10 MINDFRAMES FOR LEADERS

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The VISIBLE LEARNING® Approach to School Success

Edited by **John Hattie** and **Raymond Smith**

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About the Editors

Professor **John Hattie** is an award-winning education researcher and best-selling author with nearly 30 years of experience examining what works best in student learning and achievement. His research, better known as Visible Learning®, is a culmination of nearly 30 years synthesizing more than 1,600 meta-analyses comprising more than 90,000 studies involving over 300 million students around the world. John has presented and keynoted in over 350 international conferences and has received numerous recognitions for his contributions to education. His notable publications include *Visible Learning, Visible Learning for Teachers, Visible Learning and the Science of How We Learn*, and *Visible Learning for Mathematics, Grades K–12*.

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Douglas Fisher is a professor of Educational Leadership at San Diego State University and a leader at Health Sciences High and Middle College. He has served as a teacher, language development specialist, and administrator in public schools and nonprofit organizations. Doug has engaged in Professional Learning Communities for several decades, building teams that design and implement systems to impact teaching and learning. He has published numerous books on teaching and learning, such as the bestsellers *Developing Assessment-Capable Visible Learners* (2018) and *Engagement by Design* (2017).

Nancy Frey is a professor of Educational Leadership at San Diego State University and a leader at Health Sciences High and Middle College. She has been a special education teacher, reading specialist, and administrator in public schools. Nancy has engaged in Professional Learning Communities as a member and in designing schoolwide systems to improve teaching and learning for all students. She has published numerous books, including the bestsellers *The Teacher Clarity Playbook* (2018) and *Rigorous Reading* (2013).

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Sugata Mitra is a leading educational expert on the internet and children's learning. He is internationally known for his Hole-in-the-Wall experiment (1999) where he coined the term *minimally invasive education* (MIE). He is the recipient of many awards and honorary doctorates from India, the United Kingdom, and the United States, and was also the recipient of the first ever million-dollar TED Prize (2013). His groundbreaking work is featured in the Jerry Rothwell documentary *The School in the Cloud* (2018) and in his recently published book by the same name, *The School in the Cloud* (2019).

Dominique Smith is chief of educational services and teacher student support at Health Sciences High & Middle College. Dominique's major area of research and instruction focuses on restorative practices, classroom management, growth mindset, and the culture of achievement. In addition to his school leadership responsibilities, Dominique provides professional learning to K–12 teachers in groups large and small, on many topics that address classroom and school climate and organization. His publications include *The Teacher Credibility and Collective Efficacy Playbook* (2020), *All Learning Is Social and Emotional* (2018), and *Building Equity* (2017).

Dylan Wiliam is emeritus professor of Educational Assessment at UCL (University College London). In a varied career, he has taught in urban public schools, directed a large-scale testing program, and served in university administration in various roles, including dean of a School of Education and senior research director at the Educational Testing Service in Princeton, New Jersey. Over the last 20 years, Dylan's work has focused on supporting teachers all over the world to harness the power of assessment to support learning.

Introduction

How we think about the *impact* of what we do is more important than focusing on *what* we do

Practices Trump Labels and Beliefs Trump Practices

In the winter of 2008, Dr. Viviane Robinson, a professor of education at the University of Auckland, New Zealand, along with two of her colleagues, Claire Lloyd and Ken Rowe, released a study involving the impact of different leadership processes on student outcomes. They discovered, among other things, that school leaders' "impact on student outcomes will depend on the particular leadership practices in which they engage" (Robinson, Lloyd, & Rowe, 2008, p. 637). They identified five major dimensions of effective leaders: establishing goals and expectations; strategic resourcing; planning, coordinating, and evaluating teaching and the curriculum; promoting and participating in teacher learning and development; and ensuring an orderly and supportive environment. This finding caused Viviane and her colleagues to suggest that researchers and practitioners could elevate their attention from "a general focus on the impact of leadership, to examining and increasing the frequency and distribution of those practices that make larger positive differences to student outcomes" (pp. 637–638). Is it sufficient, however, to simply shift school leaders' focus to high-probability practices?

We think not. Clearly, school leaders don't have unlimited time, energy, and resources. Yes, they must have the basics of human relations, management, and financial acumen. So, as a matter of self-preservation, they have to figure out where their time, effort, and influence will count the most. They must decide where their leadership practice can make the biggest difference and have the greatest impact, and then deliberately set their course in that direction. So, yes, a focus on the higher-probability practices is a practical first step forward. However, by itself, it is insufficient. Why? Because a myopic focus on high-probability practices alone without an understanding of *why* school leaders are doing *what* they are doing and a focus on the

Effective school leaders talk about their mindframes and their beliefs and prove them through their practices and results.

impact of what they did condemns them to a professional life in which they wander aimlessly from one innovation or influence to the next. Conversely, a vision without a *how* (i.e., high-probability practices) is the definition of daydreaming. Effective school leaders talk about their mindframes (i.e., ways of thinking) and their beliefs and prove them through their practices (i.e., the hows) and results (i.e., the what).

Just as school leaders' practices trump the labels under which school leaders operate, there is yet one more ordinal shift: school leaders' practices are trumped by the way school leaders think about their role. In other words, the way school leaders think about what they do is more important than what they do (the particular leadership practices)—hence their mindframes, or ways of thinking. Another way of saying this is, school leaders' beliefs and values, their mindframes, explain their actions and maximize their impact on teachers, parents, and students. What are these particular "ways of thinking," and how are they evidenced within school leaders? A major theme in this book is to explore the answers to these questions.

