Introduction

As new challenges face educators today, many find themselves seeking reassurance of what constitutes best practices. That search for "what works" can be particularly complicated in literacy. While a rich and respected body of research exists, the rapidly changing world in which we live presents new cultural and social demands on both learners and researchers (Kamil, Afflerbach, Pearson, & Moje, 2011). As research evolves and grows, the need to determine what practices schools should employ often leaves leaders perplexed about how to best serve students. Douglas Fisher, Nancy Frey, and John Hattie (2016) contend

> **❝every student deserves a great teacher, not by chance, but by design.❞**

Challenges

Literacy learning is at the heart of long-term success in life. It provides the foundation for all other learning by creating a wide variety of professional avenues and choices. What we know is that students who meet the standards in literacy (CCSSO/NGA, 2010) readily undertake close, attentive, productive reading. They habitually and strategically perform the kind of critical reading necessary to sift and sort through the staggering amount of information available each day in both print and digital form to determine what is most important. They question texts, but they also question their own understandings. They actively seek wide, deep, and thoughtful engagement with high-quality literary and informational texts for the purpose of building knowledge, enlarging experience, and broadening their own worldview. They demonstrate the cogent reasoning and use of evidence essential to both private deliberation and responsible citizenship in a democratic republic.

While there is much agreement about why literacy is important and what society demands in terms of literate performances, there is less assurance about how to ensure students have access to high-quality literacy instruction. Once a lesson has been structured, the content delivered, the classroom organized, the success of teaching depends largely on what happens next and the slow and gradual way in which learners integrate the content and skills into their own repertoire (Hattie, 2009). Though a plethora of research exists about what teachers and schools should do, Fullan (2001) suggests "the main problem is not the absence of innovations but the presence of too many disconnected, episodic, piecemeal, superficially adorned projects" (119). For that reason, the groundbreaking work of John Hattie and his notion of "visible learning" unmasks the conditions necessary for students to become their "own teachers" (Fisher, Frey, & Hattie, 2016, 4) and to inform the actions of teachers that nurture and promote learning.

Addressing the Challenges: Research and Evidence

The quest for what improves practices in schools is an often-daunting one for school leaders. Because almost everything works—but to different degrees—interpreting the research is challenging. Answers began to surface for educators in Hattie's first book, *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement* (2009), and also in his later book, *Visible Learning for Teachers: Maximizing the Impact on Learning* (2012). In both texts, Hattie reports the findings from over 800+ meta-analyses conducted to identify the effects of school-based practices on student achievement.

The key, however, is not just identifying the practices that work, but as important is identifying when they work. It turns out that routines, strategies, and procedures can be mobilized with varying effectiveness at three levels: surface, deep, and transfer. Further, by shifting focus to include the appropriate phase of learning, instruction can be fine-tuned even more. Realizing the potential of applying these insights to literacy learning led to *Visible Learning for Literacy* (Fisher, Frey, & Hattie, 2016). The authors explain why Visible Learning is important in the literacy classroom:

1. Literacy is among the major antidotes for poverty.
2. Literacy makes your life better.
3. Literate people have more choices in their work and personal lives, leading to greater freedom.
4. Literacy is great at teaching you how to think successively—that is, making meaning one step at a time to then build a story.
5. Literacy soon becomes the currency of other learning.

Effect Sizes

Effect sizes are provided for each literacy practice that predicts its promise and potential. Because "virtually everything we do in education works" (Hattie, 2012, 2), Hattie created a "hinge point." When practices that

John Hattie's research, published in his books *Visible Learning* (2009) and *Visible Learning for Teachers* (2012), provides the foundation for how those findings apply to literacy learning.

The syntheses of meta-analyses conducted by researchers from around the world included 50,000 individual studies and over 250 million students.

Since the publication of these two books, even more studies have been added that further refine and enhance the selection of which instructional practices work.

