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Agile implementation for learning:

How adopting an agile mindset can help leaders achieve meaningful progress in student learning

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Introduction

System and school leaders across educational jurisdictions are working to design, implement and evaluate evidence-based initiatives to improve the quality of student learning outcomes, in both achievement and wellbeing.[1] Yet, leading meaningful progress in learning and teaching is not an easy task. There is often substantial variability in the results of improvement efforts due to the inherent complexity of implementation across diverse classroom and school contexts (Durlak and DuPre, 2008; Lendrum and Humphrey, 2012). Whilst the growing educational research evidence base can support the design of frameworks and interventions that synthesise 'what works best' (eg, Hattie, 2008; EEF, 2016) the core challenge is to find ways to ensure that 'what works best' can actually work across the unique contexts of a diverse school system.

In this paper I outline how educational leaders might adopt an agile mindset, in order to accelerate progress in their work to improve student learning, in a context of increasing change and uncertainty.

Unfortunately, the traditional improvement planning approaches provided to school leaders are rigid and built on inaccurate assumptions of simple and linear change that can be 'delivered with fidelity', over a period of 1–4 years. These approaches were fit-for-purpose when school improvement work was mostly focused on managing educational inputs such as time, teaching resources and money.

I argue that in order to make meaningful progress in student learning outcomes, school leaders need to adopt agile mindsets and methods in order to respond to change as it happens and adapt evidence-informed strategies to their unique contexts. Agility refers to the capacity to respond intelligently and adapt to change flexibly as it happens. An *agile mindset* is a stance which enables leaders to adjust, learn and iterate throughout the implementation process, in order to gain their desired impact on student learning and teaching practice. Adopting an agile mindset shifts the work of improvement from implementation-as-delivery towards implementation-as-learning.

This paper is in three sections.

1. Section 1 outlines the context of change facing educational leaders and highlights the limits of default approaches to school and system improvement.

2. In Section 2, I outline the capacity of agile approaches to support educational leaders in their complex improvement work, and to draw on the emerging literature in the field of improvement science and human-centred design methodologies.

3. In Section 3, I describe the three core elements of the agile mindset that leaders and their teams need to adopt. These are
   i) focus on impact;
   ii) learn by doing;
   iii) iterate with evidence.

I conclude with a call to embrace the inherently messy, non-linear and iterative nature of educational improvement work.

SECTION 1

The agile imperative: The limits of default approaches to leading educational change

The change challenge

Educational leaders face ever-increasing challenges and growing expectations around student progress in learning. Schools are being asked to

- ensure the growth of higher-order capabilities for an ever-increasing diversity of learners;

- adopt and embrace evidenced-informed pedagogical approaches;

- gather evidence of student progress in learning; and

- justify the effectiveness of their school improvement efforts.

These intersecting pressures are creating substantial challenges for leaders on the frontline, who are often provided with frameworks, and planning processes for leading change, which simply add to the complexity of their work.

I remember it was about 4 pm on a hot March afternoon in Western Sydney earlier this year. Tony, a young, dynamic elementary school principal walked into our room at the local golf club, which we had hired for an improvement network meeting for 10 schools. He was 30 minutes late and I was already deep into leading our review and discussion. I paused, welcomed Tony, and thanked him for making it. He wandered across to his team's table, grabbed the back of his chair, let out a deep, loud breath and then announced, 'I'm exhausted, … I've been flat-out all day, and I'm not sure whether I've achieved anything,' and sat down. I asked if any of the other 40 leaders ever felt this way. 'All the time' they replied, almost in unison, many showing a sympathetic smile to Tony, and one leader following up with, 'that's a good summary of my typical day!'

Tony's comment gave voice to the experiences of many leaders in that room and, in fact, many around the world. What I have learned from my research and improvement work alongside schools, is that many educational leaders feel stuck, frustrated and exhausted. They are working harder than ever before, and pursuing more initiatives for improvement, but they are not sure how to lead meaningful improvements in teaching and learning in the context of continual change, competing priorities and variable expertise and motivation among staff. Their current mindset and toolkit for leading change is not fit-for-purpose.

