

The Era of Reform: The Age of Contestation and Debate

Educational reform has often placed literacy at the center of both educational improvement efforts and even political movements. Broadly, educational reform has been embedded in and across debates over ideology, nationhood, public education, standards and accountability, and civil rights (operationalized as equity along ethnic, racial and gender lines). In terms of literacy, reform has formed the center of debates on a whole range of issues (the content or canon of topics and texts that should be read, censorship, and curriculum versus child centered teaching methods), but they all pale in comparison to the optimal way to teach beginning reading, especially as they relate to the role and nature of phonics instruction, and. Reading reform has also served as the epicenter of interventions related to supporting special needs students and students from diverse backgrounds, espousing what has been deemed as “best practice” informed by “science” for students at the bottom of the achievement distribution. In the mid-1990s in particular, it took center stage in the worldwide educational theater of developments that saw a number of debates erupting—many of which involved unresolved issues from prior decades associated with the fervent interests and strong views of parents, educators, and ideological reformers.

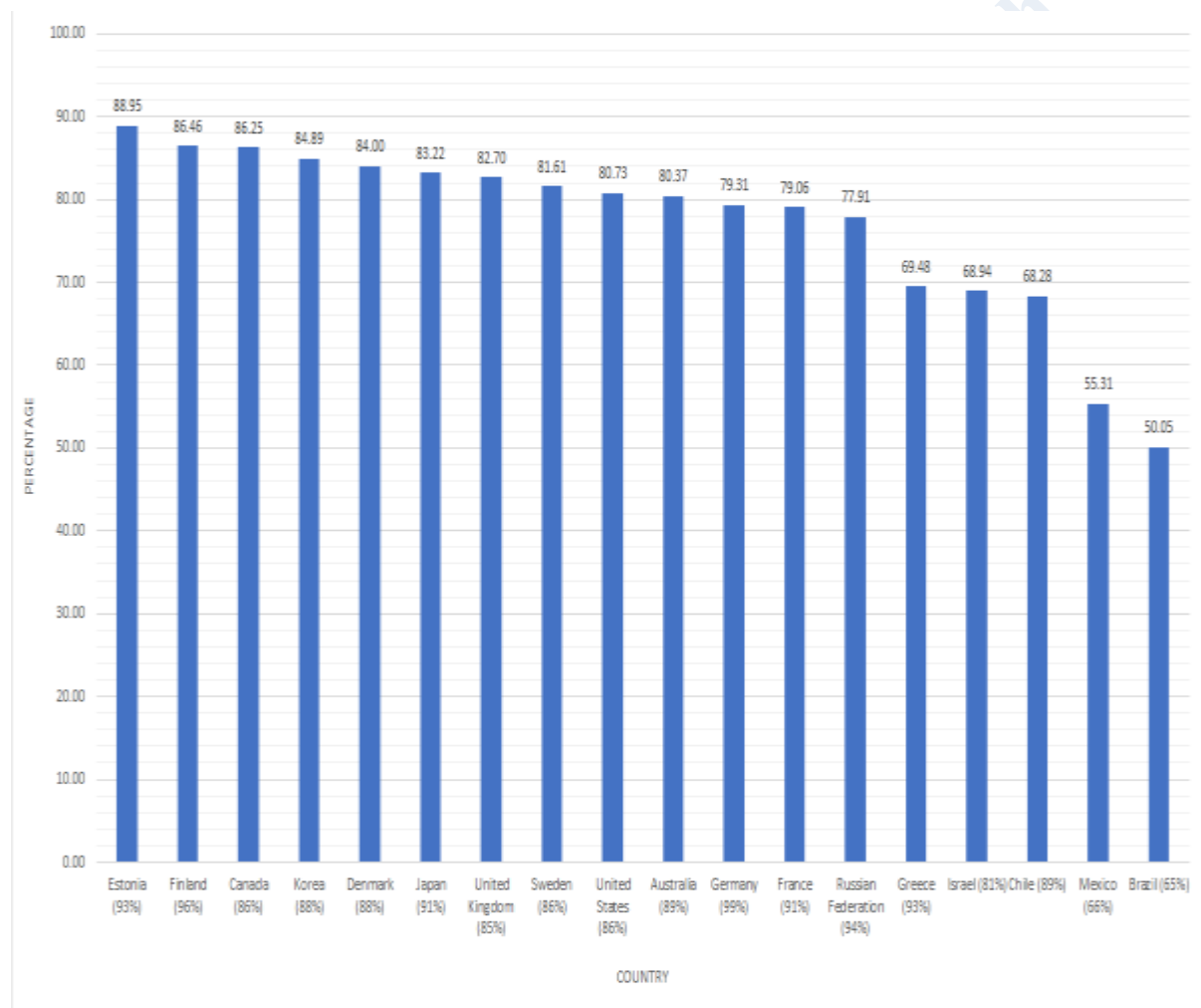
Broad Issues of Educational Development for Society: Addressing Inequities

At one level, the issues of educational development and reform are tied to broader issues of educational achievement and the benchmarking of performance and educational investments. It has become commonplace for international comparisons to spur national ambitions for educational improvement. For example, periodic international assessments of achievement are offered in conjunction with the Program for International Student Assessment (PISA)—an international assessment under the auspices of the Organization for Economic Co-operation and Development (OECD) that measures 15-year-old students’ reading, mathematics, and science literacy every three years. Figure III.7b.1 includes a subsample of the 2018 results, revealing the percentage of 15-years-olds at Level 2. Established as the baseline level of scientific literacy, Level 2 defines the level of achievement on the PISA scale at which students begin to demonstrate the scientific knowledge and skills that will enable them to participate actively in life situations related to science and technology. As you can discern, most developed countries are above the OECD

average; consequently, concerns over the ranking of the United States as compared to other countries has motivated reform. Additional PISA data compare students in terms of a range of diversity indices as well as the circumstances of schooling (hours of instruction, class size, teacher qualifications etc.) (Schleicher & OECD, 2019).

Figure III.7b.1.

Percentage of 15-year-old Students at Level 2 or Above in the PISA Reading Assessment, 2018

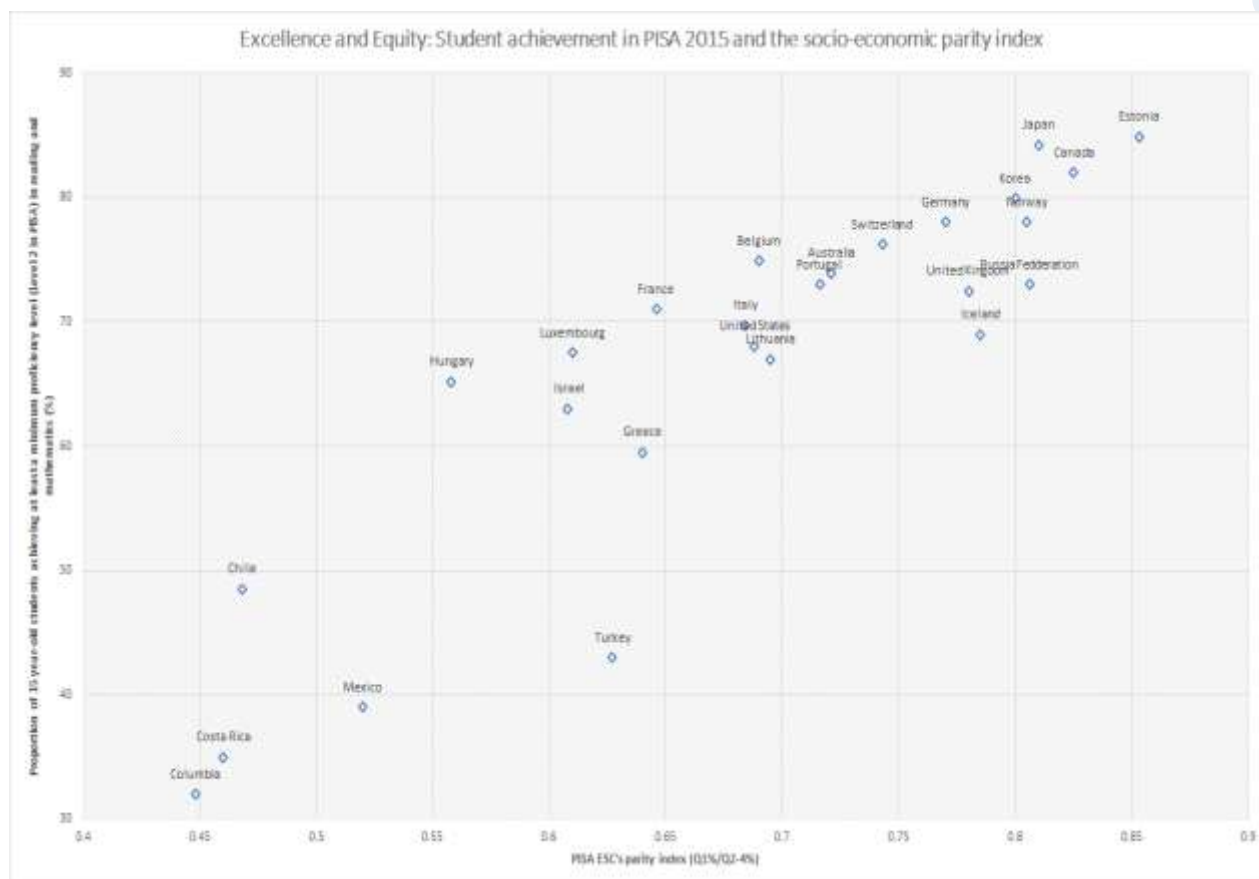


(Source: Schleicher & OECD, 2019)

In many countries, poverty and location are intertwined with matters of educational performance. In the age of global and national audits, the circumstances and performances of various groups are also mapped by location, background, and educational investment. The

data (see Figure III.7b.2) revealed that, to a large extent, achievement coincides with investment.

