Reinvesting and Rebounding

Where the Evidence Points for Accelerating Learning

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Introduction

There are a number of deficit-oriented terms that are being used to describe the experiences students had during COVID teaching: learning loss, COVID slide, gap year. This narrative ignores the fact that some students did quite well. It ignores the fact that many new technology and communications skills were developed. It also ignores the reality that there was not loss of learning for the majority of students. It's not as if ninth graders suddenly started performing at the fifth-grade level. Having said that, we recognize that there is unfinished learning for some students. And there are instances of unrealized potential, meaning that the trajectory of learning wasn't quite as strong as might have been projected. We also recognize that unfinished learning and unrealized potential differentially impact demographic groups of students, and some students need much more attention to regain their progress. For this reason, we argue that educators should focus on accelerating learning rather than develop and implement remediation programs, retain students in their current grade level, or expect less of them next year.

WHAT DO WE MEAN BY "ACCELERATING LEARNING"?

Accelerating student growth and achievement within the context of post-COVID teaching and learning demands that we leverage our expertise as educators to make decisions each day about what content, ideas, and skills we want our students to know, understand, and be able to do. We make decisions about how much time to spend on specific topics and how frequently to *engage* learners in that topic. We assess learners' progress through *high-quality assessments* and decide when to intervene, on what, and at what level of intensity with each *evidence-based activity*. However, it is also our responsibility as educators to leverage our professional expertise through the identification and implementation of evidence-based approaches and then continually seek evidence of the impact of our decisions on student learning (Hattie et al., 2021). This responsibility requires that we make *learning visible both to students and teachers*.

Ensuring that we actually accelerate learning for all students requires that we move beyond general principles and broad recommendations. Instead, we must focus on specific aspects of interventions, approaches, and strategies that have the *potential* to accelerate student learning. We must design and implement learning experiences that *increase* the rate of learning. The starting point for this increase cannot be based upon some arbitrary point that is the same for every student in the grade level or class. Instead, this increase must start from where students are in their learning journey and where they are ready to go next.

Thankfully, we can draw on the Visible Learning® research to make informed decisions about what students still need to learn and how best to impact their learning. We will provide readers with a range of ideas and strategies, but remember that our collective goal is to ensure learning. If a strategy we note as effective is not producing the impact required, change it. Students need their teachers and school leaders to focus on learning and to make decisions to ensure that learning is occurring.

Introduction to the Visible Learning Research

The Visible Learning research reaches beyond our experiences, traditions, and observations to examine and consider variances across learners and contexts. How should we spend our time in schools and classrooms? Which instructional approach or strategy should we use, and when should we use it? The Visible Learning research helps us answer these questions and make these decisions—decisions based on what works best. The Visible Learning database (see Visible Learning Meta[x], 2021) is composed of more than 1,700 meta-analyses, with more than 100,000 studies and 300 million students. In short, it is the world's largest evidence base on the factors that influence K–12 student achievement. (See Figure 2.1)

A meta-analysis is a statistical tool for combining findings from different studies with the goal of identifying patterns that can inform the collective work of teachers and educational leaders. Take, for example, the role of summer school in moving learning forward or improving student growth beyond the traditional year. Administrators and teachers could easily find a study that suggests that summer school closes "achievement gaps" and thus has a positive influence on student learning. Then, tomorrow, they can find a study that presents an opposite finding that suggests no gains are made during a remedial summer school program. So, what is a teacher to do? A synthesis of meta-analyses analyzes the collective findings from the studies to unpack the overall trends in these findings. In other words, what does the combined research say?

For summer school, four meta-analyses comprised of 127 studies, 43,977 students, and looking at 626 effects found an average effect size of 0.19. But again, what does this mean? The story behind the findings is not solely based on whether findings were positive, negative, or found no influence on learning. Instead, meta-analyses look at the magnitude of the influence, strategy, or action as well (e.g., how positive, how negative, and compared to what). In other words, effect sizes help administrators and teachers understand the likely impact of something on student learning—the bigger the effect size, the stronger the likely impact on student learning.

Understanding the concept of an effect size lets us make better decisions for our schools and classrooms by focusing on both the impact and the magnitude of our decisions—or said another way, the return on investment for a particular influence, strategy, or action. Some things are hard to implement in our schools and classrooms and have very little impact. Other things are easy to implement and still have limited impact. To have the biggest impact on student learning in the classroom, we must build our professional knowledge around those things that have the potential for the greatest impact on our students' learning. Some of these will be harder to implement and some of these will be easier to implement. Knowing the effect size would allow us to decide if a particular influence, strategy, or action has the potential to accelerate student learning.

FIGURE 2.1

VISIBLE LEARNING META[x]

The Visible Learning research is the world's largest evidence base on what works best in schools to accelerate student learning. The power of the research lies in helping educators understand, measure, and evaluate the impact they can have on student growth and achievement.

Visible Learning Meta[x] offers unparalleled access to the most up-to-date Visible Learning research, interpretations, and analyses—making it possible to understand the research and adapt it to your particular context.

See the research database at visiblelearningmetax.com

But what is the threshold for "worth it" and "not worth it"? The average of all effect sizes is 0.40, which roughly equates to one year's worth of learning over one school year. Thus, influences, approaches, strategies, and actions with an effect size greater than 0.40 indicates the potential to learn at a rate greater than that expected from one year's worth of formal schooling—that is, to accelerate learning above the expected. This hinge-point or threshold provides the basis for the Barometer of Influence shown in Figure 2.2.

FIGURE 2.2
THE BAROMETER OF INFLUENCE
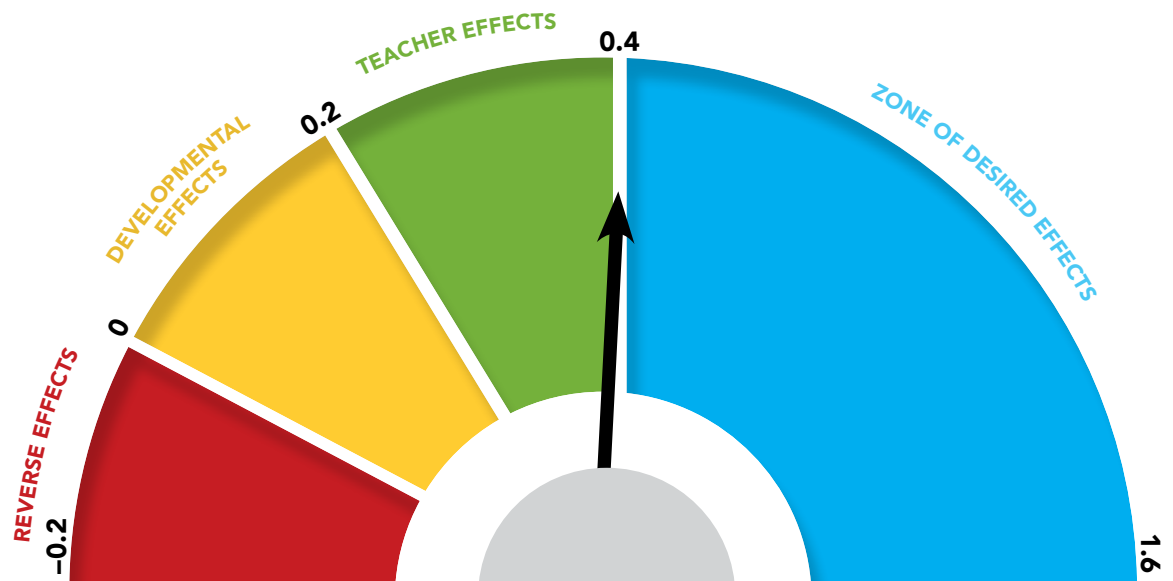
Having an acceptable threshold that allows us to critically evaluate our decisions about teaching and learning is vital as we move past the COVID-19 pandemic. With the return to in-person school from distance or hybrid learning, school districts, educational leaders, and teachers across the United States must be prepared to leverage the available resources in such a way that accelerating student learning is not only the focus but also the outcome.

