities for the teachers was a weakness in the CPD and could account for the lack of impact.

Identifying CPD focus and starting points

Coaching and collaborative enquiry were common strategies for enabling this. Henson's study provides a typical example of teacher action research which helped teachers identify their own focus for developing strategies aimed at improving on-task behaviour. Collaboration appeared to make teachers feel that together they could bring about positive change for their students, and so helped them to overcome their own personal barriers to change.

Encouraging professional dialogue, reflection and change

Collaboration appeared to be a key factor in promoting and sustaining professional development. Teachers in Xu's study collaborated around portfolios. In another study (Lin, P.J.) teachers collaborated through shared

observation and reflection.

Motivating teachers and sustaining the CPD over time

In most of the studies teachers took part in the CPD intervention voluntarily. But even when they didn't, they came to feel a sense of ownership and commitment through learning with their colleagues. It seemed that collaboration combined with the acquisition of new knowledge made them feel more positive about professional learning. Additionally, and crucially, collaboration producing in teachers a strong sense of not wanting to let other teachers down was often reported.

Practitioners may like to read case study 1 from the north-east of England that explored factors which influenced the extension and sustaining of CPD over the longer-term. In the case study the authors suggest that teachers were motivated to continue with the CPD over the long term by focusing on benefits for pupils rather than teacher development per se.

How did CPD providers combine the different elements of CPD?

The reviewers' analysis of the CPD processes revealed a spectrum of collaborative activity:

- teachers reflecting on their practice
- learning from theory or other people's research
- structured professional dialogue
- shared planning as a learning activity
- experimentation with new strategies and approaches.

Most of the CPD programmes explored in the reviews involved reflection and some core activities from the action end of the spectrum. They all involved structured professional dialogue as a learning strategy, often backed by direct use of theory and research evidence. The use of planning as a learning activity to bridge theory, reflection, practice and experimentation was evident in the majority of studies.

The Appalachia study illustrates a number of these features at work. It reported the findings of the large-scale QUILT project, which was designed to help improve teachers' questioning and students' answering techniques. This programme provided teachers with the background research and theory underpinning the CPD. It also offered teachers the opportunity to translate the aims and processes of the CPD into their own contexts. To do this, the project gave teachers a framework to help them identify their own starting-point by inquiring into, and reflecting on, their practice. Peer support was built into the programme, offering teachers a safe environment in which to reflect on and analyse their practice and to experiment with new approaches.

A thread connecting much of the CPD reviewed was the linking of experimentation and reflection, in which the latter gave the teachers the key insights into what to do next. Indeed, the second EPPI review provided some evidence to suggest that reflection without experimentation was not linked with positive outcomes for students. In one study (Lin, P.J.), for example, classroom observation by the teachers and specialist together acted as a springboard for collaborative reflection followed by experimentation. In the words of the author, 'the researcher acted as a partner to the teachers in helping them put ideas generated in discussion into practice.'

Practitioners may like to read a teacher case study (2) which focused on the importance of professional conversations, reflection and experimentation among peers in a history department. Prolonged cycles of professional interactions helped teachers to try out new ways of tackling problems, such as designing coursework.

How did teachers change their practice during and after the CPD?

The studies included in the reviews reported how the teachers underwent intense periods of professional

learning and reflection which enabled them to develop, to varying degrees:

- the willingness and ability to make changes to practice
- deeper knowledge and understanding of the subject matter
- a wider repertoire of strategies and the ability to choose when to use them.

We give some specific examples of the changes teachers made to their practice below.

Increasing teachers' expertise in questioning

The Appalachia study reported CPD which helped to bring about positive changes in teachers' questioning and students' answering styles - the teachers posed more questions at higher cognitive levels and adopted a policy of 'wait time' in relation to students' answers. (Practitioners can find out about questioning techniques and wait time in our earlier RoM about assessment for learning.)
Becoming facilitators, guides and co-learners

In Jacobsen's study, teachers adopted a less 'telling' style of teaching. This was a commonly described outcome of the CPD being studied. Instead of being a controller and dispenser of information, using a stand and deliver format based on information transfer, the teacher became more of a facilitator, guide and co-learner and co-investigator.
Developing enquiry-based learning

Goodell et al's evaluation of the large-scale Project Discovery mathematics programme reported that teachers absorbed the methods of enquiry teaching. One teacher commented, 'I look at everything I teach now - every lesson that I have - wondering how I can do this in an enquiry method...'

Developing new strategies for including pupils with special educational needs

The teachers in Vaughn et al's study found the new literacy strategies such as 'Classwide Peer Tutoring' very helpful when it came to including students with special educational needs. They also benefited from learning skills in organising effective group work designed to facilitate inclusion.

What affective changes among teachers were linked to the CPD?

Evidence from both reviews, but particularly the third review, which focused on the impact of CPD programmes on teachers, showed that the CPD had an impact on affective aspects of professional learning as well as on teaching. Such impact relates to teachers' confidence, attitudes and motivation, including their disposition to working with others and to their own professional learning. All of the teacher focused studies reported observed and self-reported changes in at least one affective aspect of professional learning, including:

- increased motivation
- increased confidence
- changes in attitudes to teaching and learning.

The selection of studies that follow will give readers an idea of the range of ways in which teachers benefited in the more personal areas of professional learning.

Increased motivation

Teachers in the Vaughn et al study felt motivated by the improvements they perceived in their students' learning and were keen to continue with the CPD project in the following year so that they could continue to learn new strategies. Xu noted how teachers developed a renewed 'sense of purpose' and felt 'energised' to take risks and to examine their practices on an ongoing basis as they engaged in collaboration and reflection with colleagues.

Increased confidence

Swafford et al's study reported how, "After a year they are all more confident about the methods they use, their understanding of why methods are powerful and the decisions they make." Another study (Greenwood and Haury) showed how a CPD programme based on enquiry methods had increased confidence and positive attitudes towards science teaching amongst primary teachers, many of whom who had little experience of science teaching. One of the teachers commented: 'My background was in English. I tried to avoid science. Now I think this approach is wonderful - I realise it's OK not to know the answers - it's OK to make mistakes and learn from them.'

