Plain language summary

Australian Education Research Organisation

Explainer

Taking an evidence-informed approach to implementation

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Evidence-based teaching practices are those practices that are most likely to improve learning outcomes for students. But even the most well-defined practices can fail to have impact if they are not implemented effectively. Just like evidence-based practices, effective implementation draws on research. An evidence-informed approach to implementation builds a bridge between knowing what works for improving student outcomes and embedding it into practice in schools.

This explainer is the first in a series of 5 that outlines the key components of a deliberate and structured approach to implementation. The series includes:

- taking an evidence-informed approach to implementation (overview)
- using a staged approach (implementation component 1)
- addressing enablers and barriers (implementation component 2)
- using key implementation strategies (implementation component 3)
- monitoring implementation outcomes (implementation component 4).

School and system leaders can use these explainers to engage with the key research and ideas that underpin effective implementation. The Australian Education Research Organisation (AERO) is working with schools to learn more about implementation in different contexts. We're committed to sharing insights into what we learn over time.

Key points

- Implementation is more complex than typically understood and requires thoughtful, intentional planning and actions over time.
- There are three key elements of a deliberate and structured approach to implementation: consider school context (where), select an evidence-based practice (what), and use implementation components (how). These elements are connected and reinforce one another.
- A deliberate and structured approach to implementation provides schools with a reliable, evidence-informed framework that enables them to tailor implementation to their context. This includes understanding and working through implementation stages, identifying and responding to enablers and barriers, selecting key implementation strategies and monitoring implementation outcomes.

Bridging the gap between knowing and doing

Achieving excellence and equity is a goal of education in Australia. Reaching this requires using what we know from research to select teaching practices that have shown to be effective, and implementing them with intention.

Implementation is a deliberate series of planned and intentional activities aimed at integrating an evidence-based practice into real-world service settings (Albers & Pattuwage, 2017). In schools, it means being intentional about how an evidence-based practice is used and sustained across classrooms. Implementation can be complex, and research about evidence use in Australian schools suggests that support is needed to better implement evidence-based practices (AERO, 2022). This also reflects findings from fields outside of education, such as health, where it's estimated to take 17 years to close the gap between what we 'know' and what we 'do' (Robinson et al., 2020).

Part of the complexity of implementation is understanding exactly what it is. Adding to the confusion, 'implementation' is often misused as a synonym for delivery, adoption or use of a particular program or resource. While discrete activities such as delivering a workshop or using a specific resource *may* support a component of implementation, when provided as a one-off activity, they're unlikely to achieve sustained adoption of evidence-based practices.

Instead, drawing on a reliable structure for implementation, informed by research, can help schools embed evidence-based practices.

A deliberate and structured approach to implementation

There are some common concepts in implementation research, but there is no one comprehensive, widely accepted model for the implementation of evidence-based practices (Birken et al., 2017; Moullin et al., 2020). In light of this, AERO has identified and operationalised key concepts from implementation research that support the use of a deliberate and structured approach to implementation in schools.

Deliberate refers to intentionally committing to and planning for the implementation process, while *structured* means using reliable components systematically to inform the process of implementation.

The key elements of a deliberate and structured approach to implementation are:

1. Consider school context (where)
2. Select an evidence-based practice (what)
3. Use implementation components (how) – use a staged approach, identify and respond to enablers and barriers, select key implementation strategies, and monitor implementation outcomes.

These elements are connected and reinforce one another. For example, enablers and barriers, strategies and outcomes are relevant across all stages of implementation. The component of using a staged approach therefore also helps to organise the 3 other 'how' components.

Figure 1 shows a bottom-up approach to the 'where', 'what' and 'how' of implementation.

Figure 1: Implementing well in schools – Using a deliberate and structured approach to the implementation of evidence-based practices

1 Where: School context

Implementation takes place in schools – the 'where'. Each school is different and will need to tailor implementation to ensure it's appropriate for, and meets the needs of, their communities (i.e., students, families, teachers, staff and the broader community). School context is woven throughout the process of implementation and helps inform the choices schools make – for example, which evidence-based practice(s) to adopt, when to start an implementation process, and who will be involved in each stage of implementation.