The importance of these data lies in the patterns that emerge and offers insights about practices that work.

influence student performance are above 0.40 (the average), those practices are predicted to have a greater positive effect and "to extend learning beyond what is expected from attending school for a year" (Fisher, Frey, & Hattie, 2016, 10). Of the 150 variables Hattie discovered, "on the top of the list, with an effect size of 0.90, is teacher credibility" (Fisher et al, 2016, 11), which includes a mixture of factors including trust and competence. Other notable effect sizes included teacher-student relationships and teacher expectations. One of the important aspects of teacher communication is the way in which literacy learning is enhanced through teacher clarity about the learning and the expectations.

General Learning Principles

In applying the findings of Visible Learning to literacy, three aspects of learning are particularly noteworthy: challenge, self-efficacy, and learning intentions with success criteria. These global factors should be considered in every learning context.

The first, **challenge,** relates to making a task. The key to striking a balance between too easy and frustrating is dependent on the teacher's awareness of students' need for surface-, deep-, or transfer-type work (Fisher et al, 2016). There are a variety of ways to do that. First, by increasing student-to-student interaction and giving opportunities to work collaboratively, students are more likely to learn deeply. Feedback that focuses on substantive changes also creates and maintains challenge. Further, clarity about the difference in challenge versus complexity informs instructional decisions, particularly those concerning level of difficulty and complexity required of students. This is illustrated in a case study (Corwin, 2015) of the Valley View School District, Illinois, when teachers and leaders began viewing themselves as evaluators of their impact. Student assessment results were viewed as feedback for the district staff and educators shifted to becoming change agents by focusing on solutions instead of dwelling on challenges. In fact, Hattie found that

> ❝*giving feedback (effect size .75) is in the top ten influences on achievement and creates a substantial impact on student learning.*❞

In applying the findings of visible learning to literacy, three aspects of learning are particularly noteworthy: challenge, self-efficacy, and learning intentions with success criteria.

The first, challenge, relates to making a task. The second global consideration of learning, self-efficacy, relates to "the confidence or strength of belief that we have in ourselves that we can make our learning happen" (Hattie, 2012, 45). The third and final global aspect, learning intentions with success criteria, relates to being explicit so that students understand the nature of their learning, and the expectations necessary for success.

The second global consideration of learning, **self-efficacy,** relates to "the confidence or strength of belief that we have in ourselves that we can make our learning happen" (Hattie, 2012, 45). Students who possess high self-efficacy engage in complex tasks rather than avoiding them, experience failure as an opportunity for learning, and recover quickly in the face of setbacks. This contrasts with students with low self-efficacy, who avoid complex tasks, struggle with maintaining goal commitment and recovering from setbacks, and view failure as a personal deficit. By using research-based practices, teachers can change students' agency and their identity by fostering a belief that they have the potential to make learning happen (Hattie, 2012).
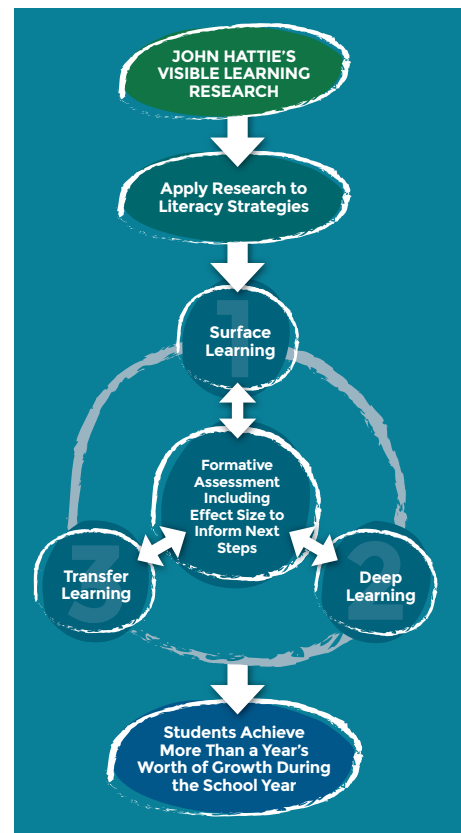
The third and final global aspect, **learning intentions with success criteria,** relates to being explicit so that students understand the nature of their learning, the expectations, and the expectations necessary for success. Students should be able to answer three questions in all learning experiences:

1. What am I learning today?

2. Why am I learning this?

3. How will I know that I learned it? (Fisher et al, 2016, 27)

Students must have clarity about answering these three questions; it is a pivotal principle in student achievement. In fact, students can participate in establishing the success criteria and the learning intentions. When students are involved, it increases the opportunities for self-assessment and enhances their progress toward reaching the desired goal. In a recent case study of Ka'miloa Elementary School in Hawaii, where the staff received professional development about embedding these global aspects into the culture of their school, they have noted positive changes in how students respond to challenges and use feedback, further demonstrating their robustness (Corwin, 2016).