Changes in attitudes and beliefs about teaching and learning

Evidence reported in Farmer et al's study showed that teachers changed their attitudes and beliefs about what constituted 'good' mathematics teaching and became more thoughtful and self-critical during the course of the CPD. Teachers in the Goodell et al study who took part in the 'Mathematics Project Discovery' programme were much more concerned with issues about 'How I teach' and 'What my students do' than the non-programme teachers.

Practitioners may like to read case study 3 which explored changes in teachers' views and behaviour that were related to collaboration and teacher development.

Were improvements in pupils' learning linked to the CPD?

The studies analysed in the second review all contained evidence relating to pupil learning. The findings from the studies included:

- improved attitudes and increased confidence
- gains in learning and attainment
- responding to questions at a higher cognitive level
- using collaboration and dialogue for learning.

Among the large number of studies in the second review there were many examples of benefits for students. The following examples will give readers a snapshot of the main ones.

Improved attitudes and increased confidence

Evidence showed that improvements in learning and increased motivation often went hand in hand. In Zetlin et al's study, 'at risk' students became enthusiastic about learning to read and write and made greater progress than expected. Their confidence also improved and they developed skills for relating to their peers more effectively.

Learning gains

McCutchen et al studied the impact of a phonology CPD programme on teacher and pupil learning in the early stages of primary school. They found that kindergarten age pupils in the experimental group improved their letter production significantly in comparison to a control group of children. In the same study children in Year 1 showed significant all-round improvements in phonological awareness, reading comprehension, reading vocabulary, spelling and composition. Practitioners may like to read a case study we featured in our earlier RoM summary of the first EPPI CPD review, which describes how four middle school teachers collaborated to improve their teaching and the impact this had on their pupils' learning.

Responding to questions at higher cognitive levels

There was evidence that when teachers adopted more open-ended questioning, students engaged in higher

order thinking. Students of teachers who participated in the treatment group in the Appalachia CPD programme, aimed at improving questioning and answering skills, showed an increase in the number of answers at a high cognitive level, when compared with students of non-treatment teachers.
Using collaboration and dialogue for learning

There was evidence that students developed learning habits involving more collaboration and dialogue with teachers and each other. For example, one study (Lin, S.W.) reported that students responded positively to new teaching schemes based on collaborative approaches to learning science. The students reported that they found learning easier, took a more active role in designing experiments and expressed increased enjoyment in science.

Practitioners may like to read case study 4 which illustrates how a group of teachers worked together with researchers to improve children's communication skills and involvement in learning.

How did specialists work with teachers?

The reviews found evidence that suggested there was a link between a positive impact on teaching and learning and the provision of a mix of teacher-to-teacher collaboration plus input and support from specialists. The use of specialist expertise took a number of forms including:

- instruction by the specialists
- continued support during the intervention
- observation and feedback
- coaching in new techniques and strategies.

Instruction by specialists

The extent and nature of the instruction provided by specialists varied considerably. In the case of individually oriented CPD the instruction tended to occur through the life of the intervention. For example one study, (Morin and Fraser), involved five days of instruction over the ten-week period of the CPD. Most instruction in the case of collaborative CPD was at the beginning. Specialists used these initial sessions to introduce or even immerse teachers in the strategies, usually through a combination of instruction, modelling and discussion. For example in Greenwood and Haury's study specialist expertise in enquiry approaches to science teaching were presented in an initial 'science institute'. Peer collaboration was then introduced to sustain the work and embed it.

Regular support

The intense initial inputs in the collaborative studies, were followed by less directive specialist support throughout the studies. In one study (McCutchen et al.), initial instruction was followed up with regular classroom visits where the researchers observed and discussed teachers' implementation of the teaching strategies. The researchers shared assessment information about their pupils and consulted with the teachers about their implementation of the recommended strategies. This was a typical pattern of support.

Observation and feedback

Observation and feedback was a feature of the majority of studies. In many cases, the researcher used observation to explore the way teachers were implementing new strategies, then provided helpful feedback for the teacher. In some cases observation and feedback took place in the context of peer collaboration (see next section). Another approach occurred when the specialist and peer teachers carried out the observation and feedback together, such as in the Lin, P. J. study. Here classroom observation of each teacher by the other teachers and the researcher were used as basis for stimulating feedback and reflection. The researcher played a lead part in this, but all the teachers participated in reflection and discussion about pupils' learning.

Coaching in new techniques and strategies

This was a feature of many of the studies. Even studies that didn't call activities 'coaching' included processes that were very similar. Vaughn et al described how researchers who were specialists in teaching students with learning disabilities worked with, and co-taught with, participant teachers in order to help them adopt new practices for teaching literacy in inclusive classrooms. In Jacobsen's study, the Galileo network technology specialists led professional conversations with teachers to build on, and extend, their understanding of key issues related to teaching and learning in technology. Practitioners can find out more about this study in case study 5.

How did teachers coach and/or support each other?

Peer support was an explicit feature of effective CPD in all but one of the collaborative studies included in the reviews. This confirmed the pattern established in the first review, which found that peer support was a key ingredient of nearly all of the studies where CPD was linked to positive pupil and teacher outcomes. By supporting each other, teachers helped to create a safe space for experimentation with new practice. Experimentation emerged from the second review studies as a factor, which when informed by reflection, became a significant driving force for teacher change.

In-school support

Most studies described a process by which teachers were supported by teachers in their own schools. An exception was Anderson's study, which compared the effects of teacher support from teachers within their own schools with support provided by teachers from other schools. The teachers who made the strongest progress were either peer taught by department heads or worked with peer (i.e. in this study, previously trained) teachers in their own schools. He hypothesised that the relative differences he found between the progress teachers made was directly linked to the extent and nature of the peer support teachers enjoyed during the course of the intervention.

Peer coaching

Peer coaching was a major element in many studies. For example, Lloyd et al's study aimed to improve primary teachers' science process skills and featured extensive support in which participant teachers were paired in order to plan together, teach, observe and review each other's progress in their own classrooms. In McLymont's study the CPD aimed to improve students' learning of mathematics by moving teachers from a telling style to one in which the teachers were facilitators of learning. They learned how to work in pairs as reciprocal coaches while they developed and tried out new teaching strategies.