The idea of tailoring implementation for context is widely accepted in implementation science (Albers & Pattuwage, 2017; Education Endowment Foundation, 2019; Nilsen & Bernhardsson, 2019). While there are varying definitions of 'context' in implementation, broadly, it can be seen as the many unique factors that influence a specific implementation effort, and not just a backdrop for implementation (Damschroder et al., 2009). This definition recognises that each school is different and prescriptive checklist or 'tick box' implementation approaches are, therefore, less likely to successfully improve practice. Rather, responding to school context enables flexibility for schools to tailor implementation for their setting. This can include addressing relevant barriers, selecting appropriate implementation strategies or identifying the measures to monitor implementation outcomes.

When adapting implementation to fit a school's context, these changes shouldn't be so significant that the approach can no longer be considered to be informed by the evidence regarding effective implementation.

Implementation is ultimately for the benefit of people in a school context (e.g., teachers and students) and is also reliant on people within the school context to carry out effectively (e.g., leaders and teachers). Therefore, ongoing collaboration and communication between key stakeholders are also important throughout the implementation process (Gaias et al., 2021).

2 What: Evidence-based practice

Selecting evidence-based practices is the 'what' of implementation. Evidence-based practices are those supported by research evidence. This means there's confidence in the rigour of the research and findings, and the practices have been shown to work for students in different contexts with different demographics (AERO, 2023a).

Schools dedicate time, energy and resources when they commit to a deliberate and structured approach to implementation, so the 'what' must be effective, relevant and likely to maximise students' learning. The practice needs to be evidence-based. See AERO's model of learning and teaching for the most effective and efficient teaching practices aligned with how students learn.

There are different types of research evidence, and consideration needs to be given to the 'best' or 'good' forms of this. Understanding research evidence is an important part of selecting and understanding evidence-based practices to implement.[1] Engaging with research and analysing strengths and limitations of different types of research evidence can inform decisions, complement professional experience, and foster confidence in a practice's effectiveness and relevance.

1 AERO's Standards of Evidence provide an overview of different evidence types and considerations for use. Aligned practice guides support the use of research evidence to strengthen practice decisions in schools.

When selecting an evidence-based practice, schools need to consider how *implementable* it may be. In other words, schools need to consider how ready for use the practice is, or the effort required to operationalise it into implementation strategies, such as professional learning cycles, so it can be consistently applied by teachers.

Evidence-based practices should be implemented with minimal adaptions to ensure they're used in a way evidence has shown them to work. This doesn't mean the practices will look the same in every classroom, but will instead feature common core elements. For example, when classrooms use explicit instruction, there will be differences in the amount of time, guidance, repetition and opportunities to practice students need, but the mechanisms of learning that transfer information to long-term memory to build knowledge and understanding are the same (AERO, 2023b).

3 How: Implementation components

The implementation components are the 'how' of implementation. There are 4 components that form part of a deliberate and structured approach to implementation which are summarised below: use a staged approach, identify and respond to enablers and barriers, use key implementation strategies, and monitor implementation outcomes. In practice, these components are applied together throughout implementation and rely on each other – no one component is more important than another.