In the interim, imagine two school leaders each engaged in many of the same things—managing a facility, attending to human relations, conducting professional learning/meetings, engaging in classroom walkthroughs, and so on. The difference between these two school leaders can be found in how they process and relay how they think about the interpretations that matter. Consider the following example to help illustrate our point. As a school leader, Joel spends much time on ensuring everyone in the school knows, adopts, and promotes the goals and expectations they have jointly determined; gearing the strategic resources to realize these goals; and ensuring that the curriculum and teaching are constructed and evaluated to align with the goals. Emma, also a school leader, is more focused on the impact of her adults in the school (teachers, assistants, front office, support staff, librarians): that the adults have exemplars of what is meant by impact; that they know what a year's growth looks like; and that the notion of impact includes achievement, social and emotional aspects, and that programs are adapted when they are shown to not have sufficient impact on a sufficient number of students. She, too, ensures an orderly and supportive environment, promotes and resources teacher learning to maximize this impact, and continually questions whether the goals and expectations are appropriate. It is more than the right focus, it is the ways of thinking about these foci to ensure that they have the appropriate impact on the students in the school.

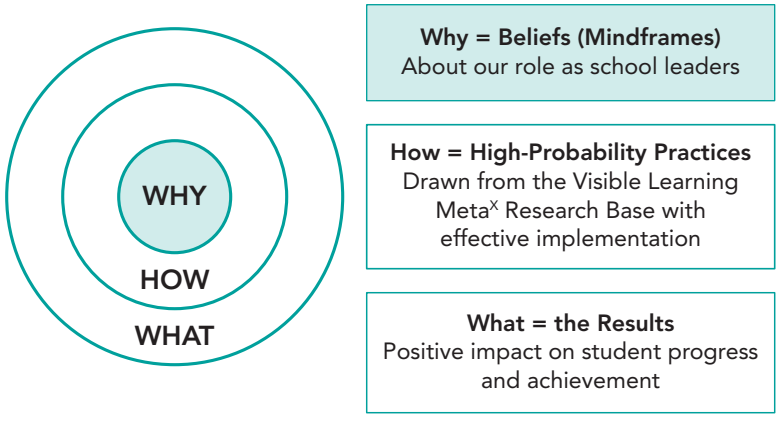
Simon Sinek and the Golden Circle

This idea—that one's thought about her or his impact of what they do precedes and guides their every action—is supported in the work of Simon Sinek (2009) and his thinking within his book *Start With Why: How Great Leaders Inspire Everyone to Take Action.* In this book, Sinek underscores the idea that "[i]t is not just WHAT or HOW you do things that matters; what matters more is that WHAT and HOW

you do things is consistent with your WHY" (p. 166), which is why a focus solely on practices alone, even high-probability practices, represents an incomplete recipe for success. Successful leaders talk about their Why and prove it with what they do. The main question for these leaders is why something should be done. Answering this question leads them to the question of how to do something (e.g., high-probability practices) and finally to what, or the results of those actions. Sinek (2019) more recently noted that leaders are not responsible for the results; leaders are responsible for the people who are responsible for the results. "And the best way to drive performance in an organization is to create an environment in which information can flow freely, mistakes can be highlights and help can be offered and received. In short, an environment in which people feel safe among their own. This is the responsibility of a leader" (p. 129). We argue that leaders are responsible for demonstrating their thinking about the importance of results (we prefer impact, to avoid any narrow notion of only or merely increasing test scores—there are so many more important results than just test scores), for helping to ensure all have similar notions of what they are aiming to impact, and for the degree to which they are successful and want and need to be successful. Leaders should ensure that the resources needed for learning are provided for all to make the needed impact—and celebrating it when it occurs.

Consequently, the complete recipe for success is depicted in Figure i.1, what Sinek (2009) refers to as the "Golden Circle" (p. 37). Success has its origins in the inner

THE GOLDEN CIRCLE



Source: Adapted from Simon Sinek. See www.visiblelearningmetax.com for the Visible Learning MetaX Research Base.

Figure i.1

circle and the question of why and then radiates outward from there by school leaders asking the questions of how and what.

If we apply this simple yet powerful model to the ideas of mindframes and their relationship to Visible Learning®, then we would populate Sinek's (2009) Golden Circle with the following language. Mindframes are our Why. They represent an internal set of beliefs we hold near and dear to our hearts—a belief that our primary role is to be an evaluator of our impact on student learning, use assessment as a way to inform our impact and next steps, collaborate with our peers and students about that impact, be an agent of change, challenge others to not simply "do your best," give and help students and teachers understand feedback and interpret and act on the feedback given to us, engage in dialogue, inform others what successful impact looks like from the outset, build relationships and trust, and focus on learning and the language of learning. The Visible Learning+™ strategies and processes are the How to our Why. And the What refers to the result—the outcomes we intend to accomplish or the evidence of our collective impact on student progress and achievement.

So, what is your Why? As school leaders, each of us has an internal set of Whys that drives our external actions. The problem is, most of us have probably not sat down and clearly identified why we do what we do. And, if we have gone through that exercise, we most likely have not determined the degree to which our personal Whys are aligned with what the research says makes the greatest difference to the learning lives of students. And, how do your Whys align with the 10 mindframes for school leaders presented within this book? The Whys or mindframes reflect a summary of the 25+ years of Visible Learning research. The underlying theory of action for these 10 mindframes is ensuring school leaders have the expertise to communicate and act on their interpretation of the diagnosis of school and classroom data, selecting high-probability intervention(s), implementing these interventions effectively, and evaluating the impact of the selected interventions on student learning.