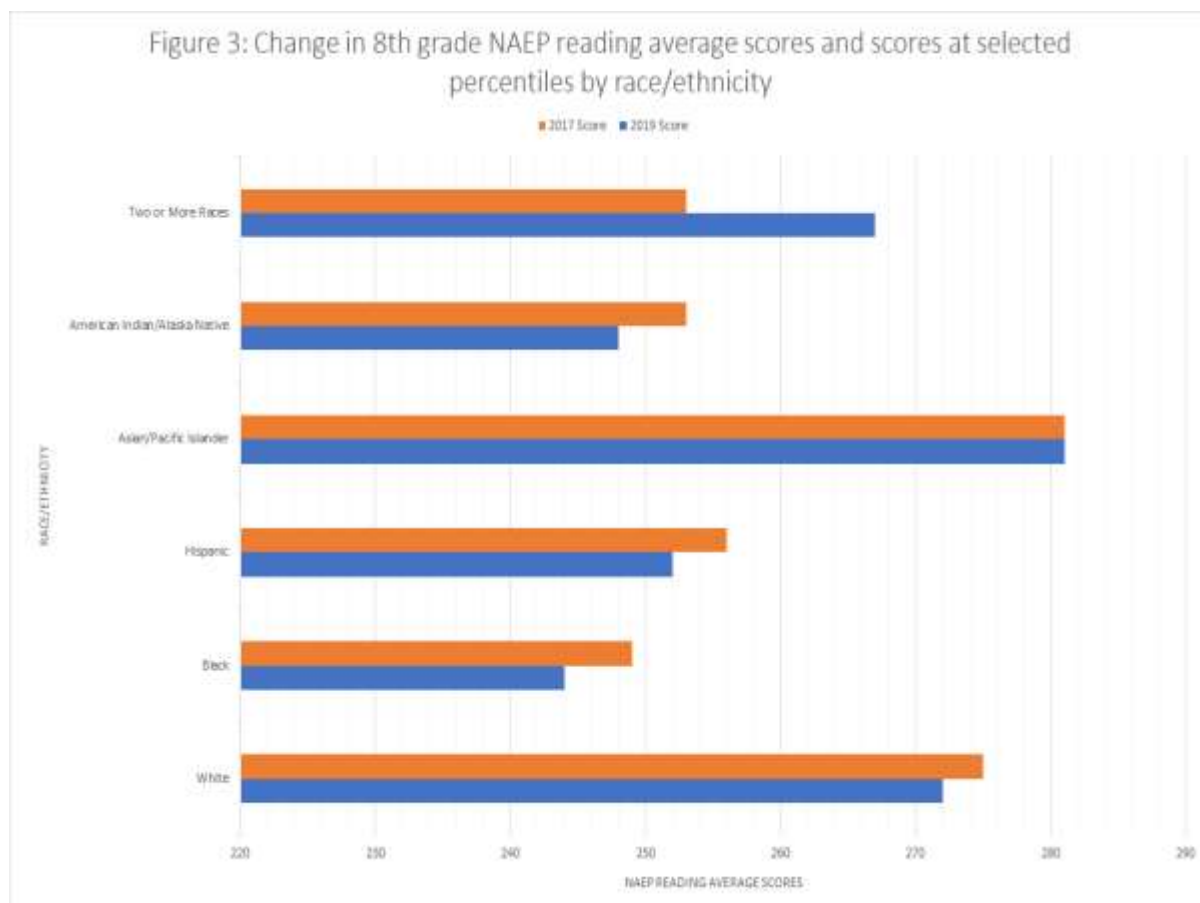
Figure III.7b.2



(Source: Schleicher & OECD, 2019)

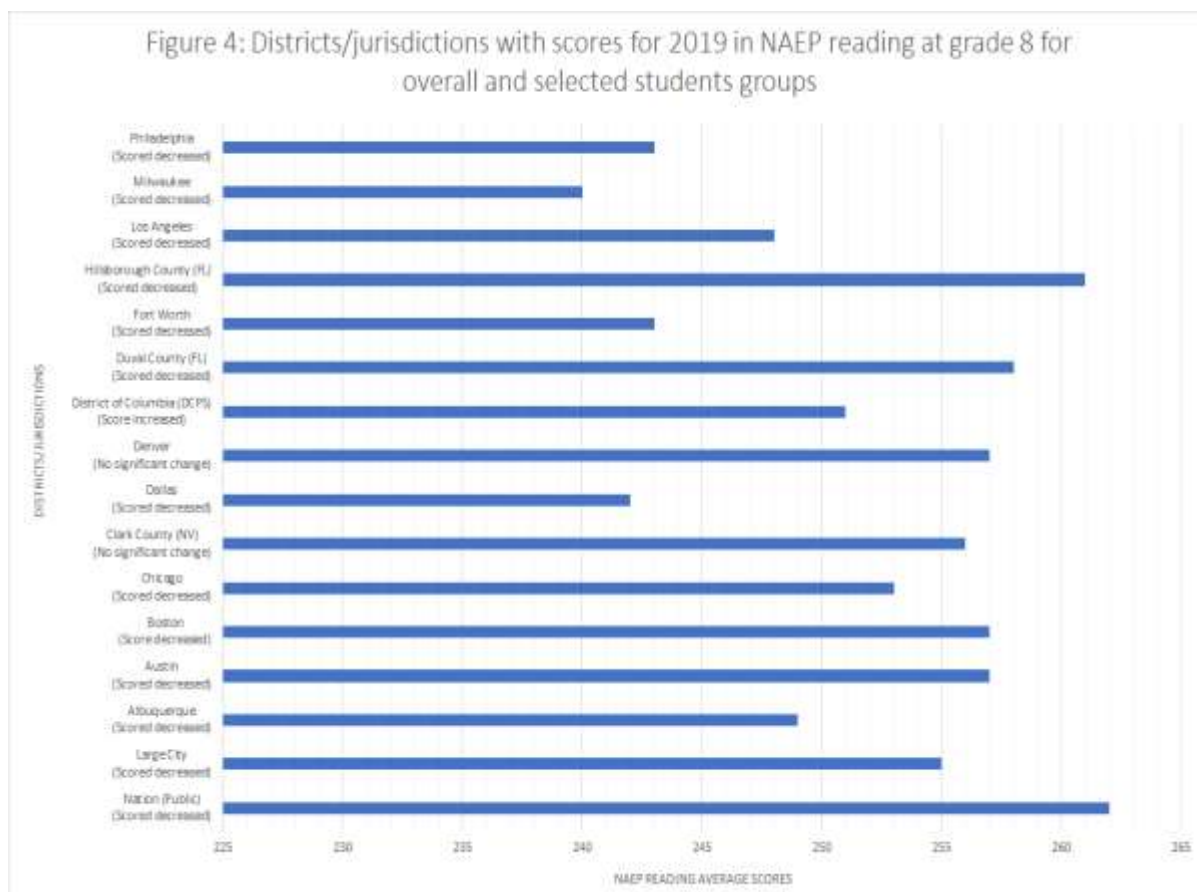
The performance of schools on PISA are highly correlated with economic investment in education in those countries. Further, they follow the same trend when these data are examined within countries by ethnicity, socio-economic circumstances or location. Examinations of the national assessment of reading performance, such as the National Assessment of Educational Progress in the United States (National Assessment of Educational Progress, 2019), reveals the same pattern of reading performance by different groups in different locations (see Figure III.7b.3 and Figure III.7b.4).