Three-Phase Model: Levels of Learning and Literacy Instruction

Learning is a process. The ultimate goal of learning is transfer. Thus, with appropriate instruction about how to relate and extend ideas through carefully crafted instruction, learners move from surface learning to deep understanding and then to transfer, where they are able to apply their knowledge, skills, and strategies to new tasks and new situations (Fisher et al, 2016).

JOHN HATTIE'S VISIBLE LEARNING RESEARCH

Apply Research to Literacy Strategies

Surface Learning 1

Formative Assessment Including Effect Size to Inform Next Steps

Transfer Learning 3

Deep Learning 2

Students Achieve More Than a Year's Worth of Growth During the School Year

When students reach the goal of transfer, learning has occurred. The impact of these principles of practice lies in the understanding teachers have of them and the time and skillfulness with which they apply them. As the cliché goes, "timing is everything." That certainly applies to the concepts of surface, deep, and transfer learning.

Surface Learning

Surface learning is foundational and has two subphases: acquisition and consolidation. Hattie (2012) posits acquisition helps learners summarize and outline the topic—an understanding where Ausabel (1978) maintained that general ideas or "key landmarks" (Fisher et al, 2016) should be presented first and then progressively differentiated in terms of detail and specificity. The idea here is that the subphase of acquisition includes practices that have effect sizes worthy of noting: leveraging prior knowledge, phonics and direct instruction, vocabulary instruction, and reading comprehension in context.

Prior knowledge includes everything the student knows as a building block for what the student will learn. Knowing what a student brings to reading and ensuring students know what to do with that knowledge is key (Fisher & Frey, 2009). Ausbel's (1978) notion of advanced organizers in the form of anticipation provides students with ways to anticipate the learning ahead and prepare strategically to integrate it into their background knowledge.

Effective **reading instruction** includes a variety of facets, and "reading" includes the integration of all of them. Rather than making each an end unto itself, Scott Paris (2005) redefined how we view and note differences in those facets. He described them as "constrained" and "unconstrained." The constrained skills are those that are often learned quickly and have boundaries and limits (i.e., sounds, letters, and letter combinations). While decoding is essential to reading, once mastered, the reader must move to the unconstrained skills of vocabulary and comprehension.

In a similar way, **direct instruction** applies broadly to the key elements that make up designing effective lessons: planning to communicate learning intentions, identifying success criteria, presentation of the lesson using modeling and demonstration, effectively closing the lesson, and identifying in what learning students will engage in to apply new learning. When used for lesson planning, this framework supports the planning instruction that "shows" rather than simply "tells."

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Both feedback and collaborative learning are key ways to orchestrate student success and consolidate learning.

Unlike alphabet knowledge, vocabulary is unconstrained; it is related to a wide range of academic skills throughout life. Strong **vocabulary instruction** has an impressive effect size when taught for both depth and range of words. Practices that grow vocabulary knowledge include five dimensions (Cronbach, 1942, cited in Graves, 1986): generalizability, application through correct use, breadth through recall of words, precision of understanding, and availability to include words in discussion. While no one could approach teaching the number of words students need to know, there are some approaches and instructional principles (Beck, McKeown, & Kucan, 2013) to vocabulary learning that yield results for students. The practice that continues to show robust results is wide reading, which continues to present unique opportunities to encounter a vast number of words, and because the words are in context, word learning is enhanced.

