What leads to positive change in teaching practice?

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Developing the Education Workforce

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Introducing The NFER Research Programme

Developing the Education Workforce

NFER has a worldwide reputation for excellence in research in education and children's services, built up over 65 years of working with a wide range of partners to produce independent evidence to inform change.

As a charity, the Foundation exists to improve the education and life chances of learners through the provision of independent evidence aimed at influencing policy, informing practice in the learning environment and directly impacting learners. To help achieve this, The NFER Research Programme was set up in 2011. Funded by NFER, it is developing partnerships with organisations and individuals who share our commitment to solving unanswered challenges young people face in education. The Programme targets key areas of education, highlighting gaps in existing evidence and conducting new research to provide the evidence to fill the gaps. Current areas of focus are *From Education to Employment*, *Developing the Education Workforce* and Innovation in Education.

Over recent years, evidence from a number of major studies has begun to highlight how different education systems are doing in comparison to England and these studies have cast the education debate in this country in a new light. Our school system needs to continually improve to meet the increasing global competition and this reform must be evidence based.

The initial phase of our work in the *Developing the Education Workforce* strand is a pair of reports which map the current research into:

- what effective teaching looks like
- what causes teachers to change their teaching practice

These reports offer a new perspective on the recent research in this area and identify the gaps for future research. A series of easy-to-use guides for practitioners, school leaders and local authorities based on the findings will also be available.

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Research Director, NFER

Executive summary

This report presents the findings of a study in which the NFER aims to map the key research evidence about what leads to positive change in teaching practice in schools. Teachers are at the heart of schools and the recent government White Paper states 'the most important factor in determining the effectiveness of a school system is the quality of its teachers' (DfE, 2010, p.19).

Our study aims to review the huge body of evidence that is available about the factors that lead to positive change in teaching practice, in order to draw conclusions about: the different forms of support that are most likely to encourage teachers to change their practice; if there is evidence about how changes in practice impact on student outcomes; and whether there are forms of support that represent particularly good value for money. We also aim to highlight any inconsistencies or gaps in the evidence that may benefit from further research.

Our report focuses primarily on literature from the UK and abroad, published in English, dating from 2006 to ensure a timely evidence base. However, where there are gaps in evidence that could be filled by high profile earlier literature, these are drawn on for completeness of discussions. We reviewed 132 items of literature, and selected 49 of these for the second stage of review at which we considered them in more detail. Sixteen items were then selected for inclusion in the final review.

Following the initial study, comments were collected on the draft report from experts in the field. These comments led to amendments to the report as well as the inclusion of additional studies. Five studies were added at this stage.

Key findings

Our findings have been grouped into four themes: leadership; planning and preparation; practice development; and monitoring and evaluation (M&E).

Leadership

This was the first theme which emerged from our review and we found that positive change requires strong leadership. Three different leadership practices emerged: strategic, operational and distributive. Taking the first, it was often the vision and high expectations of an effective leader that inspired teachers to change aspects of their working practices. It was also important for leaders to create the right climate for change, as included in our operational label. A third practice is distributed leadership referring to the sharing of leadership responsibilities across an organisation.

Strategic leadership: the vision of school leaders was found to inspire teachers to change their practice in a number of reports. For this to work well the leadership should:

- set out a clear and realistic vision – it is important for teachers to understand what the aim of an innovation is if they are to contribute to achieving that aim

- be based on a well-evidenced rationale, and also adapted to the local context

- allow teachers to take ownership of the issue, whilst also providing guidance and support where it is needed.

Operational leadership: in addition to a convincing vision, it is also necessary to be able to realise this change practically, by defining the activities that are required. This involves:

- creating the right culture for change, in which innovation is encouraged and sustained

- developing a climate for learning, in which leaders manage and organise appropriate, in-depth learning opportunities for teachers, over a number of different occasions.

Distributive leadership: it is important that headteachers have an overview of the potential change, but are not the sole drivers. They should ensure that they enable others to also be agents of change.

Planning and preparation

Effective planning and preparation provides a structure and context for teachers wishing to implement change, as well as a framework for their reflection and evaluation. As with leadership we have separated the evidence in this area into three themes: the strategic context for development, involving and listening, and resources and systems.

The strategic context: local and national policy agendas and reform affect teachers' work and it is important to set local plans for change within this wider context.

Involving and listening: the wider school community needs to be involved in planning and preparation if positive change is to arise and be sustained. This should include:

- engaging the teachers to ensure that staff are on board with the planned changes – leaders can avoid criticisms by making clear their aims and intended outcomes of any change process

- giving teachers ownership of aspects of the change process

- involving the whole school community including administrators and students, as well as parents and outside partners.

Resources and systems: it is important to ensure that the right resources, such as people, time, finances and teaching instruments, and the right systems, for example operating protocols, are in place for successful change to occur.

Types of practice development

Three categories of practice development featured in the literature that we reviewed: leader-led, peer-led and self-led, as well as a number of transferable principles. These are summarised below.

Principles of practice development: commitment to practice development is important and can be viewed as a characteristic of an innovative school. Informal and formal learning opportunities should be backed up with time and funding. It is also important that professional learning experiences focus on the links between teaching activities and valued learner outcomes. There should be multiple opportunities for teachers to learn and an integration of knowledge and skills.

Leader-led: this can be seen to harness change in schools impacting on both improved teaching and also on learner outcomes. It can provide the organisational conditions that enable teachers to change. Leadership support is also required for ensuring that other resources, such as space, time and ownership, are available for teachers.

Peer-led: collaboration between teachers working in different schools, or between teachers and researchers, can support effective practice development by making classroom practice visible and providing a form of peer accountability.

Self-led: in this form of practice development, teachers work on their own or with others to reflect on their own practice to stimulate improvement. Reflective practice can be seen as a key element in sustainable change.

Monitoring and evaluation

The final theme highlighted in our review is M&E. We found much evidence to suggest that positive change is dependent on M&E strategies that allow schools to assess the quality and impact of their work and changes over time.

School-wide M&E: the systematic collection and analysis of information about areas of development can be used to plan and inform new goals. In much of the literature headteachers use exam scores at least as part of measuring the success of interventions.

Teacher-led M&E: self-regulation by teachers is also seen as key to effective change and it is important that the learner outcomes are the focus and not just the change process itself.

Student-led M&E: it is important that students know what the change means for them, and the evaluation of change should focus on the impact of the change on the

students. Inclusive techniques were found to overcome resistance to change from learners.

Discussion and research gaps

This review has found a large amount of high-quality evidence about what leads to positive change in teaching practice, which we have categorised into four main themes. Although there is a lot of existing evidence, a number of our research questions have not been fully answered and a number of gaps in the evidence have been highlighted.

Our main aim was to examine the factors leading to positive change in teaching practice and we have highlighted the role of leadership in igniting and implementing change, the need for effective planning of any change processes, different types of practice development that can lead to change, and how M&E processes enable schools to assess the quality and impact of change.
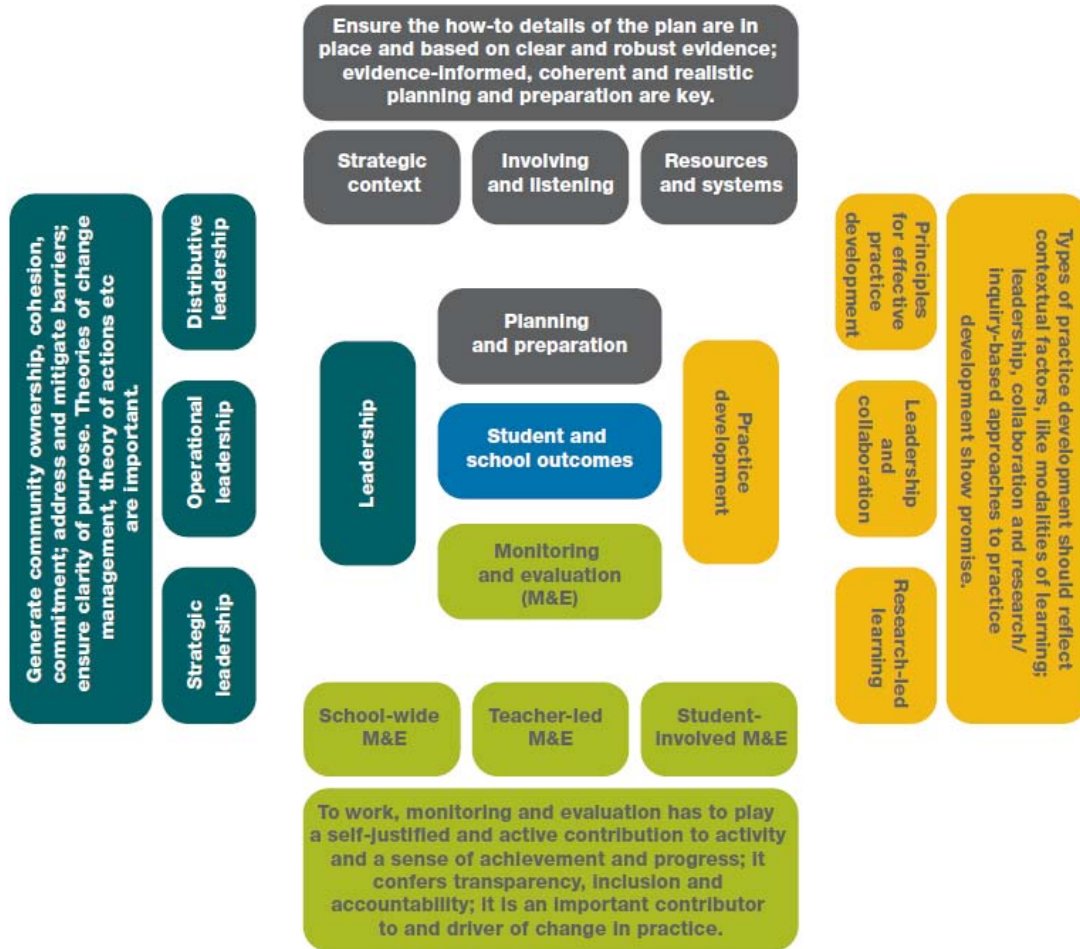
Research gaps

We found limited literature that demonstrates what outcomes the positive change leads to; the relationship between practice change and learner outcomes appears to be an area that is under-researched.