Ensuring School Leaders Have Expertise in Diagnosis, Interventions, Implementation, and Evaluation

If you are familiar with the Visible Learning® research, you will recall that the average effect size (i.e., the degree of impact of a particular influence on learning) of a year's progress is $d = 0.40$. And given the "flaws" of the average, this is but a broad benchmark needing a lot of contextual debates when applied in a school.

When the various education interventions we have reviewed in our Visible Learning work are considered, the most significant comes from teachers and school leaders, with many achieving a much greater effect than a year's growth for a year's input, as is illustrated by the following examples:

- Working together to evaluate their impact (0.93)
- Moving from what students know now toward explicit success criteria (0.77)
- Building trust and welcoming errors as opportunities to learn (0.72)
- Getting maximum feedback from others about their impact (0.72)
- Getting the proportions of surface to deep learning correct (0.71)
- Using the Goldilocks principles of challenge (not too hard, not too easy, and not too boring) (0.74)
- Using deliberate practice to attain these challenges (0.79)

To get these effects, however, requires listening to the learning happening in the schoolhouse (e.g., during classroom walkthroughs, professional learning sessions/meetings, professional learning communities) and classrooms. It requires less talk by teachers and school leaders and more listening to student and teacher dialogue; students talking to teachers about what it means to be a learner in their classes, and what they believe are the indicators of learning and progress; more evaluation of surface (content) and deep (relating and transferring content) teacher understanding and knowing when to move from one to the other; and leadership expertise that builds on a deep understanding of what teachers already know and can do relative to scaling high-probability instructional practices throughout the school.

The theory of action for such school leaders can be summed up by the phrase "School Leaders are to DIIE for!," that is, school leaders need to be expert at Diagnosis, Interventions, Implementation, and Evaluation. To be expert at diagnosis requires understanding how students and teachers are performing from multiple evidence-informed interventions so that if one does not work with the students and teachers, the school leader changes to another. It also involves knowing the interventions that have a high probability of success, knowing when to switch from one to another, and not using "blame" language to explain why students are not learning, as the problem of students not learning is more likely an adult not choosing the right teaching intervention rather than a student problem. To be expert at implementation requires a commitment to fidelity (i.e., adherence to the intervention curriculum); quality of delivery (i.e., the skill with which school leaders and/or facilitators deliver intervention material and interact

with teachers); intervention adaptation (i.e., changes made to the intervention, particularly material that is added to the intervention); and dosage (i.e., the number of intervention professional learning sessions needed to efficiently and successfully implement the intervention). To be expert at evaluation requires knowing the skills of evaluating, having multiple methods, and working collaboratively and debating with colleagues to agree on the magnitude of the effect needed for an intervention to be successful. It requires what Clinton (Chapter 1) claims is a deep embedding in evaluative thinking.

The bottom line is, if students are not learning, then it is because we are not using the right teaching and/or school leader strategies; we have our expectations of success too low or far too high, and we have to make the necessary changes to these strategies to then realize our ambitious expectations. Such a theory of action places a number of demands on our teachers and school leaders, namely, that they begin with Why by communicating from the inside out; have a high level of cognitive decision-making skills that maintains a tight alignment between their Whys and how they do things and the results they achieve; are able and willing to say "I was wrong in my choice of a particular intervention and need to change what I do or say" or "I was right in my choice of interventions as they led to me successfully teaching these students"; and engage with others in collaborative inquiry about their diagnosis, interventions, implementation, and evaluation based on the evidence of their impact.

What is the VISIBLE LEARNING® Model?

The Visible Learning® school change model of professional learning is based on the principles that have developed from the Visible Learning research and two books—*Visible Learning* (Hattie, 2009) and *Visible Learning for Teachers* (Hattie, 2012)—as well as numerous articles and white papers. It takes the theory of this research and puts it into a practical inquiry model for schools to ask questions of themselves about the impact they are having on student achievement.

The Visible Learning research is based on John Hattie's meta-meta-analysis of more than 1,600 meta-analyses to date, composed of more than 90,000 studies involving more than 300 million students—possibly the world's largest evidence base to improve student learning. From that research, Hattie identified more than 270 factors that have an impact on student achievement. "Visible Learning seeks to get to the crux of this multitude of findings from educational research and identify the main messages by synthesizing meta-analyses. The aim is to move from 'what works' to 'what works best' and when, for whom, and why" (Hattie & Zierer, 2018, p. xviii). The 270+ (and growing) influences produced from the many meta-analyses have been assigned to one of nine domains: student, curricular,

home, school, classroom, teacher, student learning strategies, instructional strategies, and implementation method. Then, each domain is further divided into subdomains—thirty-two in total in order to drill down into specific influences and the degree to which these influences accelerate student achievement.

How should educators use the Visible Learning research? The Visible Learning books serve as a *basis for discussion* on using evidence to inform your teaching and leadership practice, and the systems in which these practices are supported. One example might be the degree to which the school has developed a clear picture of the type of feedback culture and practice that they aspire to have. This can assist teachers to optimize their feedback and heighten students' awareness of the benefits of effective feedback. Similarly, it can help school leaders optimize their feedback and boost teachers' awareness of the benefits of feedback. Both of these actions serve to create an awareness of *how* feedback might be getting through to each of these key stakeholders.