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Default change processes are not working

Faced with the gap between our aspirations for student learning and what our schools can achieve consistently, leaders are often initiating a misguided decades-old formula for school improvement:

1. write a detailed multi-year improvement plan;

2. set broad objectives for improvement;

3. define specific milestones for progress, projected years into the future;

4. announce changes to the entire staff and seek their buy-in;

5. invest in professional learning on the topic; and

6. a few years later ... repeat the improvement process again (See Figure 1).

Yet, if we are honest with ourselves, in reality little has shifted sustainably in the day-to-day practice of teaching, and evidence of student learning growth is sporadic at best.

This default approach to leading improvement worked well when leaders were expected to manage the inputs to the educational experience, such as securing educational resources (textbooks, curriculum, technology); completing policy documents; and ensuring that a certain amount of instructional time for students, or professional development time for teachers. was completed. All

of these components, whilst sometimes complicated to work through, involve working with clear solutions to well-known problems. Unfortunately, however, the problems that educational leaders face in improving learning outcomes – through improving the quality of teaching and generating and responding to evidence of student learning progress – are not just complicated but complex.

The theoretical and practice difference between facing complicated and complex problems is critical (Snowden and Boone, 2007). When facing complicated problems, leaders can map out the step-by-step response required, from the start to finish, before they begin. The improvement work is a process of analysis, identifying the evidence-based answer and then following the plan to implement the solution with fidelity (also see Perkins, 2010). This works well when managing resources or ensuring a certain amount of instructional or professional learning time is accounted for. Budgeting and timetabling in a school can be a nightmare left to a poor deputy principal over a few late nights; but they are complicated problems not complex.

In contrast to complicated problems, changes in teaching practices and improvements in student learning progress, across a range of valued outcomes, are complex problems that require a process of continual experimentation, learning and adjusting. There are no ready-made

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Figure 1. Traditional approach to educational improvement
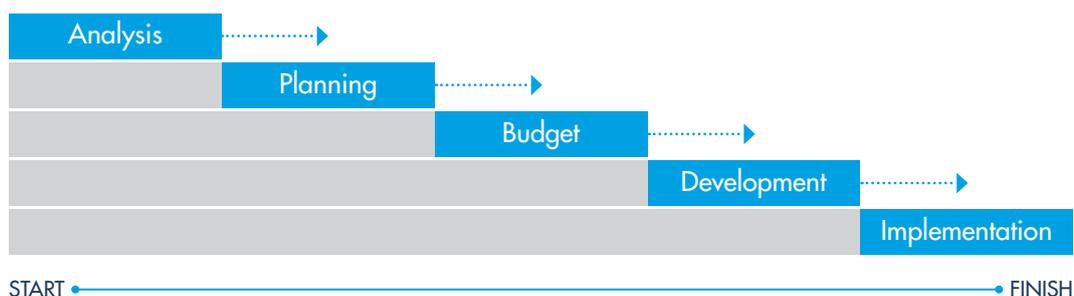
solutions that can simply 'plug-and-play' into a unique classroom and school context. Critically, the changes we are seeking to make involve enabling students, teachers – and often families – to shift their daily behaviours and attitudes around learning and teaching. This creates often-overlooked complexities in our change work, with the potential for unanticipated responses and consequences (Axelrod and Cohen, 1999; Miller and Page, 2007).

Take, for example, the implementation of a new research-based approach to early-years literacy. Whilst the development of an approach to literacy that's based on the best available research evidence is a complicated activity, the effective implementation of the program across diverse school contexts is truly complex (Meyers and Brandt, 2015). There is no clear recipe of steps that educational leaders can use to move through from beginning to end, to ensure an improvement in literacy learning outcomes. The introduction of this program will involve substantial changes and learning by many teachers and students, all of whom will need to engage in sustained behavioural and attitudinal change (Spillane, Reiser and Reimer, 2002). The classrooms themselves, even within the same school, will differ substantially depending on the diversity of student learning needs. Teachers will vary considerably in their background knowledge, pedagogical expertise and relationships with students (Coburn, 2004). Furthermore, instructional coaches and middle-level leaders tasked with the work of professional learning and development will have large variations in their capacity to build the knowledge, skills and motivation of staff, to unlearn their old approaches to literacy and adopt the new approach (Blazar and Kraft, 2015). This is all complicated further by potential change-over of staff each year,