Reading comprehension is achieved when learners integrate a variety of strategies. One of those is summarizing, which has been characterized as the art of deletion. Knowing how to sift and sort information is critical to overall reading comprehension. Being able to summarize within the reading process and construct summaries after reading allows learners to integrate learning. Often it is in writing the learner addresses E. M. Forster's question, "How do I know what I think until I see what I say?"

One of the ways readers sift and sort is through the practice of annotating texts, leaving behind a kind of roadmap of key ideas. A second practice that improves comprehension is note-taking. A variety of procedural practices exist, including the Cornell method (Pauk & Owens, 2010).

> ❝*The effect size of annotating (effect size .63) and note-taking (effect size .59) are impressive.*❞

Because both practices require learners to be both engaged and intentional, they increase the potential for developing metacognitive strategies.

Before moving to deep learning, it is important to mention both feedback and collaborative learning again as key ways to orchestrate student success. **Feedback** plays a particularly important role in creating the context for moving to deeper learning. With an effect size of .75, it is the dimensions of feedback that cause its robustness: timely, specific about what to do next, understandable and useful to the learner, and actionable on the part of the learner.

Collaborative learning plays a key role in surface learning as students use language to gain control of learning. Classroom conversation, when dialogic rather than monologic (Bakhtin, 1981), results in creating understanding. Dialogic talk promotes communication and helps build meaning collaboratively. The goal is moving away from the typical classroom discourse pattern of I-R-E that Cazden (1988) described: teacher initiates, the learner responds, the teacher evaluates.

Deep Learning

Again, timing is everything. Too often, teachers are faced with rigid pacing charts and mandates about "covering the curriculum." **Deep learning is characterized by adequate time for high engagement where learners approach learning, tapping into a reservoir of tools.** These tools help students make the shift from the presentation of knowledge to actively pursuing knowledge.

Just as in surface learning, deep learning is divided into two periods: deep acquisition and deep consolidation. While surface learning places the learner in the role of acquiring strategic behaviors and tools, deep knowledge is characterized by a learner's self-regulation and self-talk that moves the learner into increasingly more sophisticated applications of learning.

The goal of deep acquisition of literacy learning is for students to assimilate learning and integrate it with existing knowledge. In some ways, this move is characterized by the "progression of moving from effortful and deliberate to automatic use of specific actions" (Afflerbach, Pearson, & Paris, 2008, 237). This shift occurs when students effortlessly and automatically dip into their toolkit of strategies or deliberately know next steps when they meet obstacles. Expert teachers know how to facilitate and move students from surface to deep learning by the scaffolds they provide and the assignments they create for students versus those of less effective teachers. Four features characterize these kinds of assignments: alignment with the Common Core, centrality of text, cognitive challenge, and motivation and engagement. Practices that foster assimilation include active engagement through reading, writing, speaking, and listening. Concept mapping, discussions, and inquiry all play a role in nurturing deep learning.

Concept mapping and use of other graphic organizers have impressive effect sizes because they assist students in seeing relationships between and among ideas. These organizers not only help students activate prior knowledge, but they also support learners in relating the new material to the previously stored information or existing schema (Anderson & Pearson, 1984). The key to the efficacy of graphic organizers is timing and engagement.

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The consolidation phase of deep learning occurs when learners apply the tools and the metacognitive practices of thinking about and reflecting on one's learning in action (Flavell, 1979) and self-regulating their performance.

In a study by Moore and Readence (1984), the graphic organizers prepared in advance by teachers had little impact. However, when students constructed them after reading, students processed information differently. Like the use of concept mapping and graphic organizers, the use of **discussion** and **questioning** creates a rich classroom milieu that supports and extends students' learning.

When teachers provide the ground rules and expectations to fuel discussion, student engagement shifts as they control the exchange of ideas and even discussion of the differences. As students engage in authentic discussion, deep learning is more likely to occur because authentic talk mediates learning (Vygotsky, 1986/1994).

The **questioning routines** teachers use, and their timing, play a key role in student learning. While questions that allow learners to tap literal-level understandings are helpful in wrestling with a complex text initially, inferential questions deepen understanding. Four phases of questions provide a scaffolding ladder (Fisher, Frey, Anderson, & Thayre, 2015):

- What does the text say? (Literal)

- How does the text work? (Structural)

- What does the text mean? (Inferential)

- What does the text inspire you to do? (Interpretive)

These four phases of questioning provide the seamless segue into a discussion of the practice of close reading. **Close reading** is an instructional technique for studying a short text excerpt to determine its inferential meaning.