Figure III.7b.3



(Source: National Assessment of Educational Progress, 2019)

Figure III.7b.4



(Source: National Assessment of Educational Progress, 2019)

Predictably, lower performing schools tend to be located in economically struggling communities that may be remote or rural. Unfortunately, as the rich get richer, these schools often receive less funding. Take if you will Milwaukee schools, where African American students in poorer economic circumstances tend to perform poorly and receive less funding per student than their wealthier counterparts in the suburbs within the same school district. This trend is also apparent in data from throughout Asia, especially those dealing with massive populations spread across urban and remote areas such as China, Indonesia and India.

The Reform Debate: A focus on teachers, curriculum, testing, and accountability

While there is considerable debate about funding, it does seem that policy makers tend to deflect the solution to matters regarding the quality of teaching, curriculum, and accountability. In Australia, for instance, the *Review of Funding for Schooling—Final Report* (or Gonski Review Report; see Gonski, 2011; Senate Select Committee on School Funding,

2014) recommendations tried to address the huge disparities in funding received by schools. The debate centered on a number of issues around curriculum, testing, and research paradigms, which resulted in major effects on literacy teaching and literacy-related research.

In the curriculum area, these included:

- The resurfacing of age-old debates around the best approach to teaching reading. Essentially, this amounted to a debate between approaches that were tied to either a whole language philosophy or a phonics orientation.
- Debates tied to empowerment over “process writing” approaches, as advocated by Donald Graves and the National Writing Project, and a “Genre approach” (with origins in Australia).

In the area of testing, these prompted discussions related to:

- Matters of accountability and student advancement and advocacy—concerns over which resulted in the propagation of national and state examinations. Such examinations included audits of student progress across the grades and put forward the possibility of student retention.
- The merits of authentic, more informal classroom-based and learner-centered assessments, such as formative assessment and portfolios.
- The politics of a national testing tied to assumptions such as unidimensional Item Response Theory and culture-free testing.

Research discussions were perhaps the most perplexing, eliciting entrenched views tied to positivism rather than debate and the possibility of complementary consideration. In other words, there was a politicized shift from multiple research paradigms to an arbitrary (and, in some countries, politically-favored and legislated) establishment of quantitative studies enlisting randomized trial comparisons. These became the gold standard of what was needed to define the merits of educational endeavors or reading approaches and to limit the research funding. The advancement of the bias toward quantitative studies enlisting randomized comparisons views sidelined the energetic and diverse engagement of qualitative and critical approaches or formative research, which had fueled teacher-researcher engagements. Such views also shifted pedagogy away from situated and formative models to those that were prescribed and often scripted. At the same time, they vied to displace local and state-wide

curricula in the pursuit of a national curricula informed by notions of “best practice” (as identified in studies that passed muster as experimental).

Furthermore, select groups engineered and profited from these developments for their own advantage. These included special educators and psychologists who assumed a prominent role in advocating and deciding reading pedagogy and research directions. In most countries, to secure their students futures (see Kohn, 1998), historically privileged parents were also keen to ensure that the interests of their children would not suffer. To this end, tougher standards and tests were seen by some as necessary to stem the rising tide of widening educational access. (Ellwein, Glass & Smith, 1988; Shephard, Hannaway & Baker, 2009; Tucker & Coddling, 2002). Those in the literacy research community who aligned with certain uncontested developments likewise flourished and profited, while others were made to suffer and were sidelined. As some developments (e.g., digital) proceeded, those that were apt to be contested went underground. Indeed, in the U.S., some of these practices later became the site of an Inspector General investigation, which exposed the biases and deliberate exclusionary practices of the office of the U.S. Secretary of Education (Centre for Education Evaluation and Regional Assistance, 2008; Office of the Inspector General, 2006).

During this period of imposition, a great deal of focus was placed upon teachers and their qualifications, including the alignment of teacher education preparation with the doctrine of best practice (Walsh, Glaser, & Wilcox, 2006). University teacher education programs were subjected to scrutiny and evaluation, even as funding was sought for alternatives that avoided university preparation—such as Teach for America, Australia, and China. Practicing teachers also faced shifting expectations, as they were threatened with termination depending upon their performance. The notion and measurement of “value added,” using students’ test performance as evidence, was introduced as a means of evaluating a teacher’s effectiveness and as a basis for salary incentives and teacher retention. Likewise, schools and school districts were identified as successful or failing by league tables and rankings for public consumption, and perhaps school closings or take-over.

The impacts of these shifts upon schooling were predictable. Testing assumed a high-stakes profile, which perpetuated more intensive and extensive teaching for the test and a privileging of some students over others. A rhetoric around the “achievement gap” replaced learning opportunities and diversity. In turn, students, schools, and teachers were deemed as failing rather than the system itself.

In parallel with these developments was a neoliberal agenda arguing for school choice and ways by which the private sector could enhance the investment in education for children

from economically advantaged circumstances. Worldwide, we began seeing a growth in private schools, parents enlisting their resources to supplement support for their children (e.g., tutoring; in Canada, Australia, and China, a very large percentage of high school students receive out-of-school tutoring support). Perhaps predictably, the end result was a shift from a focus on diversity to one on the achievement gap—especially as we witnessed growing inequities in education in different countries for select groups, including those of low-income in rural and urban areas, Indigenous populations, and select recent migrant groups. At times the system has been subjected to questioning with regards to the widening achievement gap, but more often these select groups—while encountering issues of underfunding—are scrutinized and questioned for their failures.

A Look at the Systems in Play

Dealing with school reform requires dealing with the frameworks that undergird the reform as well as engaging in a form of political campaigning—often employing rhetorical ploys to persuade the public on the merits of an initiative. The reform efforts may be deemed legally valid and legitimate by a consultative process that informs the public as the initiatives proceed. Criticisms may at times be stemmed by selecting people of certain persuasions to support developments and by cutting off funding or other support for groups that do not comply with the proposed reform (i.e., those who might tout, pursue or advocate for alternatives). Local resistance may be tempered into compliance with such threats to cut funding.

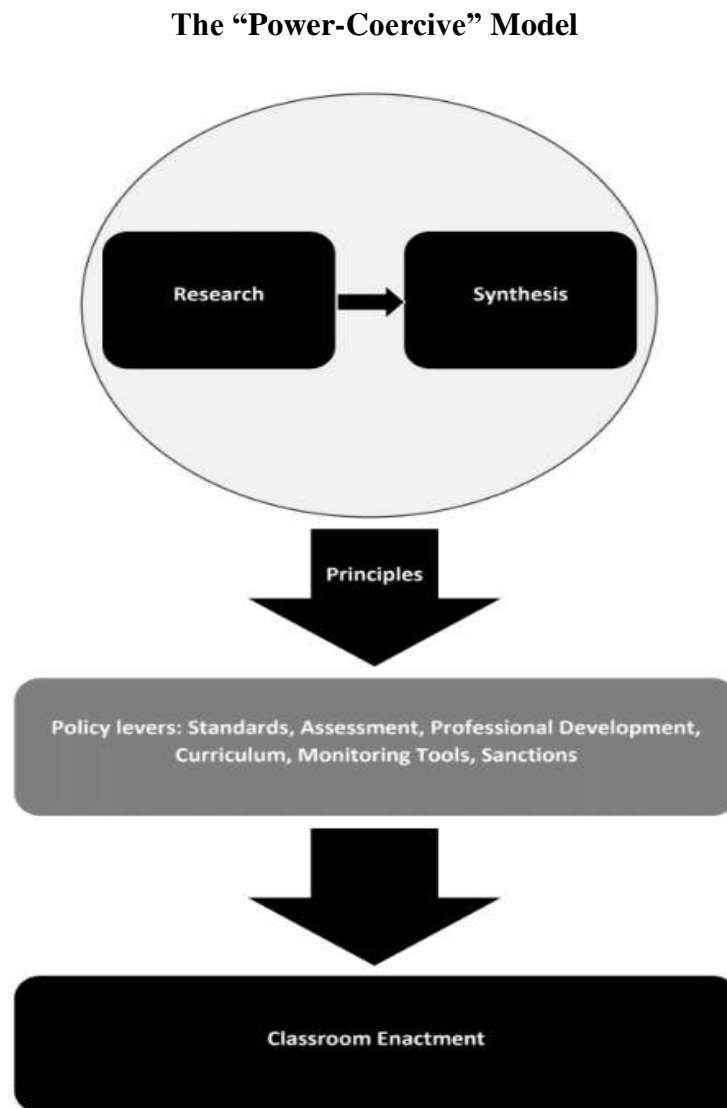
In a historical analysis of these relationships, Pearson (2007) described the model undergirding this period of reform as a “power-coercive” model:

[The power coercive model] entails a number of practices with which we have become all too familiar in recent years. We coerce people to change when we use laws, court rulings, and legislative or executive mandates as our primary policy levers. Accountability systems may or may not belong in the power-coercive category. I think it depends on whether such systems offer any choice and adaptability in the way that educators are expected to use the key policy levers in those systems: assessments, standards, criteria for selecting materials and/or professional development providers. If there is little or no adaptability, then users end up in a closed system with few degrees of freedom in shaping a local implementation; in this case, the system has, for all practical purposes, the force of mandate. If, on the other

hand, there are options in the manner in which these key policy levers can be adapted to the local context, the system can have the look and feel of the learning communities typical of the normative-reeducative approach. (pp. 15–16)

Visually, Pearson depicted the research approach in the following manner (Figure III.7b.5):

Figure III.7b.5.