Why This Book?

Over the past several years, it has been our privilege and pleasure to attend presentations or read books or articles by each of these authors whose work appears in this collection. As we listened and read, we were struck by the consistency of their message. Inasmuch as these authors had their own unique ways, as well as different ideas regarding the most effective strategies to produce a significant impact on the learning lives of students, their individual Whys for school leaders were remarkably similar. In addition, the concepts underlying their work kept returning to the same themes. They truly seemed to share a common belief about the way school leaders should view their role in order to bring about a year's worth of learning for a year's worth of teaching and leading.

We were convinced that school practitioners throughout the world who had the opportunity to explore the work of these experts would come to the same conclusion: There is coherence in their collective Why. We recognized, however, that most teachers and school leaders have neither the resources to attend professional conferences on a regular basis nor the time to devote to becoming students of the work of a variety of authors. Ultimately, we concluded that bringing the ideas of these educational thought leaders together into one book could be a tremendous resource for educators who are working to help their students achieve at ever-higher levels. We were thrilled when this outstanding collection of educational writers and thinkers agreed to contribute to the project.

It is important to note that each of these authors has had his or her own learning enriched and extended by observing the practices of exemplary schools and teachers

and school leaders within them. These educators are truly school improvement leaders in their own right, and they represent a tremendous storehouse of collective wisdom. Thus, we hope this book will accomplish several objectives. First, we hope it will be a valuable tool for educators who are doing the hard work of improving their schools. We believe this collection offers them both a coherent conceptual framework and specific practical strategies for moving forward with their improvement efforts. The following table identifies, chapter by chapter, the author, the mindframe (i.e., the Why) the author is addressing, and the various high-probability influences (i.e., the How) the author has selected to illustrate strategies for bringing her or his identified mindframe to life.

Chapter	Author(s)	Mindframe	Influences Discussed
1	Janet Clinton	"I am an evaluator of my impact on teacher/student learning"	1. Formative evaluation 2. Questioning
2	Dylan Wiliam	"I see assessment as informing my impact and next steps"	1. Mastery learning 2. Feedback 3. Collaborative learning (also discusses: • Self-regulated learning • Clear goal intentions)
3	Jenni Donohoo	"I collaborate with my peers and my teachers about my conceptions of progress and my impact"	1. Collective efficacy 2. Mastery learning 3. Appropriately challenging goals
4	Michael Fullan	"I am a change agent and believe all teachers/students can improve"	1. Collaborative learning 2. Collective efficacy 3. Leadership
5	Zaretta Hammond	"I strive for challenge rather than merely 'doing my best'"	1. Teacher estimates of achievement 2. Collective efficacy 3. Formative evaluation
6	Peter M. DeWitt	"I give and help students/teachers understand feedback and I interpret and act on feedback given to me"	1. Teacher–student relationships 2. Teacher credibility 3. School leadership

Chapter	Author(s)	Mindframe	Influences Discussed
7	Douglas Fisher, Nancy Frey, and Dominique Smith	"I engage as much in dialogue as in monologue"	1. School climate 2. Collective efficacy 3. Microteaching
8	Laura Link	"I explicitly inform teachers/students what successful impact looks like from the outset"	1. Teacher clarity 2. Mastery learning 3. Formative evaluation
9	Sugata Mitra	"I build relationships and trust so that learning can occur in a place where it is safe to make mistakes and learn from others"	1. Questioning 2. Strong classroom cohesion 3. Collective efficacy
10	Jim Knight	"I focus on learning and the language of learning"	1. Formative assessment 2. Piagetian programs 3. Prior achievement

Second, we hope it will help bridge the gap that sometimes exists between researchers and practitioners. The intended audience for these authors is not other researchers, but teachers and school leaders who are engaged in the challenges of school reform on a daily basis. Each contributor has worked closely with schools; identified high-probability practices that, when implemented effectively, will have a positive impact on student learning; and now hopes to share his or her insights with educators throughout the world. As stated previously, each of our authors had their own unique ways, as well as different ideas regarding the most effective strategies to produce a significant impact on the learning lives of students. Toward that end, we note that this notion of authors' "unique ways" and "different ideas regarding strategies" raised a potential point of confusion for the reader that we wish to address prior to your reading of these chapters. The confusion appears in Chapters 1 and 10. Specifically, in Chapter 1, Professor Clinton prefers to use the phrase "formative and summative evaluation," while Dr. Knight, in Chapter 10, prefers the phrase "formative assessment." Inasmuch as we recognize and honor these two experts' personal preferences, for our purposes we view the two phrases as often being synonymous. When Michael Scriven (1967) invented the term, he never used the words *testing* or *assessment*—it was formative and summative evaluation. Moreover, when we are asked to explain the difference between formative and summative evaluation (e.g., assessment), we believe any evaluation (e.g., assessment) can be interpreted formatively or "summatively." As Robert Stake said, using a culinary metaphor, "When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative" (Scriven, 1991a, p. 19). We note that too often, discussions using formative

assessment rush too quickly to tests and measures, whereas it is more critical that school leaders use evidence (data, teacher and student voice, experience, artifacts of lessons, observations, etc.) to inform their thinking.