Peer coaching invariably involved observation and feedback or follow up discussion to interpret shared learning experiences. For example, it played a key part in Swafford et al's study in which teachers' development was aimed at the adoption of a new literacy framework. The CPD was most effective when coaches provided feedback immediately after the lesson. Practitioners can find out more about this study in case study 6.

How did teachers take ownership of the CPD?

In the individually oriented CPD studies, the focus of the intervention was determined prior to the start of the CPD and did not allow teachers scope to focus on a curriculum area or issue of their own choice. For example, all the teachers in the Mink and Fraser study used SMILE (Science and Math Integrated with Literacy Experiences) to develop mathematics learning, and to make teachers feel more confident about involving pupils.

All of the collaborative CPD studies involved consultation with teachers. This took several forms, but the most common was to find out what the teachers knew and could do already. The CPD programmes gave teachers the opportunity to take some ownership of their CPD in a number of ways including:

- helping teachers identify their own starting points for the CPD
- planning the pace and scope of the CPD
- giving teachers the opportunity for local leadership.

Identifying starting points

The majority of the collaborative studies were carefully constructed to give teachers choice within a broad area of curriculum or pedagogy. For example, teachers in the Jacobsen technology study selected the curriculum focus of the CPD, following which the specialist provided support and acted as a critical friend when teachers analysed their own practice.

Planning the pace and scope

In Anderson's study of CPD (which aimed at introducing new literacy strategies) every effort was made to make teachers feel at home with the CPD. The new strategies were introduced in stages, the teachers were asked which change strategies they would feel most comfortable with, and which areas they felt they needed support in as the CPD unfolded.

Taking local ownership

In over half the studies it appeared that teachers themselves took on at least some aspects of the CPD. Evidence from the studies suggested this was classroom level leadership within a strategic framework. For example, in one study (Lin S.W.), whilst the researchers provided strategic leadership about the direction and aims of the CPD, teachers took local leadership in their classrooms in deciding with whom and when to develop and test new curriculum materials. In Henson's study, external mentors from another school facilitated group meetings of teachers. The aim was to gradually offer the teachers the opportunity to take the lead themselves.

How did the reviewers carry out their systematic reviews?

The Review Group consisted of policy-makers, academics, teachers, ITT practitioners and providers. Rigorous research methods were used in both reviews. The process involved:

- defining explicit review questions which led to a set of criteria that defined the type and scope of studies to be included
- searching electronic databases (such as the British Education Index) for citations, handsearching key journals and trawling websites such as the DfES, NFER and University websites
- screening the studies found according to a number of criteria, such as whether they were designed to meet explicit learning objectives
- keywording studies (such as type of study, type of setting, age, curriculum focus) that fulfilled the criteria
- re-screening these studies according to a second set of criteria to narrow the focus of the review
- extracting data from reports that met the second set of criteria by means of a set of questions designed to draw out details such as the aims and methods of the study. Two reviewers worked independently and resolved any disagreements through discussion
- synthesising the evidence to answer the review questions.

The reviewers sifted systematically over 19,000 titles and abstracts for the reviews. Reports that (i) addressed the research question(s); (ii) met the inclusion criteria used by the reviewers were analysed using the EPPI Centre's 'data extraction' software. For the purposes of the reviews summarised in this RoM, 14 studies (11 collaborative and 3 individually oriented) of CPD with pupil outcomes, and 11 studies of collaborative CPD with teacher only outcomes were judged to have a high enough weight of evidence for synthesis in respect of the research questions respectively.

The questions for the two reviews were as follows.

Review 2:

- How do (1) collaborative and sustained CPD and (2) sustained but not collaborative CPD affect teaching and learning?
- Sub-question: How do the findings from (1) and (2) compare?

Review 3:

- What do teacher impact data tell us about collaborative CPD?
- Sub-question: How do the studies of CPD based on teacher only impact differ from those which focus on teacher and pupil outcomes?

What are the implications for practitioners?

School leaders and CPD leaders may like to consider the following implications:

The evidence in the reviews suggests that collaboration is an effective way of securing teacher commitment to professional learning when it results from national policy or a whole-school initiative. Could you provide more regular and structured opportunities on CPD programmes for collaboration as a means of linking personal and broader objectives?
A combination of specialist expertise and peer support was a consistent feature of effective collaborative CPD. Could you consider inviting specialist help, such as practitioners from university education departments or other schools to help with professional development programmes in your school?
The reviews established that collaboration between teachers based on active experimentation is effective. Could you set up opportunities for teachers to choose a shared focus for experimentation in their classrooms so that they can offer each other support and reflect together on their experiences?
Case study 2 showed that interacting with each other about professional matters is important for teachers' professional development. Could you do more to actively encourage your colleagues to develop their professional relationships with each other, by for example, encouraging them to plan lessons, and schemes of work collaboratively and to debrief the effects of the planning together as a form of professional learning?

Teachers may like to consider the following implications for practice in acting out the messages of this study:

- Individually oriented CPD, such as postgraduate courses, could have a greater impact on teachers' development if it is followed up by some collaborative activities. In such situations could you seek opportunities to collaborate with your colleagues, perhaps by setting aside time for shared planning or talking together about experiences arising from the CPD?
- Peer coaching was found to be very effective in case study 6 for developing teachers in a new literacy curriculum. Could you identify a colleague who is tackling a sustained change in approach who would like to work as your partner in the learning process?
- Case study 3 described how portfolios in which teachers identified issues of concern to them and explained how they tried to tackle them became a focus for collaboration, reflection and professional learning. Could you try this approach in your department or team in order to create a means of professional development which would be manageable for you and your colleagues?

The evidence suggests that a major implication for policy is that collaboration is an effective way of securing teacher commitment to professional learning even when it results from national policy rather than a school initiative. CPD providers might want to consider whether, in designing CPD, teachers could be provided with opportunities to interpret such externally mandated professional learning in their own context.