One of the major themes in the Visible Learning research is that maximizing learning outcomes for our students is less about what teachers do and instead about how they think about what they do. Therefore, well-intentioned and much-needed resources and supports only move the learning needle so far. Let's unpack one of the most significant resources and supports provided to local education agencies (LEAs) that will serve as the impetus for reinvesting and rebounding in learning beyond the COVID-19 pandemic.

Overview of Federal Stimulus Funding

In response to the COVID-19 pandemic, the U.S. Congress has passed multiple relief packages to give states and LEAs the necessary flexibilities and emergency funding to continue delivering elementary and secondary education to our nation's students.

These packages include:

- The Coronavirus Aid, Relief, and Economic Security Act, 2020 (CARES Act)
- The Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (CRRSA Act)
- The American Rescue Plan, 2021 (ARP)

The two main funding sources within these bills are the Elementary and Secondary School Emergency Relief Fund (ESSER Fund) for direct aid to K–12 school districts and the Governor's Emergency Education Relief Fund (GEER Fund) to be distributed by each state.

TABLE 3.1
ELEMENTARY AND SECONDARY SCHOOL EMERGENCY RELIEF (ESSER) FUNDS

Also known as Education Stabilization funds

	CARES Act ESSER-I	**CRRSA Act** ESSER-II	**American Rescue Plan** ESSER-III
Bill enacted	March 27, 2020	December 27, 2020	March 11, 2021
Total amount for K–12 education States must distribute at least 90% to LEAs	$13.5 billion	$54.3 billion	$122.7 billion
Eligibility	LEAs eligible for Title I in the most recent fiscal year	LEAs eligible for Title I in the most recent fiscal year	LEAs eligible for Title I in the most recent fiscal year
Spending deadline	September 30, 2022	September 30, 2023	September 30, 2024
	May be used for pre-award costs dating back to March 13, 2020, when the national emergency was declared.		

TABLE 3.2
ALLOWABLE USES OF ESSER FUNDS

CARES Act	CRRSA Act
1. Any activity authorized by ESEA, IDEA, the Adult Education and Family Literacy Act, the Perkins Act, or the McKinney-Vento Homeless Assistance Act.	The same allowable uses under CARES Act, plus:
2. Coordination of preparedness and response efforts of LEAs with public health departments to improve coordinated responses among such entities to prevent, prepare for, and respond to coronavirus.	13. Addressing learning loss among students, including low-income students, children with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and children and youth in foster care, of the local educational agency, including by:
3. Providing principals and others school leaders with the resources necessary to address the needs of their individual schools.	A. Administering and using high-quality assessments that are valid and reliable, to accurately assess students' academic progress and assist educators in meeting students' academic needs, including through differentiating instruction.
4. Activities to address the unique needs of low-income children or students, children with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and foster care youth, including how outreach and service delivery will meet the needs of each population.	B. Implementing evidence-based activities to meet the comprehensive needs of students.
5. Developing and implementing procedures and systems to improve the preparedness and response efforts of LEAs.	C. Providing information and assistance to parents and families on how they can effectively support students, including in a distance learning environment.
6. Training for staff on sanitation and minimizing the spread of infectious diseases.	D. Tracking student attendance and improving student engagement in distance education.
7. Purchasing supplies to sanitize and clean the facilities of LEAs.	14. School facility repairs and improvements to enable operation of schools to reduce risk of virus transmission and exposure to environmental health hazards, and to support student health needs.
8. Planning for and coordinating during long-term closures, including for how to provide meals to eligible students, how to provide technology for online learning to all students, how to provide guidance for carrying out requirements under IDEA, and how to ensure other educational services can continue to be provided.	15. Inspection, testing, maintenance, repair, replacement, and upgrade projects to improve the indoor air quality in school facilities, including mechanical and non-mechanical heating, ventilation, and air conditioning systems, filtering, purification and other air cleaning, fans, control systems, and window and door repair and replacement.
9. Purchasing educational technology (including hardware, software, and connectivity) for students who are served by the LEA that aids in regular and substantive educational interaction between students and their classroom instructors, including low-income students and students with disabilities, which may include assistive technology or adaptive equipment.	
10. Providing mental health services and supports.	
11. Planning and implementing activities related to summer learning and supplemental afterschool programs, including providing classroom instruction or online learning during the summer months and addressing the needs of low-income students, students with disabilities, English learners, migrant students, students experiencing homelessness, and children in foster care.	
12. Other activities that are necessary to maintain the operation of and continuity of services in LEAs and continuing to employ existing staff.	

American Rescue Plan

The same 15 allowable uses under the CRRSA Act, with specific requirements:

LEAs shall reserve not less than 20 percent of ESSER funds to address learning loss through the implementation of evidence-based interventions, such as summer learning or summer enrichment, extended day, comprehensive afterschool programs, or extended school year programs, and ensure that such interventions respond to students' academic, social, and emotional needs and address the disproportionate impact of the coronavirus on the student subgroups, including low-income students, children with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and youth in foster care.

Analysis of Learning Recovery Strategies

Providing relief packages to America's schools is critical in ensuring that the needs of our youngest citizens, the next generation of leaders, are met. Giving school districts and educational leaders the flexibility and discretion to make data-informed decisions about how to best use this relief based on their own local context significantly enhances the probability of truly reinvesting and rebounding in America's schools and classrooms. However, this may leave superintendents, directors of instruction, and building principals overwhelmed with options about where to go next with this flexibility and discretion.

The Visible Learning research answers that question.

Rather than leaving LEAs to figure out for themselves what works best in moving student learning forward, the Visible Learning research points educators to those factors that research says has the biggest impact on student learning in the classroom. Thus, this paper offers LEAs clarity about the terms "evidence-based strategies," "interventions," or "activities," specifically called out in each relief package. Knowing the effect sizes of specific strategies, interventions, or activities will allow school districts, educational leaders, and teachers to decide for themselves if a particular strategy, intervention, or activity has the potential to accelerate student learning.

Learning Recovery Strategies Included in ESSER Allowable Uses

AFTERSCHOOL PROGRAMS

0.21
EFFECT SIZE

Typically, 20 percent of U.S. students in Grades K–8 attend an afterschool program. Studies have demonstrated that afterschool programs focused on reading and mathematics have improved attendees' academic performance in those areas. However, the effect size is below the average of all influences. While afterschool programs have the potential to positively influence learning, leveraging afterschool programs differently will enhance this potential.

How to Best Leverage This Strategy: Use afterschool programs to provide opportunities for deliberate practice, inquiry-based learning tasks, or targeted learning experiences based on learners' specific needs (Response to Intervention/Multi-Tiered System of Supports).

