

PUTTING EVIDENCE TO WORK: A SCHOOL'S GUIDE TO IMPLEMENTATION

Guidance Report



Education
Endowment
Foundation

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About the Education Endowment Foundation

The Education Endowment Foundation (EEF) is an independent charity supporting teachers and school leaders to use evidence of what works—and what doesn't—to improve educational outcomes, especially for disadvantaged children and young people.

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FOREWORD



There's no doubt that schools today are in a better position to judge what will work in their classrooms than they were ten years ago. We have access to more robust evidence about which teaching and learning strategies are likely to be effective, and, as the evidence base has grown, so too have teachers' appetites for it.

But generating evidence can only get us so far. Ultimately, it doesn't matter how great an educational idea or intervention is on paper; what really matters is how it manifests itself in the day-to-day work of teachers. This guide is intended to support you in putting research evidence to work in your setting, whether that's a school, an FE college, or a nursery. It will help you develop a better understanding of how to make changes to practice by offering practical and evidence-informed recommendations for effective implementation.

To develop the recommendations, we reviewed the best available international research and consulted experts, teachers, and academics. The recommendations start with creating the right conditions for implementation, and step through a structured process for planning, delivering, and sustaining change.

This updated guidance report includes an expanded 'Explore' section on how to identify school improvement priorities and make evidence-informed decisions on what to implement.*

A suite of free practical resources has also been created in partnership with teachers and schools to help you develop a deeper understanding of the recommendations and apply them in your context, including planning templates, case studies and an interactive online course. Our network of [Research Schools](#) hold regular training sessions and events to provide more hands-on support in using the guidance, as part of a drive towards an evidence-informed approach to school improvement.

I hope you find this guidance report useful as a starting point. There will inevitably be challenges along the way, but the prize of a consistently excellent education system is too great to lose sight of.

A handwritten signature in black ink, appearing to read 'K Collins', with a long horizontal stroke underneath.

Sir Kevan Collins
Chief Executive
Education Endowment Foundation

* The original version of the report (February 2018) is available [here](#)

INTRODUCTION

“Implementation—the process of putting a decision or plan into effect.”

—Oxford English Dictionary

“Vision without implementation is hallucination.”

—Thomas Edison

Why is implementation important?

Schools are learning organisations. They continuously strive to do better for the children and young people in their charge. In doing so, they try new things, seek to learn from those experiences, and work to adopt and embed the practices that work best.

Implementation is what schools do to improve: to change and be more effective. And yet implementation is a domain of school practice that rarely receives sufficient attention. In our collective haste to do better for pupils, new ideas are often introduced with too little consideration for how the changes will be managed and what steps are needed to maximise the chances of success. Too often the who, why, where, when, and how are overlooked meaning implementation risks becoming an ‘add on’ task expected to be tackled on top of the day-to-day work. As a result, projects initiated with the best of intentions can fade away as schools struggle to manage these competing priorities.

One of the characteristics that distinguishes effective and less-effective schools, in addition to *what* they

implement, is *how* they put those new approaches into practice. Often, individuals and schools that implement well tend to do so by instinct, or what might be called common sense. Unfortunately, good implementation occupies a rarefied space of ‘uncommon common sense’, with too few explicit discussions of the characteristics and qualities that make it effective.

The purpose of this guidance is to begin to describe and demystify the professional practice of implementation—to document our knowledge of the steps that effective schools take to manage change well.

Ultimately, it doesn’t matter how great an educational idea or intervention is in principle; what really matters is how it manifests itself in the day-to-day work of people in schools.

“It doesn’t matter how great an educational idea or intervention is in principle; what really matters is how it manifests itself in the day-to-day work of people in schools.”

INTRODUCTION

How should I use this guide?

There are legitimate barriers to implementing effectively in schools—the bombardment of new ideas and initiatives, limited time and resources, and the pressure to yield quick results, to name just a few. Nevertheless, this guidance report shows a lot can be achieved with careful thought, planning, and delivery using existing resources and structures. It is about making the implicit explicit, providing clarity and purpose to existing processes, and reframing what you are already doing, rather than bolting on a whole new set of procedures.

To date, schools have used the guide to help implement a range of different school improvement decisions—programmes or practices; whole-school or targeted approaches; internal or externally generated ideas.

We suggest you use this guide as part of an overall drive towards evidence-informed school improvement, underpinned by a culture of continual improvement and collaborative learning. The Research School Network are well positioned to help you in this respect, offering a range of training programmes to help you build capacity and make, and act on, evidence-informed decisions – further information on the network is available in ‘Further Reading and Support’.

Who is the guidance for?

This guidance is aimed primarily at school leaders and other staff with responsibilities for managing change within a school.

Teachers should also find the guide useful in developing a better understanding of how to make practical changes to their classroom practice, as well as their role in supporting departmental or whole-school changes.

The guidance may also be useful for:

- governors and parents looking to support and challenge schools;
- programme developers seeking to create more effective interventions;
- policy-makers and system leaders that implement initiatives at a regional scale; and
- education researchers, in conducting further research on the features and nature of effective implementation.

How is this guide organised?

This guide starts with two important underlying factors that influence a school's ability to implement effectively: (a) treating implementation as a process, and (b) school leadership and climate.

The remainder of the guide is organised around four well-established stages of implementation—Explore, Prepare, Deliver, Sustain—with actionable recommendations at each stage. The table overleaf summarises all of the recommendations in the report. Figure 1 shows a summary of the recommendations as a cycle, which works through the four implementation stages.

Try and see these recommendations as a rough guide, rather than a rigid set of steps. You may find that some activities overlap or that some recommendations simply aren't feasible—the ‘best shouldn't be the enemy of the good!’

IMPLEMENTATION PROCESS DIAGRAM

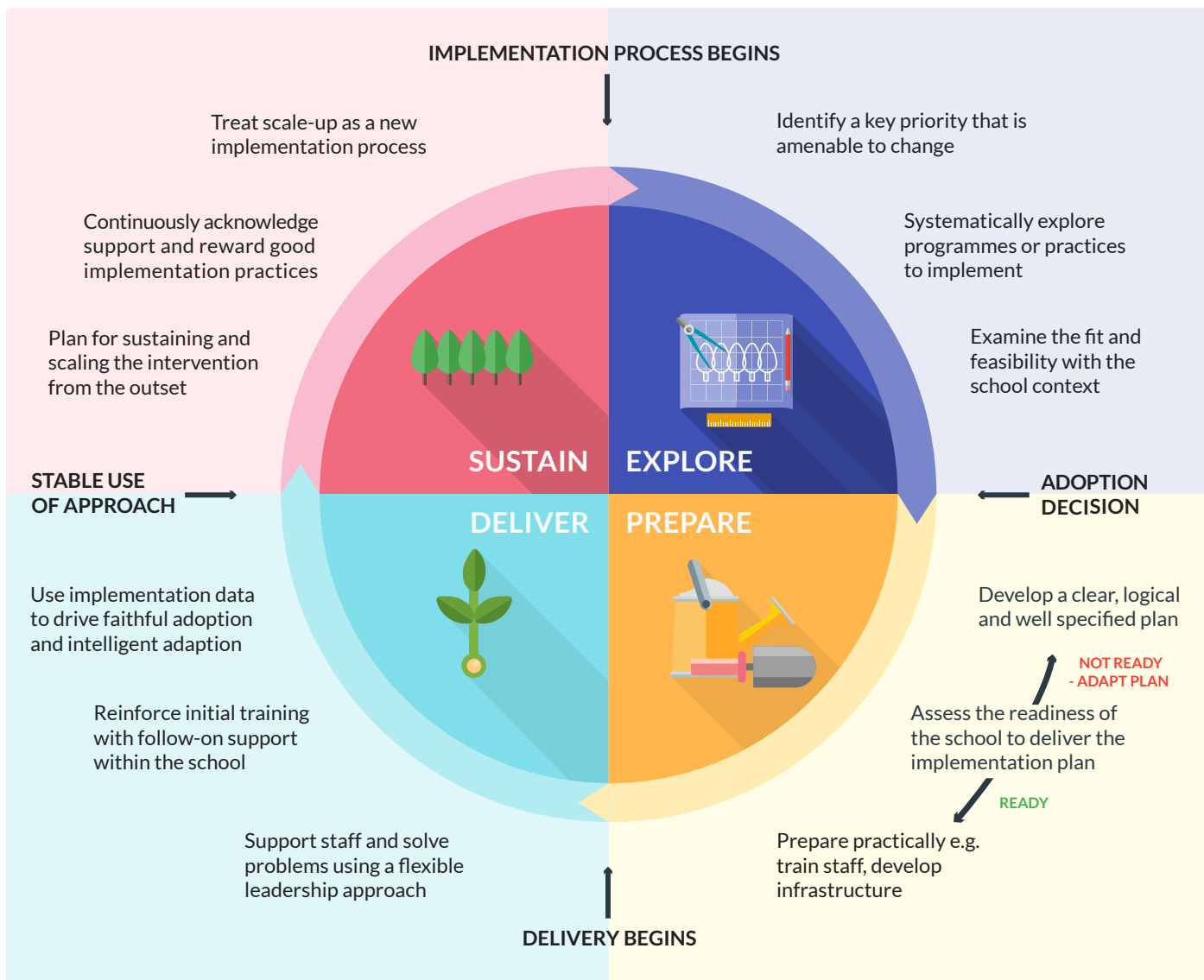


Figure 1: Implementation can be described as a series of stages relating to thinking about, preparing for, delivering, and sustaining change.

Foundations for good implementation

1 Treat implementation as a process, not an event; plan and execute it in stages.

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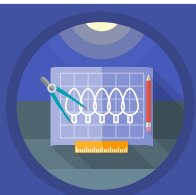


2 Create a leadership environment and school climate that is conducive to good implementation.

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EXPLORE

3 Define the problem you want to solve and identify appropriate programmes or practices to implement.

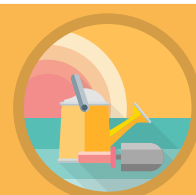


- Identify a tight area for improvement using a robust diagnostic process.
- Make evidence-informed decisions on what to implement.
- Examine the fit and feasibility of possible interventions to the school context.
- Make an adoption decision.

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PREPARE

4 Create a clear implementation plan, judge the readiness of the school to deliver that plan, then prepare staff and resources.