> **❝Within close reading, students engage in several key practices that yield high effect sizes: repeated reading (effect size .67) and the application of study skills (effect size .63).❞**

In repeated reading, students build understanding of the text. As they annotate to hold thinking, they identify memorable parts of the text. As the teacher guides discussion, students further analyze the text through questioning. Finally, students engage in and extend discussion with guidance from the teacher. All this creates a frame in which students move from literal (what the text says) to interpretive understanding (what the text inspires the reader to do). There are two dimensions to consider in moving into consolidation of deep learning: the degree of teacher control versus students' control (Wilkinson & Reninger, 2005).

The consolidation phase of deep learning occurs when learners apply the tools and the metacognitive practices of thinking about and reflecting on one's learning in action (Flavell, 1979) and self-regulating their performance. The effect size for metacognitive strategies is impressive, in part, because they support students in planning, monitoring comprehension, and evaluating their progress. Palinscar (2013) describes the metacognitive awareness in three parts:

1. Knowing about our learning selves.

2. An understanding of what the task demands and necessary strategies to complete it.

3. The means to monitor learning and self-regulate.

A particularly useful strategy, and one with a robust effect size, is that of self-questioning. It is particularly worthwhile and critical to learning since it functions as a monitoring strategy, governing sense-making and comprehension. The repertoire of reciprocal teaching (Palincsar & Brown, 1984) incorporates many of those strategies necessary in surface learning, but its structured routine of summarizing, questioning, clarifying, and predicting make it useful as a student practice in deep learning. During this phase of learning, as in others, feedback plays an important role. As learners move from teacher-led to self-regulatory performance, feedback that is timely, specific, understandable, and actionable is essential. Carol Dweck (2006) has written extensively about the difference between praise and feedback. Students with fixed mindsets seek praise. Those with dynamic mindsets desire feedback that helps learners see a relationship between success and their actions. Feedback is one of the ways we make learning visible to learners.

Transfer Learning

Transfer is both a goal and a means for driving learning. As students deepen learning, they begin to become self-determining learners. **In Visible Learning, transfer learning is when the learner recognizes what has occurred in the learning.** In "near transfer," the learner is able to apply learning in a similar, but novel situation. The learner recognizes previous learning in the new situation. "Far transfer" occurs when the student sees connections between a more distant situation and the current task.

For example, learners first understand a concept or skill to use it, and they need three types of knowledge—declarative (what), procedural (how), and conditional (when)—for transfer to occur (Fisher & Frey, 2009). In planning instruction, expert teachers consider not only where learners are but also where they will be.

It shouldn't be surprising to know educators can create conditions that nurture and foster the transfer of learning. Meaningfulness or relevancy is one of those ways. When learners see the goal of learning as relevant in their own lives, they are motivated to not only engage in the task and transfer learning to the new situation, but they are also capable of monitoring and assessing their progress. Conversely, when learning is never applied or put into practice, the potential for transfer diminishes. In transfer, the learner must know how the previous learning applies, asking how the new example or problem is similar to and/or different from others (Bransford et al., 2000). The creation of analogies or metaphors is one of the ways learners create transfer. Making comparisons provides the additional schema or anchor needed for transfer—likening one idea or concept to another that may be more familiar.

Other ways include peer tutoring that is structured carefully to benefit both learners. Another is making intertextual connections by reading across multiple texts or documents. These readings yield not only a deeper understanding, but they also may reveal disparity. Problem-based learning affords opportunities for students to grow as learners. Though ample surface knowledge is necessary, teachers who confront learners with problem-posing offer authentic opportunities for students to think for themselves. Beers and Probst (2017) report that when they surveyed

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And just as in the other phases of learning, ample time, feedback, and teacher clarity play important roles in the transfer phase.

students about concerns and real-world problems, students' responses revealed strong possibilities for classroom curriculum. Every concern the students mentioned linked to interesting and relevant reading, writing, and talking to undertake. And just as in the other phases of learning, inviting students to engage by using the language arts is essential. Just as before, ample time, feedback, and teacher clarity play important roles in this phase.