TABLE 3.3
RELATED RECOMMENDED PRACTICES

Influence	Effect Size	Definition	Further Resources
Deliberate Practice	0.79	A learning technique that involves extensive engagement in relevant practice activities in order to improve particular aspects of performance. Deliberate practice often refers to challenging, effortful repetition, often adjusted through feedback. While regular practice can include many repetitions, deliberate practice requires focused attention and is conducted with the specific goal of improving performance.	"Developing Student Expertise Through Deliberate Practice" by Michael W. Smith
Inquiry-Based Learning	0.46	Inquiry-based teaching is an educational practice in which students are called upon to behave as scientists or philosophers, generating questions and seeking to develop answers through the accumulation of evidence. This could include asking questions and solving problems and often includes procedures such as small-scale investigations and practical projects.	"3 Words to Guide Explicit Instruction in an Inquiry Classroom" by Tiffanee Brown "Build Student Agency Through Concept-Based Inquiry" by Carla Marschall "Letting Students' Wonder Guide Inquiry" by John Barell
Response to Intervention/Multi-Tiered System of Support	1.09	Response to Intervention (RTI)/Multi-Tiered System of Support (MTSS) is a multi-tier approach to the early identification and support of students with learning and behavior needs. The RTI/MTSS process begins with high-quality instruction and universal screening of all children in the general education classroom (Tier 1). Struggling learners are provided with interventions at increasing levels of intensity to accelerate their rate of learning. Those not making progress are then provided with increasingly intensive instruction usually in small groups (Tier 2). If still no progress, then students receive individualized, intensive interventions that target the students' skill deficits (Tier 3).	"Prioritizing Strategies to Maximize Impact on Student Learning" by Vince Bustamante "10 Big Questions About RtI" by PJ Caposey "7 Recommendations for Improving RTI" by Howie Knoff Webinar: Maximizing Impact: The Power of Implementation with John Hattie

DIFFERENTIATING INSTRUCTION

0.46
EFFECT SIZE

Differentiation involves adjusting instruction to meet the needs of learners. This includes adjusting the content, the process of learning, and the way learners demonstrate their learning, and the learning environment. Individually, these approaches have the potential to significantly accelerate learning.

How to Best Leverage This Strategy: Differentiation is more about teachers adjusting their methods to allow for different times and different journeys to achieve the success criteria (and not assigning students to different groups). Use differentiation to help all learners have access to the highest level of learning possible.

TABLE 3.4
ADDITIONAL RECOMMENDED PRACTICES

Influence	Effect Size	Definition	Further Resources
Appropriately Challenging Goals	0.59	A necessary precondition for meaningful learning, appropriately challenging goals provide the preconditions for student engagement and the development of intrinsic motivation. Numerous scholars have suggested that students thrive most when teachers clearly describe the ultimate goals of a particular course of instruction, and when they formulate such goals to be challenging but achievable. This is the Goldilocks principle of a challenge that is not too hard, not too easy, and not too boring.	"Taking on the Challenge of Learning" by Douglas Fisher, Nancy Frey "How to Challenge the Cruisers in Your Classroom" by Michael McDowell
Scaffolded Learning	0.58	Situated learning is premised on the assumption that learning takes place in a social context, and that students will learn best if the subject matter is taught in a meaningful, realistic, and contextually rich way that enables students to understand its relationship to what they already know. Advocates of situated learning suggest that it depends upon scaffolding, a common educational practice by which a teacher establishes and then gradually removes outside assistance that enable students to complete educational tasks.	"Scaffolding in a Visible Learning Classroom" by Connie Hamilton, Olivia Amador
Questioning	0.48	A practice by which an instructor or textbook writer poses factual or conceptual questions to students. This educational practice dates to Greek antiquity, if not earlier.	"Unleashing the Potential of Classroom Questioning" by Jackie A. Walsh, Beth Sattes "Developing the Skill and the Will of Students as Questioners" by Jackie A. Walsh "How to Generate Students' Authentic Questions" by Shanna Peeples Webinar: The Three Faces of Quality Questioning with Jackie A. Walsh, Beth Sattes

Classroom Discussion	0.82	A form of instruction in which students are invited to speak about the topic at hand. It involves much more than a teacher asking a class a question, then another, etc., but involves students discussing with each other, often prompted from an open and not closed set of questions.	"Why Should Students Lead Discussions?" by Laura Robb "Math Talk and COVID-Impacted Instruction" by Paola Sztajn, Daniel Heck, Kristen Malzahn
Reciprocal Teaching	0.74	An instructional strategy that aims to foster better reading comprehension and to monitor students who struggle with comprehension. The strategy contains four steps: summarizing, questioning, clarifying, and predicting. It is "reciprocal" in that students and the teacher take turns leading a dialogue about the text in question, asking questions following each of the four steps. The teacher can model the four steps, then reduce her or his involvement so that students take the lead and are invited to go through the four steps after they read a segment of text.	Leaders Coaching Leaders Podcast: "Episode 10: Accelerating Learning After COVID-19" with Douglas Fisher
Cooperative Learning	0.55	Greater social integration between students during the learning process has been shown to increase students' integration into the academic environment. In contrast to individualistic learning, in which students are responsible for their own mastery of the subject matter, cooperative learning environments call upon students to interact with a fellow student or with a group, with each pair or group member responsible for the learning of the others.	"7 Factors Useful in Facilitating Student Collaboration From a Distance" by Douglas Fisher, Nancy Frey

0.35
EFFECT SIZE

COUNSELING EFFECTS

There are many individual effect sizes suggesting the vital role mental health plays in student learning. Supporting the mental health of learners, aimed at reducing conditions such as anxiety and depression, will further support "teaching the whole child." This requires that we also engage families in their children's learning.

How to Best Leverage This Strategy: Learning is more than just academic content. We should direct our attention to engaging all stakeholders in supporting learners' cognitive, social, and emotional needs.

TABLE 3.5
RELATED RECOMMENDED PRACTICES

Influence	Effect Size	Definition	Further Resources
Parent/Family Engagement	0.45	Parental involvement refers to the amount of participation a parent has when it comes to schooling and the child's life. This can be via events and volunteer opportunities, school management, helping with homework, etc.	"A Story of Family Engagement" by Steve Constantino "Strengthening the Family Engagement Toolbox" by Calvalyn Day "10 Strategies to Engage Parents" by Mary Ann Burke Webinar: Helping Parents Support Their Children's Well-Being During Distance Learning with Rosalind Wiseman
Lack of Stress	0.17	Stress has been linked to memory formation along a U-shaped curve, with memory increasing with stress to an inflection point, beyond which memory formation decreases. A major advance has been to focus on the various coping strategies students have to stressful events (from cognitive, such as reframing, to emotional, such as venting).	"English Learners Living With Trauma, Violence, and Chronic Stress" by Debbie Zacarian "Now More Than Ever, Implementing SEL Will Help Teachers and Students" by Jessica Hannigan, John Hannigan
Anxiety	-0.44	An emotional state or trait that is variably related to academic performance, potentially influencing that performance positively or negatively. The most critical aspect is the coping strategies that children can be taught to deal with anxiety.	"How to Build Resilience and Battle Anxiety in the Classroom" by Bill Adair "3 Strategies to Build Resilience and Counteract the Anxiety Epidemic in Students" by Bill Adair Webinar: Adverse Childhood Experiences: Trauma-Informed Strategies for Teacher and Student Well-Being with Ricky Robertson
Depression	-0.26	A mental health disorder that impairs daily functioning by depressing mood and reducing interest in activities.	"Plan for a Successful Return to School by Focusing on SEL" by Jennifer Rogers "How to Support the Teens at Your School Through COVID-19" by Christine Mason, Dana Asby, Martha Staeheli

0.80
EFFECT SIZE

SUPPORTING LEARNERS WITH SPECIAL NEEDS

Supporting learners that are disproportionately impacted by the pandemic requires a combination of supports and interventions. There are many that have the possibility of moving learning forward at an accelerated rate.