- Develop a clear, logical, and well-specified implementation plan:
 - a. Specify the active ingredients of the intervention clearly: know where to be 'tight' and where to be 'loose'.
 - b. Develop a targeted, yet multi-stranded, package of implementation strategies.
 - c. Define clear implementation outcomes and monitor them using robust and pragmatic measures.
- Thoroughly assess the degree to which the school is ready to implement the innovation.
- Once ready to implement an intervention, practically prepare for its use:
 - a. Create a shared understanding of the implementation process and provide appropriate support and incentives.
 - b. Introduce new skills, knowledge, and strategies with explicit up-front training.
 - c. Prepare the implementation infrastructure.

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- Allow enough time for effective implementation, particularly in the preparation stage; prioritise appropriately.

- Set the stage for implementation through school policies, routines, and practices.
- Identify and cultivate leaders of implementation throughout the school.
- Build leadership capacity through implementation teams.

DELIVER

5 Support staff, monitor progress, solve problems, and adapt strategies as the approach is used for the first time.



- Adopt a flexible and motivating leadership approach during the initial attempts at implementation.
- Reinforce initial training with expert follow-on support within the school.
- Use highly skilled coaches.
- Complement expert coaching and mentoring with structured peer-to-peer collaboration.
- Use implementation data to actively tailor and improve the approach.
- Make thoughtful adaptations only when the active ingredients are securely understood and implemented.

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SUSTAIN

6 Plan for sustaining and scaling an intervention from the outset and continuously acknowledge and nurture its use.



- Plan for sustaining and scaling an innovation from the outset.
- Treat scale-up as a new implementation process.
- Ensure the implementation data remains fit for purpose.
- Continuously acknowledge, support, and reward good implementation practices.

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1 Treat implementation as a process, not an event; plan and execute it in stages.

Successful implementation happens in stages and unfolds over an extended period of time.¹ It is not a single event that takes place when the decision to adopt a new teaching practice is made, or on the day when training begins. Schools' implementation processes begin *before* this adoption decision and last for a long time *after*.

Take, for example, the development of new teaching strategies through professional development. Effective professional development typically includes both up-front training and follow-on supporting activities back in the school.² This is necessary to develop both a

thorough grasp of the rationale underpinning a new approach, and for staff to be able to apply the resulting strategies and knowledge in practice. Inevitably, this all takes time, with most effective professional development lasting at least two terms, and often longer (see Box 5: Characteristics of effective professional development).

Implementation can be described as a series of stages with activities relating to thinking about, preparing for, delivering, and sustaining, change.¹ Although these processes overlap, the 'staging' of implementation is such a crucial feature that we structure the main body of the guide in these distinct sections.

Allow enough time for effective implementation, particularly in the preparation stage; prioritise appropriately.

There are no fixed timelines for a good implementation process; its duration will depend on the intervention itself – its complexity, adaptability, and readiness for use – and the local context into which it will be embedded. Nevertheless, it is not unusual to spend between two and four years on an implementation process for complex, whole-school initiatives.^{3,4}

One implication of this timescale is that schools should treat implementation as a major commitment and prioritise appropriately. Organisations

across all sectors, not just education, tend to take on too many projects simultaneously and underestimate the effort involved in implementing innovations effectively. Schools should probably make fewer, but

more strategic choices, and pursue these diligently. Reviewing and stopping some existing practices may be required before delivering new ones. Changing existing habits and practices is rarely straightforward, so treat 'de-implementation' with the same care and attention as when implementing new approaches (see Prepare, [p.20](#)).

An overall feature of this guidance is its emphasis on activities that occur in the Explore and Prepare phases; in other words, *before* the actual implementation of a new programme or practice takes place. Creating sufficient time to prepare for implementation in schools is both difficult and rare. Nonetheless, investing time and effort to carefully reflect on, plan, and prepare for implementation will reap rewards later. The better you 'till the soil', the more likely it will be for roots to take hold.

“Schools should probably make fewer, but more strategic choices, and pursue these diligently”

Finally, recognise that implementation doesn't always follow a neat, linear process. It can be full of surprises, setbacks, and changes of direction and, at times, appear more like a skilful art than a systematic process. Keeping these dynamics in mind while progressing through an implementation process can be helpful in managing frustrations. Setbacks and barriers are natural features!

“Investing time and effort to carefully reflect on, plan, and prepare for implementation will reap rewards later”

Checklist questions:

- ✓ Do we implement changes across the school in a structured and staged manner?
- ✓ Is adequate time and care taken when preparing for implementation?
- ✓ Are there opportunities to make fewer, but more strategic, implementation decisions and pursue these with greater effort?
- ✓ Are there less effective practices that can be stopped to free up time and resources?



2 Create a leadership environment and school climate that is conducive to good implementation.

Set the stage for implementation through school policies, routines, and practices.

School leaders play a central role in improving education practices through high-quality implementation.^{5,6} They actively support and manage

the overall planning, resourcing, delivery, monitoring, and refinement of an implementation process, all of which are discussed in detail in this guide.

In addition to these practical roles, they also create an organisational climate that is conducive to change.⁷ Leaders set the stage for good implementation by

defining both a vision for, and standards of, desirable implementation practices in their school. For example, if there is an explicit expectation that staff use data

precisely to inform teaching and learning, or to participate in ongoing professional development, schools are more likely to find implementation easier than where such expectations do not exist or where they are only implied.

Implementation is easier when staff feel trusted to try new things and make mistakes, safe in the knowledge that they will be supported with high quality resources, training, and encouragement to try again and keep improving. In such supportive contexts, leaders develop a sense of enthusiasm, trust, and openness to change.⁸

If not present already, an 'implementation friendly' climate cannot be created overnight. It requires continuous nurturing over time through a consistent focus on a school's implementation practices.

“If not present already, an ‘implementation friendly’ climate cannot be created overnight”

Identify and cultivate leaders of implementation throughout the school.

While dedicated leadership of implementation is key, it is also important to recognise that implementation is a complex process that requires leadership at different levels of the school; i.e. dedicated but distributed leadership.

A culture of shared leadership can be nurtured by explicitly creating opportunities for staff to take on implementation leadership responsibilities. One way

to achieve this is to use dedicated implementation teams (see below and Box 1). Another approach is to intentionally acknowledge, support, and incentivise staff who display behaviours and attitudes that support good implementation. In this way, implementation leadership becomes a shared organisational activity with a broad base of expertise to draw on.

Build leadership capacity through implementation teams.

Effective implementation requires schools to pay regular attention to specific, additional activities; however, the busy everyday life of a school can make this investment of time and effort difficult.

Dedicated implementation teams can be a solution to this dilemma.^{9,10} They draw together multiple types of expertise and skills, from a range of different perspectives, to guide and support the

implementation process. They build local capacity to facilitate and shepherd projects and innovations, and continuously remove the barriers that get in the way of good implementation. This may involve identifying effective interventions to implement, developing plans and assessing readiness when preparing for implementation, collecting and synthesising data during delivery, and consolidating the use of the new practices across the school—to name just a few examples.

Effective implementation teams typically combine both educational and implementation expertise, rely on formal and informal leaders, and can draw on external, as well as internal, colleagues. It is important that implementation teams are adequately resourced.

Box 1 shows how an implementation team was created at a school in Sheffield to oversee a process of changing the way teaching assistants (TAs) are deployed, trained, and used. This case study illustrates the benefits of thoroughly preparing for implementation.

Checklist questions:

- ✓ Does our school have a climate that is conducive to good implementation?
- ✓ Does the school leadership team create a clear vision and understanding of expectations when changing practices across the school?
- ✓ Do staff feel empowered to step forward and take on implementation responsibilities?
- ✓ How do day-to-day practices affect the motivation and readiness of staff to change?

Box 1: Implementing changes to teaching assistant (TA) deployment at Pye Bank Primary School.

As part of EEF's campaign, *'Making Best Use of Teaching Assistants'* in south and west Yorkshire, Pye Bank Primary School, in Sheffield, went through a structured process of changing the way TAs are deployed in the school. The headteacher, Maureen Andrews, established this initiative as a key school improvement priority and created the time, resources, and initial vision for the effort. Dedicated leadership was key, as changing TA deployment is a complex challenge requiring changes in practices throughout the school—for leaders, teachers, and TAs—as well as structural changes that require leadership input, such as changing TA working hours and timetables.

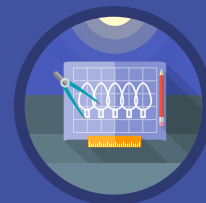
To oversee the implementation process, Maureen created a 'development team' (an implementation team) made up from representatives across the school. This team:

- conducted a thorough review of current practices in the school relating to TA deployment;
- identified specific barriers to change;
- created a detailed implementation plan (called an 'action plan' in this case);
- organised training for relevant staff members; and
- developed a set of implementation outcomes, monitored the changes, and solved problems as they arose.

You can view a full case study of Pye Bank Primary School's journey in relation to TA deployment here:

<https://educationendowmentfoundation.org.uk/tools/making-best-use-of-teaching-assistants/ta-online-course/>

3 Define the problem you want to solve and identify appropriate programmes or practices to implement.



The implementation process begins with exploration. In this phase, a school clearly defines the problem it wants to solve, identifies potential solutions in the form of educational programmes and practices, and judges the feasibility of implementing different options.

Identify a tight area for improvement using a robust diagnostic process.

Implementing a new programme or practice is a major commitment. As well as drawing on the school's time and resources there is also a personal commitment for all those involved, meaning the negative consequences

of adopting an inappropriate programme of action can be high—for leaders, teachers and, crucially, students.

Furthermore, if an implication of taking a more structured approach to implementation is making fewer—but more strategic—changes, it becomes even more important that the right issues are being addressed

(see Recommendation 1). Thus, the first step when thinking about implementation is to identify a tight and appropriate area for improvement, using a robust

diagnostic process. Don't jump to considering new approaches to implement before rigorously examining the problem—these will inevitably bias your view of the issue.

Pages 14 and 15 outline a suggested process for gathering and interpreting data and evidence to inform school improvement priorities. The overall objective is to move from initial hunches and beliefs to being confident that the identified issue(s) is a genuine priority.¹¹

Having applied a robust process to identify priorities, road-test potential plans before undertaking a more developed implementation plan (see Prepare [p.20](#)). For example, in the Bellwood Academy case study (see Box 2) the leadership team could meet with a group of governors to challenge their assertion that the attendance problem is associated with underlying low levels of literacy. Clear protocols for trusting critique is required, with governors taking the role of 'Devil's Advocates', probing the thinking and actions of leaders, teachers and pupils.