(Source: Pearson, 2007)

As Pearson summarized:

Scientific research is the driver of the system and the basis on which we establish standards for curriculum, assessment, and professional development activities. Then

monitoring tools (to ensure fidelity in standards-based reform) and sanctions (to motivate schools and teachers to higher achievement and stricter adherence to reforms) are added to keep the system moving. (pp. 23–24)

In more specific terms, he suggested that the reform undertaken in recent years in the U.S. was aligned with this model. For instance, Pearson described the events that coincided with the No Child Left Behind Act of 2001 (NCLB, 2002), in the following terms:

Sometime in the mid to late 1990s, a new force and a new paradigm began to take shape. It was first visible in a new discourse stimulated by research supported by the National Institute for Child Health and Human Development. We began to see and hear a “new” brand of experimental work that had been quietly but steadily gathering momentum for over a decade (Lyon & Chhaba, 1996). This was experimentalism reborn from the 1950s and 60s, with great emphasis placed upon “reliable, replicable research,” large samples, random assignment of treatments to teachers and/or schools, and “tried and true” outcome measures. Its aegis was in the experimental rhetoric of science and medicine and in the laboratory research that was so prominent in those earlier periods. Although the reading education community did not broadly accept this effort, it found a very sympathetic ear in the public policy arena.

Research synthesis as a new policy tool. This new research paradigm became officially codified by the appearance, in rapid succession, of two research syntheses—the publication of the report of the National Academy of Science’s Committee on Preventing Reading Difficulties (PRD) (Snow, Burns, & Griffith, 1998) and the report of the National Reading Panel (NRP) (2000). The PRD report was conducted in the tradition of “best evidence” syntheses: well established scholars meet, decide on the issues, the domain of relevant research, and some subdivision of labor, do the work, write up the results, and turn the manuscript over to a set of editors to bring some synthetic clarity to the entire effort. As such, it considered a range of studies conducted within very different research traditions using very different research methods. The result was a strong plea for a balanced view of reading instruction, but with a special nod to phonemic awareness and phonics first and fast.

Authorized by congressional mandate, the National Reading Panel report used what they considered to be the most “scientific” review approaches (i.e., meta-analysis, at least wherever they could) available to them to distill from existing research what is known about the efficacy of teaching phonemic awareness, phonics,

fluency (instantiated as either guided reading instruction or independent reading), comprehension, and vocabulary; additionally, they investigated the status of the research base on teacher education and professional development and attempted to review research on technology and literacy. (pp. 21–22)

As Pearson detailed, a key precursor to the reform effort was a narrowing of the definition of scientific research to studies enlisting randomization trials only. This narrowed definition was part of coordinated attempts to shift the focus in beginning reading toward direct instruction of phonemic awareness via commissioned reports directed by and emphasizing that orientation.

It is notable that the reform developments in literacy were dominated by a number of educators aligning with the National Reading Panel Report and the “Simple View of Reading” (Gough & Tunmer, 1986)—tied to a stage-wise developmental approach that emphasized teaching the code, especially phonemic analysis and phonics (see Ehri, 2020; Goswami & Bryant, 1990; Gough, Juel & Roper/Schneider, 1981; Juel & Midden-Cupp, 2000; Perfetti & Hart, 2002; Reitsma, 1983). This stressed a bottom-up rather than a meaning-centered emphasis for beginning reading, along with texts engineered to interface with the readers’ development (e.g., Hiebert, 2017). The emphasis upon comprehension took somewhat of a backseat to these developments, except in terms of text-centered efforts to enrich a reader’s background knowledge and vocabulary. The research focused upon vocabulary expanded and more clearly positioned vocabulary learning as simultaneous and interfaced with reading comprehension development and learning to read (Beck, McKeown & Kucan, 2013; Kamil, 2004; Kamil & Hiebert, 2005; McKeown & Beck, 2014; Nagy, 2005; Nagy & Scott, 2000). Predictably, certain lines of research over others, as well as curriculum and pedagogy developments, aligned with this emphasis. Likewise, the prescriptive nature of these efforts was enhanced with the enlistment of mandated tests, authored by persons involved in defining the parameters of the initiative and reflective of this narrowing of what should be taught.

Growth of Standards-Based Reform

Concurrent with these developments, the discourse shifted to highlighting the achievement gap and the necessity of standards. As Sarah Mosle (1996) reported in her *New York Times Magazine* article, “The Answer is National Standards:”

What distinguishes the current standards movement from past hortatory rhetoric is that it emphasizes equal opportunity as much as achievement, through a national curriculum—goals on which both liberals and conservatives should be able to agree. (para. 12)

...

The sensitivity to children's needs and differences, the ability to inspire intellectual curiosity and excitement exist independent of method. Schools should be allowed to use whatever approach they would like and then be held accountable for the results on substantive, content-based exams that are geared to the curriculum. (para. 47)

Around the time of Mosle's article, a colleague and I (Tierney & Bond, 1998) analyzed the rhetoric of the standards movement, especially that of professional groups such as the International Reading Association (IRA; now the International Literacy Association) and the National Council of Teachers of English (NCTE). Looking across 30 articles that appeared in the Council Chronicle, Reading Today, and occasional pieces in other releases, we found at least four major rhetoric ploys:

- 1) Borrowing the discourse of critics in a decontextualized and distorted fashion, or not providing the evidence to warrant assertions. These assertions included:
 - a) The standards will take into account and, in fact, promote diversity and equity;
 - b) The creation of standards is a dynamic process;
 - c) The standards will create a vision, not mandates;
 - d) The movement is being initiated and directed from the bottom up.
- 2) Calls to "get with the program," via the use of the following:
 - a) Praise and motivational rhetoric;
 - b) Fear tactics;
 - c) Bandwagoning—that is, claiming that everybody is joining the movement;
 - d) Expert involvement.
- 3) Misrepresenting the role and value of consensus.
- 4) Silencing, filtering, or marginalizing critics.

Standards were precursors to tests and other controls. During the George W. Bush administration, for instance, the Academic Achievement for All Act, or Straight A's, implemented incentives—including federal regulatory exemptions and bonus funding—for

participating states and districts to develop and meet their own standards. As William J. Bennett and Chester E. Finn, Jr. (1999), two key political strategists and contributors to George W. Bush's education platform, stated just prior to Bush's first term:

Those states that produce the promised results would get their "performance agreement" renewed and earn a bonus. Those that fail would be thrown back into the regulatory briar patch.

... the Straight A's proposal is promising because under it the federal government would align itself with many of the best ideas in American education: greater accountability, more choice, more competition, higher standards.

Congress now has a choice between two very different conceptions of the federal role in K-12 schooling." (Bennett & Finn, Jr., 1999, para. 2, 6, & 8)

Reflecting on such developments, Sharon Nichols and David Berliner (2007) found a major shift toward rhetoric of standards in discussions of education by politicians and the media around 1995. Tracking media discussions across major U.S. newspapers, Nichols and Berliner noted how there was a dramatic shift in references beginning in 1995 from discussions of educational opportunity to discussions of education for achievement. They also found that government reports around this time had plentiful mentions of achievement and scant mentions of educational opportunities.

The most recent instantiation of these developments in the United States has been the heralded and hotly debated Common Core State Standards Initiative (NGA & CCSSO, 2010). According to the Common Core website:

The Common Core is a set of high-quality academic standards in mathematics and English language arts/literacy (ELA). These learning goals outline what a student should know and be able to do at the end of each grade. The standards were created to ensure that all students graduate from high school with the skills and knowledge necessary to succeed in college, career, and life, regardless of where they live. Forty-two states, the District of Columbia, four territories, and the Department of Defense Education Activity (DoDEA) have voluntarily adopted and are moving forward with the Common Core.

For years, the academic progress of our nation's students has been stagnant, and we have lost ground to our international peers. Particularly in subjects such as math, college remediation rates have been high. One root cause has been an uneven patchwork of academic standards that vary from state to state and do not agree on

what students should know and be able to do at each grade level.