Finally, and perhaps most importantly, we hope that this book will convince school leaders that they should recognize, honor, and utilize the talent that is all around them, if we only had the courage to do so, and focus the narrative in schools around what is meant by impact, the Why to then inform the How. Our claim is that the greatest influence on student progress and learning is having highly expert, inspired, and passionate teachers and school leaders working together to maximize the effect of their teaching and leading on all students in their care. There is a major role for school leaders: to harness the expertise in their schools and to lead successful transformations.

"I AM AN EVALUATOR OF MY IMPACT ON TEACHER/STUDENT LEARNING"

Janet Clinton

VIGNETTE

My School Is Underperforming—What Can I Do?

Consider these two scenarios:

A school receives a notice from their district or regional leader that the school is underperforming academically in literacy, numeracy, and student engagement. The principal is asked to submit a school improvement plan as soon as possible. She sighs and considers options. She calls the leadership team together to discuss the directive. While some think the notice is strange, given that they thought things were getting better and they had been working so hard, the leadership team discusses the situation at the meeting and decides that direct action needs to be taken.

At the next staff meeting, the principal shares the directive and the discussion of the leadership team and then announces the following actions:

- There will be a change in the timetabling (e.g., master schedule) to accommodate more explicit teaching of numeracy and literacy.
- Class sizes will be reduced by three to four students in order to create one extra class in each grade.
- The whole school will engage in professional learning on the explicit teaching of numeracy and literacy across the grades.

(Continued)

(Continued)

- There will be a reduction in non-core-curricular activities such as sport, music, carnivals, and so on.
- Homework will only focus on numeracy and literacy practice.
- All teachers will be given access to the latest web platform featuring best practices on numeracy and literacy.

Although some staff express feeling a little shell-shocked, many think the actions should enhance academic scores. A few teachers wonder about student engagement and whether teaching will ever be fun again.

Across town, another school principal receives a similar directive. The principal decides to sleep on it because it doesn't make a lot of sense. The following morning the principal brings the leadership team together and asks whether they think the directive is correct. The leadership team feels the judgment about literacy and numeracy is correct, but the school has been on a strong growth trajectory and things are improving. Following some discussion, it is decided the team will explore perception and data in relation to numeracy and literacy levels in the school. The principal consults with the district office to explore their understanding a little more.

At the next staff meeting, the principal shares the directive and seeks a response from the staff. The staff explore ways of increasing the pace of the current work enhancing literacy and numeracy. The leadership team determines that the current growth trajectory is generally defensible, even though the school is still below the region's average academically. They also note that student and parent engagement appear to be just okay and need major improvement. The staff are not clear on what is happening across all the grades, but everyone knows Years 5 and 6 are a problem.

They agree on the following actions:

- The principal decides to hold a parents' evening focused on numeracy and literacy.
- The principal meets with the regional leader about the nature of the evidence, and the interpretations that led them to their conclusion.
- The leadership team decides to develop a monitoring plan about literacy, numeracy, and engagement and share the results with the district, and then implement it over the next two terms.
- Each alternative staff meeting becomes a sharing-of-ideas session instead of an administration meeting.

- Grades 3 and 4 teachers design a professional learning session with and for Grades 5 and 6 teachers.
- Grades 5 and 6 teachers run a numeracy and literacy capacity-building and knowledge evening for parents.

Questions to Consider

- What do these scenarios tell us about leadership actions? Which principal has the right approach? Which is demonstrating evaluative thinking with a focus on the impact on students? Which one reflects your school or a school you know?
- What outcomes would you predict for each school?
- Which school has a culture of considering the evidence and has built confidence for sharing?
- Consider what actions should be taken.

WHAT IS THIS CHAPTER ABOUT?

Thinking and acting evaluatively, questioning, and developing positive school cultures are core to Visible Learning®. This chapter explores the mindframe of the leader as evaluator. It explains the significance of evaluation leaders and how school leaders can build an evaluative culture in their schools. Consider the different responses to the two scenarios above. What will really make a sustainable and substantive difference?

There are three important notions in this mindframe: evaluator, impact, and learning. These notions go to the core of the act of teaching and learning and underpin all other nine mindframes. When teachers and school leaders have the disposition and the skills to evaluate their impact on students' learning, they will have the greatest impact. This way of thinking does not dictate any teaching methods, any program of work, or any leadership style. Instead, it highlights the capacity of educators to design effective programs informed by evidence, implement them with quality and fidelity, and then be able to critically determine the magnitude of the impact of their educational programs on student learning. It begs the moral purpose questions about what is meant across the school by impact, how many students experience this impact, and what the magnitude of the impact is. The role of the school leader is first to explain and develop an understanding in the school about these notions of impact and, second, to establish a school culture that supports active engagement in evaluation by

ensuring time, resources, momentum, and expertise to allow a culture of evaluative thinking to flourish in the school.

The school leader's role is not merely to collect data, create reports, and "teach" teachers, but involves leading collaborative discussions about the nature and worth of the impact of programs on students and the interpretation of evidence about the impact of teaching. In doing this, school leaders must allow for multiple meanings and interpretations of evidence, impact, and teaching.

Acting and thinking evaluatively in this way requires supporting teachers to make judgments about their impact and seeking alternative views (i.e., valuing the second opinion, engaging in dialogue) about the credibility of their interpretations of this impact (triangulating with test scores, reviewing with colleagues, and listening to student interpretations of their own learning).

In essence we are pointing to the idea of building a learning organization where evaluative thinking is core and the key to success.