You may also consider undertaking a 'pre-mortem'.¹² This is strategy involves imagining that the proposed plan has failed, then working backwards to explore why that might be and re-examining the root causes of the problem.

“The first step is to identify a tight and appropriate area for improvement, using a robust diagnostic process”

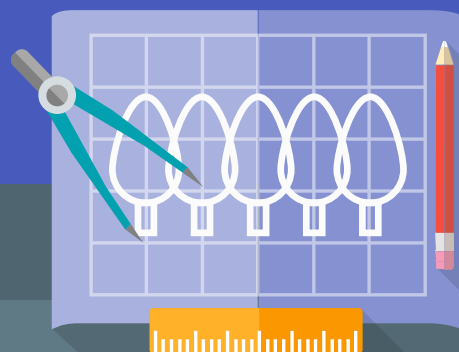
Box 2: A fictional example of digging deeper on a school improvement priority

Bellwood Academy's attendance rate is below the national average—trailing at 93%. From data gathered by Heads of Year, the school leaders believe this is driven by the poor attendance of a group of pupils in year 10.

The Head of Year 10 felt that many of these pupils were disengaged by the curriculum, so the Pastoral Deputy devised an extra-curricular engagement approach to improve attendance. This led to a sequence of motivational after-school sessions with local sports coaches and business people. Unfortunately, although attendance at the sessions was excellent, there was no change in attendance for the targeted pupils.

The Pastoral Deputy welcomed further scrutiny from the senior leadership team and teachers at Bellwood to revisit the issue. Renewed analysis of the data revealed that a longer-term three-year trend of gradually worsening attendance accounted for 30 pupils in the identified cohort. Year 7 baseline data revealed that 25 of these pupils were identified as struggling readers, who were now struggling to access the increased literacy demands of GCSEs.

As a result of this re-analysis, the Pastoral Leader initiated a new plan focused on targeted interventions for struggling adolescence readers in year 10, whilst also planning for early identification of similar pupils in KS3.



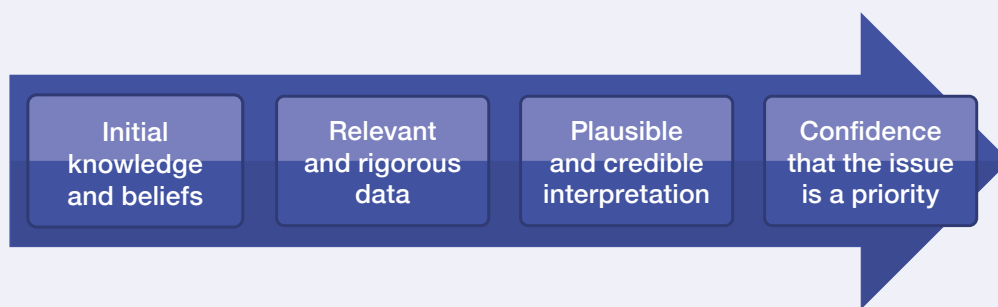
1 Confidently identify a priority

Often, the decision to act begins with an instinct, a feeling or a hunch. Existing beliefs about problems in school can be powerful and useful, but they can also reflect biases (which we all have). We need to check and challenge our initial thinking until we are confident that the identified problem is both important and real i.e. a priority. Such confidence relies on two factors:

- a. Gathering relevant and rigorous data
- b. Generating plausible and credible interpretations of that data

Remember that any data you use are simply representations of the effects of a problem—one of the “multiple inadequate glances” that you can take at the perceived issue. Be careful not to mistake the cause(s) of a problem with the outcome of a problem. For example, low attainment at Key Stage 2 will be an outcome of underlying issues (see the figure in section 4).

To generate evidence and insights on the problem we have to interpret data and use judgement, and that begins by questioning the quality of your data.



4 Provide credible and plausible interpretations

To generate *evidence* of a problem we have to provide credible and plausible interpretations of the data—this requires triangulating data from different sources and using judgement to draw accurate conclusions.

Here are some things to bear in mind:



Describe how each piece of data provides evidence for the problem *e.g. behavioural issues, captured through lesson observations, suggest that pupils A and B are struggling to access the curriculum*. Identify for whom the problem exists, when it happens and how it manifests.



Avoid fitting the data to your preconceptions—while you and the data may end up in agreement, this is not automatically the case. Set aside preconceptions of problems and solutions and let the data reveal the nature of the issue.



Create a strong argument that is credible and acceptable (it will never be definitive) rather than compelling. Rather than trying to convince yourself and your colleagues that you are right, focus on demonstrating an issue with evidence.



Share your interpretation with people who might disagree with you, to test your thinking and identify weaknesses in it. Encourage them to challenge any assumptions and see if they can disprove the existence of the problem.



Example of data interpretation

2 Gather data that is fit-for-purpose

We sometimes use data that we have to hand rather than what we need. Examine information from a range of sources to build a rich picture of the issue, recognising the strengths and weaknesses of different sources. Find the quiet trends in the data. Go beyond the headlines and explore the variation.

Ask yourself, ‘What cause of a problem does the data represent?’, ‘What are the trends in the data over time?’, ‘What are the underlying issues?’.

	National test data	Internal test data	Lesson observations	OfSTED data	Surveys/interviews
Pros	Generally reliable Overview of achievement Gives comparative data No increased workload	Tailor tests to needs Can use existing tests Cheap and efficient	Gives holistic view of teacher's actions and students' learning responses	Comparability to a national standard External perspective Actionable conclusions	Gathers perceptions Opens lines of communication Tailor surveys to needs
Cons	Overall scores can mislead interpretations of specific problems (question-level analysis can help)	Often not as reliable as external tests. Internal tests data cannot be compared to national norms	Potentially unreliable May not represent normal practice Presence of observer can bias practice	Potentially unreliable High stakes can drive unhelpful actions Presence of observer can bias practice	Low response rates and pressure to respond means data can be unreliable Additional workload
Using Well	Use overall scores across year groups and over several academic years to provide reliable trend data	Use to provide fine-grained insights on an issue, alongside larger grain-size data (e.g. KS2 Maths attainment)	Use to observe the perceived issue in context, and gain a richer picture of how students and teachers experience the issue	Consider perceived issues raised on inspection in relation to your own school improvement priorities	Use to understand the perceptions of a problem in context, and gather suggestions for future actions

3 Recognise weaknesses in the data

There are always weaknesses in the data schools use—everything from the wording of questions, to how tired the person marking test papers is, can affect the robustness of the information. This is something we need to accept and respond to constructively by interrogating data for its quality. Ask yourself:

- Are your biases, and those of colleagues, skewing your interpretations of the data?
- Are there significant gaps in your data? If so, are you filling these gaps with your own assumptions and generalisations?
- Is the most relevant and rigorous data—that which is most fit-for-purpose—being prioritised, while data of less relevance and rigour treated with greater caution?

Source of weakness	How to identify the issue
Bias in the generation of the data	Be clear on what the data represent and don't represent, and how they were generated e.g. <i>internal test scores may be biased if the tests are set and marked by a teacher in a department under pressure to show pupils making quick progress.</i>
Data isn't valid	Be clear that your choice of assessment is actually measuring what you set out to measure. Sometimes we overreach in our claims about what an assessment is telling us e.g. <i>a survey on reading for pleasure, or motivation to read, often relates to how well pupils can read, but such a survey doesn't offer an accurate assessment of reading ability.</i>
Data isn't reliable	Be clear whether your data source is fair and consistent. A reliable source of data usually follows processes that increase accuracy and consistency, such as question trialling, marking moderation and triangulation of different data sources e.g. <i>lesson observation data conducted by different school leaders could, without consistently applied processes, produce very different—and so non-comparable—insights.</i>
Data isn't manageable	Be clear that the process of gathering valid and reliable data can increase workload. Weigh up the value of gathering robust data with the opportunity costs in doing so e.g. <i>a survey of staff on a whole school change can offer us limited insights, but it proves less workload than interviewing all staff.</i>

Make evidence-informed decisions on what to implement.

Once schools have identified and specified an educational challenge, they inevitably turn to considering how they can best meet it through potential programmes and practices. The goal is to identify interventions and approaches based on existing evidence of what has—and hasn't—worked before. Questions to consider at this stage include:

- How have similar problems been tackled before in similar locations to mine?
- How strong is the evidence behind the approach?
- How easy will it be to implement?
- Is it cost effective?

One source of evidence to draw on is the school's own insights and evidence of what has been effective. At the same time, schools should also aim to draw on external evidence of what has been shown to work in similar contexts.

Below are some key principles when making evidence-informed decisions:

a. Build a rich evidence picture

Instead of considering individual pieces of research in isolation, look at multiple studies, from a range of sources, to identify themes and trends in the data. By doing so, we gain greater confidence in the overall findings. Try and avoid 'cherry picking' research that confirms, rather than challenges, your existing beliefs and consider the evidence base objectively as a whole.

Systematic reviews—and their quantitative cousins, meta-analyses—are particularly useful in this respect as they use a defined set of processes to review evidence in a way that is accountable, replicable and updatable.¹³ Resources such as the [Teaching and Learning Toolkit](#) and [Guidance Reports](#) are based on rigorous reviews (see Table 1 for a summary of EEF resources).

b. Get beyond the surface

Resources such as the [Teaching and Learning Toolkit](#) and [Guidance Reports](#) provide a valuable and accessible overview of the evidence base. At the same time, this accessibility can also be a weakness if they are engaged with at a superficial level. A shallow engagement can lead to inappropriate, and potentially even harmful, interpretations.

The 'devil is in the detail', so when engaging with research consider the variation in effects across different studies as well as the average effect. For example, the evidence on Teaching Assistant deployment suggests they have a small positive effect on attainment (+1 month in the [Teaching and Learning Toolkit](#)), but this average hides a more polarised picture, with some studies showing negative impacts and some showing positive impacts. Try and understand what drives the variation in effects i.e. under what conditions were the positive and negative impacts observed.

c. Focus on the 'how' as well as the 'what'

Evidence-informed programmes and practices won't deliver the desired outcomes if they are not implemented effectively and consistently. So, in addition to considering 'what works', look carefully at how the approach is implemented and aim to replicate those conditions in your context.