Recognizing the value and need for consistent learning goals across states, in 2009 the state school chiefs and governors that comprise CCSSO and the NGA Center coordinated a state-led effort to develop the Common Core State Standards. Designed through collaboration among teachers, school chiefs, administrators, and other experts, the standards provide a clear and consistent framework for educators.

The Common Core is informed by the highest, most effective standards from states across the United States and countries around the world. The standards define the knowledge and skills students should gain throughout their K-12 education in order to graduate high school prepared to succeed in entry-level careers, introductory academic college courses, and workforce training programs.

The standards are:

- 1) Research- and evidence-based
 - 2) Clear, understandable, and consistent
 - 3) Aligned with college and career expectations
 - 4) Based on rigorous content and application of knowledge through higher-order thinking skills
 - 5) Built upon the strengths and lessons of current state standards
 - 6) Informed by other top performing countries in order to prepare all students for success in our global economy and society
- (NGA & CCSSO, 2019)

How widespread are such reform efforts? Initially, in the U.S., for example, over 80% of states aligned with the Common Core initiative. Over time, however, support has dwindled, as many states have become concerned with how the standards represented the federal control of the curriculum as well as the curriculum itself. Strange bedfellows of conservative and states' rights advocates united with anti-testing coalitions to express their concerns and to leverage non-compliance with the standards. Their objections ranged from state-level opposition to federal control of teaching and mandated curriculum to concerns over what were included as guidelines for texts and reading skills and strategies (Hess, 2014).

Elsewhere in the world, similar concerns have been raised but do not seem to have thwarted several countries from pursuing a similar agenda of standards and testing initiatives. For example, in Australia, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) assumed an approach to educational development tied to similar

sentiments—enlisting a bully pulpit to advance their agenda with a lure of funding and by mobilizing fears of a stricter regime of control. As the Hon. Dr. David Kemp MP, Minister for Education, Training and Youth Affairs, suggested to the Curriculum Corporation’s 6th National Conference (Kemp, 1999):

If we are to have a school system for the next millennium, which meets the expectations and has the confidence of the Australian community, then we must have mechanisms in place that allow us to measure the key outcomes of all Australian schools and report these outcomes to the Australian community. We need to make clear our expectations for all schools—government and non-government schools alike.

A standards-based approach informed by “select” research fitted the dominant framework that politicians in a number of countries enlisted. This approach holds that standards should be research-based, and that schools and school staff should be focused upon developing students using these standards—and be held accountable for doing so. In other words, teachers and teachers’ professional development were seen as needing to be aligned with these standards. Further, standards should proceed nationally rather than in an uneven fashion, state by state. Again, the system for doing so was largely by legislative fiat, imposed top-down and uniformly rather than locally or diversely.

Accordingly, as standards and testing assumed prominence, teaching practices were realigned with testing. And, in turn, tests became a way to monitor and also bridge to practices of ensuring accountability as well as compliance. For example, tests such as Dynamic Indicators of Basic Early Literacy Skills (DIBELS), which was developed by insiders to the reform, became influential with their increased use in the U.S. DIBELS was developed to screen, monitor, and assess outcomes of the elements extrapolated from the National Reading Panel (NRP) Report. The test developer suggested that DIBELS could be used as a means of screening students to identify those who are at risk, to monitor progress in selected areas for instructional emphasis, and further to measure the outcome of a student’s progress as a reader. In so doing, DIBELS linked the means with the ends—using testing to repeatedly assess student literacy development and also serve as a measure of outcomes. In other words, DIBELS equated what it measured with what teachers taught.

Essentially, these reform efforts were seen as displacing diverse and situated curricula that met local needs, and sidelining teacher professionalism, teacher research, classroom-based assessment. Too often, the tests became the program. This is not surprising, however,

as it has happened repeatedly in cases where high stakes assessments are enlisted in schools. In his examinations of past studies of the impact of testing upon teaching in the U.S. and the UK, George Madaus (1988) suggests such testing contributes to a form of teaching to the test in a fashion whereby the curriculum begins to emulate the test.

These developments were not apolitical. The emphases on what research counted and what themes were gleaned could have been predicted given the make-up of the reviewers and the leanings of the group overseeing the effort. Indeed, special interest groups of parents and educators, formed to address the needs of students with reading difficulties, were major advocates for such emphases. Perhaps among the more notable of these groups were those focused upon what some might consider a pathologization of reading, such as occurred with a lobby for a dyslexia. They touted various studies emanating from the neurosciences as supporting their advocacy for a code emphasis, aligning their efforts to translate such research into practice. But such has not been without a significant amount of contentiousness as to whether the evidence and logic warranted the claims (See Side Comment III.7b.1).

A history of literacy education: waves of research and practice

Side Comment III.7b.1

Looking to Neuroscience for Solutions: A Bridge Too Far

Reading scholars have a history of inquiring into the nature of the reading process by delving into the workings of the brain. They have attempted to do so through a range of methods, including studies of eye movements (Hogobaum, 1983; Rayner, 1998), observations of oral reading, and most recently, magnetic resonating technology (which attempts to signify how brain activity couples with linguistic inputs as readers process written texts). Despite the problems with the reliability of brain scan data (e.g., with extrapolations that measures of electronic response match the phenomena of brain activity measured), educators have embraced the possibilities that this technology might pin down the regions of the brain involved in the acts of reading and reading development.

Unfortunately, the bridge resulting from the passion and interests of educators may have stretched too far. Despite advances in the technology and the precision in measuring what the technology yields in measurable (i.e., visual) form, the claims offered still seem to exceed what has been shown. Further, they appear to ignore other research that would seem to supersede these findings—positioning the interpretation or inferences drawn from the data as faulty.

One can find many examples of findings going beyond what neuroscience offers and the data indicate. For instance, although the data emanating from MRIs (tracking learners' responses to coding) may have succeeded in imaging responses to decoding, it is a long way from confirming the view that reading proceeds first from the translation of visual cues of letters into sounds and then eventually builds to meaning. Support for this linear process represents group aspirations more than a firm grounding in neuroscience. Statements by groups such as the International Dyslexia Association (2020a) and others reflecting such views in relation to dyslexia are problematic.

Compounding this questionable logic is support for findings that suggest that teaching decoding results in shifts in brain activity aligned with successful readers. Again, the research in this area seems to flirt with implications that go beyond measurable data. Take, if you will, the claims reflected in the statement offered by Petscher et al. (2020). As they stated:

Research has clearly indicated that skilled reading involves the consolidation of orthographic and phonological word forms.... Work in cognitive neuroscience has indicated that a small region of the left ventral visual cortex becomes specialized for this purpose. As students learn to read, they recruit neurons from a small region of the left ventral visual cortex within the left occipitotemporal cortex region (i.e., visual word form area) that are tuned to language-dependent parameters through connectivity to perisylvian language areas.... This process provides an efficient circuit for grapheme–phoneme conversion and lexical access allowing efficient word-reading skills to develop. These studies have provided direct evidence for how teaching alters the human brain by repurposing some visual regions toward the shapes of letters, suggesting that cultural inventions, such as written language, modify evolutionarily older brain regions. Furthermore, studies have suggested that instruction focusing on the link between orthography and phonology promotes this brain reorganization (e.g., Dehaene, 2011). (p. S268)

Or consider the claims by Shaywitz (2003)—that MRI frequency data suggest that written language must first be converted to oral language. Building to this point, Shaywitz (2003) begins: “The reader must somehow convert the print on a page into a linguistic code—the phonetic code, the only code recognized and accepted by the language system” (p. 50) of the brain. Having been “translated into the phonetic code, printed words are now accepted by the neural circuitry already in place for processing spoken language. Decoded into phonemes, words are processed automatically by the language system” (Shaywitz, 2003, p. 51). Linking this to MRI data, Shaywitz (2003) concludes:

We used fMRI (functional magnetic resonance imaging, SGP) to study boys and girls who were struggling to learn to read and who then received a year-long experimental reading program. The final set of images obtained one year after the intervention had ended was startling. Not only were the right-side auxiliary pathways much less prominent but, more important, there was further development of the primary neural systems on the left side of the brain....[T]hese activation patterns were comparable to those obtained from children who had always been good readers. We had observed brain repair. (Shaywitz, 2003, pp. 85–86)

A similar claim was made by Simos et al. (2002), who found that intensive phonics instruction was responsible for improvements in functional brain imaging. However, as Rosenberger and Rottenberg (2002) suggest, “reservations may be in order” regarding the claim that “a ‘deficit in functional brain organization’ has been ‘reversed’ by remedial training” (p. 1140). The data highlighted by Simos et al. (2002) and others—illustrating how remedial instruction leads dyslexic children to do “what normal readers do naturally” (p. 1140)—does not necessarily demonstrate proficiency, then, but rather merely indicates “that the subject is doing something different (or differently)” (Rosenberger & Rottenberg, 2002).