The crucial role of leaders in supporting and driving change in teaching practice is well-evidenced, although it may be beneficial to conduct further research around the relationship between different forms of leadership and improved student learning outcomes.

Our research found little evidence about Initial Teacher Training and the ways in which it encourages teachers to be more receptive to change. This may be a gap in the literature, although it may be an effect of the strict search parameters that we used for this study. Similarly, we did not go into the detail of change management processes, so failed to find evidence about how specific processes impact on student outcomes, and we found little evidence of the value for money of different interventions. These may be areas where further research is required.

Finally it may be of value for further research to be undertaken into the ways in which M&E can add most value and the impact of the new policy backdrop in which education sits, building on ideas of localism and local governance.

Diagram 1　Summary of the different factors effecting change in teaching

Ensure the how-to details of the plan are in place and based on clear and robust evidence; evidence-informed, coherent and realistic planning and preparation are key.

Strategic context　**Involving and listening**　**Resources and systems**

Generate community ownership, cohesion, commitment; address and mitigate barriers; ensure clarity of purpose. Theories of change management, theory of actions etc are important.

Distributive leadership

Operational leadership

Strategic leadership

Leadership

Planning and preparation

Student and school outcomes

Practice development

Monitoring and evaluation (M&E)

Principles for effective practice development

Leadership and collaboration

Research-led learning

Types of practice development should reflect contextual factors, like modalities of learning; leadership, collaboration and research/ inquiry-based approaches to practice development show promise.

School-wide M&E　**Teacher-led M&E**　**Student-involved M&E**

To work, monitoring and evaluation has to play a self-justified and active contribution to activity and a sense of achievement and progress; it confers transparency, inclusion and accountability; it is an important contributor to and driver of change in practice.

1. Introduction

This report presents the findings of a study in which the NFER aims to map the key research findings about what leads to positive change in teaching practice in schools and other educational settings. The study is one of a pair of studies that were conducted as part of the NFER Research Programme on Developing the Education Workforce. The second study in the pair maps the features of effective teaching as detailed in existing research evidence. The purpose of the studies is to summarise and map the key evidence around workforce development, with the aim of using this as a baseline to inform future research. The studies do not claim to be systematic reviews or to encompass the huge wealth of literature that is available on these topics. The audience for the reports is primarily internal to the NFER, so that researchers planning future stages of our own research are drawing on the relevant evidence. These reports are also being published for a more general audience for the purpose of transparency and where they may add value to on-going debate.

The NFER has chosen to focus one strand of its own research on the education workforce because teaching staff are at the heart of everything that goes on in schools and other educational settings. There has been increasing interest recently in the role of the teacher and the centrality of this to the success of any education system (although this is by no means a new policy area). In Michael Gove's, Secretary of State for Education, foreword to the Schools White Paper (DfE, 2010, p.7)) he states that:

We know that nothing matters more in improving education than giving every child access to the best possible teaching'. The White Paper then goes on to state that *'The evidence from around the world shows us that the most important factor in determining the effectiveness of a school system is the quality of its teachers.*

Importantly, the new school reform programme spelled out in the White Paper places teachers at its heart.

Teachers work daily to promote the learning and achievement of their students and there are many examples of excellent practice in schools and other settings. However, while there have been improvements in our understanding of what effective teaching constitutes, it is less easy to ensure that it is occurring in all settings. The NFER Research Programme aims to answer the questions: what would make classrooms consistently great places to learn? What should be on the agenda of those looking to change classroom practices? What leads to positive change in teaching?

1.1 Research questions

Our study explores the factors leading to positive change in teaching practice among teachers in schools and other educational settings in the UK and abroad. For the sake of manageability, we are not extending our study to all those staff with teaching responsibilities, such as Higher Level Teaching Assistants. By positive change we mean those factors which lead to different teaching practices in the classroom (or other setting) which directly impact on the learners' experience. Improvements may be seen

in student learning outcomes as measured by external assessments, or by improved attitudes to learning. We have sought to answer six questions, the answers to which are woven into our discussion. The questions are:

1. What factors influence teachers to develop their teaching practice? Do these relate to, for instance: initial teacher training (ITT); continuing professional development (CPD); within-school leadership of teaching and support for change; teacher-level networks and professional association support; or accountability structures?

2. Are there forms of ITT, CPD, leadership, peer support or accountability structures (or other factors emerging in response to question 1) that are most likely to encourage teachers to develop their teaching practice and contribute to positive change?

3. What evidence is there of positive change in teaching practice leading to improved outcomes for students and schools?

4. Is there evidence of the value for money of the different factors that lead to change in the classroom?

5. Is it possible to produce a map of the different factors influencing change and the interactions between the factors, as supported by the majority of the evidence?

6. What gaps are there in the research evidence, or suggestions about further needed work?

1.2   Strength and nature of the evidence base

We discuss in this report what it takes to ignite change in teaching practice. Making change happen is a complex business, about which there is a huge amount of existing evidence, and our report is short. We have arrived at our conclusions by reviewing the best available recent evidence, but our research is a rapid mapping exercise rather than a systematic review of published literature. We used tight parameters to ensure the selection of the most relevant reports. Our study utilises literature from the UK and abroad, dating from 2006 to ensure a timely evidence base. However, where there are gaps in evidence that are filled by high profile earlier literature, these are drawn on for completeness of discussions. We reviewed 132 items of literature; 49 of these were then selected for the second stage of review at which we considered them in more detail. Sixteen items were selected for inclusion in the final report.

- **Which types of contexts?** We mainly focus on universal impetuses rather than those that are context-specific, as permitted by our search parameters. The intention was to produce a map of generalisable findings. We realise the importance of contextualisation as it can provide the best directions, but time pressures prevented us from reviewing specialised papers.

- **What type of change?** Our report largely deals with creating and sustaining the conditions for continual improvement rather than mandatory system reform or radical change, about which we read very little.

- **What is positive change?** Evidence emerged from our review about ways to effect practice change, but definitions of 'positive' change were not always forthcoming or apparent. Where possible we link actual changes in practice with impacts/outcomes for learners – but our inability to do this consistently is a gap in our review and an area for future research.

The documents appraised for this study comprise research reports, literature reviews and policy papers. Documents were selected for full review using a two stage process: initial sifting based on abstracts and likely relevance, from which 49 documents were sourced in full for the second stage; then a more detailed selection against the following criteria: relevance, analysis, interpretation, reporting and presentation of findings, generalisability and, if qualitative, to what extent the findings are useful in explaining changes to practice. After the two stages of screening, 16 articles were selected for a full review.

After the review of the literature was completed we asked for comments from a number of experts on the draft report and initial conclusions. We also asked the reviewers to suggest key literature that ought to have been included but which had not been highlighted through our search and selection procedures. This led to the addition of five new items of literature.

1.3 Main themes

The chapters that follow provide an overview of the features shown to be important when aiming for positive change in teaching. We use four themes to organise our findings: leadership; planning and preparation; practice development; and monitoring and evaluation (M&E). There are also several crosscutting themes related to context, structures, resources and processes on which we report. By 'structures', we refer to things within a school that create the conditions for effective teaching, such as organisational practices and underlying beliefs or norms. Our reference to 'resources' refers to things within a school that support its teaching (including staff) and learning goals, such as the allocation of practice development, and M&E plans. We use the term 'processes' to define things within a school that help students learn, such as a curriculum, assessment strategies or other classroom practices.