How to Best Leverage This Strategy: Use available evidence to identify where learners are in their learning progression, identify specific evidence-based interventions, implement those interventions with fidelity, and continually monitor the impact of these interventions.

TABLE 3.6
RELATED RECOMMENDED PRACTICES

Influence	Effect Size	Definition	Further Resources
Special Education Programs	0.80	The programs are considered as a means of achieving the goals of the Individuals with Disabilities Act: equal opportunity, full participation in society, independent living, and economic self-sufficiency.	"Using the SOLO Taxonomy with Diverse Learners" by John Almarode, Jennifer Newton "Formative Assessment: The Key to Assessment-Capable Learners" by Shirley Clarke "Coming Back from COVID: Anything but Retention" by John Hattie
Repeated Reading	0.75	Repeated reading involves students repeatedly reading the same passage (usually at least three times) to teachers. When the student miscues, the teacher can read the correct word aloud, and the student rereads the passage until reaching a satisfactory reading level.	"3 Ways to Re-imagine Small-Group Reading Experiences" by Julie Wright
Technology for Learners with Special Needs	0.57	The use of various computer technologies in the teaching of students with particular learning needs.	"Technology Can Make a Difference in Learning. Here's How." by Sonny Magana
Interactive Video	0.54	A digital video technology that allows students to review segments of a recording in a non-linear way, as many times as they wish. Interactive video has been linked to reduced cognitive overload, greater attention, and greater reflection.	"What Does Technology Integration Look Like?" by Brad Currie

TABLE 3.7

OTHER COMMON LEARNING RECOVERY STRATEGIES THAT WORK

Influence	Effect Size	Definition	Further Resources
Peer Tutoring	0.51	Peer tutoring is a teaching strategy that uses students as tutors. The student pairs might work on academic, social, behavioral, functional, or even social skills. There are many different ways to pair students, such as by ability level, skills mastered, or age. Many studies look at the effects on both the tutor and tutee.	"Cultivate Self-Directed Learners with 5 Key Shifts" By Julie Stern, Krista Ferraro, Kayla Duncan, Trevor Aleo
Small Group Instruction	0.47	This is where students are grouped into smaller groups within the class.	"What Are the Other Kids Doing While I'm Teaching in Small Groups?" by Debbie Diller "3 Ways to Re-imagine Small-Group Reading Experiences" by Julie Wright Webinar: What Are You Grouping For? Five Teacher Moves to Jump Start & Sustain Small Group Learning Opportunities with Julie Wright, Barry Hoonan
Reading Recovery	0.53	A literacy intervention developed from research by New Zealand educator Marie Clay in the 1960s and 1970s. The program works by identifying first-grade students who struggle with reading and then providing them with targeted, individualized interventions across 12–20 weeks with individual, daily lessons.	
Acceleration Programs	0.68	These programs allow students to reduce the time spent on a year's curriculum expectations by skipping a year, telescoping the curriculum coverage, and going deeper on fewer curriculum topics. Three types of achievement goals have been recommended: a learning or task involvement goal focused on the development of competence and task mastery (an approach orientation), a performance or ego involvement goal directed toward attaining favorable judgments of competence (also an approach orientation), and a performance or ego involvement goal aimed at avoiding unfavorable judgments of competence (an avoidance orientation).	"Teach to the Top: Finding and Developing Talent in Your Classroom" by Gerald Aungst
Transfer Strategies	0.86	For learning to be effective, students must be able to make a spontaneous, unprompted, and appropriate transfer of a learning or problem-solving strategy from one context to another. This can be near transfer to new problems similar to the instruction, or far transfer to new situations and domains.	"Clarifying Transfer: The Ultimate Goal of Learning" by Julie Stern, Nathalie Lauriault "Impact the World: Strategies for Transferring Learning" by Julie Stern Webinar: Making Sense of Learning Transfer with Julie Stern

Strategy Monitoring	0.58	A metacognitive practice whereby a student monitors her or his own strategies to complete a task. It often involves students being trained both in problem-solving techniques and in monitoring techniques (through which they observe how and whether they are following problem-solving protocols).	"Promoting Metacognitive Awareness" by Jenni Donohoo
Elaboration and Organization	0.75	These strategies enable learners to commit information and skills to memory. In combination, practices of elaboration (such as note-taking or forming questions about course material) are often combined with practices of organization (such as outlining or information mapping).	"Three Lessons from the Science of Learning" by John Almarode
Strategies to Integrate Prior Knowledge	0.93	The argument is that readers who establish more connections between a text and their prior knowledge produce stronger situation models, or cognitive maps of a given state of affairs. This situation model, in turn, is aimed to improve comprehension and recall.	

For each of the specific influences above, we can use the 0.40 threshold as a starting point for discussing our return on investment in student learning—our "bang for our buck." To truly reinvest and rebound post-pandemic, the effect sizes for each of these influences is, indeed, the starting point for school districts and educational leaders to take advantage of the flexibility and discretion to make data-informed decisions about how to best use this relief. This is also the starting point for considering the local context and what each of these influences might look like in the specific school district and classrooms.

However, there are some specific recommendations in the relief packages that have relatively low effect sizes (e.g., individualized instruction, summer school, extended school year programs, changes to the school calendar). As we have pointed out before, this will raise some eyebrows.

TABLE 3.8
LEARNING RECOVERY STRATEGIES INCLUDED IN ESSER ALLOWABLE USES WITH RELATIVELY LOW EFFECT SIZES

Influence	Effect Size	Definition	How to Increase the Impact
Individualized Instruction	0.23	Typically, one-on-one instruction between a student and teacher/tutor with the aim of immediate feedback, scaffolded concepts, and intervention at key moments of success or difficulty. Other forms of individualized instruction can include tailoring lessons for various student learning needs, providing individualized feedback, and teaching to mastery. However, what often happens is a repeat of whole-group/small-group instruction.	Individualized instruction should focus on a specific skill or content where enrichment or scaffolding is needed. Then, targeted evidence-based approaches and strategies should be selected to move learning forward. At the same time, individualized instruction offers teachers an opportunity to engage in strategy instruction so that in the future, the learners know what to do when they don't know what to do and the teacher is not around—a self-regulated learner.

Summer School	0.19	Summer school has a very small impact on student achievement despite the weeks of extra instruction. This is because summer school is typically focused on remediation. Students often view summer school as a punishment and are thus highly resistant to learning.	The quality of the instructional time matters. When summer school utilizes evidence-based interventions that focus on accelerating learning, not remediating learning, we have the potential to increase the impact of this additional time. This might include, but is not limited to:
			    Goal-Setting
			    Project-Based Learning
			    Cooperative Learning
			    Effective Feedback

Extended School Year Programs	-0.01	This influence looks at the different lengths and timing of summer vacation on student performance. A number of school districts have considered or even implemented alternative school calendars that eliminate, reduce, or expand summer vacation.	The focus should not be repeating the previous year's instruction—louder, longer, and more of the same. Instead, our focus should be on finding a different way for learners to engage in the content, skills, and understandings. At the same time, we should strive to build the capacity of our students to become self-regulated learners so that they can take ownership of their own learning (e.g., learning strategy instruction, peer-tutoring, and deliberate practice).
School Calendar Changes	0.09	This includes changing the school terms, semesters, vacation times, times of day for starting and closing school, and block scheduling or various time spans for classes.	As we have said before, the time spent learning is only going to benefit our students if that time is spent on what really works best.