Filling in the gaps

Gaps that are uncovered in a piece of research also have a useful role in making sure that future research builds cumulatively on what is known. But research also needs to inform practice, so practitioners' interpretation of the gaps and follow-up questions are crucial. We think the following kinds of studies would usefully supplement the findings of the reviews:

- evaluation studies which include information both about the pedagogy underpinning the aims of the CPD and the CPD

processes engaged in by the teachers to help users make the most of the evidence
- studies designed to investigate which characteristics of collaborative CPD (identified by the reviews as active experimentation with peer support, specialist expertise linked with in-school activity, opportunities for teachers to engage in shared learning and reflection in pairs or small groups) are key
- studies which explore how teacher development is sustained over the longer term - as the evidence suggests that teacher practice which is aimed at having an impact on pupil learning is often short term (typically less than one year), whilst the evidence from studies evaluating changes in teachers' attitudes and beliefs points to longer time scales.

The involvement of external specialists was identified in all the studies of CPD as linked to positive changes in teaching and learning. In order to explore this issue further the review group is now undertaking a fourth systematic review of CPD for teachers of pupils in the 5-16 years age range.

What is your experience?

Do you have any evidence about successful professional development in your school? Do you have action research or enquiry based development programmes running that explore, for example, group learning in science, learning writing in key stage 1 or integrating ICT into the curriculum at key stage 3? We would be interested to hear about examples of effective CPD, which we could perhaps feature in our case study section.

Your feedback

Have you found this study to be useful? Have you used any aspect of this research in your own classroom teaching practice? We would like to hear your feedback on this study. Click on the link below to share your views with us.
research@gtce.org.uk

References

We list below the full reference details for the individual studies from the reviews which we have included in our RoM summary. We have not included all the studies from the reviews in the RoM, but provide a representative range of examples of the CPD processes and outcomes the reviewers found. Whilst the majority of the studies came from the United States, they refer to strategies and contexts which teachers in England will be familiar with. The reviewers' search strategy involved casting a wide net in this complex field. The studies they selected represent those that conformed to a particular set of criteria which was relevant to the aims of the reviews. This is not to say excluded studies did not contain useful information. Practitioners wishing to read the original studies will be able to locate them via educational research databases, such as the British Library and the (American) Educational Resources Information Center.

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Xu J (2003) 'Promoting school-centered professional development through teaching portfolios: a case study.' *Journal of Teacher Education* 54: 347-361.

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Case studies

We have chosen the following case studies to illustrate key aspects of CPD identified by the reviews. The first two case studies describe investigations carried out by teachers: one investigated the long term impact of CPD activities whilst the other investigated how teachers learned from each other to help them build on what they already knew. Case studies 3, 5 and 6 were included in the reviews. They provide further detail about the affective changes brought about by CPD, and the benefits of onsite specialist support and peer coaching. Case study 4 explores the impact teachers' professional development had on pupil learning.

We have found surprisingly little teacher research about CPD, probably because of the difficulties of researching this complex field. So, if you are doing some, we would be delighted to know - please get in touch!

The long term impact of engaging in professional development activities

We chose this case study because it explores factors that helped sustain CPD over time. It follows up six secondary, comprehensive schools that had been involved in the North East School Based Research Consortium (NESBRC), a collaborative partnership funded by the Teacher Training Agency, which focused on generating evidence about teaching and learning. During the NESBRC project the schools had developed a number of approaches, including:

- collaborative action research
- video coaching
- using personal construct theory to elicit teachers' beliefs about teaching and learning (through using cards with sets of three statements and asking teachers to say what was the same and what was different about the statements).

We explored this project in an earlier RfT, 'Teachers and school based research'.

Interviews with the headteachers and research co-ordinators in the six schools revealed that the activities which focused directly on understanding pupil learning and making an impact on pupil achievement were continuing to enthuse and involve teachers. Not only were the schools sustaining the activities, they had widened the focus of the activities and the number of staff who participated in them. The schools appeared to find it more difficult to sustain and develop those activities that were more directly focused on teacher learning. Teachers and school leaders recognised the role of the research co-ordinator as key to developing conditions for dialogue about teaching and learning.

In what ways did the schools sustain their professional dialogue?

Evidence collected during the study showed that:

- all six schools had sustained an emphasis on establishing a research and development cycle to improve teaching and learning and were able to present cautious, but encouraging evidence of the positive impact it was having on pupil achievement
- collaborative action research projects were continuing in all six schools. The activity was funded in a number of different ways, including Best Practice Research Scholarships and using resources from membership of Network Learning Communities or an Education Action Zone
- staff were continuing to deliver INSET on training days within school and to bodies outside the school and the activity was still highly valued by all concerned

- video coaching was continuing in the two schools that had embedded this practice during the earlier NESBRC project
- senior management were continuing to provide support for informal meetings such as 'thinking lunches'.

What evidence was there that the schools had developed their professional dialogue?

Teachers had developed professional dialogue in a number of ways, including:

- widening the focus of professional dialogue undertaken in the schools - it now encompassed more staff and had moved beyond the original topic of thinking skills to include, for example, assessment for learning and learning styles
- making classroom based research into teaching and learning part of the schools' improvement plans
- placing a stronger emphasis on promoting dialogue about teaching and learning For example, knowledge about evidence-informed practice had been included in the selection criteria and induction programme for new staff
- extending the use of video and peer observation for research to schools which had not used it before.

It was apparent that the schools found it more difficult to sustain and develop those activities that were focused on teacher learning rather than on understanding pupil learning:

- only one school was making use of video coaching as a vehicle for CPD beyond the two schools that had developed this approach during the NESBRC project
- the school that had used personal construct theory to elicit teachers' beliefs about teaching and learning during the NESBRC project was no longer using the approach and none of the other schools had adopted it.

The schools were particularly enthusiastic about the value of collaborative action research. One research co-ordinator reported the a tangible impact it was having on practice:

'...the research culture is changing the school ethos, students are used more in helping us to improve learning ... we are more holistic, centred around teaching and learning. For example, we use planners differently now, to review learning rather than targets.'

Another research co-ordinator commented on how collaborative action research was involving everyone in the school in discussion about teaching and learning:

'Maintaining culture of learning - want to be known as a learning school and all seen as learners ... we have a shared collective language - this goes out in PR material and is predominant at interviews.'

A head teacher commented on how collaborative action research had led to a shift in school culture, whereby the expertise of teachers was acknowledged and ideas were shared freely:

'Informally have a culture where people test things out ... MFL doing some work testing out the best learning conditions for their department for example.'