What Is Evaluative Thinking?

Evaluation refers to the process of determining the merit, worth, or significance of something, or the product of that process (Scriven, 1991b). We should not, however, confuse evaluative thinking with just doing evaluation. Evaluative thinking is a cognitive process; it is a way of being.

In education, it is a state of questioning, reflecting, making sound judgments, using good evidence, learning, modifying, and acting on maximizing impact on the learning lives of students as a matter of course. Baker and Bruner (2012) suggest that evaluative thinking "is an approach that fully integrates systematic questioning, data, and action into an organization's work practices" (p. 1). It builds on an organization's evaluation capacity to innovate and then to develop sustainability. Evaluative thinking is a cognitive process in the context of evaluation, "motivated by an attitude of inquisitiveness and a belief in the value of evidence, that involves skills such as identifying assumptions, posing thoughtful questions, pursuing deeper understanding through reflection and perspective taking and making informed decisions in preparation for action" (Archibald, Sharrock, Buckley, & Cook, 2016).

School Leaders Who Think Evaluatively

School leaders exhibiting evaluative thinking have greater pattern recognition, are more adept at checking their and others' assumptions, biases and constraints, are more able to monitor implementation of programs, and are more likely to

seek alternative actions in the light of failure or resistance. Such school leaders are slower to come to problem representations and conclusions; they try to see the world through others' eyes, check back with the problem statement regularly, and overlearn the skills and views from the evaluating literature (theoretical and practical) to better integrate them and make more immediate and automatic selection in the moment by moment of school life.

WHICH FACTORS FROM THE VISIBLE LEARNING® RESEARCH SUPPORT THIS MINDFRAME?

An evaluative school leader is characterized as someone who is actively engaged in formative evaluation (d = 0.34), engaged in open questioning (d = 0.48), and able to create an evaluative school climate (d = 0.43).

Formative Evaluation

When Scriven (1967) first introduced the notion of formative and summative, he did so with respect to evaluation; however, other researchers morphed the concept into formative and summative *assessment*, which has led to many misleading claims. Here, we use the terms synonymously. Scriven argued that the distinction between formative and summative is more related to purpose and time, as illustrated by Robert Stake's maxim (cited in Scriven, 1991b): "When the cook tastes the soup, that's formative; when the guests taste the soup, that's summative" (p. 19). It is not the instrument (tasting) that is formative and summative; it is the timing of the interpretation and the purpose for which the information is used. A major role of the evaluative school leader is to make interpretations to improve the current status during the process of leading teaching and learning, and at appropriate summative moments—and at these summative moments to appropriately celebrate the success of teachers and motivate them to increase their positive impact on the learning lives of students. This notion of "learning lives" is quite broad and includes ensuring safety and fairness in the classroom, finding joy in the struggle and hard work of learning by teachers, endorsing multiple strategies of teaching learning, maximizing growth, and working with teachers to raise achievement in the lessons of the class.

As Scriven (1991b) has noted, it is a fallacy to assume that formative and summative represent two types of interpretations. Instead, they refer to interpretations of information at two differing times—interpretations that can lead to either changing a program of learning or a statement about the learning at the end of the program or intervention. In the same way that the goal of the cook is to make the best soup possible for the guests, it is imperative that school leaders have excellent summative evaluation in place in their school. Poor soup for the guests is pretty powerful evidence

of poor cooking. If school leaders have poor summative assessment in place to support an overall evaluation, then it is unlikely they will have the ability, purpose, or wherewithal to be concerned with formative interpretations. Serving poor soup to the guests is probably the best indicator that the cook was lousy at tasting it during the preparations. Too much reliance on tasting the soup may lead to inattention to the goals, such as making the soup cold when the guests arrive. Thus, getting the balance right in the way school leaders implement formative and summative evaluations is critical.

Undertaking formative evaluation any less rigorously than summative evaluation undermines the accuracy of the mid-course corrections, which is all too likely to send the mission in the wrong direction. Contrary to popular utterance, it is the formative interpretations that need to be most rigorous; too often, mid-course corrections and evaluations about progress are based on very weak evidence, and there can be lower probability of attaining the goals of an intervention.

An aim should be to include evaluation in the planning, the doing, the continuously checking and monitoring, and in the review phases, as such interpretations can provide focus for intervention, information for adaptation, and evidence to continue or not with the program. A major purpose for school leaders is to lead and promote the interpretations. Ensure judgments are made while at the same time building the collective efficacy of the staff to engage in learning that is improved progressively in light of formative evaluations.

In the same manner, school leaders have responsibility for evaluating individual teachers in a manner where they receive feedback information to improve their impact on students. The effects of formative evaluation increase where there is an emphasis on interpretation from multiple sources of evidence, when school leaders have the necessary skills and mindframe to analyze and interpret data effectively (and with others), when there is attention to ensuring that the recipient of evaluative feedback correctly receives the interpretations, and when the quality of formative evaluation is judged by the degree to which improvement then occurs (see Harlen, 2007; Hendriks, Scheerens, & Sleegers, 2014; as well as other chapters in this volume). Formative evaluation requires capacity building within a school, ready access to multiple forms of evidence, a relentless focus on interpretations of this evidence, and a high sense of trust and climate of safety to explore successes and foci for improvement among the teachers and school leaders.