Let us be clear here. Changes to the calendar and structural changes are inevitable and will happen. We are not arguing against these approaches nor in any way attempting to discourage you from offering additional opportunities to your learners. What we are saying is that **we cannot simply assume that more time is better time**. Rather than quantity, all available research strongly points to the quality of that time. To quote one of the authors of this paper, "Why can't we make summer school awesome?"

These structural or calendar-related influences will only have an impact on student learning if we move past the schedules and into the specific learning experiences and tasks associated with these influences. How might this perspective on other influences guide and support our focus on accelerating student learning and designing and implementing learning experiences that increase the rate of learning? Just as we must move past schedules and focus on what is occurring during this instructional time, we must also move past Visible Learning as a checklist of "dos" and "don'ts" in our schools and classrooms.

Moving beyond a checklist approach, the question is, "What really does work?"

What Really Works

We can sort the body of the research in the Visible Learning database into six broad categories of factors:

FIGURE 4.1
THE SIX BROAD CATEGORIES OF INFLUENCES

Category	Average Effect Size
Student Influences	0.25
Home Influences	0.11
School Influences	0.29
Classroom Influences	0.28
Curricula Influences	0.46
Teacher Influences	0.52

Source: Visible Learning Meta[X], 2021.

Within each of these broader categories are influences that are associated with each factor. For example, the student category includes influences related to goal-setting, motivation, stress, and anxiety, to name a few (see Visible Learning Meta[X], 2021).

To look across the high-impact compared to lower-impact strategies is to understand the underlying reasons for why some work better. When looking at each of these broader categories, a very important trend develops: **The quality of the teacher and teaching is the most important controllable factor that impacts student learning** (Rickards, Hattie, & Reid, 2021). It is less about what teachers do, and rather how they think about what they do. No wonder many strategies fail to get implemented or fail to have impact in some cases—it is not about merely implementing an intervention, it is the evaluative thinking that goes on moment-by-moment; the quality interpretations of students' thoughts, work, and tests; and the collegial critiques of these interpretations and thinking that truly matter.

WHAT MAKES AN EXPERT TEACHER?

If the answer to the question of what matters most is the quality of the teacher and the teaching, then the natural follow-up question is: What makes a quality teacher? How do you define quality teaching?

Expert teachers approach teaching and learning differently than their colleagues. For example, expert teachers are more attuned to the dynamics of their classrooms, recognize what is happening in their classrooms, are more opportunistic and flexible in their teaching, and show a greater sensitivity to the cognitive demands of learning experiences and tasks (see Berliner, 2004). Put differently, expert teachers are better at noticing what is going on in their classrooms, making sense of those events or activities, and using that sense-making to plan their next decision alongside the learners (see Gibson & Ross, 2016). They are very much focused on the impact of their teaching, and they adjust teaching to maximize that impact on student learning.

7 Characteristics of Expert Teachers EXPERT TEACHERS WORK ALONGSIDE THEIR LEARNERS TO:	Effect Size
Evaluate the impact on learning	Effect Size = 1.32
Establish and maintain high expectations	Effect Size = 0.90
Work together with students toward clear success criteria	Effect Size = 0.77
Find the right level of challenge in the learning experiences and tasks (i.e., the Goldilocks Principle of not too hard, not too easy, and not too boring)	Effect Size = 0.74
Establish a trusting classroom learning environment where errors are welcomed as opportunities to learn	Effect Size = 0.72
Seek out feedback about their impact on students' progress of learning	Effect Size = 0.72
Strike an ideal balance between surface and deep learning	Effect Size = 0.69

The fostering, nurturing, and sustaining of expert teachers is what really works best in accelerating student learning schoolwide. Our primary goal and focus during this time of transition, as well as our overall work in education, is to recognize expertise in our schools and classrooms and, at the same time, dedicate all available resources to improving the expertise of teachers.

Investing time, energy, and resources in building teacher expertise will lead to long-term benefits for both teachers and learners. Reinvesting in the building of teacher capacity will accelerate learning.

When these seven foundational principles drive our conversations about teaching and learning, we are less likely to treat learning recovery or acceleration as a simple roadmap, inaccurately believing that "if we just do X, Y, and Z," we will accelerate student learning. Teaching and learning is far more complex, and interactions between the teacher, the students, and the curriculum require more than a mere checklist. The influences that foster, nurture, and sustain the dispositions and skills of teachers to collaborate with students to monitor their impact on learning move us away from conversations about a particular teaching style, boxed curriculum, or program.

THE REAL ACCELERATOR OF LEARNING: STUDENTS

When we foster, nurture, and sustain the expertise of teachers, we will accelerate student learning. That is because the dispositions and skills of expert teachers result in the development of self-reflecting, self-monitoring, self-evaluating, and most importantly, self-regulating learners. The Visible Learning research calls these learners "assessment-capable visible learners."

These learners:

- Know their current level of understanding.
- Know where they are going next and are ready to take on the challenge.
- Possess the capacity to select and apply strategies that move their learning forward.
- Monitor their learning and make adjustments, when necessary.
- Seek feedback and believe that errors are learning opportunities.
- Recognize their learning and can support their peers (Frey, Hattie, & Fisher, 2018).

With an effect size of 1.33, or the *potential to more than triple the rate of learning*, developing the assessment-capability of our students will provide long-term benefit across multiple contexts and in the face of future challenges. This is the *why* behind our what.

FIGURE 4.2
CHARACTERISTICS OF ASSESSMENT-CAPABLE VISIBLE LEARNERS

When expert teachers...	Students...
Communicate clear learning intentions.	Understand the learning intentions and know what they are learning and why they are learning it.
Have challenging success criteria that define the learning intention.	Are challenged by success criteria and prepared to take on that challenge.
Teach a range of learning strategies.	Develop a range of learning strategies that they can use so that when the first does not work, they have alternatives.
Know when students are not progressing, through formative assessments and checking for understanding.	Know when they are not progressing and make adjustments to their learning.
Give and receive timely and effective feedback.	Seek feedback and use that feedback to decide where to go next.
Visibly learn themselves—make their own learning explicit and model approaches to learning.	Visibly teach themselves—they know what to do when they don't know what to do and teachers are not there.

Adapted from Frey, N., Hattie, J., & Fisher, D. (2018). *Developing assessment-capable visible learners*. Thousand Oaks, CA: Corwin Press.

We should not solely focus on what is taught and how it is taught, but focus on the way teachers think about the impact of their teaching. Our time, attention, and resources are best spent when we increase the expertise and capacity of teachers. If what really works best is the fostering, nurturing, and sustaining of expert teachers, then our path forward is to recognize expertise in our schools and classrooms and, at the same time, dedicate all available resources to improving the expertise of teachers. The question is, how do we do this?

How Do We Put What Really Works Best into Practice?

Knowing what works best and implementing what works best are two very different things. While the Visible Learning research along with the six major categories of influences provide the starting point for reinvesting and rebounding, implementing these approaches, interventions, or strategies requires that we make adaptations based on the local context of the particular district, school, and/or classroom. The previous discussion around structural and calendar-related influences (e.g., summer school, extended school day) further highlights the role of implementation. As leaders, deciding how to move forward with the available resources requires an evaluative mindset that looks first at the "who" in your schools and classrooms, followed by what they next need to accelerate learning.