where the hard-won capacity that has been built is lost during the course of the implementation period. In my experience it is possible that at the end of a 3-year implementation process none of the teachers from year one are still working in the same school or within the year groups of focus. As a consequence of these sources of variability, in any school there is no clear, simple set of predictable steps, to achieve the desired outcome, which can be seen from the outset. It is a complex problem, and traditional approaches to leading change are unlikely to be effective in achieving the levels of student learning growth we desire. We need to equip our schools and system leaders with improvement and implementation approaches that can embrace and respond to this inherent variability and complexity of improvement work.

SECTION 2
Embracing agile approaches

A way to animate linear, traditional change approaches can be found in the field of agile development and improvement. Rather than engaging in efforts to create perfect detailed plans and milestones and then implementing the strategy over time, agile approaches embrace the inherent complexity and ambiguity of change processes in complex-adaptive systems. Initially, agile approaches developed and gained traction as a way to respond to the complexity of large-scale software development projects (Sutherland, 2014). Developers found that by working in fast-moving teams, through sequences for short, focused work cycles – called sprints – they could respond rapidly to change and better meet the needs of their end users. Over the last decade agile development

approaches have now taken root across many diverse sectors (Rigby, Sutherland and Takeuchi, 2016). In broad terms, agile approaches to innovation and change focus on setting up teams to respond, learn from and adapt to change as they are working to solve a complex problem. As outlined in Figure 2, crucial to agile approaches is a bias towards action, continuous experimentation, and seeking rapid real-world feedback to guide new iterations.

Developing agility through improvement science

The commitment to doing improvement work through short cycles of disciplined inquiry, steered by evidence, resonates with 'improvement science' approaches to change. Pioneered in health improvement through the Institute of Health Improvement (IHI), improvement science is designed as a process that can create impactful change in complex work systems (IHI, 2016).

More recently, Anthony Bryk and colleagues at the Carnegie Foundation for the Advancement of Teaching have been advancing the use of improvement science to support educational change (Bryk, Gomes, Grunow and LeMahieu, 2015). Bryk and colleagues suggest that

improvement science deploys rapid tests of change to guide the development, revision, and continued fine tuning of new tools, processes, work roles and relationships. The approach

is explicitly designed to accelerate learning by adding. … The ultimate goal is to develop the necessary know-how for a reform idea to ultimately spread faster and more effectively.

(p 9)

These approaches also resonate with practices of human-centred design that are deeply user-focused and tend towards rapidly prototyping ideas in the real world (Brown, 2009; Norman, 1988), and also design-based implementation research.[2] Adapting the best of agile approaches enables educational leaders to respond to complexity, stay dynamic, and adapt as necessary to have their desired impact on student learning.[3] I have synthesised this approach as the agile mindset.

SECTION 3
Agile mindset

Agile leaders adopt a fundamental mindset of seeking to get better all the time. They do not expect rapid large-scale transformation, whereby deep change happens through one big surge. Rather they aim to make small, critical changes that they can improve through disciplined inquiry and action. Agile leaders know that they must work through the school that they have, and take their people on a journey of long-term behavioural and cultural change.

> crucial to agile approaches is a bias towards action, continuous experimentation, and seeking rapid real-world feedback to guide new iterations.