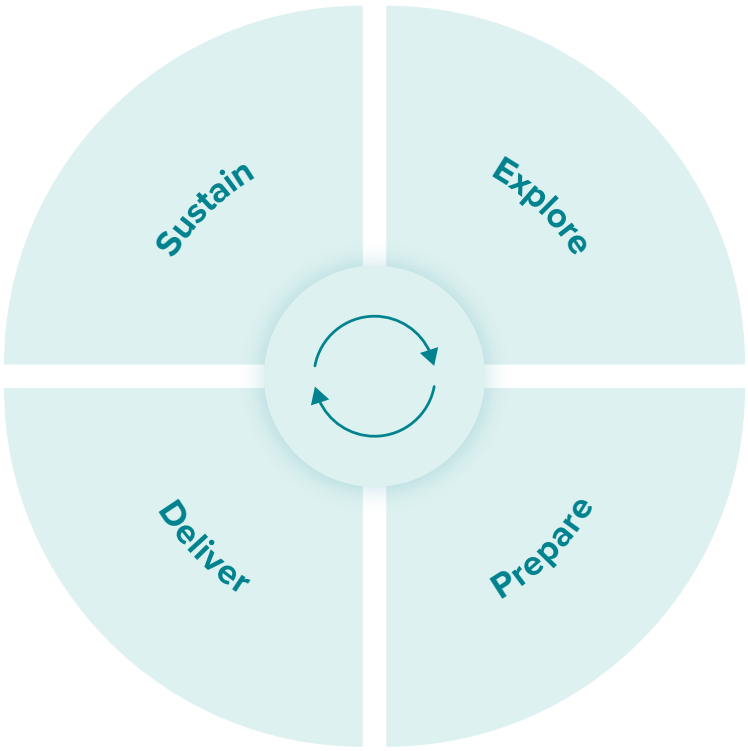
Use a staged approach

Implementation occurs in distinct stages or steps that repeat or build upon each other and is not a one-off event (Albers & Pattuwage, 2017; Meyers et al., 2012; Saldana et al., 2012). These stages highlight key activities and considerations over the cycle of implementing an evidence-based practice and reinforce that no one stage is more important than another.

There are different ways to phase stages of implementation and various models available to help with this. Evidence for Learning (E4L)'s stages of implementation is specifically designed for schools (E4L, 2019). The 4 stages of Explore, Prepare, Deliver and Sustain are shown in Figure 2.

Leaders can draw on stages to reflect on where they are within the implementation process and plan for what's next. Although the stages are depicted as discrete, they're often experienced as overlapping and non-linear during implementation. For example, schools may be in 2 stages at once, and will likely return to earlier stages (e.g., from Deliver to Prepare) as they work through strategies such as professional learning cycles and respond to enablers and barriers.

Figure 2: Stages of implementation



Source: 'Figure 1' in Putting Evidence to Work: A School's Guide to Implementation by E4L (2019, p. 8), licensed under a CC BY-NC-ND 4.0 licence. Adapted with permission, including recreating in AERO branding and simplifying content.

Address enablers and barriers

Every implementation effort will experience enablers and barriers that can help or hinder the process. Understanding exactly what's acting as an enabler or barrier within a school context is useful, but being prepared to *respond* to this information is key to effective implementation.

Each school has implementation enablers and barriers that are specific to their own setting, and these will likely change for each evidence-based practice that's implemented and over time. In implementation research, enablers and barriers are sometimes referred to as 'determinants'. There are frameworks that collate common implementation determinants that can be used by schools to help consider their own key enablers and barriers. The Consolidated Framework for Implementation Research (CFIR) is one of the most used determinant frameworks (Damschroder et al., 2022). It includes 5 different areas or 'domains' that determinants sit within, recognising that implementation is influenced by different people, processes and contexts.

Use key implementation strategies

Implementation strategies are the 'how to' component of turning research into practice (Proctor et al., 2013). They're the activities that shift evidence-based practices from theory into everyday use (Cook et al., 2019). Schools will likely be familiar with often-used implementation strategies such as professional learning and coaching. However, effective use of implementation strategies isn't just about choosing the right strategies for a school's context but also how they're combined and sequenced. For example, when considering sequencing, professional learning strategies to develop teachers' knowledge about specific elements of an evidence-based practice would likely precede any strategies related to teaching observations and coaching.

There's a wide range of implementation strategies a school can choose from. The most comprehensive taxonomy is the School Implementation Strategies, Translating ERIC Resources (SISTER) project[2] (Waltz et al., 2019). SISTER highlights 75 strategies (e.g., develop a detailed implementation plan or blueprint) across 9 domains (e.g., adapt and tailor to context, train and educate stakeholders) to support implementation (Cook et al., 2019). Starting with a taxonomy such as SISTER is useful for schools to see the breadth of strategies available to support implementation.