2. Leadership

Change requires leadership. This was the first theme emerging from our literature review (Mourshed *et al.*, 2010; Pollard, 2010; Chew and Andrews, 2010; Kiely *et al.*, 2010; Grierson and Gallagher, 2009; Hulme, 2009; Day *et al.*, 2009; Office for Public Management (OPM), 2008; Timperley, 2008; Robinson and Timperley, 2007; Bolam and Weindling, 2006). The research we reviewed focused on ways to ignite, implement and issue change – which we have matched to three leadership practices: strategic, operational and distributive leadership. Taking the first, it was often the vision and high expectations of an effective leader that inspired teachers to change aspects of their working practices. It was also important for leaders to create the right climate for change, as included in our operational label. A third practice is distributed leadership referring to the sharing of leadership responsibilities across an organisation.

We focus in this section on the leadership practices outlined above. There is, as Day *et al.* (2009) point out, no single model of effective leadership. Rather, we seek to emphasise how certain practices carried out by school leaders can facilitate changes for the better, as supported by research evidence. Similar to Day *et al.*, we point to a 'common repertoire' (p.2) of values, qualities, actions and competencies. Such an inventory, however, does not necessarily secure effective change. Instead, as noted by Day *et al.*, certain strategies should combine with individual diagnoses, school needs and national policy imperatives to improve learner outcomes.

2.1 Strategic leadership

Igniting change requires strategic leadership – and strategic leadership is central to a headteacher's role. Their vision, clear reasoning and balance of loose-tight leadership can make change happen. The principles we describe are located within a wider body of literature on 'change management' that cuts across our entire review.

2.1.1 Show the way

Igniting change requires a realistic vision – which teachers can contribute to via 'constructive problem talk' (Robinson and Timperley, 2007, p.253). It might focus on higher teaching standards, greater creativity or a more stimulating curriculum. Timperley (2008), in her review of learning and development in teaching, points to the role of leaders in developing a vision of new possibilities. She remarks that a vision can serve as a 'powerful catalyst' (p.22) for teachers to engage in new learning. OPM (2008), reporting on teachers as innovative professionals, identifies 'having a clear vision' as a condition for leader-led innovation (p.22). It is important to know what one's school is trying to achieve through its innovation.

A roadmap should follow, indicating the steps needed to meet the vision. Robinson and Timperley (2007), in their review of leadership, observe the importance of direction or goal setting. They refer to this process as 'creating a discrepancy between what is

currently happening and some desired future state' (p.250). This discrepancy, they note, creates 'constructive discontent' that motivates goal-relevant behaviour (p.250). Timperley (2008) warns against the fragmentation of efforts through the introduction of competing reforms. She notes that it is 'particularly important' to ensure that other innovations taking place within a school are 'theoretically coherent' with new learning (p.23).

A roadmap might require a new driver, according to OPM (2008) and Mourshed *et al.* (2010). OPM notes that changing the leadership of a school can increase motivation. Mourshed *et al.* similarly classify new leadership as by far the most important factor in igniting change in their study. Indeed, the 20 school systems they studied relied upon a new leader's 'presence and energy' to jumpstart their reform programmes (p.22) – with leaders staying in power about six years.

Aside from a headteacher's vision, external politics can stir up change in teaching. Yet, Timperley (2008) argues that, even with the involvement of external experts, leaders still play an important role in developing 'a realistic vision of alternative possibilities' (p.28). Their role, she says, remains steadfast in ensuring that teachers understand new information and that they have productive opportunities to learn. They also need to manage conflict arising from the challenging of existing practices and provide incentives for teachers to take up new ways of working.

2.1.2 Clarity of purpose

Igniting change needs a well-evidenced rationale. Day *et al.* (2009), in their study of how school leadership impacts on pupil outcomes, note that effective leadership is underpinned by 'clearly articulated sets of values' (p.2) focusing on promoting 'individual and social well-being and raising standards of achievement' for all students. This not only leads to changes in classroom practices but also effects cultural change within schools. OPM (2008) and Grierson and Gallagher (2009) outline the need for evidence to support suggested changes, such as proof of innovations working in similar locations and/or endorsement from a credible national organisation.

In clarifying one's purpose, it is important to avoid defensiveness. Robinson and Timperley (2007) discuss this issue when writing on aspects of leadership. A solution, they argue, is 'constructive problem talk' (p.247). This dimension of leadership allows leaders to challenge and change entrenched aspects of teacher culture. It is an aspect of leadership requiring problem solving. Leaders name and describe problems in a way that avoids defensiveness, instead encouraging ownership and commitment. The aim is to examine, respectfully, the extent to which beliefs and practices of leaders and teachers inadvertently contribute to a school's problems.

Furthermore, OPM and others point to the importance of contextualising. Teachers want to know how outside ideas fit their context. Moreover, the aims and objectives of any changes need to be learner-related. Indeed, Robinson and Timperley (2007) note that change programmes need to reflect student profiles and needs. They remark, '[i]t

makes little sense to have a programme that is coherent in the eyes of adults but does not work for students' (p.252).

Timperley (2008) suggests that one way of doing this is through everyday success stories. These embed high teacher expectations of students – which contribute as much to the development of a vision as setting goals and targets. Similarly, Day *et al.* (2009) found that effective leaders applied strategies in ways that were 'sensitive to school and student background characteristics, to nationally defined needs and to their core educational ideals for maximising pupils' achievement across a range of academic, social and personal competencies' (p.3).

2.1.3 Loose-tight leadership

Igniting change involves loose-tight leadership – moving away from top-down and bottom-up strategies. Loose leadership can foster ownership and autonomy, while tight leadership provides guidance through centralised priorities and parameters. Mourshed *et al.* (2010) draw on these themes in their study of the world's most improved school systems. They point to pulling and pushing teachers towards change and ways to control the teaching processes.

- **Pull or push:** Should leaders use a mandate or persuasion to effect change? Mourshed *et al.* (2010) consider the 'fast action and fidelity of practice' provided by a mandate with the 'ownership and autonomy' of persuasion. They refer to the 'stakeholder resistance' of a mandate and the 'complacency and the slowing of reform momentum' of persuasion (p.62). Noticing 2.1.2 above, leaders in their sample, when an intervention was mandated, went to the front line to hear views and explain their rationale. Leaders, when using persuasion, worked to build a critical mass of support, while continuously reminding stakeholders of the urgency of change.

- **Loose or tight control:** Should leaders exercise loose or tight central control over teaching processes? Mourshed *et al.* (2010) point to a 'strong correlation between a school system's improvement journey stage and the tightness of central control over the individual school[']s activities and performance' (p.26). Systems moving from poor to fair exercise tight, central control over teaching processes, but those moving from good to great provide only loose, central guidelines – and this encourages peer-led creativity and innovation inside schools.

2.2 Operational leadership

A vision of new possibilities is not enough to effect change. Indeed, as with any aim or aspiration, objectives need to follow. We place such objectives under the heading of operational leadership – referring to the activities undertaken to bring about the changes one hopes to achieve.

2.2.1 Organisational culture

Organisational culture affects everyone in a school and headteachers crucially determine its philosophy. Indeed, regarding change, the attitude of a headteacher (and wider leadership team, to a lesser extent) was the most crucial factor enabling innovation within classrooms, according to teachers interviewed by OPM (2008). Bolam and Weindling (2006) found that there is significant existing evidence about the importance of the school culture in improving CPD.

OPM reports ways to create an environment to sustain and encourage innovation – referred to as building blocks. These blocks were common to some schools in its study whereas others were developing them within a programme of change.

Figure 2.1   Creating the conditions for innovations in teaching

Strong pupil voice	Structures for internal sharing and reflection	Commitment to CPD
Time and space to innovate	Distributive **Strong and reflective leadership** leadership	OK to fail
Some focus on skills	Well-run organisations	Trust in teachers' professionalism

Source: OPM, 2008, p.4

2.2.2 Climate for learning

Implementing change needs the right climate for learning. We have included this as a discrete sub-section because it is a crosscutting theme within our review. OPM (2008) refers to the need for 'strong organisational commitment' for practice development and the need to share good practice. They continue by saying: 'Innovative schools tend to function as well run organisations leaving more scope to concentrate on thoughtful innovation and improvement rather than day to day fire-fighting' (p.25).

Leaders need to manage and organise appropriate, in-depth learning opportunities for teachers. Their role, among many, is to demonstrate 'personal passion and enthusiasm' while also being 'sensitive to the fears of some teachers' in trying new things (p.26). Moreover, Timperley (2008) argues that, to make significant changes to their practice, teachers need 'multiple opportunities to learn new information and understand its implications for practice' (p.15). Teachers need to encounter these in environments offering both trust and challenge because 'change is as much about the emotions as it is about knowledge and skills' (pp.15-16). Timperley also states that

leaders without specific expertise can participate in professional development to understand the conditions needed to support teachers' ongoing learning.