Reference

Baumfield, V.M and Butterworth, A.M (2004) School Improvement: Developing and sustaining professional dialogue about teaching and learning. National Teacher Research Panel (2004)

NTRP: Baumfield and Butterworth

The importance of teachers interacting with other teachers for their professional development

We chose this case study because it shows how expert and less experienced teachers undertook

learning from each other in order to build on what they knew already. The case study evaluates the contribution of interactions between teachers - formal and informal - t o their professional development. The study found that interactions were highly important because they presented teachers with learning opportunities and contributed to the process of 'internalisation' of knowledge. It found that the creation of such 'interactive communities' of teachers was a critical element in professional learning and that the nature and effectiveness of interactions could be shaped by environmental factors.

The study took place in a large history department in an independent boarding secondary school. Twelve teachers, ranging in experience from NQTs to thirty years in the profession were interviewed in groups and individually over a two-year period.

What different types of interaction took place?

The study found that two main kinds of interactions took place routinely in the school - 'planned' and 'ad-hoc' interactions. Teachers new to the profession and those in their early years of teaching found planned 'frame working' interactions which involved perhaps only two teachers (for example the Head of Department and NQT) particularly useful for helping tackle challenging issues that were relevant to them, such as the design of coursework. 'Hard copy' exchanges, such as sending e-mails, were another helpful form of planned interaction - although there was no oral contact, learning was still exchanged. All teachers found 'ad hoc' interactions - 'casual conversations', 'multi-conversations', 'collisions' or 'bumping into each other' - useful for problem solving.

How did interactions inform the teachers' professional knowledge?

The study found that interactions presented teachers with professional learning opportunities, and that different types of interaction made different contributions to their learning. Whereas planned interactions promoted more considered reflection, ad-hoc interactions were more 'dynamic' and usually related to more immediate concerns. Their learning took them through a number of cognitive phases - from the 'beginner' to the more 'expert'. However, 'expert' teachers continued to learn - for example, the experienced teachers learned about new approaches and interventions from the beginning teachers in the department.

Planned 'frame working' meetings usually took place after an observed teaching session. The observer and observed teacher openly discussed different aspects of the lesson, focusing on both positive and negative aspects. During these meetings, the more experienced teacher encouraged the beginning teacher to make connections between what they were learning and what they already knew. It was noticeable that over the two years of the study the beginning teachers became more able to solve problems on their own suggesting that reflecting on what they were learning helped them to internalise their knowledge.

How did the environmental factors influence the nature of the interactions that took place?

The teacher researcher suggested that the environment of the particular department studied - both social and physical - could shaped the nature of the interactions that took place. The department involved in this study was socially cohesive. Members worked collaboratively with a high degree of commitment to common goals and a high degree of support for one another, although there was still a strong sense of the teachers as individuals.

The department had a large central resources room with work areas for all of the teachers. Comfortable chairs and a coffee machine encouraged them to remain once they had entered. It acted, therefore, as the hub of the department. Teaching rooms were close to each other and teachers could easily see colleagues' rooms from the central room. These geographical factors contributed to an open culture among the teachers of the department in which interaction was routine and separateness avoided.

Reference

Letman, S. (2004) Engaging with each other: how interactions between teachers inform professional practice. National Teacher Research Panel (2004).

NTRP: Letman

Promoting professional development through teaching portfolios

We chose this study because it shows how a professional development project brought about affective changes, including teachers taking more risks and feeling a renewed sense of purpose. The study was included in the third EPPI review.

This study investigated the impact on their professional learning of a project in which teachers kept portfolios for one academic year. The study took place in a primary school and involved 12 teachers at different stages of their teaching careers. The headteacher encouraged the teachers to collect and reflect on samples of pupils' work over the year to help them examine and adjust their teaching strategies so that they could help the pupils learn better. The researcher interviewed the teachers and headteacher at the beginning and end of the year, to find out their thoughts concerning the processes involved in keeping portfolios and to note the changes in their practice as a result of their involvement.

What did the portfolios involve?

Teachers were encouraged by their headteacher to collect and reflect on samples of pupil work in areas that interested them. For example, one teacher wanted to work out how she could better meet the needs of her 6-7 year old pupils in reading. She chose three pupils, one each from the top, middle, and bottom reading levels of her class. With the aid of running records, she tried to address their needs so they could advance to the next level. Her portfolio documented the journey she had travelled from the beginning of the school year.

Each teaching portfolio consisted of three sections:

- an explanation of why the teacher was pursuing the topic
- documentation of the teacher's learning in the area of interest (for example cooperative learning) along with practical suggestions for other colleagues
- supplementary materials (such as references to research and examples of children's work).

These materials were to provide justification for the work as well as to enhance individual learning and group sharing.

How did the portfolio project impact on teachers' professional learning?

The portfolio project had a positive impact on professional learning. The project:

- enabled teachers at different developmental stages to approach their work more meaningfully and purposefully. For example, a teacher who was new to teaching, started to think through the steps of everything she did more carefully, including,' What specific goals do I have for each lesson?'

- encouraged teachers to take risks. For example, one experienced teacher commented that for the first time in her teaching career, she did not need someone coming in to watch her try to teach the perfect lesson. Instead, she 'could try something that is not going to work' and then 'write about why it did not work'
- provided teachers with ongoing learning opportunities. For example, a teacher in her third year of teaching felt that it provided a starting point for trying out new ideas in her class - 'It probably makes me search out new ideas to add to my portfolio'.

The study also found that the portfolio project affected professional collaboration in a number of ways, including:

- providing a vehicle for the teachers to learn with and from each other - it generated an electric atmosphere and produced a sense of camaraderie among the teachers
- giving teachers a "common language" that helped connect new teachers with experienced teachers - the spirit of collaboration grew beyond teaching portfolios with teachers coming together on their own during lunchtimes etc
- changing the working relationships between the headteacher and the teachers - the headteacher felt that it provided her with rich information about her staff while many teachers felt that the project enabled them to connect better with the headteacher.

What conditions supported professional learning?