IMPLEMENTING INTERVENTIONS IN THE CLASSROOM USING THE DISCOVER MODEL

The Discover Model provides a framework for this evaluative thinking that will guide not only the selection of what really works best in accelerating learning, but the implementation of those approaches, interventions, and strategies
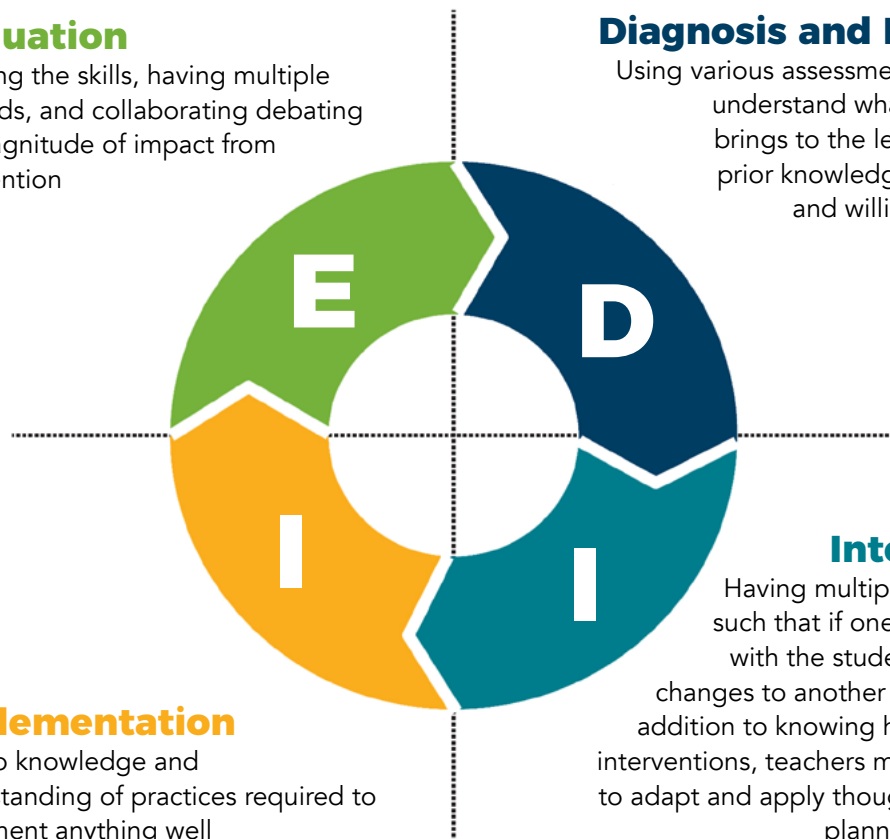
FIGURE 5.1
THE DISCOVER MODEL FOR IMPLEMENTATION

Evaluation
Knowing the skills, having multiple methods, and collaborating debating the magnitude of impact from intervention

Diagnosis and Discovery
Using various assessment strategies to understand what each student brings to the lesson, including prior knowledge, motivations, and willingness to learn

Intervention
Having multiple interventions such that if one does not work with the student, the teacher changes to another intervention. In addition to knowing high-probability interventions, teachers must know when to adapt and apply thoughtful design in planning for learning

Implementation
A deep knowledge and understanding of practices required to implement anything well

Hattie, J., Bustamante, V., Almarode, J., Fisher, D., & Frey, N. (2020). *Great teaching by design. From intention to implementation in the visible learning classroom*. Thousand Oaks, CA: Corwin Press.

Discover

The first step to learning recovery is excellent discovery. Diagnose where students are in their learning progression, their strengths and barriers, what their expectations and beliefs about learning are, and all that they bring to the learning experiences. This includes administering and using high-quality assessments that are valid and reliable to accurately assess students' academic progress and assist educators in meeting students' academic needs, including through differentiating instruction. Before you can address the "gap," we need excellent starting information—from last year's performance, from the student, and from teacher observations and evaluations.

Intervene

Choose optimal interventions that will accelerate closing the gap between where the students are currently and where you wish them to move to. This is why it is so critical to be clear, ambitious, and transparent with students about what your criteria of success are—in the short term, medium term, and over the whole year.

Implement

Only when we are clear about the starting point and the goal are we ready to implement evidence-based approaches or strategies to meet the comprehensive needs of learners. Too often we decide on the solution before we can fully articulate the issues and goals that the solution is supposed to address.

When choosing an evidence-based approach or strategy, every teacher, every policy maker can find evidence for their pet ideas. If we are to accelerate student learning, we should not be asking *what really works,* but *what really works best*?

Evaluate

We will never really be able to "know thy impact" on student learning without the evaluation of practice. Once again, we must administer and use high-quality assessments that are valid and reliable to accurately assess students' academic progress. This is best done in collaboration with our colleagues and our learners. During the evaluation component, teachers have to reflect on previous decisions and determine where they are going next in their teaching and students' learning.

STRUCTURES THAT SUPPORT THE BUILDING OF TEACHER EXPERTISE

While the Discover Model provides the framework for building expertise and capacity in teachers, this must be supported through the deliberate practice of teaching and continual professional learning. This continual professional learning must involve the opportunity for coaching to help focus on the critical aspects of what really works, the adaptation of these aspects based on the local context of each individual classroom, and the opportunity for feedback. These two factors, when simultaneously integrated into our schools and classrooms, have the potential to accelerate student learning by influencing teacher practice.

FIGURE 5.2
EFFECT SIZES FOR DELIBERATE PRACTICE AND PROFESSIONAL DEVELOPMENT
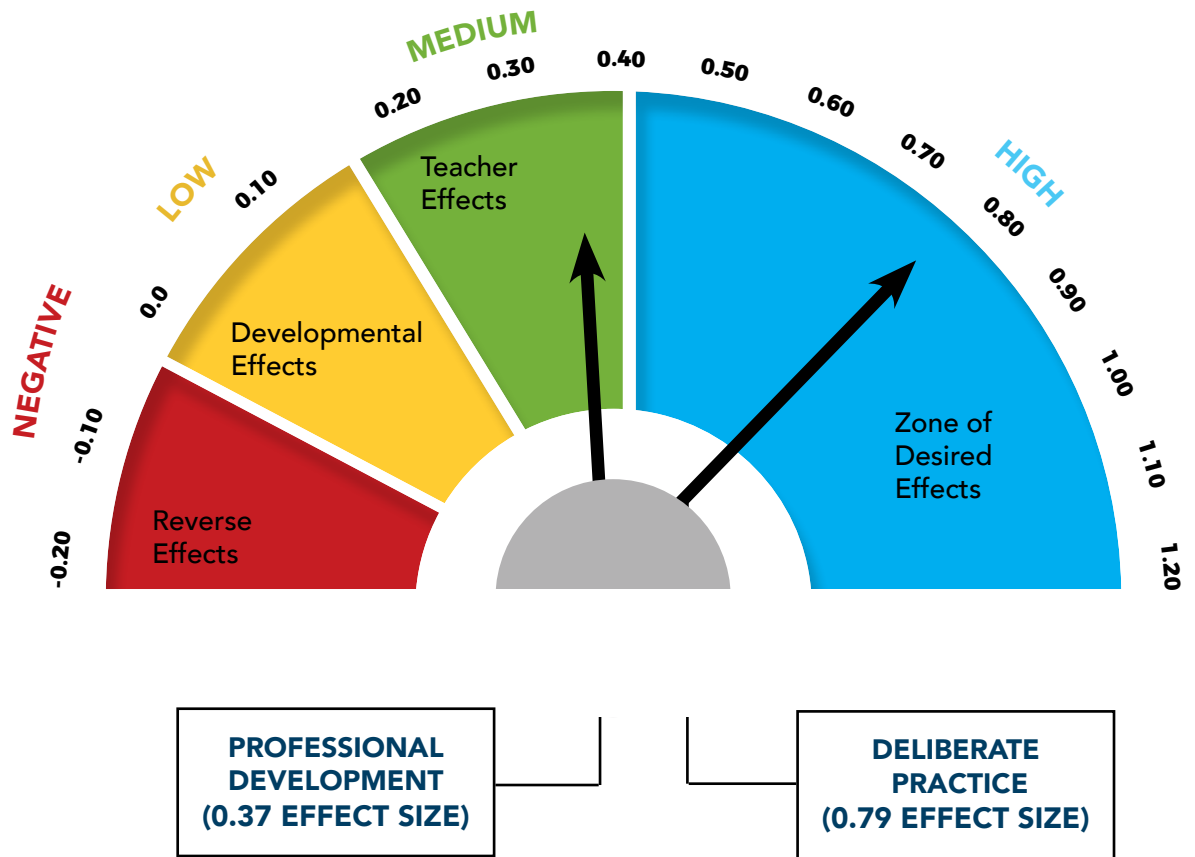
Deliberate Practice