One way to achieve this is by identifying the *active ingredients* for a particular approach, which are the key principles, practices and content that make it effective (see [p.21](#) and the additional summary on 'Active Ingredients' for more information). For example, when considering how Teaching Assistants are deployed and used across a school, a key principle should be to 'supplement, not replace, the teacher' (see the [Making Best Use of Teaching Assistants](#) guidance report).

d. Be an intelligent consumer

Intelligent consumers of research are able to make sense of the information they encounter, can understand the concepts involved in research methods and statistics, and apply evidence to the challenges they grapple with day-to-day. This involves having knowledge of the strengths and limitations of different research methods, and a working knowledge of some key research on teaching and learning.

The question of ‘What counts as good evidence?’ depends on what is being asked and for what purpose. If you are interested in how or why a particular approach works, or exploring new innovations, then a broad range of evidence will be useful, including observations, case studies, surveys and other qualitative research. If the question is about measuring effectiveness or impact, then the key evidence is likely to come from quantitative studies, and in particular, experimental trials.¹⁴

Part of being an intelligent consumer of research is being open to new ideas, yet also thinking critically about claims that are being made. Look for warning signs in a claim rather than accepting it unquestioningly i.e. ‘this programme has huge impacts’. Be willing to challenge your own preconceptions and biases

as well as external claims. The Assessing Claims in Education (ACE) website provides some key principles and resources to help make informed choices about education interventions—

<https://www.thatsaclaim.org/educational/>

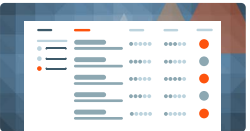
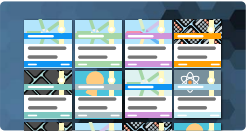

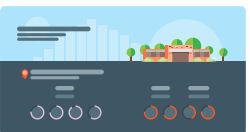
e. Integrate research evidence with professional judgement

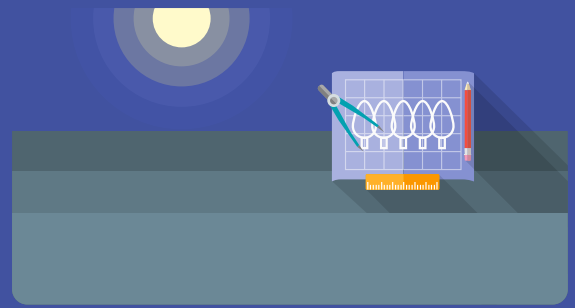
Evidence-informed practice has been described as ‘integrating professional expertise with the best external evidence from research’.¹⁵ It is important to remember that there is a lot of experiential knowledge that is not captured by research, and, therefore, an absence of evidence certainly does not mean absence of effectiveness.

One key source of evidence when selecting approaches to implement will be your own insights on what has been effective. The same principles apply here as when identifying school improvement priorities: provide robust evidence to substantiate your initial beliefs of what might work, then challenge yourself by testing the validity and reliability of that evidence. The aim is to build confidence that an identified programme or practice will address the defined problem.



Table 1: Overview of EEF resources

EEF resource	Description	Using it well
<p>Teaching and Learning Toolkit</p> 	<p>The <i>Teaching and Learning Toolkit</i> provides an accessible overview of the international evidence on teaching for 5-16 year-olds. There is also an Early Years Toolkit. Both Toolkits guide schools towards the ‘best bets’ for improving pupils’ attainment on the basis of research of what has (and also what hasn’t) worked in the past. Each of the 30+ topics covered in the Toolkit briefly answers four key questions: How effective is it? How secure is the evidence? What are the costs? What should your school consider?</p>	<p>The <i>Teaching Learning Toolkit</i> is a good place to start when considering different evidence-based practices.</p> <p>Use it to inform your decision-making by considering the relative strengths and weaknesses of different strategies. Think carefully about how a generic approach—e.g. feedback—should be applied in specific subjects and contexts.</p>
<p>Guidance Reports</p> 	<p><i>Guidance Reports</i> provide evidence on key school improvement priorities—e.g. Improving Behaviour—and go into greater detail than the Toolkit. They are based on rigorous reviews of the best available research evidence. This evidence is translated into clear and actionable recommendations for schools. <i>Guidance Reports</i> are accompanied by additional resources to support successful implementation, such as self-assessment tools, case studies, and planning frameworks.</p>	<p><i>Guidance Reports</i> are designed to support teachers and school leaders in developing their practice.</p> <p>The guidance is presented at different levels of detail. The summary of recommendations is a good place to start, but the more actionable insights often sit in the full text of the report. Try and see the recommendations as a coherent whole, rather than cherry pick those that you intuitively like.</p> <p>The Research Schools run regular events and professional development programmes based on <i>Guidance Reports</i>—https://researchschool.org.uk</p>
<p>Promising Projects</p> 	<p><i>Promising Projects</i> are programmes that have been robustly evaluated and show signs of improving pupil attainment. Evidence-based programmes can act as useful tools in getting evidence-based practices working in a replicable manner. They provide additional support for implementation, for example by providing high-quality training and coaching, or practical resources. At the same time, care and attention is needed to implement evidence-based programmes, just as for evidence-based practices.</p>	<p>It is important to consider a range of factors and questions when deciding if an evidence-based programme is suitable for your context.</p> <ul style="list-style-type: none"> • Is the intervention well-placed to address a specific priority issue? • Is there evidence that it will be beneficial for the pupils you are interested in? • Is the available evidence relevant to your context? • How straightforward will it be to implement? • Are there other programmes that might deliver similar impact for lower cost/effort?
<p>Families of Schools</p> 	<p>The <i>Families of Schools</i> database is an interactive tool that enables schools to compare the performance of pupils in your school to those of other schools with similar characteristics. It aims to help schools share their successes, learn from others working in similar circumstances, and build capacity in the system.</p>	<p><i>Families of Schools</i> is designed to provide school leaders with useful information about the performance of their disadvantaged students to inform decision-making and support collaboration. Use it to inform conversations for colleagues, for example when reviewing your school’s Pupil Premium strategy. You can also use it to explore what has been effective in schools in similar circumstances, by contacting schools in your family.</p>



Examine the fit and feasibility of possible interventions to the school context.

Once a possible intervention(s) has been identified, schools should interrogate the extent to which its objectives—the purpose, recipients, practices, and outcomes—align with the school’s needs and values. Questions to ask include:

- Does a programme or practice fully address the defined challenge?
- Is it likely to lead to better outcomes in *our* school?
- Do the values and norms of an intervention align with ours?
- How motivated are staff to engage in this change?
- Are these staff sufficiently skilled? If not, are we able to provide the necessary professional development?
- Are we able to make the necessary changes to existing processes and structures, such as timetables or team meetings?
- And crucially... What can we stop doing to create the space, time, and effort for the new implementation effort?

Further questions may be relevant to raise, depending on the setting in which the implementation will take place. By involving all relevant key stakeholders in this process, both the description and understanding of problems to be tackled, and the selection of solutions can be based on the broadest possible knowledge and expertise. This will also create immediate opportunities to build shared ownership and leadership of an implementation process.

The ‘Explore’ phase ends with a decision to adopt a new programme or practice.

Checklist questions:

- ✓ Are we confident we have identified a strong school improvement priority that is amenable to change?
- ✓ What are we looking to achieve by adopting a new programme or practice?
- ✓ Have we systematically identified the right approach to achieve these goals?
- ✓ Is there reliable evidence it can have the desired impact, if implemented well?
- ✓ Is it feasible within our context?

Create a leadership implementation plan, judge the readiness of the school to deliver that plan, then prepare staff and resources.



Having decided to deliver a specific programme or practice, the focus turns to preparing the school and its staff. This phase can be intensive, requiring a significant effort to ensure the school is in a position to deliver the new approach effectively. As this section is extensive, and potentially overwhelming, we have organised the recommendations as three interconnected sets of activities:

- Develop a clear, logical, and well-specified plan:
 - a. specify the active ingredients of the intervention;
 - b. develop an appropriate package of implementation strategies; and
 - c. define a set of clear implementation outcomes.
- Assess the readiness of the school to deliver the implementation plan.
- Once ready to implement an intervention, practically prepare for its use:
 - a. create a shared understanding of the implementation process and provide appropriate support and incentives;
 - b. introduce new skills, knowledge, and strategies with up-front training; and
 - c. prepare the implementation infrastructure.

Although there is logic to this sequence (see [Figure 1](#)), schools may decide to approach the process differently to suit their needs. For example, it may be felt there is value in conducting an initial readiness assessment before creating a detailed implementation plan.

Develop a clear, logical, and well-specified implementation plan.

An important first step when preparing for implementation is ensuring there is a detailed and shared understanding of the programme or practice that has been selected. This can be aided by creating a well-specified plan, which, in turn, can act as a basis for practically preparing for implementation.⁴

There is no set way of conceptualising and developing an implementation plan. Logic Models are one popular tool that can help (see [Appendix I](#)); other schools may take a less formal approach. Whatever method is chosen, the objective should be to describe:

- **why** we are doing this—a precise definition of the problem
 - **what** the intervention entails—for example the active ingredients
 - **how** it will be implemented—the implementation activities
 - a means of knowing **how well** implementation is going—the implementation outcomes
 - and the final intended outcomes (**and so?**)—the overall objectives
- In addition, you may want to describe who will be affected by these changes, and how, the resources required for implementation, and any external factors that could influence results.
- Out of this planning process should emerge a range of outputs that subsequently can be used to structure and monitor the implementation effort:
- a clear description of the intervention;
 - a set of well-specified ‘active ingredients’;
 - an appropriate package of implementation strategies; and
 - a series of short, medium, and long-term implementation outcome measures.

An example of an implementation plan is provided in [Appendix I](#), developed by Meols Cop High School, for their project ‘Flash Marking’—an approach to improve marking and feedback in Key Stage 4 English lessons.¹⁶ Further examples of implementation plans and a blank planning template are available from the EEF website (see ‘Further Resources and Support’ for details).

a. Specify the active ingredients of the intervention clearly; know where to be 'tight' and where to be 'loose'.

It is easier to implement an intervention if it is clear which features need to be adopted closely (that is, with fidelity) to get the intended outcomes.^{16,17} These features or practices are sometimes called the 'active ingredients' of the intervention. A well specified set of 'active ingredients' captures the essential principles and practices that underpin the approach. They are the key behaviours and content that make it work.

Generally, the more clearly identified the active ingredients are, the more likely the programme or practice is to be implemented successfully.^{19,20} On the other hand, implementation will be more difficult if there isn't a shared understanding of what the approach actually involves. Hence, when preparing for implementation try and distil the essential elements of the programme or practice, share them widely, and agree them as fixed components that are applied consistently across the school.