Conditions contributing to the teachers' professional collaboration and learning included:

- building an environment of trust between the headteacher and teachers through nurturing open lines of communication - the headteacher thought it was, 'very important to listen, to listen, and to listen' and she welcomed teachers into her office any time, whether to 'borrow a book, or initiate a conversation'
- ensuring that the teachers and the headteacher had a sense of joint control over the professional learning that was taking place - this was realised when the teachers selected an individual area of interest to work on while the headteacher decided on a larger focus for the school each year
- encouraging teachers to learn from their colleagues by connecting teachers to one another and by referring teachers who were just beginning, or who were midway in the process, to talk with those who had already completed a portfolio.

Reference

Xu, J. (2003) Promoting school-centred professional development through teaching portfolios. *Journal of Teacher Education*, 54, (4) pp. 347-361

CPD aimed at increasing pupils' participation in lessons through improving their communication skills

We chose this study because it shows how improvements to pupils' learning were linked to their teachers' professional development activities. Six Year 2 teachers from three primary schools worked with the researchers over six months to design a programme of lessons that aimed to enhance pupils' participation in their learning and raise their achievement levels through improving their communication skills.

What did the professional development activities involve?

At the start of the six-month project, all the Year 2 teachers in the target schools took part in a day of professional development and two sessions after school. The researchers also visited all the target schools regularly throughout the project to give the teachers informal support and provided four further after-school sessions. Together, the researchers and teachers devised an initial set of five core lessons, which focused on developing the children's awareness and skills in using spoken language. They then created a further set of nine lessons, which applied the approach to curriculum subjects, such as history and geography.

How were the children taught to interact and reason with each other?

The project teachers arranged their classes into mixed gender, mixed ability and mixed ethnicity groups of three. They taught the children talk skills during 'Thinking Together' lessons. Early lessons in the programme focused on raising an awareness of the importance of talk and developing skills such as listening, sharing information and cooperating. Later lessons encouraged critical argument for and against different points of view. The children had opportunities to practice core skills, such as discussing alternative ideas, giving and asking for reasons and ensuring that all members of the group were invited to contribute. The teacher emphasised the quality of their talk, intervened to support groups during discussion and acted as a model when talking to the class.

The classes created and agreed upon a set of ground rules for talk that would enable them to reach a group consensus. These included, for example:

- everyone in the group is encouraged to speak to other group members
- reasons are expected
- contributions are considered with respect
- the group takes responsibility for decisions
- the group seeks to reach agreement.

No set roles were given to the children (other than that of occasional scribe or reader) to encourage a perception that all contributions to the group were equal.

How did the pupils benefit?

At the end of the project, the target pupil's communication skills were compared to a control group of five Year 2 classes from three primary schools whose teachers had pursued their normal activities during this time. The target pupils asked more questions and gave reasons more often than the control group children. They also involved each other, listened carefully to what each other said and responded constructively, even if their response was a challenge. The control group children's interactions did not show a similar pattern of change.

All the teachers in the target schools felt that the programme had had a positive impact on collaboration and inclusion in their classroom. Specifically, they reported that their quiet children became more confident and participated more in discussions, which they attributed to the use of small groups, and the ground rules of listening with respect and asking others what they thought.

A headteacher commented on the difference the programme had made to the pupils in her school in these words:

'Based on previous knowledge of these classes at this school, I wouldn't have expected children to have the skills to enrol other members of the group who weren't engaged initially, bringing in other children into what's happening, not just ignoring them ... I wouldn't have expected to see so many children listening to each other, involving each other, actually even noticing that somebody else hasn't even given any input'.

Reference

Wegerif, R., Littleton, K., Dawes, L., Mercer, N. and Rowe, D. (2004) 'Widening access to educational opportunities through teaching children how to reason together.' *Westminster Studies in Education* 27 (2) pp.143-156

On-site specialist support for teachers integrating technology into their classroom practice

We chose this case study because it illustrates the effectiveness of close specialist support. The

study was included in the second review. A core feature of the study was the author's belief that simply making computers available in schools does not necessarily lead to reforms in educational practice. Available evidence suggested that the way teachers used technology for new tasks closely matched the ways in which they had taught before because they lacked understanding of how to take advantage of the capabilities of ICT. The professional development reported in this study was designed to help teachers use ICT more effectively for learning.

The study took place in three primary schools. The professional development consisted of onsite mentorship and support - teachers from the 'Galileo Educational Network' helped staff to plan and implement projects that built upon and extended innovative teaching methods. They also engaged in sustained dialogue about effective pupil learning.

Galileo Network staff supported the teachers in a number of ways including:

- working with teachers to plan instruction
- modelling teaching methods to enable the teacher to be a participant observer
- observing and working alongside teachers using new methods and discussing the results with them afterwards
- working with teachers to design appropriate assessments of pupil work
- gathering, organising an sharing resources with teachers and pupils
- leading professional conversations to build and extend teachers' understanding of teaching and learning issues
- supplying on-going, on-site support for risk-taking and innovative practice.

The Galileo Educational Network's approach to professional development was based upon relationship building; a key feature was that Galileo Network staff worked closely with teachers from their individual starting point and were non-judgemental. The Galileo teachers worked only with those teachers who were willing, ready and interested in working to integrate technology into teaching and learning. They and did not impose methods or models on an entire staff or individuals. They worked with them, rather than on them, to develop inquiry-based projects for pupils.

The evaluation was based on classroom observations and interviews with 30 teachers and 48 pupils aged 6-12 years. The findings suggested that that through professional dialogue with the Galileo teachers and their colleagues, and by seeing the results that other teachers had achieved with their pupils, the teachers became increasingly convinced of the relative advantage of integrating ICT in innovative ways. With support, they risked uncertainty, planned for changed roles and developed their own technology and teaching skills. As a result:

- pupils were introduced to new ways of using technology - instruction was focused on how technology might best serve the task in hand rather than focused on the use of technology itself
- the teacher's role changed from being a dispenser of information to more of a facilitator, guide, co-learner and co-investigator - teachers created opportunities for pupils to work collaboratively to solve problems, share knowledge and responsibility
- pupils' work exceeded expectations - when presented with opportunities to explore meaningful questions and ideas pupils engagement with tasks was more sustained and they worked at higher levels of thinking and reasoning.