Determining Impact

Teachers find pleasure when their lessons go well and the students are engaged. However, effective teachers don't stop there; they seek to know if the desired impact of instruction has been achieved. By calculating effect sizes, teachers see the positive impact on student learning, and that builds teacher efficacy. As a result, teachers grow more skilled at planning and organizing, exhibit openness to new ideas, are persistent and resilient when obstacles occur, are less critical of student errors, and are less inclined to refer difficult students to special education (Protheroe, 2008).

> ❝The culture that is created becomes one of collective efficacy (effect size 1.57) where teachers collaborate to increase instructional effectiveness for all students.❞

Success breeds efficacy and the impressive effect sizes for collaboration contribute to the overall culture of success. The potential for success at the classroom level becomes a reality when the conditions discussed earlier are present:

1. Lessons have clear learning intentions.

2. Lessons have success criteria.

3. The success criteria indicate and define quality.

4. Students know where they stand in relation to the criteria for success.

To determine impact and evaluate progress, key steps are taken. The first is to gather baseline data through pre-assessment. When teachers know what students can do at the beginning of a unit of study, they can measure the effect of instruction on student learning. Pre-assessment offers teachers insights about where to begin instruction for a specific group of learners. Thus, it is far different than relying on and following rigid pacing guides.

Effective teachers determine the impact of their instruction on student learning. To determine impact and evaluate progress, key steps are taken.

The first step is to gather baseline data through pre-assessment. Next steps are determined based on understanding the impact of instruction on student learning whether for the whole class, small groups, or individual students.

As educators continuously monitor student progress, they accrue a growing refinement of what works. Re-administering the outcome measure as post-assessment helps teachers determine the effect size of particular practices.

In the same way, teachers who re-administer the outcome measure as a post-assessment glean an effect size using a formula. This understanding of the impact of instruction on student learning leads to next steps, particularly when the outcome is less desirable. Since teaching is about monitoring and making necessary adjustments, the information that informs the response is key to the eventual success for all students.

The evidence and effect size for response to intervention is significant. To be effective, however, initial screening data is critical. Once the initial data is gathered, the staff determines an appropriate intervention and how it will be administered. Again, the substantial effect sizes for teacher-student relationship, acceleration, and direct instruction offer guidance into the planning and insights about what works. Perhaps the most substantial way educators can affect student performance is through high-quality core instruction. Marie Clay (2015) referred to this initial instruction as good first teaching. Too often, interventions address lapses in the quality of initial instruction.

As learners engage in Response to Intervention (RTI), tools are used to measure and monitor progress toward the desired goals. As educators monitor student progress, they accrue a growing refinement of what works. As in all the other areas discussed, Hattie's analyses offer clear research and evidence in effect sizes to guide teachers about what does and doesn't work.

Leading the list of the "what doesn't work" list is grade-level retention. This practice, though too frequently used, is not only undesirable—it has a reverse effect on student achievement. Rather, when teachers provide supplemental and intensive interventions in a timely way throughout the school year, acceleration in student learning occurs, and there is no need to consider retention.

Another common practice that yields adverse effects is ability grouping.

> **❝What does work is flexible, "needs-based" groupings (effect size .49) as a responsive way to differentiate according to learners' unique needs. ❞**

In contrast to grouping that separates and labels, it provides support that focuses on students' needs at a particular time. Groups are therefore not permanent but change day to day depending on students' needs. There are other practices—matching learning styles, test prep, and homework—that are ubiquitous and yet have no supporting evidence.

As teachers grow more aware of the potential power of some practices, student learning increases. Empowering educators with this knowledge is the purpose for Visible Learning in literacy. Arming teachers with clear and potent data about what works is not only good for teachers, but it also ensures students will have access to the highest quality instruction. Teachers do matter and what and how they teach matters. By offering them the best possible information to apply in their teaching, the possibilities for students are limitless.

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