For example, if the intervention is focused on developing pedagogy—e.g. formative assessment—what are the core principles, strategies and behaviours that will reflect its use? The use of formative assessment is likely to differ across subjects, although there will be some core consistent features across these different contexts.

Ultimately, the active ingredients can relate to any aspect of the intervention that you think is key to its success – the important thing is that you have an idea of 'where to be tight and where to be loose' (see Deliver, [p.32](#) on adaptations). The implementation plan in [Appendix I](#) outlines the active ingredients for an EEF-funded intervention, Flash Marking.

While it is entirely feasible for schools and external programme developers to develop their own approaches to specifying the active ingredients of interventions, schools may find Theory of Change tools helpful in this process.²¹ If you are looking to implement a programme outside of the school, speak to the developers for their thoughts on the key activities and principles (they may not be documented).

Inevitably, there are limits to how accurately you can specify the active ingredients of an intervention before its use. Schools should therefore carefully monitor and assess the implementation of the active ingredients during delivery and use this data to refine the design of the intervention over time (see Prepare [p.20](#)).

Further information on active ingredients is available in the supplementary summary, *Active Ingredients* (see 'Further Resources and Support' for details).



b. Develop a targeted, yet multi-stranded, package of implementation strategies.

When planning for implementation, a broad range of strategies are available to educators. Some will be very familiar (such as training, coaching, audit, and feedback) and some less so (such as using implementation advisors or train-the-trainer strategies).

“Typically, the application of a single strategy alone will be insufficient to successfully support the implementation of a new approach.”

Table 2 outlines a range of different implementation strategies that schools may consider adopting.²²

Typically, the application of a single strategy alone will be insufficient to successfully support the implementation of a new approach. Instead, a combination of multiple strategies will be needed.²³ When selecting implementation strategies, aim

for a tailored package that supports change at different levels of the organisation—individual practitioners, departmental teams, school level changes, and so on.²⁴ The objective is to align these strategies so they reinforce each other and are sequenced appropriately. For example, activities designed to increase staff motivation, such as recruiting opinion-leaders, would typically precede training and professional development.

Build your implementation plan around the active ingredients of your intervention:

- If structural changes are necessary across the school to accommodate the active ingredients, ensure these are planned in advance and maintained over time. If you think it needs three sessions a week to be successful, make time for three sessions a week!

- If you are developing training manuals and implementation resources, ensure they are tightly aligned to the key components and objectives of the intervention. At the same time, retain sufficient scope for appropriate adaptations where there is flexibility.
- Professional development activities should focus on understanding and applying the key intervention strategies. Many of the EEF’s most promising projects are precise in terms of the teaching practices they are introducing or changing, with the training and coaching activities focused squarely on making these changes.²⁵

Evidence-based programmes have particular value in this respect, as they often contain a structured set of implementation strategies that have been tested and refined over time.²⁶ In doing so, evidence-based programmes can act as useful tools to support the implementation of evidence-based practices. Details of evidence-based interventions can be found at the EEF’s Promising Projects webpageⁱ and the Institute for Effective Education’s Evidence for Impact database.ⁱⁱ

In addition to using any implementation strategies that are captured within an evidence-based programme, schools should also consider additional activities that can create ‘readiness’ for that programme in their context, such as developing a receptive environment for the intervention.

i. <https://educationendowmentfoundation.org.uk/tools/promising/>

ii. <http://www.evidence4impact.org.uk>

Table 2: Examples of implementation strategies, adapted from the ERIC framework²²

Strategy	Definition
Access new funding	Access new or existing money to facilitate the implementation effort.
Alter incentive structures	Work to incentivise the adoption and implementation of the innovation.
Audit and provide feedback	Collect and summarise performance data and give it to staff to monitor, evaluate, and modify behaviour.
Change physical structure and equipment	Evaluate current configurations and adapt, as needed, the physical structure and/or equipment (e.g., changing the layout of a room, adding equipment) to best accommodate the innovation.
Conduct small scale pilots of change	Implement changes in a cyclical fashion using small tests of change before system-wide implementation. This process continues serially over time, and refinement is added with each cycle.
Conduct educational outreach visits	Have staff meet with experienced providers in their practice settings to learn about the approach.
Conduct ongoing training	Plan for, and conduct, ongoing training.
Create a learning collaborative	Facilitate the formation of groups of staff/schools and foster a collaborative learning environment to improve implementation.
Create implementation teams	Change who serves on the team, adding different disciplines and different skills to make it more likely that the intervention is delivered successfully.
Develop academic partnerships	Partner with a university or academic unit to bring training or research skills to an implementation project.
Develop and use tools for monitoring implementation quality	Develop and apply quality-monitoring systems with the appropriate language, protocols, standards, and measures (of processes, student outcomes, and implementation outcomes).
Develop educational materials	Develop and format manuals, toolkits, and other supporting materials, to make it easier for staff to learn how to deliver the approach.
Distribute educational materials	Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically.
Identify and prepare champions	Identify and prepare individuals who can motivate colleagues and model effective implementation, overcoming indifference or resistance to the intervention.
Inform local opinion-leaders	Inform providers identified by colleagues as opinion-leaders or 'educationally influential' about the innovation in the hopes that they will influence colleagues to adopt it.
Involve executives and governor boards	Involve existing governing structures (e.g., boards of directors, board of governors) in the implementation effort, including the review of data on implementation processes.
Make training dynamic	Make training interactive, with active learning through observation, meaningful discussion and reflection, demonstration of skills, deliberate practice, and feedback.
Mandate change	Have leadership declare the priority of the innovation and their determination to have it implemented.
Model and simulate change	Model or simulate the change that will be implemented prior to implementation.
Obtain formal commitments	Obtain written commitments from key partners that state what they will do to implement the innovation.
Provide follow-on coaching and mentoring support	Use skilled coaches or mentors (either internal or external) to provide ongoing modelling, feedback, and support that helps staff apply new skills and knowledge in practice.
Recruit, designate, and train for leadership	Recruit, designate, and train leaders for the change effort.
Remind teachers	Develop reminder systems designed to help teachers to recall information and/or prompt them to use the programme or practice.
Revise professional roles	Shift and revise roles among delivery professionals, and redesign job characteristics.
Tailor strategies	Tailor the implementation strategies to address barriers and leverage facilitators that were identified through earlier data collection.
Use an implementation advisor	Seek guidance from experts in implementation.
Use train-the-trainer strategies	Train designated teachers or organisations to train others in the innovation.

c. Define clear implementation outcomes; monitor them using robust and pragmatic measures.

To monitor the use of a new approach, and ensure it is being delivered with high quality, schools will need to define the implementation outcomes they want to achieve and develop an appropriate set of measures (see Box 3 on monitoring implementation).

When selecting implementation outcomes and measures, aim to capture both early signs of successful implementation as well as data on how the intervention is being embedded and adapted over time. Of course, there is a practical limit to what you will be able to measure, so pick implementation measures that are key to the intervention and its delivery. A good starting point is focusing on whether the intervention has been implemented as intended by measuring fidelity in relation to the active ingredients of your intervention (see Prepare, [p.21](#)).

Before a school can begin monitoring the adoption of a new approach, the implementation outcomes need to be agreed and understood by those staff who are using the intervention.

Implementation monitoring and data collection processes also need to be operationalised. They need to fit with school routines and be usable for staff as part of their daily work. Data collection processes that are complicated and require extensive resources run the risk of not being supported and sustainable in a busy work environment.²⁷ Simple and quick to collect measures, on the other hand, will likely find greater acceptance among staff and be easier to integrate into implementation processes. Clearly, this highlights a tension between reliability and feasibility.

As an example, if a school was introducing a small-group literacy intervention for struggling readers, it may decide to capture data on the degree to which the intervention was being delivered as intended—the fidelity of delivery. A member of the implementation team may decide to review timetables and measure the frequency of sessions, observe the delivery of interventions sessions, or speak to pupils for their perspectives on the intervention. This data could be summarised in a standardised format and discussed regularly as part of implementation team meetings.

Box 3: Continuously monitor and improve the quality of implementation.

A key element of effective implementation is monitoring how well a new programme or practice is adopted and whether it achieves the intended outcomes. Schools should regularly monitor and review data that describes the progress and quality of implementation, and apply this information to refine the use of the intervention over time.

Determining how well implementation is progressing relies on having a clear understanding of what ‘good’ implementation looks like. How tightly should teachers adhere to the principles of a new approach? Should it be used by all teachers? If so, by when? How quickly would you expect it to be integrated into existing structures and curricula? Questions like these introduce the concept of ‘implementation outcomes’—the implementation goals a school wants to achieve throughout the change process.³⁷

Examples of common implementation outcomes include:

- **fidelity:** the degree to which staff uses an intervention as intended by its developers (see Box 6 for details);
- **acceptability:** the degree to which different stakeholders—such as teachers, students, and parents—perceive an intervention as agreeable;
- **reach:** how many students it is serving;
- **feasibility:** the ease and convenience with which the approach can be used by staff and integrated in a school’s daily routines; and
- **costs.**

It may be that several practical activities contribute to these overall implementation outcomes, as can be seen for ‘fidelity’ in the example of Flash Marking in [Appendix I](#).

Having defined a set of appropriate implementation outcomes, schools will also need to develop a set of robust and pragmatic measures to capture these outcomes.²⁷ Data can be drawn from statistical databases and administrative systems used in schools, or can be collected directly from students, staff, or other stakeholders through surveys, interviews, and classroom observations. Wherever possible, use implementation measures that have been tested in similar contexts and shown to yield accurate and consistent results. Unfortunately, well-specified and evidence-based measures of implementation are rare, so take care to ensure any ‘home grown’ measures are capturing the intended implementation outcome precisely.

Capturing useful data on implementation means little unless it is acted on. Create a means of summarising data in formats that make it easy for staff to understand (see Prepare, [p.24](#)), and provide regular opportunities to tailor strategies in response to this data (see Deliver, [p.35](#)).

Thoroughly assess the degree to which the school is ready to implement the innovation.

At this point, a school should have a clearer idea of what it will implement, how it will implement it, the ways in which it will monitor that process, and the resources required to make it a success. With a more concrete plan emerging, now is a natural point to take the temperature on how ready it is to put that plan into action.