Ericsson, Krampe, and Tesch-Romer (1993) define two types of practice. The first type, often called naïve practice, is the accumulation of experience and accomplished by an individual simply engaging in an activity or task (see Ericsson & Pool, 2016). Consider an amateur golfer who strives to play golf at least once a week. While there is nothing wrong with naïve practice, this form of practice does not lead to expert performance.

Deliberate practice, on the other hand, is required to move individuals beyond everyday skills and toward expert performance (Ericsson, 2006). Deliberate practice involves five key components that separate this type of practice from naïve practice, emphasizing quality over quantity.

TABLE 5.1
FIVE COMPONENTS OF DELIBERATE PRACTICE

Components of Deliberate Practice	Actions for Developing Expertise in Teaching
Engaging individuals in an exercise, task, or experience outside of their current skill level.	Identify areas for growth in teaching practice derived from standards of professional practice, student growth and achievement data, and classroom observation/walk-through data.
The exercise, task, or experience is focused on a specific and measurable learning or performance goal.	Collaboratively develop a SMART goal: Specific, Measurable, Attainable, Relevant, Timely.
The environment of the practice allows for the individual to focus on the exercise, task, or experience.	Provide time, space, and resources for the teachers to implement the SMART goal in their classroom.
The individual receives effective feedback.	Use classroom observations, walk-throughs, microteaching, peer observations, professional learning communities, video analysis software or platforms, and instructional coaching to provide effective feedback related to the SMART goal. Allow for the evaluation and revision of the goal over time: SMART-ER goal.
A mental model is developed that allows the individual to self-regulate future performance.	Scaffold the feedback to allow for the development of self-reflection, self-monitoring, and self-evaluating of teaching and learning.

Adapted from Ericsson, K, A., & Pool, R. (2016), *Peak. Secrets from the new science of expertise.* New York, NY: Houghton Mifflin Harcourt.

To accelerate student learning, we must provide both opportunities and an environment that allows for the deliberate practice of teachers. Using a shared language of learning and standards for the professional practice of teachers, we must provide opportunities for teachers to receive formative evaluations of their teaching, identify areas of growth, develop goals for improvement, receive effective feedback on their progress toward their goals, and develop mindframes for future decisions.

Characteristics of Effective Professional Learning

1. Involves coaching over an extended period of time. This supports the role of deliberate practice in moving toward expertise in teaching.

2. Utilizes the interpretation of multiple data sources to ensure the professional learning is data-directed, data-informed, and data-infused.

3. Moves beyond what we teach, but how students learn and the implication on implementing the professional learning.

4. Avoids a siloed approach to implementation and instead supports professional learning communities as a vehicle for implementation.

5. Focuses on content with discipline-specific and context-specific examples.

6. Provides multiple opportunities for teachers to engage in the new approaches, interventions, or strategies they plan to implement in their own classrooms.

7. Builds in time for teachers to critique and interpret, receive additional input on, and make improvements to their practice by facilitating reflection and soliciting feedback.

Bausmith & Berry, 2011; Darling-Hammond, Hyler, & Gardner, 2017

Professional Learning

Simply attending and sitting through a professional development conference, session, or webinar does not lead to a significant impact on teaching and learning. Just like practice, there are components or characteristics that are associated with a greater likelihood of the professional learning experience making a difference in our schools and classrooms.

Professional learning provides the content, skills, and understanding about *what really works best* that is implemented through deliberate practice. **As classroom teachers identify areas of growth in their teaching, this is often accompanied by the need for professional learning.**

What is important to note here is that this is cyclic in nature. Once a mental model of expertise, or a specific mindframe about teaching, is developed through deliberate practice, the process of continual professional growth will lead to the next area of growth, the associated professional learning, and the deliberate practice of that area. Increasing expertise and capacity in teaching is a cyclic process of lifelong learning.

When putting *what really works best* into practice, schools, classrooms, and teachers require the deliberate practice of content, skills, and understandings from targeted professional learning opportunities.

Conclusions and Recommendations

The U.S. Congress has made a substantial financial commitment to supporting the work of schools and classrooms on the other side of this international pandemic. However, finances alone will not move us past the COVID-19 teaching and learning. The average effect size for school finances is 0.21, below one year's worth of growth. The underlying theme in these pages is not about the money making a difference, but how this financial commitment will make the most difference in the teaching and learning of America's students.

What we hope to have conveyed is that the potential for this commitment to accelerate learning requires the intentional, deliberate, and purposeful use of these dollars. Committing funds to approaches, strategies, interventions, and supports must start with identifying which ones have the potential to accelerate learning. These specific influences must align with the dispositions or mindframes of all stakeholders that we are not operating at a deficit, but targeting unfinished and unrealized learning in our students. In other words, we must shift from remediating to refocusing on student learning.

Considering the ideas and research within this paper together, we make the following recommendations for reinvesting and rebounding:

1   **Remove deficit language from any and all conversations around teaching and learning.** While the previous academic year was not what any of us envisioned, to assume a universal loss in learning is misguided and will undercut efforts to reinvest and rebound.

2   **Start with those approaches, strategies, interventions, and supports that have the potential to accelerate learning at a rate beyond one year's worth of growth.** Drawing from a robust body of evidence-based practices, we must begin with those that are well documented for accelerating learning. This means we may have to refocus and let go of certain influences that are our "favorites" and replace them with influences that may provide greater gains in student learning.

3   **Focus on the implementation of the approach, strategy, intervention, or support.** Once we have identified those influences that will potentially accelerate student learning, we must devote time, energy, and resources to ensure they are implemented in a way that aligns with our learners, in our classrooms. We must be prepared to support classroom teachers as they make adaptations to these interventions based on the local context of their classroom.

4   **Build confidence, capacity, and credibility in teachers.** The research is very clear on the value added to student learning by an expert teacher. Providing professional learning and opportunities for teachers to develop expertise in supporting learners' social and emotional needs, monitoring student learning progress, giving and receiving feedback, interpreting evidence of learning, designing and implementing rigorous and engaging tasks, and ensuring equity of access and opportunity to the highest level of learning possible will maximize the use of resources available to schools and classrooms.

5 **Seek evidence of impact on student learning.** Time, energy, and resources should be devoted to generating evidence of student learning, gathering that evidence, and utilizing that evidence to make decisions about where to go next with each student's learning. This will help us avoid assuming "loss" and will help make our teaching and their learning visible.