Questioning

Robinson (2009) has noted the power of school leaders engaging in "open-to-learning" conversations, which are "learning about the quality of the thinking and information that we use when making judgments about what is happening, why and what to do about it" (p. 1). This is key to evaluative thinking and is

closely related to the ideal of formative evaluation. What distinguished these from closed conversations is not the focus of the conversation, but the openness to learning about others' points of view. This requires attention to questioning techniques, the ability to describe problematic situations and detect and challenge their own and others' assumptions and viewpoints, the skill of demonstrating to the other (teacher) that you have not only heard but understood (not necessarily agreed or disagreed), and the building of relational trust as the basis for enhancing the quality of what is happening across the school to successfully improve interventions and enhance the quality of learning for teachers and students in the school. A major essence of open-to-learning conversations is based on effective questioning.

We know that teachers are prolific questioners, asking 150–250 questions a day in their classes, mostly about the facts, and usually as a prompt for them to continue to the next part of the lesson. The research on optimal questions to enhance student learning, however, privileges those questions that elicit information for the teacher about what the students (plural and not just the question answerer) understand and particularly do not understand, such that the teacher modifies where they go next in their teaching. The questions need to be phrased in a manner that is understood by the students (which does not necessarily mean closed questions leading to "correct" answers); be preferably higher-cognitive-level questions; probe students' responses for clarification, support, and stimulation of thinking; and encourage students to respond in some way to each question asked (Redfield & Rousseau, 1981).

Nystrand, Wu, Gamoran, Zeiser, and Long (2003) also noted the power of "uptake" questions, when teachers effectively build on students' prior knowledge and current understandings by incorporating the students' responses into subsequent questions. Thus, the classroom discussion is less predictable (teacher question, student answer, teacher continues) and more a discourse or dialogue that is negotiated or co-constructed as teachers pick up on, elaborate, and question what students say (Nystrand, 1990; Nystrand & Gamoran, 1991). Such interactions, Nystrand (1990) argues, are also often characterized by "authentic" questions, which are "questions asked to obtain valued information, not simply to see what students know and don't know; authentic questions are questions without 'prespecified' answers" (pp. 6–7). The conversation is thus less pre-scripted and more open to learning, and the teacher can hear how many of the students are processing, engaging in, and reacting to the lesson.

These are the same characteristics of good questioning by school leaders: a focus on an openness to learn; privileging of those questions that elicit information for the school leader about what the teachers understand and particularly do not understand, such that the school leaders modify where they go next in their

teaching; questions that are understood by teachers, probe for clarification, and support them; and uptake and authentic questions that invite and stimulate thinking and require a response.

There are five core evaluative thinking questions for school leaders (Table 1.1). The first is "What are students ready to learn?" In this case, we could change the word "students" to "teachers," which means that excellent diagnosis is needed to ensure that there is a triangulation of evidence about what is to be improved, the readiness of the teachers to engage in improvement, and an agreed focus on the diagnosis and improvement direction. The second is "Have I chosen optimal, evidence-based interventions and built a logic model to focus on implementation?" School leaders rarely lack in choice for intervention, and too many interventions are chosen because they are liked, are trialed by the school leader elsewhere, or involve the least disruption. But do they fit the diagnosis, is there a plan to appropriately adapt to the local situation, and is there an up-front process to

THE FIVE EVALUATIVE QUESTIONS RELATING TO EVALUATIVE THINKING

Evaluative Thinking	Evaluative Questions
1. Critical thinking valuing evidence	1. What are students ready to learn?
2. Addressing the fidelity of implementation	2. Have I chosen optimal, evidence-based interventions and built a logic model to focus on implementation?
3. Investigating potential biases	3. Am I seeking evidence that I might be wrong?
4. Focusing on knowing one's impact	4. What are the shorter-, medium-, and longer-term impacts expected, and am I monitoring and reporting these?
5. Understanding others' points of view	5. Am I seeking others' perspectives and evidence about fidelity and impact?

Table 1.1

monitor implementation to ensure the highest chance of attaining agreed (short-, medium-, and long-term) goals?

The third question is "Am I seeking evidence that I might be wrong?" This is core to being open-minded and an essential skill in school leaders' open-to-learn conversations. Hattie and Zierer (2018) make much of this question as core to Visible Learning®, and it derives from the philosophical claims by Popper (1959), who argued that falsification was the major difference between science and belief. Seeking evidence that one might be wrong entails seeking feedback about what is working and what is not working, and the degree to which the intervention is having an effect, and it is more likely to lead to improvements. The alternative, seeking information only about what is working, is often the source of confirmation bias, as there is always some evidence, somewhere, with some teachers that "it" is working. However, the intervention might have been working anyway regardless of any school leader impact. It might mask critical avenues for improvement, and it might lead to continuing with a program that eventually will show little impact.

The fourth question is "What are the shorter-, medium-, and longer-term impacts expected, and am I monitoring and reporting these?" This is a question typically associated with building program logics (Funnell, 2000), and it allows for immediate seeking of feedback to ensure that the program is going in the right direction. More often, the shorter-term impacts are proxies or indicators of implementation (was the program implemented with appropriate fidelity, dosage, adaptability, and quality?), and the too-early focus is on the longer-term impacts (changes to student learning and achievement). Thus, programs can be abandoned or changed in directions that do not subsequently lead to these improvements. School leaders who work with their teachers to be clear and agreed on the short-, medium-, and long-term impacts are more likely to engender feedback for improvement, appropriately adapt the program to local conditions, and achieve the desired impacts.