There are many different definitions and understandings of implementation readiness, and the field is far from a consensus on how this can be measured and assessed. One helpful model posits implementation readiness as a combination of three components: the organisation's motivation to adopt an innovation, its general capacity, and its innovation-specific capacity.²⁸ Box 4 unpacks these three elements in more detail.

Schools can use this framework to determine the degree to which they are ready to adopt a new approach, identify barriers that may impede implementation, and reveal strengths that can be used in the implementation effort. This assessment can be based on simple questions that address critical features of an innovation, but it can also include more sophisticated measures to evaluate the school's implementation climate, its general motivation or other underlying characteristics.

Examples of questions to consider during a readiness assessment include:

- Who are key individual and organisational stakeholders who need to be involved in the implementation process? In what ways?
- Are these staff sufficiently skilled? If not, does our plan contain the appropriate blend of professional development activities?
- How motivated are staff to engage in this change process? How well does the innovation align with our shared educational values?
- Are we able to make the necessary changes to existing processes and structures, such as timetables or team meetings?
- What type of administrative support is required? Who will provide it?
- What technical equipment is needed to deliver the innovation?
- How will we collect, analyse, and share data on implementation? Who will manage this?
- Does the intervention require external support that needs to be sourced outside of the school? And crucially...
- What can we stop doing to create the space, time, and effort for the new implementation effort?

This is certainly not an exhaustive list; it should be expanded and tailored so it fits the needs of the local context. Importantly, judgements relating to readiness should be seen as a matter of degree rather than binary positions (ready or not) and aim to draw on a range of stakeholder perspectives across the school (see Prepare, [p.20](#)).

By building a collective understanding of the implementation requirements, and the degree to which the school is able to meet those requirements, the leadership team should be in a position to judge whether or not they can begin practical preparation for implementation. If they are ready, the practical implementation activities—such as staff training—can begin.

If they are not (which is quite possible), schools should revisit the implementation plan and adapt it appropriately. It may, for example, be decided that additional implementation strategies are needed, further funding secured, or new individuals brought into the implementation effort.

It may even be decided that it is not suitable to implement the programme or practice at that moment. If that is the case, a range of alternative options need to be explored (See Explore, [p.12](#)).

Schools may decide to approach implementation planning and judging readiness the other way around, or in parallel: what is important is that they operate as an iterative process.

Box 4: A framework to review implementation readiness.²⁸

Implementation readiness = motivation + general capacity + innovation-specific capacity

The **motivation** to use an innovation depends on many factors, including the complexity of the new programme or practice, its compatibility with existing structures, the perceived advantage of the innovation compared to other approaches, and the norms or values of staff, to name just a few.

An organisation's **general capacities** include factors such as staffing levels, leadership capacity, administrative availability, and the overall climate and culture in the school – all of which are foundations for a school to be able to work with any type of innovation (see Foundations for Good Implementation, [p8](#)).

The **innovation-specific capacities** relate to the knowledge and skills needed to work with the specific programme or practice to be adopted. They include the capability to train and coach staff, the presence of required staff positions, and the availability of technical equipment required for the application of a new intervention, amongst others.

Once ready to implement an intervention, practically prepare for its use.

a. Create a shared understanding of the implementation process and provide appropriate support and incentives.

School leaders set the foundation for implementation by aligning it with a school's mission, vision, and goals. Nevertheless, for this vision to become a reality there needs to be common understanding of the objectives and widespread buy-in. Having decided to commit to a new approach, school leaders need to create a common and explicit understanding of what will be *expected*, *supported* and *rewarded* during the implementation process.²⁹ It is important that leaders:

- communicate the purpose and importance of the innovation, and what is expected from staff in its use;
- clearly articulate the alignment between the intervention, student learning needs, and the school's broader purpose and values;
- ensure there is shared, clear understanding of the active ingredients of the approach; and
- use existing lines of communication—such as staff and governor meetings—and create repeated opportunities to discuss the planned change.

A planning template is available to help you outline what is expected, supported and rewarded during the implementation process (see 'Further Resources and Support' for details).

While communication is certainly valuable in developing a theoretical understanding of what is expected during the implementation process, it is unlikely by itself to be sufficient to change perceptions, attitudes, and behaviours among staff.

Therefore other, more action-oriented, strategies may be required, such as:

- recruiting the efforts of school opinion-leaders—student, community, and teacher leaders—to articulate the benefits of the intervention. Where possible, opinion-leaders should be assigned specific roles within implementation teams (see Foundations for Good Implementation, [p.8](#));
- identifying advocates for the innovation who can champion its adoption through modelling and supporting others to use it effectively;
- directly participating in activities that are conducive to good implementation—'walking the walk'. This will signal a recognition of its priority while at the same time providing an arena for modelling the desired behaviours; and
- developing incentives and rewards that can be used to acknowledge individual and team behaviours that contribute to successful implementation (for example, promotion, monetary, or symbolic rewards).

Does the intervention require external support that needs to be sourced outside of the school? And crucially...

What can we stop doing to create the space, time, and effort for the new implementation effort?

b. Introduce new skills, knowledge, and strategies with explicit up-front training.

A large body of evidence, including from evaluations funded by the EEF, shows the benefit of high-quality, up-front training for teachers.^{2,29,6,31} The typical purpose of this training is to develop an understanding of the theory and rationale behind a new approach, and introduce the necessary skills, knowledge, and strategies. Box 5 contains further information on the characteristics of effective professional development.

Schools should aim to factor in a number of common features of effective up-front training when introducing new programmes or practices:

- Create opportunities for staff to reflect on their existing beliefs and practices, and challenge them in a non-threatening manner.
- Make training interactive, with active learning through observation, meaningful discussion and reflection, demonstration of skills, deliberate practice, and feedback.
- Focus both on generic and subject-specific pedagogy. Provide structured support to help staff apply general pedagogical strategies to specific subject areas.
- Use a range of media and delivery approaches, including video, to demonstrate skills and exemplify good practice.

When developing or attending training, ensure it focuses on developing the key intended behaviours and activities for the intervention i.e. ‘active

ingredients’ (see Prepare, [p.20](#)).

A supplementary summary on professional development is available on the EEF website—see ‘Further Resources and Support’ for details.

“School leaders need to create a common and explicit understanding of what will be expected, supported and rewarded during the implementation process.”

c. Prepare the implementation infrastructure.

The implementation of a new approach often relies on a range of simple things that facilitate its use: the proactive support from an administrator, the availability of digital devices that are configured properly, a process for keeping a record of decisions, and so on. Examples like these relate to the governance, administration, and resources that support an intervention.¹⁹ These factors are unusual in that they tend not to be noticed when working well, however, they are important in removing barriers to implementation and allowing staff to focus on developing and applying new skills.

Having assessed the readiness to deliver an intervention, schools should have a clearer idea of the resources and support that are needed. This is likely to include:

- dedicated administrative support from staff who are fully briefed on the purpose of the intervention, and understand their roles in supporting its use;
- appropriate governance, with a clear mandate and operating procedures;

- technical support and equipment—with staff trained and skilled in its use;
- printed and digital resources that are licensed and up-to-date;
- dedicated space to deliver the intervention, which is regularly timetabled; and
- a realistic amount of time allocated to implement the intervention, review implementation data, and address problems.

Remember, this is more about repurposing existing time, effort and resources than adding lots of additional infrastructure.

Checklist questions:

- Is there a logical and well-specified implementation plan?
- Do we have a clear and shared understanding of the active ingredients of our intervention and how they will be implemented?
- Have we selected the right set of implementation strategies, in the right order?
- Are we able to capture the desired (and undesired) changes in practices?
- Have we honestly appraised our capacity to make those changes?
- Are staff and the school practically ready to adopt the new approach?



Box 5: Characteristics of effective professional development

Effective professional development includes both initial training as well as high-quality follow-on support.

Regardless of the specific objective and content of a new intervention – be it introducing new instructional methods or building subject knowledge – the process of implementation requires not only organisational, but also individual, changes in behaviour. To achieve these changes, effective implementation is almost always supported by high-quality professional development.^{2,6,30,31}

In this guide, we break professional development down into two distinct activities: up-front training and follow-on coaching. Training is used to describe initial activities to develop an understanding of the theory and rationale behind the new approach and to introduce skills, knowledge, and strategies. This training usually starts before an intervention is used in the school, hence is situated in the Prepare phase of this guide. Characteristics of effective training are discussed on [p.29](#).

Coaching refers to a range of different types of follow-on support that almost always takes place within the school setting after changes to practices have begun. It involves working with skilled coaches or mentors (either internal or external) who provide ongoing modelling, feedback, and support to help apply the ideas and skills developed in initial training to practical behaviours. As such, coaching is situated in the Deliver section of this report. Characteristics of effective coaching are discussed on [p.34](#).

A common mistake in implementing new programmes and practices is only providing up-front training, with little or no follow-on support.

At the same time, professional development processes are unlikely to be successful without also ensuring there is high-quality content and a sharp focus on pupil outcomes. Many of the EEF's most promising projects are precise in terms of the teaching practices they are introducing and provide explicit training and support to help teachers apply general pedagogy to specific subject domains i.e. pedagogical content knowledge.²⁵

Professional development activities should be appropriately spaced and aligned—avoid one-off inputs.

Overall, the evidence suggests that professional development should be viewed as an ongoing process rather than a single event. There needs to be appropriate timing of initial training, follow-on support, and consolidation activities to fit both the school cycle and the iterative nature of adult learning.²

The content of professional development activities should also be aligned and purposeful so that individual learning activities collectively reinforce one another and revisit the same messages. For example, in-school coaching activities should build on, and reflect, the ideas and strategies that are introduced in initial training. Inevitably, this all takes time, with most effective professional development lasting at least two terms, and often longer. Hence, school leaders and programme developers need to design interventions that allow for frequent and meaningful engagement, and move away from a model of one-day, one-off training.²

DELIVER

5 Support staff, monitor progress, solve problems, and adapt strategies as the approach is used for the first time.

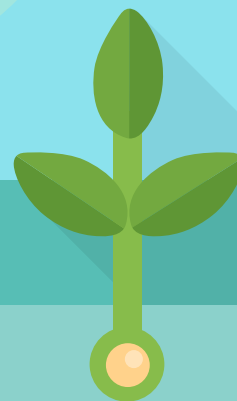


'Deliver' is a vulnerable phase in which the new programme or practice is applied for the first time. To begin with, even highly experienced educators and administrators may feel awkward as new behaviours and structures are learned and old habits set aside, creating feelings of unease or 'incompetence' which can potentially derail the implementation effort.