2.3 Distributive leadership

Headteachers are busy people. While it is important for them to have an overview of potential change, they cannot and should not be its sole driver. Instead, they should make use of the resources they have to foster a culture that enables others to be agents of change, too. The research literature refers to this type of leadership practice as distributive or distributed leadership, or parallel leadership in the case of Chew and Andrews (2010). Regardless of the label, this type of leadership can be particularly effective in motivating, embedding and sustaining changes in practice, especially when linked to a school's improvement priorities. Chew and Andrews (2010) note that distributive or parallel leadership is characterised by mutualism, that is, a sense of shared purpose that allows for individual expression. Headteachers need to advocate distributive leadership, they argue, for it to achieve its goals. They remark: '[w]hen teachers are able to exercise their individual talents and professional insights in and outside of the classroom they increase their school's capacity to respond to new challenges posed by external school environment' (p.71).

Day *et al.* (2009) also highlight distributive leadership in their study of school leaders' impact on pupil outcomes. They report 'positive associations between the increased distribution of leadership roles and responsibilities and the continuing improvement of pupil outcomes' (p.4). These authors also identify 'leadership trust and trustworthiness' as fundamental for the progressive and effective distribution of leadership (p.4). OPM (2008) also notes the importance of distributive leadership. Its report notes that, in addition to reflective and effective leadership, the creation of different forms of distributive leadership was common to schools where systematic innovation was apparent. All the reports that discuss distributive leadership emphasise the role of distribution in embedding and sustaining change.

3. Planning and preparation

Effective planning and preparation provides a structure and context for teachers wishing to implement change, as well as a framework for their reflection and evaluation. We reviewed various sources focusing on the principles and processes of effective planning and preparation (see Pollard, 2010; Poet *et al.*, 2010; Grierson and Gallagher, 2009; Hulme, 2009; Robinson and Timperley, 2007; Fisher *et al.*, 2006). We have organised these principles and processes into three themes: the strategic context for development; involving and listening; and resources and systems. As in other sections of this review, we focus on transferable principles rather than attempt to present a single model of effective planning and preparation. Schools can adopt these principles flexibly or interpret them to suit specific school contexts.

3.1 The strategic context

The strategic context for effective practice development is important to consider when exploring changes in teaching. Teachers do not work in an apolitical or solitary vacuum. Rather, local and national policy agendas and reform regularly affect their work. A number of the articles we reviewed referred to the broader policy and political backdrop against which teachers work when discussing practice development and planning and preparation. Perhaps unsurprisingly, the literature mentioned that reflecting local contexts and needs within national frameworks and targets is a constant challenge faced by those people who prepare practice development strategies.

3.1.1 Contextualising

The positive and symbiotic relationship between practice development and wider educational policy appeared in two publications. Reporting the outcomes of the Schools for Ambition project, the Scottish Government's report (Hulme, 2009) notes that the practice development elements of the Ambition project helped schools work towards Curriculum for Excellence goals. The schools benefitted from linking practice outcomes to overall education strategy. Similarly, Grierson and Gallagher (2009), reporting on 'demonstration classrooms', note that the practice development element of this programme was designed to be consistent with strategic environments and known good practice.

Notwithstanding the above, Hardy *et al.* (2010) highlight a tension between practice development focused on student learning and practice development focused on performance measures. They refer to praxis-related approaches in comparison to technical approaches – the former is preferable but squeezed by the latter. Hardy *et al.* argue that practice development should respond to local need, rather than focusing on test scores.

Fisher *et al.* (2006) offer a more centralist approach in their review of new technologies in teacher learning. These authors note: 'An instrumental model of teacher

development is limited. It attempts to capture, copy and disseminate elements of 'good practice', out of context in which they were developed' (p.39). In other words, this model fails to embrace localism. Fisher *et al.* argue that a solely instrumental approach does little to develop reflexive professionals, who are capable of intelligent action in fast changing contexts. Rather, they highlight the use of 'principles', citing those proposed by Hargreaves and Goodson (1996).

Still considering the strategic context for practice development, Poet *et al.* (2010) found that staff with the least, and the most, experience considered the English Frameworks standard, introduced by the Teacher Development Agency in 2007, more useful for information practice development than did other members of staff. Additionally, as we noted when discussing leadership, leaders need to clarify with their staff the rationale and intended outcomes of any practice development. Indeed, as noted by the Scottish Government report (Hulme, 2009), there should be no ignoring of the strategic context. Rather, it should act as a motivational instrument, helping to provide a focus and rationale for change. Ultimately, the drivers of change (strategic and local) should reflect the specific contexts in which schools plan and prepare for practice development.

3.1.2 Value for money

Cost is an inevitable consideration underpinning planning and preparation. Indeed, 'cost effectiveness' and 'value for money' feature increasingly in the decision-making processes of public service managers. We reviewed one report that referred to this aspect of planning. Grierson and Gallagher (2009), reporting on 'demonstration classrooms', note that funding for this project was viewed as a catalyst to their practice development. External workshops, bringing together staff from different schools, were a key aspect of the project. However, site-based coaching replaced these workshops to reduce costs. This example illustrates the importance of capacity development, while also showing that decision makers are increasingly looking for schools to build internal capacity to reduce costs.

3.2. Involving and listening

School communities need to be involved in planning and preparing for practice development, according to the literature we reviewed. It is important to involve and listen to all the stakeholders who will be participating in and/or affected by the intended practice development.

3.2.1 Engaging teachers

Attuning practice development to the learning needs and contextual realities of teachers is important. Grierson and Gallagher (2009) point to the need to provide believable and vicarious experiences in local contexts. Similarly, Fisher *et al.* (2006) note: '[t]eacher learning is an active, experiential process, through which knowledge is enacted, constructed and revised' (p.2). The authors emphasise the impossibility of

separating knowing and thinking from the social context in which things happen. Several other authors highlight the continuous nature of practice development – identifying it as a self-developing cycle of need and ambition. For instance, Fisher *et al.* (2006), drawing on Somekh and Davis (1997), refer to the 'evolution into the 21st century of a learning society' (p.3). They claim that teaching should be an iterative ongoing exploration and journey – ending with the 'renaissance teacher'.

Some authors highlight the challenges posed by obstructionist attitudes within teaching. Fisher *et al.* (2006) refer to the teaching profession as one that can resist change. For example, they point out that 20 years of practice experience may refer to an incremental year-on-year development of knowledge or may refer to the repeating of the same actions every year for 20 years. Effective planning and preparation for practice development needs to bring staff on board (Robinson and Timperley, 2007).

Furthermore, according to Robinson and Timperley (2007), leaders can identify and avoid criticism by making clear the aims and intended outcomes of any particular change occurring within their school. The authors also note that, in dealing with teachers' attitudes, leaders should not ignore the within-school attitudes about what constitutes good teaching. Instead, they should work 'realistically' and 'respectfully' with teachers – principles they refer to as 'theory of action'. Kiely *et al.* (2010) also highlight the often individualistic nature of teacher practice, stating '[i]t's not about a model or a course that's been imposed, it's about what actually happens when one person is in the classroom' (p.10). To this end, they emphasise the need to be sensitive to the ways teachers learn, as well as being aware of the contextual factors affecting their learning. They argue that such allowances are important in helping overcome challenges such as potential resistance to change.

3.2.2 Ownership and involvement

The literature we reviewed pointed out the importance of distributed leadership in the planning and preparing of practice development. For instance, Chew and Andrews (2010) describe three essential characteristics for practice development: mutualism; a sense of shared purpose; and allowances for individual expression. The inclusion of these characteristics, they argue, enables teachers to develop as pedagogical leaders. They note '[w]hen teachers are able to exercise their individual talents and professional insights in and outside of the classroom they increase their school's capacity to respond to new challenges posed by the external school environment' (p.71).

Pollard (2010), in his commentary on pedagogy, discusses a conceptual framework for the professional expertise of teaching. This framework seeks to 'holistically represent' the major dimensions of teacher expertise (p.2). It incorporates concepts concerning curriculum, pedagogy and assessment. Pollard discusses the ways in which schools are using the framework to inform professional debate. For example, one school was attempting to make the foundation subjects more relevant and accessible to children. Teachers were using the conceptual framework to assess and evaluate the content and effectiveness of their new ideas. They spoke of the need to feel ownership of

pedagogic concepts, and keep them in mind when planning. A second school decided to use narrative as a method for getting teachers talking. They considered their stories in the light of Pollard's framework. Teachers especially focused on how far its concepts and questions were reflected in their planning and experiences, as well as thinking about changes that would have occurred if they had asked certain questions prior to planning.

Robinson and Timperley (2007) emphasise the need to 'create a community' within schools for improving student success. Their literature review identifies two aspects of such communities linked to student success. First, communities need to focus on how teachers teach and what students learn. Second, they should engender strong norms of responsibility and accountability for student progress and wellbeing. There is a need, Robinson and Timperley argue, to challenge 'private' approaches to classroom activity and, instead, take collective responsibility for student progress. A new norm of shared responsibility emerges focusing on ways to make teaching more effective.

Moreover, Chew and Andrews (2010) emphasise the importance of teacher-led learning communities, as these can achieve desired practice development outcomes. The Scottish Government's report on their School of Ambition project (Hulme, 2009) also emphasises the importance of collaboration, partnership and networking opportunities with practice development. It states '[a] significant future development would be an extended notion of reflective practice to include systematic professional enquiry that is cyclical, formative and collectively undertaken' (p.11).