The researcher's report of her observations of students in one classroom illustrated these points:

'I observed students working on their electronic portfolios ... One student described for me what each slide in her portfolio was about, and as she navigated the slides which recorded her reflections about maths, reading, story writing and symmetry, I was amazed by the amount of learning that the child's portfolio represented ... The electronic portfolios contained a diverse range of writing samples, digital photographs of the student painting or working in a group, different questions they had been working on in social studies, scanned

drawings, concepts they had been thinking about in mathematics, the levels of reading they had achieved and examples of books they had read, and so on ... Anne had set up the classroom structure in such a way that each time the class completed a project or investigation ... she prompted them to create a new slide to capture their learning at that point in time ... The students worked energetically and productively on their electronic portfolios ... Initially concerned about my reaction, she said, "I'm sorry, it probably didn't seem like a class to you, but a class is going on. The students are all over the place, but they are working on their portfolios" ... Teachers know that it is risky for their classroom to look different. There is a tension that accompanies changed teacher roles ...'

The teachers explained the impact their professional development had made on them in these words:

'They made me think, reflect, challenge my practice, read and put into practice what I thought about, but sometimes just did not get around to because I was always too busy.'

'It was never about the computers and the hardware. It was all about teaching and learning: the changes in your practice, the changes in your professional growth and how that can impact kids. Teachers became aware of the possibilities that were out there. How can we use technology to make learning meaningful and exciting? How can it be used to engage kids?'

Reference

Jacobsen, M. D. (2001) *Building different bridges: technology integration, engaged student learning and new approaches to professional development*. Paper presented at the Annual Meeting of the American Educational Research Association

Helping teachers improve their literacy teaching through peer coaching

We chose this study because it provides some helpful insights into the effects of peer coaching. The study was included in the third review. It involved two teacher-coaches and eighteen early years teachers from six schools.

At the start of the school year, the teachers received one week of training in how to implement an early literacy framework. The framework was designed to engage children in a variety of literacy experiences through carefully planned daily instruction. The components included reading aloud, and shared, guided and independent reading. The writing components included shared, interactive, guided and independent writing. Other elements of the framework included documenting children's progress and involving parents. Teachers were expected to use their knowledge of the children's literacy strengths and their theoretical knowledge of the reading and writing processes to inform their teaching. The framework was very different to the teaching methods the teachers had used previously.

Over the year, the teachers also took part in a number of activities with peer coaches who had been selected because of their knowledge and successful use of the framework. The peer coaching activities included:

- the teacher and coach watched a video of a literacy lesson separately, then the teacher wrote a reflective paper and the coach wrote reflective notes. About one week later the coach and teacher met to discuss the lesson and watch parts of the video together
- a literacy lesson was videoed and observed by the coach. The teacher and coach conferenced on the day the lesson was taught, then the teacher watched the videoed lesson and wrote a reflection paper
- the coach observed during a literacy lesson and took notes. The teacher and coach conferenced on the same day as the observations

- the teacher requested guidance with a particular part of the framework. A conference was held after the lesson and the coach returned the next day to observe the changes.

Interviews with the teachers and coaches, post-observation conferences (which were audiotaped) and teacher self-reflection papers provided rich detail about the effects of peer coaching. It showed that the teachers identified three main benefits. Peer coaching:

- provided them with the support they needed for implementing new teaching practices
- provided different 'lenses' through which teachers could view their teaching
  facilitated change.

What kind of support did the peer coaches provide?

The researchers found the peer coaches provided three kinds of support:

- procedural (technical) support - teachers needed procedural support most often when first began to implement a particular component of the literacy framework. To provide this support, coaches answered questions, highlighted teachers' strengths, suggested alternative practices, emphasised important teaching points, facilitated problem solving, helped teachers select materials, and suggested classroom management and organisational strategies
- affective (emotional) support - peer coaches reassured teachers when they had doubts about the effectiveness of their teaching and confirmed their teaching strengths and areas in which they could improve. The affective support encouraged teachers to take risks in the classroom and not to give up when they experienced difficulty when implementing the different components of the framework
- reflective support - coaches scaffolded conversations in the post-observation conferences so that they moved beyond discussions of procedures to clarifying issues, verbalising their teaching objectives and reflecting on their strengths. The discussions also helped the teachers to think about future lessons and changes they would make.

How did peer coaching provide teachers with different viewpoints of their teaching?

The videos enabled the teachers to view their lessons through the eyes of an experienced peer coach and from an observer's perspective. Both 'lenses' gave the teachers opportunities to revisit a lesson and engage in assisted reflection and self-reflection.

How did peer coaching affect the participants?

The teachers changed in terms of their:

- technical expertise - they became more adept at implementing the literacy framework and integrating the various components
- feelings about the effectiveness of their teaching - their confidence grew about their understandings of the framework and how well they applied their understandings of it in the classroom. Teachers who were hesitant about implementing components of the framework in their classrooms at the start of the year shared their expertise confidently and expertly with others at the end of the year
- reflections about teaching and learning - the teachers' discussions in the post-observation conferences became more reflective rather than technical. They verbalised their realisation that the framework was not simply a technique to be implemented, but that their teaching would change as the students grew and as their own knowledge of teaching and learning developed.

Peer coaching also had an impact on the coaches. For example, one coach reported that as she became more experienced, she found asking questions that challenged their thinking was more beneficial for the teachers than simply telling them how to do something. Both coaches also made reflective changes - they thought more critically about what they saw when observing in teachers' classrooms and had started to look at the framework in more depth.

What characteristics of coaching did the teachers find most helpful?

Most teachers preferred:

- conferences to take place soon after the coach had observed the lesson, but two teachers preferred to have the peer coaching conference on another day so that they could reflect on the lesson beforehand
- conferencing with a more experienced peer because the coach could relate to the concerns teachers experienced and could help them to solve problems
  frequent visits from their peer coaches (at least twice a month)
- observations to start early in the school year because teachers could be provided with guidance as they began applying the new methods and this helped them build confidence about using those methods.

The teachers spoke of the benefits of peer coaching in these ways:

'... even watching the video, it is amazing; you think you know everything about the lesson. I was there, but then you watch it. You really see things that [you were not aware of] ... watching the video really helps you reflect and then, of course, working with your coach makes you reflect on it, which is what we need to do because it's a way of improving'.

'It [peer coaching conference] is also a sounding board ... Somebody to listen to you [the teacher] and who isn't there to make judgements or to criticise things that you are doing, but to look at those things that you are doing and to help you build on those'.