When delivery is framed in this way as a learning process, monitoring implementation becomes an essential tool in identifying, and acting on, implementation barriers and enablers. Gather implementation data while applying the new approach and use this information to improve its use over time.

As when trying anything new—be that learning to drive, or playing an instrument—we should expect it to be tricky at first; hence this phase is about continuous dynamic improvement:

- Motivating staff
- Identifying and solving problems
- Identifying successes to solve those problems
- Providing ongoing support to help embed new skills, knowledge and behaviours.



Adopt a flexible and motivating leadership approach during the initial attempts at implementation.

As mentioned, the initial period of applying a new approach is often challenging as staff get to grips with new ways of working. A key role for leaders during this period, therefore, is to manage expectations and encourage 'buy-in' until positive signs of change emerge.⁶ Having clear and achievable short-term measures of implementation are important in capturing these changes and demonstrating early signs of success.

Barriers and challenges almost inevitably emerge as a school moves through an implementation process. Some challenges will be more of a *technical* nature: qualified staff may leave the organisation meaning that new staff need to be hired and trained; or a school may identify a gap in skills and need to develop a new strand of training. Challenges like these can be met using the routine processes and operating procedures that already exist in a school,

such as human resources, professional development, and timetabling.

Other implementation challenges can be more unfamiliar: for example, a new practice may require filming teaching in the classroom, raising concerns among staff, parents, and students. Such problems are rarely met with ready-made, routine solutions, and call for a more *adaptive* leadership style. They require dialogue, involvement, negotiation, and the collaborative development of solutions.³² In the example provided above, a meeting of parents may need to be called to work through any concerns regarding videoing in the school.

Research suggests that leaders are prone to applying the wrong leadership style when tackling implementation problems.³² Take care in choosing the appropriate approach, recognising that problems may require a blend of technical and adaptive solutions.

Reinforce initial training with expert follow-on support within the school.

While up-front training is important in developing a conceptual understanding of a new approach, crucially, training alone is unlikely to be sufficient to yield changes in practice. Often, it is only when follow-on support is added to training, in the form of expert coaching or mentoring, that teachers are able to apply their conceptual understanding to practical classroom behaviours.^{2,6,18,33}

An increasing body of evidence demonstrates the impact of coaching on improving implementation and learning outcomes.³³ Nevertheless, coaching varies in its effectiveness, depending on how it facilitates professional learning.³¹ A number of activities emerge as being useful which schools should seek to factor into their post-training support:

- Create opportunities for explicit discussions around how to apply new ideas and strategies to classroom practice and adapt existing practices.

- Model the delivery of new skills and strategies.
- Encourage staff to deliberately practice specific skills and apply what they have learnt by experimenting back in the classroom.
- Structure in time for reflection on the success of experimentation and what can be improved next time.
- Observe classroom practice and provide regular and actionable feedback on performance and implementation.
- Provide ongoing moral support and encouragement.

As these coaching activities require dynamic and frequent interactions with teachers, they almost always take place within the school setting. Ongoing instructional support requires school leaders to carefully plan how these activities are integrated into the overall professional development programme.

Use highly skilled coaches.

If coaching is used to provide follow-on support, ensure the coaches are highly skilled. Less effective coaches adopt a more didactic model where they simply tell teachers what to do, passively observe practice, and evaluate staff performance against a set observation rubric.³¹ More effective coaches:

- offer support in a constructive, collaborative manner;
- help teachers take control of their professional development, while at the same time providing appropriate challenge; and
- have the trust and confidence of teachers and regularly engage with school leaders.

Coaching support can be provided either by internal staff or external specialists, with successful examples of both approaches emerging in EEF-funded evaluations of promising programmes.²⁵ More research is needed on the skills and experience of successful coaches; however, it appears that having significant experience in working with teachers (more than five years), and expertise across multiple areas—specialist pedagogical knowledge, adult learning, feedback, monitoring, and so on—are likely to be important.^{2,31,33}

Complement expert coaching and mentoring with structured peer-to-peer collaboration.

Another important form of follow-on support is peer-to-peer collaboration in the form of approaches like professional learning communities. Here, the evidence is more mixed, with some forms of collaboration not appearing to add value to implementation and student outcomes.² This suggests schools should think precisely about the content of such groups and the nature and purpose of the work they are engaged in.

The features of effective peer-to-peer collaboration are still contested. A collegial problem-solving approach is recommended, that mirrors the features of effective coaching and mentoring (see above). There should be

clear objectives, structured content and processes, and a tight focus on improving pupil outcomes. Loosely defined and unstructured collaborations are unlikely to work. Coaches and mentors—either internal or external—can play a valuable role here in guiding, monitoring, and refining the work of collaborative groups.^{31,34}

A supplementary summary on professional development is available on the EEF website—see ‘Further Resources and Support’ for details.

Use implementation data to actively tailor and improve the approach.

By now, schools should have developed an appropriate set of implementation outcomes and a process for collecting and analysing this data. These tools are now used to monitor the progress and quality of implementation, and apply that knowledge to inform decisions about the delivery of the intervention.

Data can be used to identify barriers that arise in using the new approach, which, in turn, should be used to tailor the intervention by, for example, restructuring teams, adapting implementation strategies, redistributing resources, or enhancing staff support. Data may also point to implementation strengths and

facilitators that can be used to enhance the wider use of the innovation, for example, by identifying early adopters who can mentor and coach other colleagues.

Most importantly, implementation data will only be meaningful if it can then be applied in daily practice. This requires that data—such as fidelity scores for staff using a new programme—is summarised in digestible ways that make it easy for staff to understand and apply. Frequent opportunities should be created to review implementation data, address barriers, and tailor implementation strategies, for example as a standing item on school leadership team meetings.

Make thoughtful adaptations only when the active ingredients are securely understood and implemented.

A key recommendation when developing a well-specified implementation plan is establishing a clear sense of the active ingredients of the intervention (see Prepare, [p.20](#)). Embracing a notion of active ingredients implicitly acknowledges the significance of ‘flexible elements’—those features or practices within an intervention that are *not* directly related to the theory and mechanism of change, and where there is scope for local adaptations.

Local adaptations to interventions are almost inevitable, particularly in U.K. schools where professional flexibility and autonomy are highly valued.²⁰ Staunch supporters of ‘fidelity’ have tended to view such adaptations as failures of implementation, however, this may be taking too pessimistic a view. Although the evidence base isn’t robust, there is an increasing body of research showing that local adaptations can potentially be beneficial to implementation, encouraging buy-in and ownership, and enhancing the fit between an intervention and the local setting.²⁰ Novel additions to interventions—in contrast to modifications—are likely to be most beneficial.

Too much flexibility can be damaging, however, with over-modification resulting in lack of impact, particularly where modifications are made to the core components of the intervention.¹⁸ As such, teachers shouldn’t view fidelity as a threat to professional autonomy, rather see it as guide to understanding where to be ‘tight’ and where to be ‘loose’.

The take-home lesson is stick tight to the active ingredients of an intervention until they are securely understood, characterised, and implemented, and only then begin to introduce local adaptations.

A school that has achieved a stable routinisation in the use of an innovation—with most staff able to naturally and routinely apply new behaviours and approaches—shifts its focus towards sustaining the new practice.

Box 6: Fidelity – combine faithful adoption with intelligent adaption.

A common challenge when adopting new programmes and practices is ensuring they are being used as intended. Staff may like some aspects of an intervention more than others and ‘cherry pick’ their favourite elements; new ideas and practices may lead to unintended adaptations to a programme that diminish its effect; people may struggle with some aspects of an approach and leave these elements out. The use of an approach, therefore, can vary greatly from teacher to teacher, and the educational outcomes they achieve may not meet the initial expectations.³⁰

If we want to enable effective change, we need to make sure that the core requirements of the innovation are being met.

Ensure programmes and practices are delivered as intended by the developers.

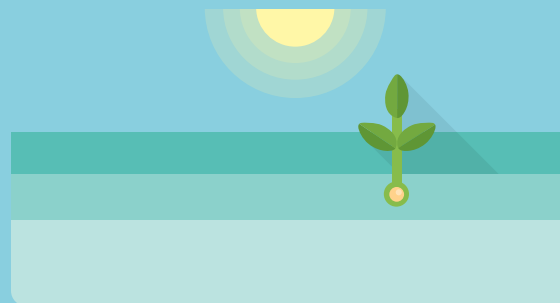
Fidelity is the implementation outcome most acknowledged and measured in implementation studies in education. It describes to what degree an intervention has been implemented *as intended by its developers* (both in-school and external developers). Fidelity can relate to structural aspects of the intervention, such as dosage (for example, the correct number of sessions are delivered) or training (for example, teachers are trained as planned and receive the necessary supervision). It can also refer to more dynamic aspects of the intervention, such as whether key teaching strategies are included in lessons, or whether the delivery of those strategies is sufficiently student-centred.^{20,30}

Systematic reviews of implementation studies in education consistently report a positive relationship between the fidelity with which an intervention is implemented and the outcomes for students.^{6,30}

Ensure you are being faithful to what matters – use ‘active ingredients’ as a guide.

At the same time, it is important to ensure that the focus on fidelity is in the right place. A theme running through this guide is the importance of specifying the ‘active ingredients’ of an intervention – those elements and features that are tightly related to an intervention’s theory and mechanism of change (see Prepare, [p.20](#)) – which could, for example, relate to key pedagogical strategies, or to aspects of its delivery, such as the duration and frequency of lessons.

Specifying the active ingredients of an intervention enables educators to identify which features need to be adopted closely (with fidelity) to get the intended outcomes, as well as areas where there is scope for intelligent adaptations (see Deliver, [p.32](#)).



Checklist questions:

- ✓ Are we able to respond to challenges that arise during the initial stages of using a new approach? Can we use existing structures and processes or are novel solutions required?
- ✓ Is appropriate follow-on support available to embed new skills and knowledge developed during initial training, in the form of coaching, mentoring, and peer-to-peer collaboration?
- ✓ Is the intervention being implemented as intended? Are the active ingredients being observed in day-to-day practice?
- ✓ Does implementation data suggest we need to adapt our implementation strategies?





Plan for sustaining and scaling an innovation from the outset.

Depending on the scale and complexity of the changes, and the initial degree of alignment with the climate of the school, implementation can be, at the same time, tiring, energising, ambiguous, exhilarating, and overwhelming.