**Figure 2. Agile approaches to improvement through iterative learning cycles**
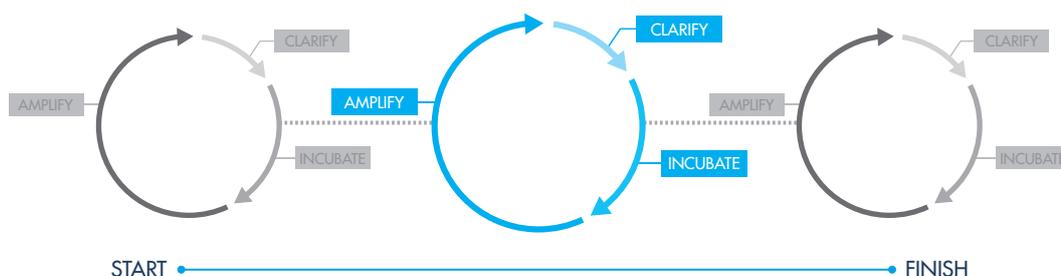
Agile leaders typically seek to get better all the time by following the maxim: start small, learn fast and fail well. Agile leaders have a relentless pragmatism: every week, every term, every year, agile leaders seek to find creative ways to ensure that students make meaningful progress in their learning, and that teachers grow in their pedagogical expertise. They seek to respond to feedback, rather than try to plan it out perfectly from the beginning.

Three key elements are crucial to sustaining an agile mindset through change efforts. These are to

1. focus on impact;
2. learn by doing; and
3. iterate with evidence. (See Figure 3.)

Figure 3. The Agile mindset
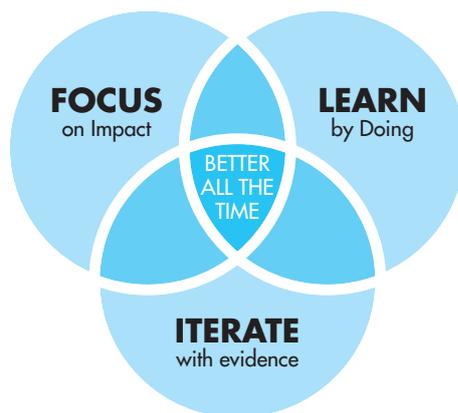
Key element 1: Focus on impact

Agile leaders adopt a counter-intuitive approach of maximising their impact by focusing on the disciplined pursuit of 'less but better'.[4] Agile leaders know that by focusing their teams' limited time, energy and resources on the smallest number of high-leverage initiatives, they can actually achieve greater impact. They start small because they respect the complexity of the challenges that they face in improving teaching and learning. By carving out small slices of the challenge, and focusing on

specific student outcomes, they make the work of educational improvement more open to disciplined, iterative inquiry.

Schools have never been busier places and the lives of educators never more hectic. More initiatives, programs and 'next big ideas' enter our working lives, creating a state of low-impact exhaustion. The reality is that our schools and our staff have only so much time and human resources to devote to a new initiative. Financial and human capital are scarce. Educators already bear a high cognitive load in their day-to-day work. They are thus very sensitive to change fatigue and exhaustion.

Prioritising the focus for improvement

Prioritising a small number of areas for improvement is crucial to achieving impact. Agile leaders trade the low impact of doing too many things for the high impact of choosing to create tangible improvement in a few areas at a time. Prioritising and selection of which areas to improve is a crucial process, based on the evidence of current student learning and the capacity of the team or organisation to respond. Unrealistic improvement plans cause serious pain and frustration; and typically they result in capitulation by staff half way through the implementation process. Focusing on less but better in school improvement efforts is reinforced in the Australian Council for Educational Research (ACER) National School Improvement Framework, with its emphasis on defining an explicit improvement agenda (ACER, 2012). Despite this advice, the tendency for teams to fill their school plans with numerous broad strategic intents is still at epidemic levels across most of the educational jurisdictions in which we work.

Agile leaders set challenging targets for maximising student learning and commit to being held to account for real impact

on student learning experiences and outcomes – not just their efforts, good intentions or the number of initiatives they run. The key here is to focus on the desired impact for learners, rather than simply the next initiative or program that will be started. Teams need to debate the impact they want to have on student learning, and the evidence that they would need to collect to convince them that they have achieved their desired aim.

Focusing and refocusing

The decision to focus on areas of greatest potential effort is not a temporal event that occurs once every few years, when strategic priorities are set. Rather, focusing on impact needs to be revisited on a regular interval of review, with a clear and disciplined protocol. Rather than improvement strategy being set once at the outset, the process should involve an ongoing process of learning and iteration.