*Moreover, research from neuroscience would also suggest that the process does not follow the linear order from symbol to sound to meaning. Instead, it engages “higher order” processes tied to the cortex and its engagement in meaning making, involving more “top-down” processing (such as predictions). In his popular book, *On Intelligence*, Jeff Hawkins (2004) reviews the work in neuroscience and touts the role of predictions in governing sensory attention and processing—in a fashion more akin to an executive role than the linear progression suggested by proponents of the “Simple View of Reading.” (It is noteworthy that Ulric Neisser earlier argued for the key role of predictions in his landmark 1976 book, setting the stage for studies of cognition).*

In a similar vein, Strauss, Goodman and Paulson (2009) suggested that there was a failure of much of this research to reckon with other findings. As they stated:

So, the new view is that the brain is not a prisoner of the senses—rather, on the basis of stored knowledge, it predicts experience before it happens. It uses the senses selectively as it makes sense of the experiences it is having with the world.

The functional MRI studies which claimed to show that the brain uses letter-sound relationships as it reads, and that reading is essentially matching letters with sounds, were based on an inadequate understanding of human brain function. The studies indeed demonstrated that a sufficiently advanced machine can reveal brain sites where letter-sound processes occur. But they were misinterpreted to imply that nothing else of significance to reading is going on when the reader transacts with a whole, meaningful text. (p. 032)

Or, as Elliott (2020) noted.

Confusion seems particularly evident in this discipline, where beguiling references to brain scans and the brightly colored pictures of brain activation seem to reduce the critical faculties of many. Many fail to understand that the contribution of neuroscience to the practical task of assessment and intervention of reading disability is still rudimentary (and scientific understandings continue to be undermined by methodological difficulties and the selective use of evidence....

Misunderstandings have been fueled by the internet, where neuroscientific research on dyslexia is frequently characterized by “distortions, simplifications, and misrepresentations” (Worthy, Godfrey, Tily, Daly- Lesch, & Salmerón, 2019, p. 314). An absence of criticality reflects a form of neuroseduction, whereby neuroscientific accounts increase the likelihood that one will be persuaded by explanations or conclusions that are not justified by the facts.... Principal among these for dyslexia, perhaps, is the erroneous belief that brain imaging can be employed for the purpose of differential assessment and intervention rather than this being an aspiration for the future (that may ultimately “be proven to be unfeasible” (Ozernov-Palchik, Yu, Wang, & Gaab, 2016, p. 52). (p. S66)

Confirming an Alternative: Reflective Practice

In the U.S. and elsewhere, the number of detractors has increased as results of improvement have not been forthcoming and local authority has been displaced. Indeed, in the U.S., this critique appears to be arising from growing concern over federal versus local control of education, and the lack of national improvement on international comparison. Counter examples are evident in countries such as Finland (Sahlberg, 2015), where the educational approach undergirds its premier performances on international comparisons of educational achievement. As Hargreaves and Shirley (2007) commented:

Imagine you are a newly appointed education official in a nation looking for policies to study and adopt in its school system. A couple of options stand out. Country A offers extensive measurements of learning gains for millions of pupils in all its public schools, generates only fair to poor academic outcomes, and ranks near the bottom of 21 industrialized countries in child well-being in a recent UNESCO study. Country B has no system of national testing at all, but its children are consistently at the top of tests used for international comparisons, and it is among the world leaders in the child-well-being rankings.

Which model looks the most attractive? Country A is great for number-crunchers and advocates of “data-driven decisionmaking,” but produces poor

outcomes and yawning achievement gaps for students. Country B has world-class standards of living and learning for students, but is data-impooverished in comparison to country A. (para. 5–6)

They suggest:

In places like Finland and Canada, the world is increasingly embracing a second theory of change that we call “post-standardization.” This new theory pays more attention to developing teachers’ capacity to meet higher standards, rather than emphasizing the paper standards themselves. It replaces imposed standardization and privatization with networks and peer-driven improvement. Assessment for summative quality assurance is replaced by assessment for learning, where data are used to inform ongoing decisions to produce better outcomes. In this second theory of change, the teaching profession is a high-caliber resource for and responsible partner in modernization, not an obstacle to be undermined.

It’s time to accept that standardization has gone down like a lead balloon, utterly failing to inspire teachers, students, or the public at large. Post-standardization, on the other hand, inspires people’s commitment to and capacity for change by connecting a visionary future to a sense of pride in the best of one’s past. New economic and social needs beckon, and existing strategies are self-evidently exhausted. Other countries are beating better paths, and it’s time for America to follow their lead. The future is not going to be soulless or standardized. Why should our schools be? (Hargreaves & Shirley, 2007, para. 14–15)

By contrast, many educators remain attracted to the notion of teachers as reflective practitioners.¹ Indeed, a number of groups of teachers have coalesced and formed their own coalitions in an effort to engage with and support one another in their pursuits. For example, under the Whole Language Umbrella there is a consortium of networked groups (e.g., Center for Expansion of Language and Thinking; Teachers Applying Whole Language; etc.) exploring advances in literacy research, theory, and practice. Around the world, groups

¹ See, for example, Schon’s 1983 work, *The Reflective Practitioner: How Professionals Think in Action*. This piece has also been discussed at length by a number of educators (e.g., Carr & Kemmis, 1986; Cochran-Smith & Lytle, 1993; Clay, 1998; Kincheloe, 1991; Miller, 1990; Newkirk, 1992; Ladson-Billings, 1994; Pappas & Zecker, 2001).

affiliated with the International Literacy Association and other professional groups have a history of supporting development aligned with reflective practice.

As reflective practitioners, teachers assume roles in which classroom practices are more emergent than predefined, with special emphasis given to practices arising from teachers' transactions with their students, as well as other considerations. In these roles, a teacher may be informed by various readings of past research, but these readings are apt to be critical. The teacher's instructional approach is therefore informed by an array of sources, including the teacher's past experience, the experiences of others, and notions of literacy. Furthermore, instructional adjustments may be made in an ongoing fashion, based on a form of continuous and recursive decision making, as the teacher pursues a scaffolding of learning and uses indicators of the success of certain supports and activities. Table III.7b.2 represents an attempt to identify these dimensions and their possible impacts.

Table III.7b.2.

Characterization of Reflective Practice

Overall Characteristics

- Non-standardized, ongoing, and transactional (c/f meaning making)
- Teacher as researcher, informed by array of sources and engaged in a dynamic relationship with students and stakeholders as well as literacies. Teaching is ongoing and complex.
- Teacher as a professional, working in collaboration with parents, students, and colleagues

Reform Mode

- Inside-out, school and classroom-based, student-based, and community-based
- *Sources*: Various observations and sources of data may inform teaching. Local consideration of assessment needs and the development of assessment and evaluation tools in collaboration with colleagues.
- Assumes findings not generalizable, non-transferable, but can inform work in a case-like fashion

Potential Impacts

- Responsive, dynamic curriculum
- Greater teacher, student, parent decision-making and investment/ownership
- Non-standardized and open-ended model of literacy and literacy instruction
- Qualitative research, action research, and other forms of inquiry—no longer stepchildren

- Across students and settings, a range of literacy experiences and practices derived from a consideration of socio-cultural possibilities, interests, and needs
- Accountability allows for a range of measures across students and schools
- Assessment follows from and is in partnership with learning; it is not the determiner of what is taught and learned

Apart from reflective practice having a long history, recent studies of effective schools have supported this approach. Indeed, the now historic Bullock report (1975) from the UK proffered:

In our view, teachers should be involved not only experimenting with the outcomes of research, but also in identifying the problems, setting up hypotheses and carrying out the collection and assessment of data. We should particularly like to see more action research...for we believe that this form of activity holds considerable promise for the development of new practices in school. (p. 553)

The notion of reflective practice and learner-centered assessment is also consistent with recommendations made by Hoffman (1991), Taylor, Pressley, and Pearson (2002), and Taylor, Pearson, Clark, and Walpole (1999). For example, based upon a review of the literature, Hoffman (1991) described eight attributes of effective schools:

1. A clear school mission;
2. Effective instructional leadership and practices;
3. High expectations;
4. A safe, orderly, and positive environment;
5. Ongoing curriculum improvement;
6. Maximum use of instructional time;
7. Frequent monitoring of student progress; and
8. Positive home-school relationships.

(Hoffman, 1991, p. 911–950)

Relatedly, following their analyses of studies examining effective schools, Taylor and her colleagues (Taylor et al., 2002) found commonalities across the studies distinguishing effective literacy programs as those in which teachers work together and use their observations to develop instructional plans along with customized ways to assess them (see Table III.7b.3).

Table III.7b.3.