Planning and preparing practice development benefits from involving whole school communities – as this can help to embed and sustain practice development activity. For instance, Grierson and Gallagher (2009) emphasise the need to involve administrators in such reviews. Chew and Andrews (2010) note that one of their study schools videoed classroom teaching and pupil feedback to plan and prepare for future learning. The schools in their study used a 'project-focused management team' to organise school-based activities. This team comprised members drawn from across the school community. Likewise, Sinnema *et al.* (2011) report the value of 'multi-dimensional collaboration', that is, bringing together staff, pupils, parents and outside partners into 'hubs' of practice development activity.

3.2.3 Involving other partners

Research use and involvement is an important element of effective practice development, as noted in sections 1 and 4. The literature we reviewed consistently emphasised the importance of partnerships between academic researchers and those who plan and prepare teachers' practice development. As shown by Hulme (2009), Chew and Andrews (2010), Kiely *et al.* (2010) and Sinnema *et al.* (2011), the level and nature of researcher-school partnerships varies according to the nature and details of specific programmes, but there are some consistent features.

- Partnerships help to inform planning, based on research evidence.

- Partnerships help schools develop M&E capacity development.

- Partnerships help teachers to be self-reflective.

Several reports referred to researcher-school collaboration as being an important feature of planning and preparation. Sinnema *et al.* (2011) provide this definition of 'evidence-informed collaborative enquiry':

…teachers engaging with research to inform enquiries into their own practice. This notion positions research and practice not as dichotomous, but of mutual concern to educational practitioners and academic researchers. Collaboration refers to the participation between academic researchers and practitioners which enables once-competing discourses to be integrated to transform practice. (p.247)

They go on to emphasise the important role such collaboration can have in preparing effective practice development activity:

Outcomes-linked evidence (both from classroom experience and published reports) has an important role to play as a resource for teacher professional learning, since it highlights and explains how teaching approaches have positively impacted on diverse learners' outcomes. (p.248)

3.3 Resources and systems

Planning and preparation requires resources, such as people, time, finances and teaching instruments. It also needs systems – formal and informal structures and operating protocols within which schools operate. The programme-related publications that we read referred to resources and their importance to planning and preparation. For instance, Hulme (2009) and Kiely *et al.* (2010) note the significance of having additional resources for planning and preparation. Indeed, the Schools of Ambition project, required specific resources through which practice development activity could be coordinated. Initially, the employment of such resources was to develop capacity, and drive and focus development. They often involved external facilitation and dedicated school-based coordination (see Hulme, 2009; Chew and Andrews, 2010; Kiely *et al.*, 2010; Sinnema *et al.*, 2011).

It is important to ensure that planning within practice development weaves into all elements of school activity, as far as possible. Robinson and Timperley (2007) discuss this issue. They argue that such weaving helps to underpin and define explicit goals, thereby creating staff 'buy-in' for changes in teaching. Grierson and Gallagher (2009) concur, citing Guskey (2002), Youngs (2001) and Fullan *et al.* (2006). They claim that programme organisation and cohesion needs to be 'embedded within the schools during all phases of development and implementation' (p.581). The reports we read emphasised the importance of developing and sharing capacity and responsibility, in order for practice development to embed within schools. Achieving this leads to better-sustained practice development without necessarily needing continued additional funding.

The research evidence also highlighted the importance at the planning and preparation stage of building practice development into schools' everyday activities, such as staff meetings and working groups, including management groups (Hulme, 2009; Chew and Andrews, 2010; Kiely *et al.*, 2010; Sinnema *et al.*, 2011). In particular, and related to planning and preparation, the active and visible support of leaders is vital in helping to motivate teachers' actions, focus their attention, ensure credibility and legitimacy, and make certain the proper deployment of necessary resources (Hulme, 2009; Kiely *et al.*, 2010; Sinnema *et al.,* 2011). Additionally, several authors note that time for practice development is a key facilitator in successful practice development (Fisher *et al.*, 2006; Hulme, 2009; Chew and Andrews, 2010; Kiely *et al.*, 2010; Poet *et al.*, 2010; Sinnema *et al.*, 2011).

Finally, we refer to the need for M&E. A comprehensive system of M&E is an essential part of practice development. We reviewed several evaluations of projects involving active researcher input and/or partnership, but few employed pre- and post-initiative testing or provided detailed explorations of learner outcomes, for instance. It will become increasingly necessary for schools to evaluate practice development outcomes as the value-for-money and cost-effectiveness agendas develop, in order to best inform their spending decisions going forward.

4. Types of practice development

Three types of practice development featured in the literature: leadership, collaborative and research-led practice development (see Sinnema *et al.*, 2011; Chew and Andrews, 2010; Kiely *et al.*, 2010; Mourshed *et al.*, 2010; Poet *et al.*, 2010; Pollard, 2010; Day *et al.*, 2009; Grierson and Gallagher, 2009; Hulme, 2009; Timperley, 2008 and 2009; OPM, 2008; Robinson and Timperley, 2007; Bolam and Weindling, 2006; Fisher *et al.*, 2006). We explore each type in this section, as well as commenting on some of the principles of effective practice development. We sourced few publications containing robust evidence on the impact of practice development initiatives, so we use a collection of examples to help us discuss each type of practice. We focus on the transferable principles of practice development rather than attempting, in our view incorrectly, to present a single model.

4.1 Principles of practice development

Teacher learning significantly enhances pupil learning (Pollard, 2010). Indeed, in their review of the world's most effective school systems, Mourshed *et al.* (2010) note the importance of teacher learning, by way of practice development, in bringing about school improvement. These authors mapped nearly 575 reform interventions made across 20 countries and found that only 15 per cent dealt with the content of system instruction (for example, standards and curriculum). However, 75 percent dealt with the delivery of instruction – of which the two most frequent interventions relate to practice development and accountability (25 and 15 percent, respectively). The authors remark that both 'structure' and 'resources' are important to school improvement, but that the latter was being used more by improving school systems.

Commitment to practice development is a characteristic of innovative schools, according to OPM (2008). Its study of teacher innovation found a 'very high level of commitment' to practice development among innovative schools (p.32). Employees of these schools were involved in a range of formal and informal learning opportunities, with time and funding made available for conferences and training courses. Teachers in these schools demonstrated a 'high level of commitment' to developing their skills, doing so through a range of different methods (p.33). A commitment to practice development means continually improving, evaluating the success of innovations and reflecting on one's own practice. OPM singles out three building blocks common to innovative schools: structures to encourage reflective practice; time to engage with the structures; and culture allowing and expecting trial and error.

Timperley (2008) adds to these building blocks in her article on professional learning and development. She maintains that professional learning experiences focusing on the links between particular teaching activities and valued student outcomes are most associated with positive impacts on those outcomes. Timperley also notes that the integration of essential teacher knowledge and skills can prompt deep teacher learning and effective changes in practice. Moreover, she claims that for teachers to make

significant changes to their practice, they need 'multiple opportunities to learn new information and understand its implications for practice' (p.15). Teachers need to meet such opportunities in environments offering trust and challenge. Timperley (2009), in her article on using assessment data for improving teaching practice, adds another building block. She maintains that a 'skills-only focus' to practice development does not allow teachers to gain the deep understandings they need to change their practice (p.23). Rather, teachers need to understand the theories underpinning, for example assessment or curriculum information, to make ongoing, informed decisions about practice.

Another message emerging from our review is the limitations of a 'one-size-fits-all' and standards-driven approach to practice development. Instead, the research literature suggests adopting approaches and strategies, based on principles of good practice, that reflect modalities of learning and the needs and resources of specific school contexts. Fisher *et al.* (2006) explore this view at length, arguing that there is limited applicability to a 'one-size-fits-all' instrumental approach to practice development. Rather, they ask for flexibly adoptable principles. They also maintain, citing Hargreaves and Goodson (1996), that teacher development should embrace the key principles shown in Figure 4.1.

Figure 4.1 Key principles of teacher development

1. Opportunities and responsibilities to exercise discretionary judgement.
2. Opportunities and expectations to engage with moral and social purposes.
3. Commitment to working collegially within collaborative cultures.
4. Occupational heteronomy rather than self-protective autonomy.
5. A commitment to active care, not just anodyne service for students.
6. A self-directed search and struggle for continuous learning.
7. The creation and recognition of high task complexity.
8. Opportunities and support for creative activity.
9. A recognition of the situated affordances of digital technologies to support teachers as learners.

Sources: Hargreaves and Goodson, 1996, pp.20–21; Fisher *et al.*, 2006, p.39

Fisher *et al.* (2006) argue for the above approach. They claim it provides for creativity, but also, usefully, constrains. These qualities are enabling and complementary, the authors maintain. Fisher *et al.* continue by referring to the creation of clusters of purposeful activity. They view this approach as creating a renaissance teacher, who is ready, willing and able to learn in contexts that are social and dynamic. Table 4.1 shows the clusters they discuss.