In my experience in supporting schools in strategic improvement work, many leadership teams find it difficult to adjust the focus of their improvement plans. It is extremely common for leaders to realise, 6–12 months into a 3-year improvement plan, that their strategic directions were too broad or their initiatives not designed for greatest impact. Yet, rather than being willing to refocus their plan on the areas that they now know will have the greatest impact they feel beholden to the initial plan and milestones. Unfortunately, often district, regional and network leaders can play a role in the perceived pressure to 'keep with the published plan' rather than being responsive in order to create impact. In contrast, the Scrum approach to technology development involves teams working in rapid cycles of two-week sprints, at the end of which they revisit the plan and focus on the next most important section of work to achieve working products for their users (Sutherland, 2014).

Agile leadership teams need to adopt a regular cadence of cycles of reflection and reprioritisation every 8–10 weeks. Using a clear protocol, over a 30-minutes meeting, teams can ask three critical questions.

1. *What should we keep doing?* We should continue on the current path by choice rather than simple default.

2. *What should we stop doing?* Leaders should minimise the work and time spent on activities that are no longer having an observable impact on learning.

3. *What should we tweak for greater impact?* How can we adjust our current strategy and initiatives to have an even greater impact for less effort?

In our experience, teams who engage in such processes often keep an agile plan as an e-document that is continually sharpened and refined through the implementation process.

Key element 2: Learn by doing

Improvement work requires learning collectively how to improve student outcomes in your specific school context. Rather than implementation-as-delivery, leaders must adopt a more responsive approach of implementation-as-learning, where planning and 'doing' are linked through rapid iterative cycles of learning. As Tony Bryk and colleague write, 'Deliberately learning our way to better outcomes is, in fact, how organisations improve quality and how interventions scale' (Bryk et al, 2015, p 177). In order to achieve this Bryk advocates that leaders should learn to start small and learn fast, rather than implement fast and learn slow (Bryk et al, 2015, p 201).

Ambiguity tolerance

As complex challenges do not have a simple, neat plan that can be seen from the beginning, agile leaders must work with

> Unfortunately, district, regional and network leaders can often play a role in the perceived pressure to 'keep with the published plan' rather than being responsive for impact.

the knowledge they have, and remain open to the reality that new information and insights may lead them back to re-evaluate an earlier part of their work – including the very definition of the goals themselves. In agile approaches, it is assumed that you can never know everything from the beginning of the process, and much of what you think you do know may turn out to be wrong. To act under these circumstances educational leaders must increase what I have coined their 'ambiguity tolerance', which is about helping their teams to get moving before they feel entirely ready, because that is the only way to become ready to attack the problem. In the past, educational leaders often felt they needed to assert their credibility by knowing the answer and having a clear vision before they began the change work. Now they must lead by demonstrating the capacity and commitment to learn-by-doing, rapidly. They and their team must increase their ambiguity tolerance, moving forward with the improvement mantra, 'probably incomplete, possibly incorrect' (Bryk et al, 2015).

Iterative cycles of collective learning

To engage in collective cycles of learning, educator and system teams need a shared and disciplined way of solving problems. This can take multiple forms such as rapid prototyping cycles that are prevalent in human-centred design (Brown, 2009); or Plan, Do, Study, Act (PDSA) cycles, which are a common approach to evidence-informed learning cycles in improvement science, in health and other industries (Langley et al, 2009).

In our own work with networks of schools in Australia and districts in Canada,[5] we are working with a process that we have called Agile Improvement-Cycles (AI-Cs). The AI-Cycle is a disciplined collective improvement process that combines the best of rapid-prototyping, PDSA cycles

Figure 4. Agile Improvement Cycle
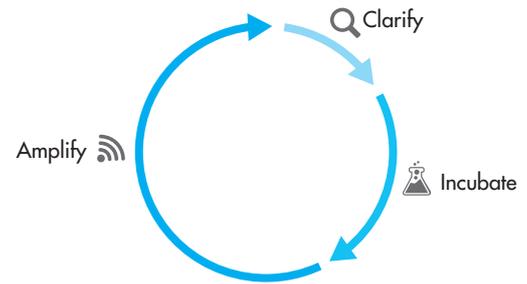
and behavioural design. As can be seen in Figure 4, the improvement work occurs through three interconnected phases: clarify, incubate and amplify.