School Level Factors Responsible for High Achievement in High Poverty Schools

Factor	Study				
	Hope for Urban Education	CIERA: Beating the Odds	Title I: Prospects	Successful Texas Schoolwide Programs	Chicago Schools with Substantially Improved Achievement
Focus on improved student learning	4	4		4	4
Strong school leadership	4		4		4
Strong teacher collaboration	4	4		4	4
Consistent use of data on student performance	4	4		4	4
Focus on professional development and innovation	4	4		4	4
Strong links to parents	4	4	4	4	4

(Source: Taylor, Pressley, & Pearson, 2002, p. 369)

In a similar vein, Rogers et al. (2006) have argued for assessments that are situated. As they describe, a situated assessment is:
 ...collaboratively developed and used in the context of a particular reform effort and is meant to benefit teachers who use it by informing their instruction. We contrast this to standardized measures that are used solely for accountability rather than for professional development. (p. 544)

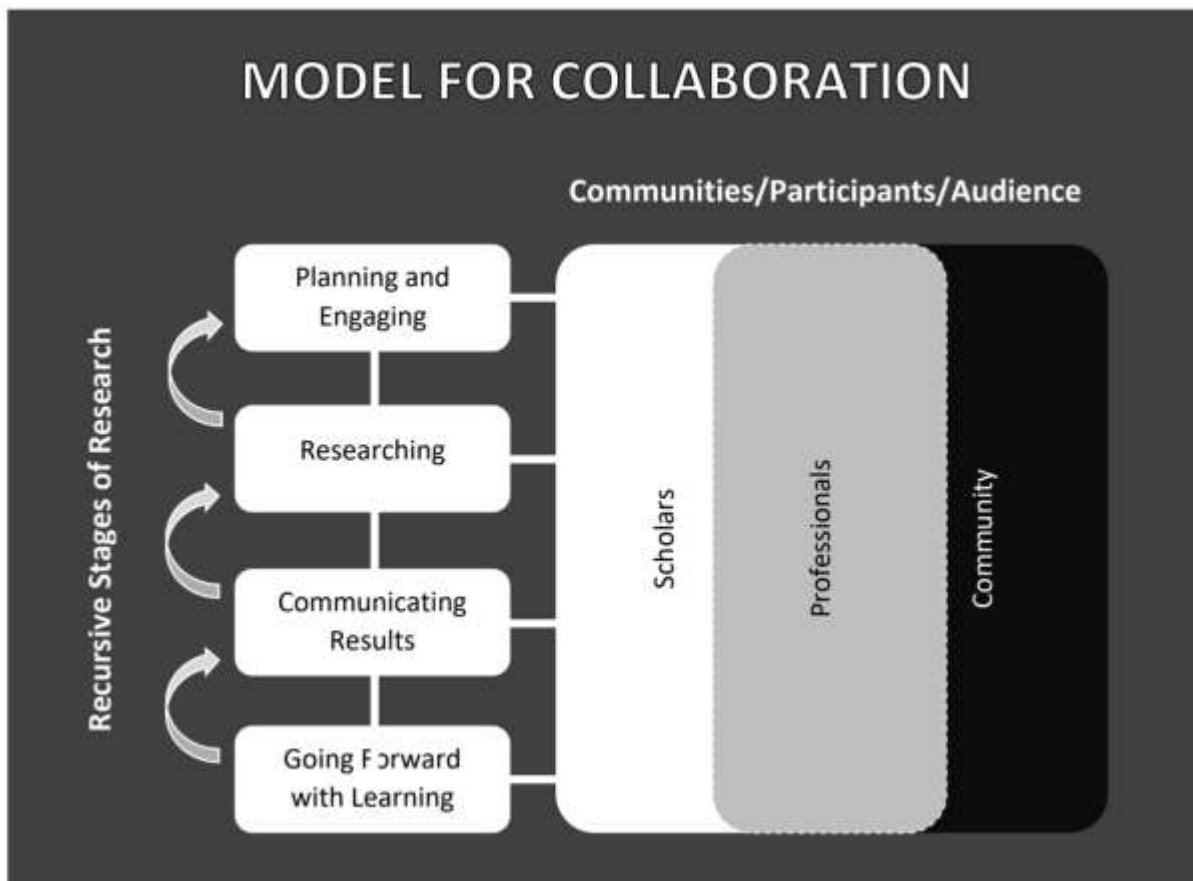
In conjunction with their project, Rogers et al. (2006) describe a university-school collaboration to develop the comprehension strategy development of middle graders. In pursuing the project, they report their arrival at a collaborative engagement among researchers, teachers, and school board consultants for the development of an assessment tool

directed at school-specific interests and situations. As they maintain, by pursuing situated assessments, they saw themselves able to:

...respond to the growing demand for assessment approaches that are sensitive to the contexts in which they are used, build on notions of consequential and transactional validity, and allow for critical inquiry into the relationship between curriculum and instruction. This approach also supports and encourages teachers and school administrators who set their own goals for accountability and improvement in literacy. (p. 552)

In terms of the view that teaching involves partnership building, a number of educators have proposed models that entail engaging in meaningful, educationally sound, and ethical partnerships with students, other teachers, and parents—an approach that is formative and transactional (Figure III.7b.6). This would be consistent with the participatory approach advocated by Barbara Rogoff and colleagues (Rogoff, Turkanis, Goodman, & Bartlett, 2001) as well as Deb Butler and Leyton Schnellert (Butler & Schnellert, 2012; Butler, Schnellert & Higginson, 2008), in which engaging with professional personnel and the public as research is planned, pursued, and contemplated in terms of its influence.

Figure III.7b.6.



As Luke (2004) posited, teachers and teacher educators should strive to be somewhat akin to the cosmopolitan, suggesting that "...what is needed is a teacher whose stock and trade is to deal educationally with cultural 'others,' with the kinds of transnational and local diversity that are now a matter of course" (pp. 1438–1439). It is as Purcell-Gates (2006), Rose (1995), and others have advocated: a teacher is someone who develops an understanding of the cultural worlds of students and their communities—who also has the ability to help improvise within and across these spaces for the betterment of individuals and groups. Such a description would be consistent with the two sets of attributes of teaching detailed by Taylor, Pearson, Clark and Walpole (2000) (Table 4):

Table III.7b. 4.

Two Sets of Criteria Used to Rate Teacher Accomplishment	
Elements of Culturally Responsive Teaching	Elements of Effective Instruction
1. Seeing teaching as art	1. Awareness of purpose

<ol style="list-style-type: none"> 2. Seeing oneself as part of the community 3. Believing all students can succeed 4. Helping students make connections between community, nation, world, and self 5. Teaching from the perspective of “pulling knowledge out” instead of “putting knowledge in” 6. Viewing teacher-student interactions as fluid, humanely equitable, extending to interactions beyond the classroom 7. Demonstrating a connectedness with all students 8. Encouraging a community of learners 9. Encouraging students to learn collaboratively 10. Viewing knowledge as being recreated and shared by teachers and students 11. Viewing knowledge critically 12. Teaching content with passion 13. Helping students develop necessary skills 14. Seeing excellence as complex but taking account of student diversity and individual differences 15. Treating student as competent 16. Providing instructional scaffolding 17. Making instruction the focus of the classroom 18. Extending students' thinking 19. Possessing in-depth knowledge about the students and the subject matter 	<ol style="list-style-type: none"> 2. Enthusiasm 3. Task orientation 4. High pupil engagement 5. Short transitions 6. Much time spent in reading/language arts activities 7. Frequent instruction in skills and strategies 8. High success rate 9. Masterful classroom management 10. Positive classroom climate 11. High pupil expectations 12. Redoubling of teaching efforts when students have difficulty 13. Effective use of praise 14. Extensive content coverage, instructional density 15. Explicit modelling and scaffolding 16. Teaching skills in context 17. Extra instruction for low readers 18. Encouragement of self-regulation 19. Instructional balance 20. Much reading of connected text 21. Much writing of connected text 22. Activities appropriate, meaningful, challenging
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(Source: Taylor, Pearson, Clark & Walpole, 2000)

In a fashion befitting reflective teaching, John Guthrie and his colleagues have explored student engagement and proposed an “Index of Reading Engagement” that teachers might enlist to rate their students. The index guides the rating of students in terms of active

engagement in reading based upon behavior, internal motivation, cognitive pursuits. (See Guthrie, 2004; Guthrie et al., 2007; Guthrie, McRae, & Klauda, 2007; Guthrie & Wigfield, Wigfield, & Guthrie, 1997; and Wigfield, et al., 2008.)

The Status Quo, Decentralized and Centralized Reform

Globally, educational reform has struggled with issues of centralization versus decentralization relative to policies and practices and their implementation. If you look at educational development in Asia, for example, there seems to be predominately governmental control of most educational decisions despite some variations across countries. King and Guerra (2005), drawing from World Bank data, developed the following portrayal (Table III.7b.5):

Table III.7b.5.