6 **Move beyond structures and schedules.** Yes, each of the ESSER funding streams makes specific recommendations related to school structures and schedules (e.g., extended school year, summer school). Our purpose here is not to contradict the United States Department of Education or create controversy, but our final and strongest recommendation is to focus on what happens within these structures and during this extended learning time. The research is very clear—the reinvesting and rebounding will NOT come from the fact that students are in an extended school year or summer school, but from what happens while they are there. This final recommendation assumes the implementation of the previous five recommendations.

About the Authors

John Almarode, PhD, is an associate professor and executive director of teaching and learning in the College of Education at James Madison University. He has authored multiple articles, reports, book chapters, and over a dozen books on effective teaching and learning in today's schools and classrooms, including *The Success Criteria Playbook* and *Great Teaching by Design*.

John Hattie, PhD, 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 1,700 meta-analyses comprising more than 100,000 studies involving over 300 million students around the world.

Douglas Fisher, PhD, is professor and chair of educational leadership at San Diego State University and a leader at Health Sciences High and Middle College. He has published numerous articles on reading and literacy, differentiated instruction, and curriculum design, as well as books, such as *PLC+: Better Decisions and Greater Impact by Design and Building Equity,* and *The Distance Learning Playbook*.

Nancy Frey, PhD, is a professor in educational leadership at San Diego State University and a leader at Health Sciences High and Middle College. She 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 Teacher Clarity Playbook* and *The Distance Learning Playbook*.

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Recommended Reading

EXPERT TEACHING
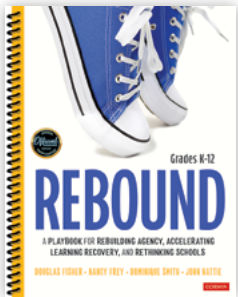
Rebound, Grades K–12: A Playbook for Rebuilding Agency, Accelerating Learning Recovery, and Rethinking Schools by Douglas Fisher, Nancy Frey, Dominique Smith, John Hattie (2021)

Great Teaching by Design: From Intention to Implementation in the Visible Learning Classroom by John Hattie, Vince Bustamante, John Almarode, Douglas Fisher, Nancy Frey (2020)

The Teacher Clarity Playbook, Grades K–12: A Hands-On Guide to Creating Learning Intentions and Success Criteria for Organized, Effective Instruction by Douglas Fisher, Nancy Frey, Olivia Amador, Joseph Assof (2018)

The Success Criteria Playbook: A Hands-On Guide to Making Learning Visible and Measurable by John Almarode, Douglas Fisher, Kateri Thunder, Nancy Frey (2021)

Developing Assessment-Capable Visible Learners, Grades K–12 by Nancy Frey, John Hattie, Douglas Fisher (2018)

Collective Student Efficacy: Developing Independent and Inter-Dependent Learners by John Hattie, Douglas Fisher, Nancy Frey, Shirley Clarke (2021)

LEADERSHIP & PROFESSIONAL LEARNING
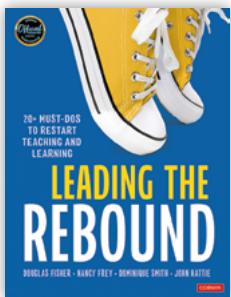
Leading the Rebound: 20+ Must-Dos to Restart Teaching and Learning by Douglas Fisher, Nancy Frey, Dominique Smith, John Hattie (2021)

10 Mindframes for Leaders by John Hattie, Raymond Smith (2020)

PLC+: Better Decisions and Greater Impact by Design by Douglas Fisher, Nancy Frey, John Almarode, Karen Flories, Dave Nagel (2019)

The PLC+ Playbook, Grades K–12: A Hands-On Guide to Collectively Improving Student Learning by Douglas Fisher, Nancy Frey, John Almarode, Karen Flories, Dave Nagel (2019)

Developing Teaching Expertise: A Guide to Adaptive Professional Learning Design by Ryan Dunn, John Hattie (2021)

VISIBLE LEARNING

Visible Learning by John Hattie (2013)

Visible Learning for Teachers by John Hattie (2013)

Visible Learning for Literacy, Grades K–12 by Douglas Fisher, Nancy Frey, John Hattie (2016)

Visible Learning for Mathematics, Grades K–12 by John Hattie, Douglas Fisher, Nancy Frey, Linda M. Gojak, Sara Delano Moore, William Mellman (2016)

Visible Learning for Science, Grades K–12 by John Almarode, Douglas Fisher, Nancy Frey, John Hattie (2018)

Visible Learning for Social Studies, Grades K–12 by John Hattie, Julie Stern, Douglas Fisher, Nancy Frey (2020)
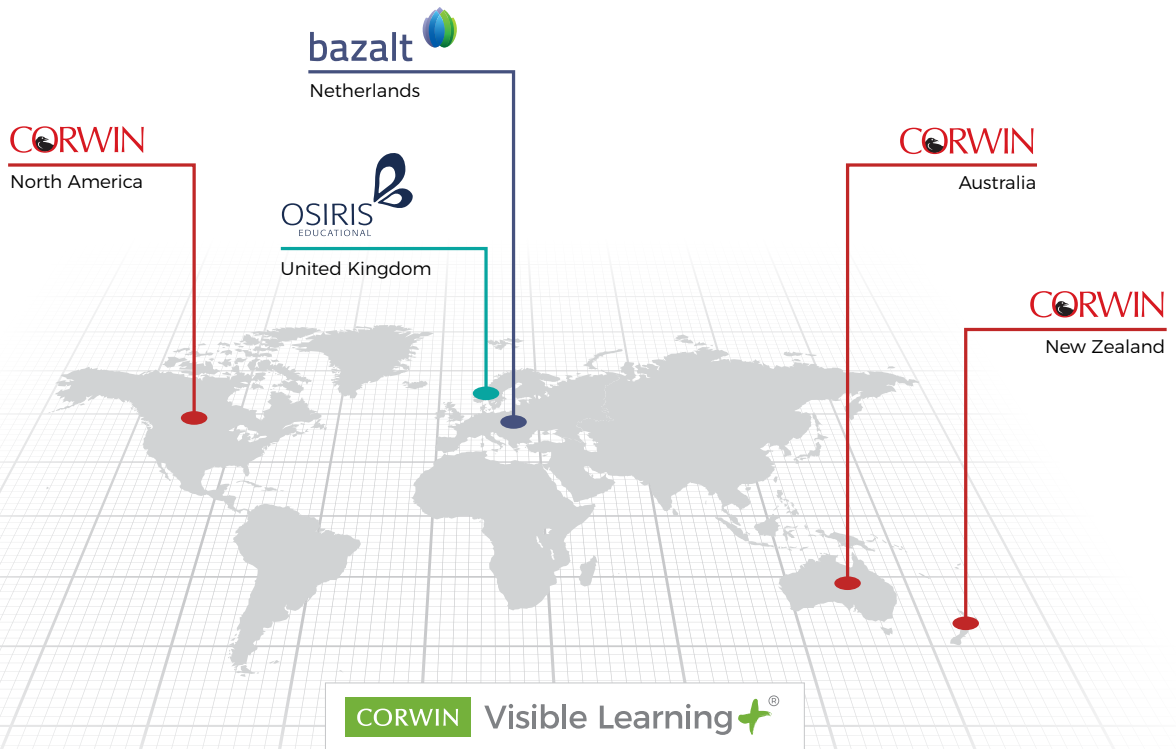
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