The **Clarify** phase involves bringing together strategies that teams use to identify an area of student learning to improve, and to investigate the problem deeply in order to determine how to attack it. It is about how 'agile leaders' can lead their teams to do the hard refining work of deciding on the core focus for the improvement, in terms of student learning and then understanding the 'real' problems that need to be solved in order to have their desired impact.

During the **Incubate** phase, teams work through a systematic approach to develop, refine and test evidence-informed solutions. Teams move through multiple design and test loops in order to learn how to gain improvement in their unique context, collecting evidence throughout the process.

During the **Amplify** phase, teams work to spread the new approaches by facilitating processes of social learning and adoption. They pay close attention to simplifying the change required, so that the new approaches are both more effective and easy to pick up and adopt. Opening up opportunities for educators to learn new practices, by co-teaching alongside colleagues who are already using the approach, is crucial for the transfer of capacity.

Deep personal learning

Another key element of learning continuously is being open to the personal learning and development work that may need to occur in order for progress to be made. Organisational learning theorist Chris Argyris highlighted the importance of differentiating between single-loop and double-loop learning (Argyris, 1991). Single-loop learning occurs through the problem solving work, as leaders identify errors and correct for them. Argyris argues that whilst many leaders are effective in this type of single-loop learning, they too often fail to turn inwards, to engage in double-loop learning. Argyris (1991) describes this as the capacity to

> *reflect critically on their own behaviour, identify the ways they often inadvertently contribute to the organisation's problems, and then change how they act. In particular, they must learn how the very way they go about defining and solving problems can be a source of problems in its own right.*

Leaders need to be able to remain open, make their reasoning about their own behaviour explicit and transparent, and be willing to question their own role in the current challenges that they are trying to solve.

Key element 3: Iterate with evidence

To be effective, educational change work must be strengthened by a consistent focus on evidence and evaluation. Agile leaders know that improvement in complex people-filled organisations is not linear; and thus the journey requires the continual generation and use of evidence to steer the improvement effort towards the desired impact on student outcomes. Iteration refers to the process of moving through multiple versions of a solution as a result of a disciplined improvement process.

Evaluative thinking

Educational leaders need to reorient their relationship with evaluation and evidence, away from pass/fail judgement and towards one that steers and supports the improvement process itself. In classroom assessment we have seen a large-scale reorientation towards assessment becoming a driver of the learning and targeted teaching processes, rather than a summative pass/fail judgement at the end of a learning and teaching sequence (Masters, 2013). In a similar way, evidence generation and use in school improvement work should be perceived as like formative assessment for our improvement work, helping teams to steer and redirect their work towards greater impact.

The concept of 'evaluative thinking' provides a helpful framework for educational leaders to embrace this new approach to evidence and innovation. Earl and Timperley (2015), have described this process as follows.

> *Having a continuous cycle of generating hypotheses, collecting evidence, and reflecting on progress allows … opportunities to try things, experiment, make mistakes and consider where they are, what went right and what went wrong, through a fresh and independent review of the course and the effects of the innovation.*

(p 8)

This approach to evaluation is appropriate for agile, iterative work, as it is responsible to the reality that implementation work is an unfolding endeavour – with the need for continual learning, and responsiveness to roadblocks and challenges. Agile leaders do not celebrate failure itself, but the learning and new insights that come from their efforts, while not yet resulting in their desired outcomes. Each new cycle of evidence enables the formation of a

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new iteration, with a higher likelihood of creating the desired impact on student learning.

The collection and analysis of evidence is the engine room of learning in agile implementation. Leaders need to keep an open and inquiry stance in response to the evidence they are collecting. Rather than wanting to know whether the innovation worked or not, they are interested in a more nuanced understanding of what is working now, for whom, when and under what conditions.