The fifth question is "Am I seeking others' perspectives and evidence about fidelity and impact?" As noted in Robinson's claims above, this requires particular skills to not only listen to the teachers, and show the teachers that you have listened, but to then use the empathy to collectively work toward the goals of the program and school. Woolley, Chabris, Pentland, Hashmi, and Malone (2010) have shown this question to be necessary for the "wisdom of the crowd" and for collective efficacy to be realized. Note that this sensitivity to others is related not merely to building group cohesion and goodwill but also to attending to the fidelity of program implementation and maximizing agreed-upon outcomes.

School Culture

Schools with a culture in which everyone is responsible for the progress of the students, schools that deprivatize the information and evidence, and schools that collaborate to improve learning are great schools (Hattie, 2012; Hattie & Timperley, 2007). Building a learning culture and a system for continuous reflection is key, and thinking evaluatively is essential. When did you meet with colleagues and talk about the evidence of progress of your and their students, how to improve your teaching, how to enhance your teaching, and how to do this in light of the evidence that what you are currently doing is just not good enough to have the effect on progress of students? Do you feel psychologically safe to discuss how to improve your teaching (not talking about the students, not the curriculum, not the resources, not the class size, not the conditions, but the impact of teaching of your staff) and leading? (To be clear, it is not discussing how we teach or lead, but the impact of this teaching and leading, which then may relate to the How). Such school leaders built assessment-rich schools (using test scores, evidence from assignments and projects, artifacts of student work, and student voice about their learning), and the teachers are mirroring the same classroom climate with their students—let's learn together and respect each other by seeking evidence that we can improve and are doing a great job. The desired climate is where teachers and school leaders share their interpretations about assessment, students, and teaching.

School culture is about "how we work here in this school"; can relate to a shared sense of purpose; defines and routinely monitors the norms of collegiality, improvement, and hard work; involves rituals and traditions to celebrate success; and most often provides an informal network of storytellers and a web of information. Marzano, Gaddy, Foseid, Foseid, and Marzano (2005) found that the most common behaviors of effective school culture are promoting cohesion, well-being, and an understanding of purpose among the staff, and developing a shared vision of what the school could be like.

The meta-analysis by Bulris (2009) was based on thirty studies and included over 3,000 schools. The overall correlation between school culture and achievement was $r = 0.35$ (converts to $d = 0.74$), which is substantial. He concluded that school leaders need to attend to the cultural elements within their school, school culture should be a key part of the evaluation of school leaders, and "establishing a school culture supportive of continuous improvement is the only way to provide opportunities for lasting and sustainable school improvement to occur" (p. 167).

WHERE CAN I START?

A number of strategies are germane to developing evaluative thinking in schools, and there are some necessary conditions that provide the climate for change. The

identified preconditions do not operate in isolation and extensively affect each other. For instance, relational trust between teachers and school leaders supports the development of a positive school climate. Other strategies might include the following:

Create a climate of shared questioning

- Create a safe space for speculation
- Talk about and learn from the failures
- Challenge the generalizations and explore the contradictions
- Ensure learning occurs as we go
- Ask "So what?" and "What next?"

Promote active engagement in evaluation

- Use backward mapping—where do we want to get to and how will we get there?
- Take action—use logic models and evidence platforms
- Engage in a collaborative cycle of exploration
- Emphasize sense making

Provide resource systems to review data

- Triangulate the evidence
- Mobilize the data on effective practice
- Follow the path but be aware of the forks in the road
- Use a learning management system

Focus on feedback for all

- Provide opportunity for feedback to build upon
- Ensure coaches are focusing on data
- Promote what comes next from data reviews

The focus of the evaluative thinking, in the context of schools, always has learning at its core. Aligned to this is how school leaders impact the learning by teachers and students. Illeris (2015) argued that learning involves an interaction between a learner and the environment and evokes an internal acquisition process that includes the learning content and the learning incentive. The content of learning can include many pertinent aspects: knowledge, skills, attitudes, understandings, beliefs, behavior, and competencies.

The incentive is the investment of mental energy to drive the learning, to develop a mental model of inquiry that relates to learning. School leaders need to have clarity on the desired and required content, engender investment to drive teacher learning, and understand barriers and enablers of this learning (see Hattie & Donoghue, 2016).

Maximizing the process of analysis and ensuring an openness of their evaluative judgments about learning requires school leaders to deeply know, understand, and respect their teachers' and their own needs. This might include taking into account their prior learning, understanding how teachers use learning strategies to enhance their teaching, being explicit with teachers about what success looks like near the start of a series of school-wide interventions, implementing high-probability impact programs that have the optimal proportion of emphasis on surface and deep learning, and having appropriate levels of challenge—never accepting "do your best."

CHECKLIST

Working and thinking evaluatively means

- ☐ understanding that evaluation is action and evaluative thinking is a way of being,
- ☐ creating an environment where evaluation is not a threat but a desired activity,
- ☐ resourcing engagement in evaluative and data-gathering activities,
- ☐ modeling a questioning mindset, and
- ☐ having a plan for formative evaluation in your school.

EXERCISES

1. Bring together the leadership review learning outcomes in the school and map all the possible explanations for the results focus. Consider the factors you have control over and the ones you don't. Consider the evidence you have or do not have for the factors you have control over. Brainstorm what can be done about it.
2. Create groups to collate and display all the data about a specific question in your school. Ask the school staff to interpret it and consider what's next.
3. Ask the staff about their evaluation needs.