Table 4.1 Clusters of practice development

Cluster	Activity
Knowledge building	Adapt and develop ideas, modelling, representing understanding in multi-modal ways
Distributed cognition	Access resources, find things out, write and develop
Community and communication	Exchange and share, extend context, extend participation at all levels
Engagement	Explore and play, deal with risk and uncertainty, work with different dimensions of interactivity, respond to the current situation

Source: Fisher *et al.*, 2006, p.3

Fisher *et al.* (2006) also reviewed the role of new technologies in teacher learning. They examine the ways teachers learn, alongside their discussion of ways to use new technologies. They conclude that information technology can overcome some of the barriers teachers face in learning, such as being constrained by location and time. Fisher *et al.* remark, in relation to the use of information technology in practice development, that its use is 'not about making an industrial process more efficient; rather, it is about enabling cultural change in the profession' (p.4).

4.2 Leadership

Leadership can harness change in schools. Day *et al.* (2009), in their review of leadership, refer to the building of a learning community as a striking characteristic of outstanding contemporary leaders. These authors, however, found secondary headteachers to be 'much more likely' than primary headteachers to stress their leadership actions relating to enhanced teaching quality/CPD and its impact of improved pupil outcomes and the overall quality of teaching (p.70). Primary school headteachers, compared with those in secondary schools, perceived that their actions relating to improved teaching had a stronger impact on their school's approach to learning, the way teachers teach, pupil engagement in learning and the overall quality of teaching.

Notwithstanding the above, Timperley (2009) reports the findings of recent analysis demonstrating that it is teachers who have the 'greatest system influence on student outcomes' and this has led to an 'increasing focus' on what happens in classrooms and how teacher professional learning can be promoted (p.24). However, Timperley also notes that teachers cannot effect change alone. Instead, they require particular organisational conditions – especially a school leader's promotion of, and participation in, practice development.

Robinson and Timperley (2007) discuss the role of leadership in fostering teacher learning. These authors reviewed a range of studies, all showing statistically significant

impacts on student learning. Seventeen studies measured impacts of student learning and one study focused on social factors – most reported effects that were moderate to large. Using a technique called 'backward mapping', Robinson and Timperley identified 23 elements of leadership. They categorised these using five key principles critical to fostering teacher and student learning. The authors point out that these five principles work as a whole. Each aspect builds on or complements the other (see Table 4.2).

Table 4.2   Elements of effective leadership

Element	Actions for leaders
Provide educational direction and goal setting	Define where goals start and end. Set goals through joint thinking as these are associated with the highest success. Embed goals in everyday activities.
Ensure strategic alignment	Embed practice development within overall school-related activity and seek to secure its sustainability. Practice development programmes should reflect student profiles and needs.
Create a community for improved student success	Promote an intensive focus between how teachers teach and what students learn. Engender strong collectively held norms about student progress and wellbeing. Challenge previous 'private' professional approaches to classroom activity to establish collective responsibility and scrutiny.
Engage in constructive problem talk	Do not ignore staff beliefs about what makes good teaching when dealing with resistant and/or entrenched practice – work realistically and respectfully with them. Identify and describe problems in sensitive and respectful ways – e.g. by making the gap to be bridged explicitly clear. Support this strategy with capacity development – teachers need to see the aims and objectives of practice development as realistic and achievable.
Provide leadership through selecting and developing smart tools	Leadership needs to be wedded to, and set within, all of the teaching 'tools' associated with learning. Leadership does not involve only face-to-face managing and communication.

Source: Robinson and Timperley, 2007, p.249

A further study by Chew and Andrews (2010) discusses the role of distributive or 'parallel' leadership in practice development. Their report focuses on an Australian programme, Innovative Designs for Enhancing Achievements in Schools (IDEAS), examining the ways teacher leadership brings about practice change. The IDEAS approach – designed by researchers – placed teaching at the centre of school improvement. It identified leadership as critical to this process. Indeed, a core element of IDEAS was the creation of an IDEAS School Management Team, responsible for

organising the delivery of practice development and ensuring that it reflected local needs and resource realities. Their findings point to the 'centrality of teacher leadership' in bringing about change and the importance of school leadership in giving staff the space, time and responsibility to make decisions (p.59).

OPM (2008) refers to leadership as 'the most fundamental building block' and the 'primary factor in creating the conditions for innovations in teaching' (p.26). Its study found that, of those teachers interviewed, around two-thirds said they had opportunities to introduce innovative processes or practices into their school more widely. However, some said that the leadership of their school stifled broader innovation. OPM notes that some schools that are successfully innovating concentrate on leader-led innovation while others concentrate more on practitioner-led innovation taking place in classrooms and more widely. The most successful, which continually improve and innovate, do both, as environments that allow practitioner-led innovation to flourish also sustain leader-led innovation.

4.3 Collaboration

Three EPPI-Centre reviews, although pre-dating 2006, provide robust evidence about the positive impact of collaborative CPD on teaching practice (Cordingley *et al.*, 2003, 2005a and b). They conclude that collaborative CPD can support positive outcomes for teachers and pupils and sustained support is likely to be more beneficial than several more episodic opportunities (Cordingley *et al.*, 2003). In the second report they conclude that significant evidence exists that collaborative CPD is effective in bringing about changes but there is only weak evidence that individually-oriented CPD can influence teacher or pupil changes (weak in terms of the number of studies and the low levels of impact) (Cordingley *et al.*, 2005b). Finally, they conclude that those studies that look at impact on teachers, rather than impact on teaching and learning, find similar conclusions (Cordingley *et al.*, 2005a).

Collaborative development also featured in the literature we reviewed. We refer to such collaboration as an activity involving pairs or groups of teachers or schools, or an activity involving schools and other partners, such as researchers. Figure 4.2 gives a further account. Mourshed *et al.* (2010), in their review of the world's most improved school systems, refer several times to collaborative practices. They note that such practices 'embed routines of instructional and leadership excellence in the teaching community' which makes classroom practice public and makes teachers coaches of their peers (p.73). Mourshed *et al.* maintain that an 'infrastructure of professional career pathways' (p.28) is needed to support collaborative practices, to enable teachers to chart their development and also share their pedagogic skills. Consequently, collaborative practices 'shift the drive for improvement away from the centre to the front lines of schools' – so making it self-sustaining (p.83).

Figure 4.2   Collaborative practice

Collaborative practice is about teachers and school leaders working together to develop effective instructional practices, studying what actually works in [the] classroom, and doing so with rigorous attention to detail and with a commitment to not only improving one's own practice but that of others as well… This is the essence of collaborative practice: teachers jointly engaged in an empirical, routine, and applied study of their own profession. A remarkable effect of collaborative practice is that it serves as a mechanism of peer accountability, substituting for other formal accountability measures such as teacher appraisals or requalification.

Source: Mourshed *et al.,* 2010, p.75

Cordingley *et al.* (2007) reviewed the evidence about the impact of partnering teachers with 'specialists' in CPD programmes and found a positive impact on both pupil achievement and attitudes, as well as changes in teaching practice. Similarly, in their study of professional learning intervention in New Zealand, Sinnema *et al.* (2011) brought together teachers and outside partners. They used three forums for collaboration: a post-graduate taught course, in-class support, and reflection and planning days. They refer to their project as employing multi-dimensional collaboration, involving staff, pupils and parents.

Hulme (2009) points to the central nature of collaboration in the Schools of Ambition programme. Collaborative efforts were observed within project development, implementation and M&E. Hulme reports that, as a direct result of the Ambition project, various external partnerships formed. However, engaging business partners was challenging. The project's focus on research was particularly successful. Indeed, an action research element emerged which provided mentoring, support, advice and feedback to participating schools. Such support made use of virtual and face-to-face research and collaboration, tailored to the needs of schools rather than being generic. Schools received support with these activities:

- writing teacher-initiated proposals

- managing projects (their scope, timeline, stages and resources)

- deciding on ethical matters

- collaborative practices

- accessing electronic resources

- collecting data

- M&E

- disseminating/writing summaries

- producing portfolios 'telling the story'.

Notwithstanding the above, it is clear from our review that collaboration often requires dedicated responsibility and time for coordination. Moreover, funding for such

coordination often relies on specific research-led programmes, and ends when such programmes conclude (Hulme, 2009).

4.4 Research-led

Research-led practice development featured in the literature we reviewed. This type of practice refers to reflective or enquiry-based learning through which teachers look back at their practice, alone or with others, to stimulate their professional development. Mourshed *et al.* (2010) make a key observation in their study on improved school systems. They note that the sustaining of new practices is not only about 'changing the explicit structure and approach of a system, but about how teachers think about teaching' (p.21). Mourshed *et al.* point to collaborative practices between teachers within and across schools as one of three ways to improve school systems. Bolam and Weindling (2006) find that there is 'fairly strong' evidence about the importance of leaders promoting a research-engaged culture and professional learning communities.