What counts as good evidence

Seeking evidence to guide practical improvement efforts requires leaders to broaden their sources of evidence beyond standardised test data (Brown, 2015). The question of what counts as good evidence of impact in social sciences is highly contentious. Some argue that there are hierarchies of evidence, with some research methods being inherently better than others (Nutley, Powell and Davies, 2013). For interventions, randomised controlled trials (RCTs) and quasi experiments are regarded as the gold standard in intervention research, for good reasons, but they are not always possible or desirable within pragmatic improvement work on the frontline (Kane, 2016). What counts as high quality evidence, 'depends on what we want to know, for what purposes, and in what contexts we envisage that evidence being used'(Nutley, Walter and Davies, 2007). This requires less concern with the prioritisation of certain research methods, and instead collecting appropriate information using well-tried and well-respected methods of analysis appropriate to the task. Efforts are under way to support leaders collecting such evidence. The NSW Department's Futures Learning Unit and Centre for Educational Statistics and Evaluation provide support with evaluative thinking approaches.[6] So, too, the work surrounding the Evidence Hub within the Queensland Department of Education provides promising signals that systems are responding, to build the capacities of school leaders to use evidence to steer and guide improvement work.[7]

Conclusion

Leading educational change is like driving at night. You can see only as far as your headlights, but you can make the whole trip that way.

(Adapted from E L Doctorow's 1986 comment about writing)

The three-element agile mindset is crucial to doing complex improvement work that is necessary to improve student outcomes. Focusing on impact directs the limited energy, resources and attention on the opportunities for the highest potential gains for student learning. Learning by doing, through rapid iterative cycles, enables teams to work out how to make 'what works best' work in their unique context. Iterating with evidence ensures a disciplined improvement process, where we seek out robust feedback to steer our efforts towards the final desired impact for learners.

Deep down, agile system and school leaders know and embrace the realisation that implementation is not an event, but rather a collective journey of getting better all the time. They embrace the quest, and have a sense that every month, every term, every year, they can find new and better ways to improve student learning. So let us become agile to create greater impact!

> implementation is not an event, but rather a collective journey of getting better all the time.

Endnotes

1. Many educational jurisdictions around the English-speaking world have formulated new visions and strategies for improvement. One example is the vision for reform in Ontario, called 'Achieving excellence: A renewed vision for education in Ontario', accessed on 1 July 2016 at www.edu.gov.on.ca/eng/about/excellent.html. For an example in Australia, see the Queensland strategy 'Advancing Education', accessed 1 August 2016, at www.edu.gov.on.ca/eng/about/excellent.html.

2. For more information on this approach see learndbir.org/.

3. My work at Agile Schools over the last two years has involved 'democratising' improvement science tools and making them accessible to school leaders and teachers on the frontline of implementation. For more information see www.agileschools.com.

4. New York Times bestselling author Greg McKeown has explored this concept in his 2014 book *Essentialism: The Disciplined Pursuit of Less* (Crown Business, New York).

5. See, for example, the Network Innovation Community, led by the Alberta Teachers Association, which focused on improving numeracy outcomes from K–9. More information is available at static1.squarespace.com/static/54d4870ee4b08e57d715d395/t/57046cd5a3360c62ede108dd/1459907802995/Report%2520ATA_17.11%2520%25281%2529-2.pdf.

6. For more information on the NSW Department of Education's Futures Learning Unit, see education.nsw.gov.au/futures-learning.

7. For more information on the Queensland Evidence Hub, see deta.qld.gov.au/corporate/evidenceframework/practice-and-innovation.html.

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Simon Breakspear

About the Author

Dr Simon Breakspear is a Research Fellow at the Asia Pacific Centre for Leadership and Change, The Education University of Hong Kong. He is Founder and Executive Director of Agile Schools Pty Ltd.

About the paper

This paper is based on Dr Breakspear's forthcoming book, *Agile Leadership*, to be published by Corwin Press in 2017. In this summary introduction to his ideas, Dr Breakspear argues that to make meaningful progress in student learning outcomes, school leaders need to adopt agile mindsets and methods, so they can respond to change as it happens; and adapt evidence-informed strategies to their unique contexts. An *agile mindset*, he explains, enables leaders to adjust, learn and iterate throughout the implementation process, in order to gain their desired impact on student learning and teaching practice – shifting the work of improvement from implementation-as-delivery towards implementation-as-learning. For more information about agile implementation approaches, visit www.agileschools.com.

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