Implementation readiness—motivation, general capacity, and innovation-specific capacity—is therefore rarely static; it can be developed and built, but can also diminish and vanish. The loss of staff or opinion-leaders can fundamentally change how an intervention is perceived in an organisation, while

reduction of budgets and other resources can limit its use.

These possibilities cannot first be addressed in the final stages of implementation;³⁵ schools should aim to plan for sustaining and scaling an innovation in the early stages. This may involve building contingency plans for turnover of staff, or considering additional funding sources to maintain the innovation over time. Take regular ‘pulse checks’ to ensure the stresses and strains of implementation are not adversely affecting the readiness of the school.

Treat scale-up of an innovation as a new implementation process.

If an implementation process is successful and reaches the Sustain phase, schools should shift their focus to consolidating the new programme or practice and enhancing its skilful use among all relevant staff. Sustaining an innovation may involve expanding its use to additional staff, teams, or schools as confidence grows in its use.

Like the initial implementation process, the decision

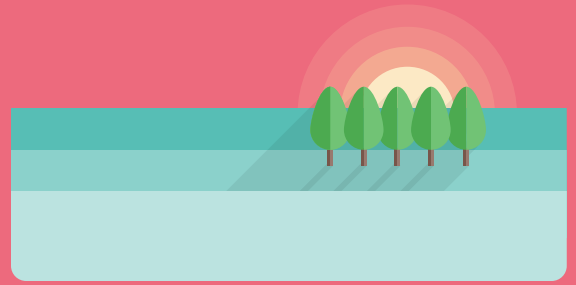
to scale-up an approach should also be driven by local data and other available evidence. Start a scale-up process by conducting a thorough review of the previous implementation experience and the achieved outcomes. This may suggest an entirely new implementation process is required—potentially leading the organisation back to Explore—as the school re-assesses the needs of the intended recipients and the capacity to deliver the intervention at scale.

Ensure that implementation data remains fit for purpose.

When implementation has reached the Sustain phase, schools should continue monitoring implementation to capture how the intervention is being adopted and adapted over time. At the same time, the foundation and context for data collection may have changed: new cohorts of students may have different learning needs, changing policy agendas may have led to new

reporting requirements, or decreased capacity within the school made collecting data challenging.

With these and other changes in mind, schools should review their capacity to collect and review implementation data on a regular basis to ensure it is being measured accurately over time.³⁶



Continuously acknowledge, support, and reward good implementation practices.

Once a new programme or practice is integrated into the normal routines of a school, there is a risk of assuming that the implementation process requires no further leadership support; however, to ensure that the changes brought to a school can be sustained, school leaders should continuously acknowledge, support, and reward its use (see Prepare, [p.20](#)).

Sustaining implementation requires formal leaders to continuously engage in implementation processes, provide purposeful support, and 'walk the walk'. Modelling of expected behaviours and demonstrating the use of evidence in daily routines are key ingredients of healthy, ongoing implementation leadership.

Checklist questions:

- ✓ Do we have a stable use of the intervention, as intended?
- ✓ Is it achieving the desired outcomes?
- ✓ Have we created contingency plans for any changes across the school that may disrupt successful implementation?
- ✓ Is it appropriate to extend the use of the approach to additional staff? What is required to achieve this?
- ✓ How can the existing capacity and resources be best used to support scale-up?

FURTHER READING AND SUPPORT

EEF Implementation Resources

A range of free practical resources are available to help you apply the strategies and recommendations in this guidance report in your context (available at <https://eef.li/implementation/>):

- **[Online course](#)**
An interactive online course, which guides you through some key activities in the guidance report. The course contains two video case studies of schools that have used the guide to support changes in practice.
- **[Guidance report checklist](#)**
An aggregated set of checklists from across the guidance report, to help reflect on the recommendations in the report.
- **[Implementation theme summary—Professional development](#)**
This summary provides more information on Professional Development, drawing on the recommendations in the guidance report.
- **[Implementation theme summary—Active ingredients](#)**
This summary provides further information on what we mean by ‘active ingredients’, how to identify them, and ways in which they can be used to support implementation.
- **[Gathering and interpreting data to identify priorities](#)**
A printable version of the Explore section summary on how to use data to identify school improvement priorities.
- **[Implementation plan template](#)**
A template to help create a clear and logical implementation plan.
- **[Examples of implementation plans](#)**
Examples of implementation plans created by schools in the Research Schools Network.
- **[‘Expected, supported, rewarded’ planning template.](#)**
A template to help school leaders and programme developers clearly communicate what will be expected, supported and rewarded during the implementation process.
- **[Card sort activity](#)**
An interactive activity to introduce some of the key themes in the guidance report.

Wider Implementation Resources

The **Active Implementation Hub**, developed by the National Implementation Research Network in the U.S., contains a useful range of resources, videos, and online modules that relate to themes covered in this report.

<http://implementation.fpg.unc.edu>

The **UK Implementation Society** aims to ‘build capacity and expertise for more effective, evidence-informed implementation of services for people and communities’, and is an excellent source of resources, expertise, and support on implementation.

<https://www.ukimplementation.org.uk/about>

The **Research School Network**, coordinated by the Education Endowment Foundation, is a regional network of schools that can offer support and training on effective implementation.

<https://researchschool.org.uk>

In 2016, the Department for Education published a ‘**Standard for Teachers’ Professional Development**’. The accompanying implementation guide contains useful ideas and insights on how to apply the principles.

<https://www.gov.uk/government/publications/standard-for-teachers-professional-development>

The **Assessment Lead Programme**, run by Evidence-based Education, aims to help leaders make their school assessment approach more efficient, and staff make more reliable judgements about what pupils know, can do and need next.

<https://evidencebased.education/assessment-lead-programme/>

HOW WAS THIS GUIDANCE COMPILED?

The guidance draws on a series of recent reviews that summarise and interpret research on implementation in education.^{2,6,31,33}

These reviews have been supplemented by insights from the wider literature on implementation science, as well as findings from individual studies, including the EEF’s own evaluations of education interventions. As such, the guide is not a new study in itself, rather a translation of existing research into accessible and actionable guidance for schools.

We have taken a pragmatic approach, with not every issue and factor relevant to implementation covered in detail. Instead, we have aimed to provide a manageable introduction and focused on areas where there is existing evidence that is not regularly applied.

While the evidence base on implementation in education is evolving quickly, it is nevertheless patchy. Some areas, like training and professional development, have a reasonably robust evidence base, while others, like implementation climate, have not been studied extensively. Hence, research from other sectors, such as social work or healthcare, is also used. Although the elements in the guide have supporting evidence, the overall process and structure we propose has not been evaluated. As such, the guide should be treated as a snapshot of promising evidence in implementation and an introduction to a rapidly developing field.

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APPENDIX I

'FLASH MARKING' - IMPROVING MARKING AND FEEDBACK IN KEY STAGE 4 ENGLISH LESSONS

Meols Cop High School - Southport

Problem (Why?)	Intervention Description (What?)	Implementation Activities (How?)	Implementation Outcomes (How Well?)	Final Outcomes (And so?)
<p>Teachers</p> <ul style="list-style-type: none"> Teachers spend too much time on ineffective feedback. Staff workload. <p>Learner behaviours</p> <ul style="list-style-type: none"> Ineffective self/peer assessment. Feedback not developing student metacognition. Lack of student engagement with feedback. Feedback demotivating for some students. <p>Attainment</p> <ul style="list-style-type: none"> Less than expected progress at KS4 English. 	<p>Active ingredient 1</p> <p><i>No grades:</i> Remove grades from day-to-day feedback.</p> <p>Active ingredient 2</p> <p><i>Codes within lessons:</i> Provide feedback using codes that are skill specific, known as Flash Marking (FM).</p> <ul style="list-style-type: none"> FM codes given as success criteria. FM codes used to analyse model answers. <p>Active ingredient 3</p> <p><i>Personalisation and planning:</i></p> <ul style="list-style-type: none"> Feedback is personalised and used to identify individual areas for development. FM codes are used to inform future planning/intervention. <p>Active ingredient 4</p> <p><i>Metacognition:</i></p> <ul style="list-style-type: none"> Targets for improvement are addressed in future work that focus on a similar skill, identified by a FM code. Students justify where they have met their previous targets by highlighting their work. Skill areas are interleaved throughout the year to allow students to develop their metacognitive skills. 	<p>Training</p> <p>Three training sessions over two years, attended by two staff (including Head of English). Training is cascaded to other members of the department.</p> <ul style="list-style-type: none"> Session 1 - Introduction to the theory and principles. How to embed the codes into existing practice. Session 2 - Moderation of work. Demonstration videos. Using FM to develop metacognitive skills and inform curriculum planning. Session 3 - Refresher for any new members of staff. Sharing good practice. <p>Educational materials</p> <ul style="list-style-type: none"> Online portal access available to share training resources and demonstration videos. Webinars. <p>Monitoring</p> <ul style="list-style-type: none"> Periodic moderation of work via the web portal to ensure fidelity. <p>Coaching</p> <ul style="list-style-type: none"> In-school support - visits, coaching, observational support, team teaching and planning. 	<p>Short term</p> <p><i>Fidelity:</i></p> <ul style="list-style-type: none"> Staff demonstrate understanding of FM theory and principles. Removal of grades in day-to-day feedback. All feedback uses FM codes. Success criteria and model answers use FM codes. Some staff able to adapt future planning to address improvements. <p><i>Reach:</i></p> <ul style="list-style-type: none"> All staff using FM codes in Year 10 lessons. <p><i>Acceptability:</i></p> <ul style="list-style-type: none"> Majority of staff experience a reduction in time spent on marking. <p>Medium term</p> <p><i>Fidelity:</i></p> <ul style="list-style-type: none"> FM codes used to ensure previous targets are acted upon. Tracking sheets are used to inform future planning. Areas for skills development interleaved into future curriculum planning. <p><i>Acceptability:</i></p> <ul style="list-style-type: none"> All staff experience a reduction in time spent on marking and reallocate some of this time to curriculum planning. 	<p>Short term</p> <ul style="list-style-type: none"> Increased student engagement with feedback. Students engage with codes and are more focussed on skill sets than attainment grades. <p>Medium term</p> <ul style="list-style-type: none"> Improved student motivation and metacognition. More purposeful self and peer assessment. Greater awareness of required skills. <p>Long term</p> <ul style="list-style-type: none"> Increased levels of progress in KS4 English and English Literature. Increased levels of progress at KS4 English and English Literature for disadvantaged pupils.





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