Figure 4.3   Key elements of reflective practice

'Reflective practice is based on open-minded enquiry and a willingness to use evidence to challenge one's own provision. This might be based on external evidence of school or pupil performance, on reading research findings, on small-scale personal enquiries or observations, on discussions or collaborative activities with colleagues. There are many possibilities but, in all cases, evidence is used to generate re-appraisal. In this way, taken-for-granted thinking is challenged and professional judgement is refined. Working with colleagues in a department, school or network provides additional support and professional enrichment. Reflective enquiry may be focused on particular problems or issues and is best carried out in systematic ways and for specific purposes. Understanding then becomes embedded in teacher expertise and enables decision-making at other times.'

Source: Pollard, 2010, p.27

Self-led or reflective practice is relevant to our entire review. Timperley (2008) notes that sustained improvement depends on teachers developing 'professional, self-regulatory inquiry skills so that they can collect relevant evidence, use it to inquire into the effectiveness of their teaching, and make continuing adjustments to their practice' (p.24). She maintains that, with these crucial self-regulatory skills, teachers can answer three important questions: 'Where am I going?', 'How am I doing?', and 'Where to next?' (p.24). The teachers in Poet *et al*'s (2010) study preferred this approach to practice development to other methods, typically those involving an element of assessment such as performance management and external observation.

A handbook written by Kiely *et al.* (2010) makes clear some of the principles of reflective practice. They refer to 'critical learning episodes' (CLE) founded on this view: '…teaching is best enhanced when teachers analyse and reflect on what happens in their own classrooms' (p.5). The authors give guidance on what they refer to as 'core and optional' components. Kiely *et al.* derive their findings from a series of research

projects exploring the teaching of English to non-English speakers, but they view the components of CLE as transferable. The authors note the popularity of the CLE approach with teachers, but they also emphasise the need for flexibility and adaptability within the methodology.

Personal reflection initiates and informs CLE. Collegiate working then shapes the approach, which allows for innovation and a developed understanding of one's own practice. Reflection, review and development thus play a central role in this particular approach to practice development. Moreover, action research is at the centre of CLE – it is an incremental learning and innovation process involving a series of sequential processes. For instance Kiely *et al.* (2010) involved the following:

- teachers and programme staff meet to develop key concepts
- research frameworks and tools are adopted and/or adapted
- observation follows – analysis of observation leads to teacher-created episodes
- CPD leads and colleagues undertake analysis
- teachers develop their own innovation to enhance teaching effectiveness.

Similarly, Grierson and Gallagher (2009) used research-led case studies to explore the use of 'demonstration classrooms'. They based their work on the premise that teachers require differentiated learning, just like students, albeit within an overarching structure to practice development. The authors selected expert teachers to conduct the demonstration classes. This approach enhanced teachers' feelings of efficacy in their practice. It also persuaded teachers to view the practice guidance as feasible. The gradual release of responsibility to teachers, afforded by this approach, was effective. Teachers gradually took onboard and applied what they had learned. The study shows that demonstration teachers need to be brilliant, while also valuing and respecting the professionalism of colleagues.

A final thought on reflective learning to emerge from this literature concerns a community model. Reflective learning can include self-directed learning, but usually as one element of a wider community-based model. Indeed, Fisher *et al.* (2006) warn of the potential pitfalls of practice development that relies solely on self-directed learning and Cordingley *et al.* (2005b) conclude that individual CPD is less effective in terms of impact than collaborative CPD. This is because individuals are unable to fully challenge and change their practice if their efforts are isolated from colleagues and the on-going challenge and support from colleagues allows for developments to be sustained. Community-based learning focuses on learning rather than teaching, with teachers working collaboratively to achieve the best outcomes for pupils.

5. Monitoring and evaluation

M&E was the fourth theme to emerge from our research evidence (Mourshed *et al.*, 2010; Pollard, 2010; Poet *el al.*, 2010; Hulme, 2009; Timperley, 2008; OPM, 2008; Robinson and Timperley, 2007; Grierson and Gallagher, 2009; Sinnema *et al.*, 2011). The processes of M&E enable schools to assess the quality and impact of their work against strategic plans. When teaching practices change, it is important to know how well the changes are working and what impact they are having. Otherwise, how do you know if the required change has been achieved? Pollard (2010) notes that the moral commitment of teachers to learners calls for them to monitor outcomes, while Mourshed *et al.* (2010) refer to evaluation as a form of accountability. We discuss in this section three ideas that emerged from the research literature: school-wide M&E, teacher-led M&E and student-involved M&E.

The theme of M&E cuts across our review. This is not surprising in a study of the factors influencing change since M&E are stages of the 'change management' process. Both processes intersect with our theme of practice development. They also overlap with our theme: planning and preparation, as well as leadership. The processes of monitoring (systematically collecting and analysing information as things progress) and evaluating (comparing actual impacts against one's agreed plans) are also a distinct theme. We discuss both in relation to teaching practices – not teachers' personal effectiveness (which The Sutton Trust (2011), for example, criticises in its report). The research evidence we read highlighted the contribution made by M&E to a sense of progress in schools. Its role in shaping teaching practice and generating 'buy-in' was also underlined.

5.1 School-wide M&E

Schools need to change constantly to stay abreast of their pupils' changing needs, as emphasised by OPM (2008). Many of the factors leading to such change have appeared in this review, but there is a place for M&E, too. Indeed, being encouraged to reflect on and evaluate success is at the heart of an innovative school, according to OPM (2008). M&E allows evidence-informed innovation to become part of a school's culture. It is through the systematic collection and analysis of information that schools can identify and prioritise areas for development, and through evaluation that they can learn what change has been accomplished and how – and then set new goals.

The purpose of M&E needs to be transparent. It is important that schools and teachers are clear as to how M&E relates to their plan for change. Robinson and Timperley (2007, p.251), in their review of leadership, refer to the need for clarity when they discuss coherent teaching programmes. They advise schools, as organisations, to support a common framework for evaluation, as they should also do for recruitment, professional development and the allocation of resources. It is through a consistent M&E system that schools can perfect new teaching practices, and encourage others to

support their development. Indeed, Timperley (2008) makes this statement about gaining commitment:

One of the most powerful means of gaining teacher commitment is to provide proof, obtained through monitoring, of improved student progress towards identified goals. Leaders need to find ways to demonstrate such progress. (p.22)

M&E can also strengthen pedagogy. Pollard (2010) discusses this issue in his commentary on professionalism within teaching. He describes pedagogy as 'the practice of teaching framed and informed by a shared and structured body of knowledge' (p.5). He argues that teachers should be able and willing to 'scrutinise and evaluate their own and others' practice in the light of relevant theories, values and evidence' (p.5). This statement holds relevance for effecting change – it is through teachers' professional judgements that they can explore new and innovative ways of working. Pollard provides an example of a 'pedagogic discourse' as an illustration of how evaluation can be done (see Figure 5.1).

Figure 5.1   'Pedagogic discourse' in Finnish schools

In a world-class educational workforce – Finland might be used as an example – teachers are the ones who initiate discussions about pedagogy, and then evaluate and critique the ideas they develop. This 'pedagogic discourse' aspires to be explicitly grounded in the scrutiny of ideas, theories, ethical values and empirical evidence. It goes well beyond simplified prescription, for instance of 'what works', and supersedes reliance on centrally-imposed performance targets. In their place is greater trust in teachers' capacity for self-improvement as an inherent element of their professional identity. However, this trust has to be earned – hence the focus in this Commentary on the nature of pedagogic expertise.

Source: Pollard, 2010, p.4

Pollard's example is clearly not universal. For example, OPM (2008) found teachers to be using their professional judgements to innovate but their evaluations were informal and reactive. Teachers (especially in primary schools) used student reactions and their own feelings of success to decide whether to continue and/or refine their new approach or not. Interestingly, because these innovations were not school-wide initiatives they were not subject to explicit evaluation. OPM found that headteachers and senior managers usually focused on evaluating innovations that were school-wide rather than classroom-based, such as a new competency-based curriculum. Indeed, evaluation was 'nearly always' an integral part of such change (p.47). Their main tool for evaluating was exam results, however, teachers did not necessarily agree with this measure, as described in Figure 5.2.

Figure 5.2   Measuring success

Whilst some teachers suggested that the success of innovative teaching could be measured through improved pupil performance in GCSEs, A levels and SATs, others argued that exam results were not likely to be an effective method for evaluating innovative teaching. Some claimed that informal and anecdotal feedback form more reliable and context-based evaluations of innovation…However heads, particularly at secondary schools, did ultimately see exam attainment as a key indicator of success and it was often this that was the ultimate aim and indicator of the success of whole school innovation. Other indicators such as increase in pupil attendance and improved behaviour were pre-cursors to improved academic achievement and were seen as part of the interim means to this end.

Source: OPM, 2010, pp.47–48

OPM points out that parents, governors and policy-makers would base success on academic achievement. Therefore, all headteachers used exam scores, in some way or other, to evaluate the success of innovations.