'They [coaches] have encouraged me to try things that I have never done before. Even if I have doubts about what I have done, there is a support base that I can turn to for help and encouragement'.

Reference

Swafford, J., Maltsberger, A., Button, K., Furgerson, P. (1997) 'Peer coaching for facilitating effective literacy instruction'. In: Kinzer, C.K., Hinchman, K.A., Leu, D.J. (eds) *Inquiries in literacy theory and practice*. Chicago: National Reading Conference. pp 416-426

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Further reading

What else might I enjoy reading?

Hargreaves, D. H. (1993) 'A common-sense model of the professional development of teachers'. In: Elliot J (ed.) *Reconstructing Teacher Education: Teacher Development*. London: Falmer

Elliott , J.(1991) *Action Research for Educational Change*. Milton Keynes: Open University Press

Cordingley, P. & Bell, M. (1999) *Developing Teachers: The Challenges of Lifelong Learning*. London: Falmer Press

Cordingley, P. & Bell, M. (2002) *Literature and Evidence Search: Teachers' Use of Research and Evidence as they Learn to Teach and Improve their Teaching*. London: TTA

Joyce, B. (2002) *Student Achievement Through Staff Development*. 3rd edition. London: Longman

Guskey, T. R. (1998) 'The age of our accountability'. *Journal of Staff Development*, 19, pp. 36-44.

Adey, P., Landau, N.,Hewitt, G. & Hewitt, J. (2004) *The Professional Development of Teachers; Practice and Theory*. Kluwer Academic Springer

Where might teachers find helpful information online?

EPPI Centre

http://eppi.ioe.ac.uk/cms/

All three systematic reviews of continuing professional development can be found on the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre website.

Related research

Factors affecting the transfer of good practice

http://publications.dcsf.gov.uk/default.aspx?PageFunction=productdetails&PageMode=publications&ProductId=RR615 &

Fielding, M. et al (2005) *Factors affecting the transfer of good practice*. DfES RR615.

Summaries of research studies focusing on CPD

http://www.standards.dfes.gov.uk/research/themes/cpd/?digest=all

Summaries of research studies focusing on CPD are available on The Research Informed Practice Site (TRIPS) on the DfES Standards website at:

Information and activities for CPD leaders
National Framework for Mentoring and Coaching

http://nationalstrategies.standards.dcsf.gov.uk/node/41662

Teacher Learning Academy

http://www.teacherlearningacademy.org.uk/

Related research

Timperley, H. Wilson, A. Barrar H. & I. Fung (2007) *Teacher Professional Learning and Development: Best Evidence Synthesis*

www.educationcounts.govt.nz/publications/series/2515/15341
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Appraisal

Robustness

The two systematic reviews forming the basis of this RoM built on a previous systematic review of teacher continuing professional development (CPD). This first review aimed to explore the impact of collaborative CPD in relation to teacher and pupil outcomes for the 5-16 age range. It identified a number of features of CPD linked to positive impact. The second and third reviews appraised here built cumulatively on the findings of the first review.

The reviews were subject to the strict criteria used by the EPPI systematic process. Titles and abstracts that might be relevant to the study were obtained by searches using combinations of agreed keywords on websites and electronic databases. This was supplemented by hand searches of contents pages of selected journals published within the timeframe. Altogether, 19,000 titles and abstracts were systematically examined and sets of inclusion and exclusion criteria were applied to the studies searched. For those that passed the inclusion criteria, full studies were obtained and examined. Full reports were key-worded by two reviewers and a second narrower set of criteria applied. EPPI data extraction software was used to assess the weight of the evidence. Twenty-five full reports were selected for synthesis.

The reviewers provided a realistic assessment of the strengths and weaknesses of each study. One strength of all the reviews was that a wide range of user groups were involved in setting up and refining the questions and interpreting and communicating findings. All the reviews defined their research questions and their terms clearly. A further strength, especially of the third review, was the way in which it built systematically on previous work, enabling the researchers to explore how specific CPD processes influence changes in teacher practice, including, for example, discovering how the role of external, specialist expertise links to peer support and mechanisms for teacher collaboration.

Relevance

The original EPPI CPD study grew out of teachers' (and their professional associations') interest in this subject. The later reviews maintained the involvement of a wide range of users to ensure that their interests were central to the research. The identification of a number of characteristics of effective CPD has found a broad audience and its findings have been used in a variety of recent CPD initiatives, including the Primary National Strategy and the Key Stage 3 Strategy.

CPD providers, including the Teacher Training Agency (TTA) and the General Teaching Council of England (GTC) and teachers' professional associations, such as the NUT, have shown a keen interest in these EPPI reviews. The findings will also interest teachers and school leaders in the main Key Stages.

Applicability

The findings reinforce the emerging consensus that teachers themselves are an important resource in supporting and sustaining the development of their own or their colleagues' practice. The reviews provide evidence that:

- sustained collaborative CPD focused on pupil outcomes is linked to positive effects on pupils' learning and positive changes in teachers' practice, motivation, attitudes and knowledge
- effective collaborative CPD involves a combination of active experimentation, peer support and specialist expertise that builds on teachers' starting points; and
- effective collaborative CPD involves significant in-school activity with teachers working in pairs or small groups.

The reviews offer implications for teacher practitioners, CPD coordinators, providers of CPD, policy makers and researchers, including:

- recommendations for researchers encouraging them to report information on context and CPD processes as well as outcomes. A further suggestion for researchers from the third review is that, in exploring an evidence base for their research, they need to consider both literature about CPD processes and literature about pedagogic interventions if users are to gain the most from the evaluations
- collaboration may be an effective vehicle for securing commitment to and ownership of CPD in cases where it is not possible for the teachers to select their own focus; and

- the impact of individually orientated CPD could be improved by asking teachers to share their new knowledge with colleagues in some detail and to build on this together.

Writing

The reviews distilled findings from a substantial body of literature to highlight messages from research about CPD. They gave a considerable amount of detail on the processes used, so readers can make an assessment of the strength of the evidence base. The main findings and implications for practitioners, policy makers and researchers were clearly reported, although they also include extensive technical details in the earlier sections of the report as this is a requirement by EPPI for such reviews.

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