Monitor implementation outcomes

Implementation outcomes are used to monitor the strength of implementation throughout each stage. These outcomes are the *effect* of implementation and help to guide the implementation process.

Implementation outcomes are distinct from (but connected to) effectiveness outcomes, which measure the impact on student learning. Strong implementation outcomes are a good indicator of future impact on student learning outcomes.

Monitoring implementation outcomes enables schools to adapt implementation to meet their needs and respond to contextual factors. For example, if acceptability of the evidence-based practice is low, a school may decide to target acceptability as an implementation outcome or spend more time in the Prepare stage to deliver specific professional learning on the practice.

There are 8 outcomes that can be used to evaluate the success of implementation, outlined in Table 1 (Proctor et al., 2011).

2 Expert Recommendations for Implementing Change (ERIC) has 73 implementation strategies and was developed for use in the health sector.

Table 1: Definitions for implementation outcomes

Outcome	Definition for schools
Acceptability	The perception among stakeholders (e.g., teachers, students, families, community) that a given evidence-based practice is agreeable, palatable or satisfactory.
Adoption	The intention, initial decision or action to try an evidence-based practice.
Appropriateness	The perceived fit, relevance or compatibility of the evidence-based practice for a specific school (including staff, students, families and community).
Feasibility	The extent to which an evidence-based practice can be successfully used or carried out within a given school.
Fidelity	The degree to which an intervention or practice is implemented as intended, especially in terms of: • adherence to the description of the practice • dosage – the frequency and amount of use • quality of use of the practice.
Implementation cost	The extent of the cost of implementation based on the particular evidence-based practice, the implementation strategy and school context.
Reach	The degree to which the evidence-based practice has been integrated within a school.
Sustainability	The extent to which an evidence-based practice is maintained and embedded within a school's ongoing operations.

Source: Based on Outcomes for Implementation Research: Conceptual Distinctions, Measurement Challenges, and Research Agenda by Enola Proctor, Hiie Silmere, Ramesh Raghavan, Peter Hovmand, Greg Aarons, Alicia Bunger, Richard Griffey and Melissa Hensley (2011), licensed under a CC BY-NC 2.0 licence.

Different implementation outcomes can be monitored during different stages of implementation. Some of these outcomes (e.g., feasibility and acceptability) are used to monitor whether teachers are likely to use a new practice (Proctor et al., 2011), and are particularly important to monitor in the Explore and Prepare stages. Other implementation outcomes (e.g., fidelity and reach) can be used to monitor whether a new practice that is in use is likely to have an impact on student outcomes. These are particularly important to monitor in the Deliver and Sustain stages.

The Learning Partner project in schools

One of AERO's core objectives is to encourage the adoption and effective implementation of evidence in educational practice and policy.

AERO is working alongside a small number of schools to learn about effective approaches to implementing evidence-based practices in different school contexts. AERO is directly providing support and guidance to these schools to enact a deliberate and structured approach to implementation, informed by research (Figure 1).

The objectives of the Learning Partner project are to:

- work alongside teachers and leaders to learn about implementing evidence-based practice in schools
- provide direct support and guidance to schools to enhance both implementation leadership and evidence-based practice
- generate examples of promising implementation of evidence-based practice in schools.

The Learning Partner project is new for AERO and small in scale. It began in 2023 with 9 primary schools, with an additional 6 primary schools joining in 2024. The schools are from Catholic and government sectors and located in clusters in New South Wales, South Australia, Queensland and Victoria.
Each school is focused on implementing explicit instruction in either mathematics or writing.[3]
AERO Implementation Consultants provide in-person support to schools to:

- develop leaders' knowledge and capability of a deliberate and structured implementation process
- enhance teachers' explicit instruction practice.

Implementation Consultants work closely with schools during Terms 1 to 3 and taper support in Term 4 (and during the second year) as these schools work towards sustaining explicit instruction with less support from AERO.

To discover what we're learning about implementation from the Learning Partner project, read our Insights into Implementation discussion paper.

3 One school focused on implementation in reading comprehension (including writing).

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