5.2   Teacher-led M&E

Self-regulation is critical to M&E. Robinson and Timperley (2007) identify the principles of such learning as '…evaluating performance against identified goals, monitoring progress towards them and adjusting performance based on the feedback provided by the monitoring systems' (p.258). Timperley (2008) makes further comments on this deliberate and evaluative process in her paper on teachers' professional learning and development. She argues that without self-regulation, changing practice becomes 'an end in itself' rather than 'a means to benefit students' (p.14). She highlights the following principles as important.

- Meta-cognitive and self-regulatory processes help teachers to define goals and monitor their progress towards them.

- Self-regulatory skills enable teachers to monitor and reflect on the effectiveness of changes they make to their practice – they can identify any necessary adjustments to maximise student outcomes.

- Teachers should identify the intended outcomes – as well as the cues that will make it possible to monitor progress towards those outcomes.

- Self-regulation is *not* supported by prescribing sets of desirable behaviours or leaving teachers to develop better practice in the absence of clearly defined goals.

In her discussion, Timperley contrasts self-regulation with traditional conceptions of assessment. She describes the latter as being non-conducive to self-regulated inquiry. Timperley argues that teachers are most likely to participate in an inquiry process in an open and meaningful way if they know that any less-than-desirable outcomes will not put their job, pay or reputation at risk.

There are, however, challenges to teacher-led M&E. For instance, are teachers able to engage with research, a practice that can make a difference to M&E (as well as informing teachers' enquiries into their own practice)? Poet *et al.* (2010), surveying over 4000 teachers in England, found that only a third had been involved in research while over half had not (despite many wishing to be involved in research). Interestingly, research involvement was most likely among teachers who reported a high frequency of practice development during the last year. The Scottish Government (Hulme, 2009) also highlights challenges to research involvement. It found, from its Ambition project, that research users were mainly senior staff, even in schools that had adopted an inclusive and distributed approach to the Ambition project. Moreover, beyond the Ambition project, researchers found no evidence that further M&E partnerships had developed.

5.3 Student-involved M&E

Students should know what change means for them, and M&E of change should be student-focused. OPM's (2008) study of innovation in schools notes that students should be involved in developing, testing, evaluating and sharing ideas. Its case study schools focused efforts on students understanding more about the techniques behind education. Indeed, by involving students in M&E, schools treated them as 'co-producers' part-responsible for their own learning (p.23). Its innovative schools used forms of 'pupil voice' to involve students in evaluating lessons, such as lesson observation and teacher-learner discussion about the success of particular innovations. These inclusive techniques helped to overcome possible resistance to new techniques, while also improving teaching practice and learning.

6. Discussion

This study has explored the factors leading to positive change in teaching practice among teachers in schools and other educational settings in the UK and abroad. A range of research literature and other publications provided answers to six research questions, although no question was entirely resolved. Indeed, several question marks remain. We return in this section to our initial questions and consider the implications of our findings for future NFER research in the area of workforce development and creating change in schools.

6.1 Factors influencing change

The principle aim of our review was to examine the factors leading to positive change in teaching among teachers. What influences their practice development? What encourages their search for change? Our literature review identified four factors: leadership, planning and preparation, practice development, and M&E. We have highlighted the role of leadership in igniting, implementing and issuing change. We have outlined the need for effective planning and preparation to provide a structure and context for teachers wishing to implement change. We have discussed types of practice development that can lead to change in schools. Moreover, we have identified how processes of M&E enable schools to assess the quality and impact of change against strategic plans.

Building on the evidence we reviewed, we developed a diagram showing the theories or practices most likely to encourage teachers to develop, implement and evaluate new ways of working. Table 6.1 provides more details of the factors leading to, and encouraging, positive change in teaching among teachers.

Table 6.1   Factors leading to positive change

Factor	Facilitators	Further details
Leadership	Strategic leadership Operational leadership Distributive leadership	Generate community ownership, cohesion, commitment Address and mitigate barriers Ensure clarity of purpose Theories of change management, theory of actions are important
Planning and preparation	› Strategic context › Involving and listening › Resources and systems	Ensure the how-to details of the plan are in place and based on clear and robust evidence Evidence-informed, coherent and realistic planning and preparation are the key to success
Practice development	Principles for effective practice development Leadership and collaboration Research/inquiry-based learning	Types of practice development should reflect contextual factors such as modalities of learning Leadership, collaboration and research/inquiry-based approaches to practice development show promise
M&E	› School-wide M&E › Teacher-led M&E › Student-involved M&E	Effective M&E: Makes a self-justified and active contribution to activity Realises a sense of achievement and progress Confers transparency, inclusion and accountability Is an important contributor to, and driver of, change in practice

6.2 Research gaps

The findings provided in the sections above largely cover a number of the research questions posed in Section 1.1 of this report, including:

- the factors that influence teachers to develop their practice

- the forms of CPD, leadership and peer support that encourage positive change (although little evidence was found about the impact of ITT or accountability structures in this regard)

- the possibility of producing a map of different factors and their interventions (see Diagram 1).

However, a number of questions remain and further questions have emerged in light of the findings.

- Is it possible to produce a map of the different factors influencing change and the interactions between the factors, as supported by the majority of the evidence?
- What gaps are there in the research evidence or suggestions about further needed work?

We speculate in this section on future directions for the NFER's proactive research strand. We start by pointing to a research area well covered by the evidence base – this being how to effect change in schools. There is plenty of literature showing how teachers learn, as well as the elements of practice development most effective in helping teachers to change practice. Many educational experts have written about this issue at great length, and there is no need for the NFER to add to this research theme. Rather, our review identifies other areas where research, and researcher-school collaborations, could help inform, drive and monitor ongoing development in teachers' professional practice.

First, we have explored what leads to changing teaching practice. Yet, what outcomes does such change achieve? Limited evidence emerged from our review of positive change in teaching practice leading to **improved outcomes for pupils and schools** (cf. Mourshed *et al*., 2010). We did find evidence of teachers being satisfied with the training they receive, as well as teachers' self-reported inventories of the impact of practice development. We also found in our section on M&E that student outcomes were seen as an important measure of the success of interventions. However, the relationship between changes in practice and outcomes for students, based on the evidence from the reviewed literature, appears limited. There is certainly scope for the NFER to explore the impacts and intended outcomes of practice change for students, as well as teachers themselves.

Second, there is a need for closer analysis of leadership and its effects on changes in practice. The NFER could engage in rich qualitative work which would help to illuminate the extent to which the leaders are aware and supportive of small-scale classroom-based innovation. Further research needs to confirm (or otherwise) a relationship between distributed forms of leadership and improved student learning outcomes. Moreover, future research should explore the intended outcomes for professional development with actual outcomes for learners.

Third, our search failed to uncover any significant research regarding the ways in which Initial Teacher Training (ITT) might contribute to preparing the ground for teacher-led practice innovation. Further research should explore the ways in which ITT encourages teachers to be receptive to change, as well as being outcome-focused and collaborative-minded. Similarly, although we sourced articles on collaborative working and distributed leadership, we did not encounter any references to teacher-level networks or support from professional associations (this is not to say that it does not exist, more that our tight search parameters did not bring it to the fore). Moreover, we

found very little evidence of the 'value for money' of the different factors that lead to change in the classroom. Only one of the research reports reviewed discussed this issue (Grierson and Gallagher, 2009). However, in the current financial situation it is anticipated that this may become more of a consideration for schools when they have a number of different options to choose from and are in the position of evaluating the best means to achieve change. Studies which research the cost of different interventions and the likely impact they will have could provide useful evidence to inform schools' choices.

Fourth, although 'change management' is a very well-researched area, more research is needed on how changes to practice demonstrably affect student outcomes. Moreover, there would seem to be a potentially increasing role for research to help teachers develop their practice. There is much room and opportunity for international collaborative research in this area. We suggest that further research should a) better describe and connect practice development with teacher/student outcomes and b) help develop the capacity of teachers to engage in, and with, reflective or enquiry-based learning.

Fifth, rich qualitative research needs to explore how M&E drives support for change in schools, including dissemination techniques. For instance, what processes are involved in gaining whole school or subject support for change, especially as senior managers can overlook classroom-based innovation? Moreover, do teachers feel they have appropriate M&E skills? How confident are they in measuring the effectiveness of change? What questions feature along the way? Are there examples of teachers using specific methodologies? Is there a common language of M&E in schools? What would a 'toolkit' used for setting up system of M&E look like? Moreover, to what extent would such tools be useful given that the headline measure of success is exam results? What matters most when measuring change?

Sixth, as we noted in section 4, there are serious limitations of a 'one-size-fits-all' and standards-driven approach to practice development. Indeed, the new policy backdrop in which education now sits embraces the localism and local governance agenda. Central government is giving schools more power and responsibility than has been offered in decades. Considering this shift, through various methods, the NFER could work with individual or groups of schools to:

• design practice development approaches

• create M&E models

• develop enquiry-based learning

• design tools and instruments to support practice development.

To summarise, the NFER should take advantage of its school-level expertise, together with practice development expertise, to work in partnership with schools. The NFER's research knowledge and experience could lead to some exciting research collaborations with schools and training providers.

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