OECD World Bank Survey (2003)

	Cambodia	China	Indonesia	Philippines	Thailand
Instructional matters					
Design program of study	Central government	Central government	Central government	Central government	Central government
Defining course content	Central government	Central government	Central government	Central government	Central government
Choosing textbooks	Central government	Local government and schools	Schools	Schools	Schools
Teaching methods	School	Schools	Schools	Schools	Schools
Modes of grouping students	Schools	Schools	Schools	Schools	Schools
Support activities for students	Central Government	Schools	Schools	Schools	Schools
Setting qualifying exam	Central government	Central & Local government	Central government	Central government	Central government & School
Methods for assessing students' regular work	Central government	Schools	Schools	Schools	Schools

Management					
Hiring teachers and principals	Central government	Local Government	Central & Local government	Intermediate govt	Central government
Salaries	Central government	Central government & school	Central government	Central government	Central government
Careers	Central government	School	School	Intermediate government	Intermediate government and school
Resource decisions	Central government	Local government	Central government	Central government	Central government

(Source: OECD, 2003)

In Closing

Educational reform—especially literacy reform—can be looked at through various lenses. Specifically, reform developments can be looked in terms of:

- The rationale behind the reform initiative;
- The historical developments that lead up to the reform;
- The views and rhetoric informing these developments and how they position the state, schools, teachers, students and parents;
- The politics of education, including who is privileged;
- The role of research (what and whose research counts);
- Teacher professionalism;
- Local versus national versus global considerations and governance;
- The interests served and not served by the reform initiative;
- The views of reading perpetuated by the reform, including the skills, strategies, and approach to teaching and testing.

Over the last 25 years, there has been a shift in the manner of the systems in place for controlling schooling, leading to an emphasis upon prescriptive practices, a return to positivism and the search for best practice, and uniform standards and accountability. Matters of diversity and teacher professionalism and decision-making were displaced as rhetorical ploys and political shifts coalesced, legislating and funding renewed interests for standardized, top-down control of education. These developments occurred in Western nations especially, though not exclusively. Indeed, educational reform efforts in many

countries appear to be aligned with a similar approach, which entails legislated, prescribed educational practices (i.e., a top-down approach) drawing selectively from research findings en route to developing standards and accountability via testing. In particular, many countries have experienced an ongoing battle over curriculum matters such as phonics and whole language.

In terms of research, positivist research in search of best practice has sidelined more critical, situation-specific, and participatory classroom and socio-cultural studies. For those of us who have been advocates of reflective and participatory practice, we found ourselves in the role of critics and sometimes adversaries—either positioned as outcasts or as non-scholarly and non-compliant. Jerome Harste (1998) captured these sentiments when he discussed his encounters with the changing political climate in the October 1998 *NCTE Council Chronicle* entitled “A Model of Difference.” As Harste (1998) stated:

I think we are in a McCarthy era in reading and it concerns me.

All of a sudden we are supposed to be pleased with research reports on reading that take us back to a Bloomfield view of reading. Reports in which reading is not being seen as an instance of language. That is why they need not review this literature. Goodman doesn't exist. Reports in which reading and writing relationship research, other than the early literacy stuff, can be ignored. Now Graves doesn't exist. These are decisions that strike at the very heart of our profession. What is particularly insidious is that all of this is being done in the name of science.

Recently, I was asked to respond to Preventing Reading Failure in Young Children at AERA where a panel of the researchers presented sections of this final report published by the National Reading Council.

Specifically, I criticized the report on its many flawed conceptions of reading. I argued that the report positioned itself as having ended the reading wars and in so doing perpetuated the myth that the problems with reading in this country are a result of whole language and phonics wars and that somehow this mess has weakened reading instruction and resulted in declining literacy scores. I suggested that the panel visit schools so they could see for themselves that there is not enough whole language going on in this country to have affected reading scores either positively or negatively. I concluded this first point by arguing that I thought they had the big picture wrong. My second criticism rested on their conception of the reading process. While their exact definition of reading is rather slippery, for the most part they advocate a linguistic model of reading where "real reading" begins with phonological

awareness and graphophonemic processing. Everything else is cast as a factor that effects reading My third criticism of the document was that it posed itself as a document about pedagogy when it was really about power. I used the fact that the report's conclusions already had become legislative action as data to support this hypothesis.

When I got done with my critique, several respected colleagues expressed their dis-appointment with my remarks. One said he just couldn't understand what it was I disliked about this report. Another said it was a little bit like having a skunk show up at a rose garden party. Still another thought it was most unfortunate I took the position I did and that I should use my position as vice president of NCTE to get behind the report.

. . . Now I personally know that these colleagues of mine have broader views of reading than are reflected in this report. But why, I ask, is no one speaking out? (p. 220)

Optimistically, we may be witnessing some developments that might foreshadow some shifting and new alternatives. These include:

- A growing emphasis on and political lobbying for educational options and local control, together with the re-establishment of a more problem-based, topically-oriented, and diverse curriculum with local origins (i.e., as opposed to a uniform, academic skill-based curriculum tied to national goals);
- An increased responsiveness by universities to alternative forms of assessment criteria from aspiring applicants;
- Growing momentum for mixed methods and participatory forms of research and design-based studies;
- A resurgence in critical studies, especially tied to issues of race, gender, class, economic circumstances and epistemologies;
- A growing regard for teachers and their professionalism as they pursue ways to connect with their students and colleagues;
- Recognition of the importance of a culture of collaboration and learning in schools;
- Increased interest in student-led decision-making;

- A reorientation of literacy via the integration of digital technologies, with more participatory, socially-networked, multilayered and multimodal learning opportunities;
- An interest in developing globally-astute learners with 21st century dispositions, understandings and strategies.

That said, despite these developments, expansive educational developments and change are often elusive—especially when they are pursued in systems that serve other interests and perpetuate the privilege of some over others. At times, such initiatives have faced obstacles when they have failed to address the politics of change, including attitudes, self-interests, and the gravitational forces delegating a more centralized (i.e., undemocratic) authority or a specific form of best practice. Unfortunately, audits of initiatives have sometimes appeared to be sidelined by the power dynamics of institutions, media portrayals of schools and failing students, or the changing commitments and values of authorities. Therefore, even when audits of educational endeavors have illuminated shortcomings in educational programs, substantive change has still proved challenging when faced with competition from other interests and a lack of “true” commitment.

Many of us have been involved in such encounters. Take, if you will, an evaluation of Milwaukee City Schools (Tierney, Allington, Carry, Karbon, & Thome, 2008). A team of us were asked to audit the reading services, questioning the lack of funding to inner city schools as well as the lack of coordinated support for reading. This proved disheartening, especially given the historical privileges of certain well-funded schools and the power given to special education and school psychology (Tierney, Allington, Carry, Karbon, & Thome, 2008). Or consider the review of Indigenous education at the University of Sydney (SEG Indigenous Education Review Working Group, 2011). Despite an extensive audit revealing major shortfalls, pre-existing institutional forces and historical racism including among university executive proved insurmountable. With some other Deans and key Indigenous faculty, analyses were undertaken of the access and graduation rates of Aboriginal and Torres Strait Islanders within each degree program (as well as other features, such as hiring patterns and research). The audit found major shortcomings in access and graduation rates, especially for selected faculties over time, despite significant government funding. While progress seemed promising (and heralded), significant forward progress proved quite modest, especially in

certain faculties. It was as if the follow up to critical analyses was embraced by some but shelved by others.

Educational change and the disruption of systemic forces is also often countered by political maneuvering befitting pre-existing biases fueled by preset agendas. For example, in a discussion of the Australian government's efforts to meet the needs of their diverse student body (i.e., immigrant and indigenous), a portrayal by Morgan, Reid, and Freebody (in press) highlights the disingenuous nature of pursuits. They make visible how government positions achievement results as a means of discounting and displacing diversity goals with forms of assimilation that advances national agendas perpetuating mainstreaming, accentuating inequities and dismissing situated cultural responses. As I have noted, in the United States, during the No Child Left Behind and Reading First initiatives, the Inspector General's Office exposed similar biases including efforts by key figures in the US Office of Education to support some groups over others from endorsements for funding in conjunction with reading reform.

Today's literacy scholars are often faced with views by non-educators of what should be taught and emphasized in ways that are questionable—even if represented as aligned with the "Science of Reading." In this regard, certain educators seem to have had the ear of politicians as they market their wares (e.g., ideas and suggestions for reform) as best, if not essential practices. At times they appear to have considerable media influence regardless of their credentials or conflict of interests (See Side Comment III.7b.2). Disagreements with their position often have resulted in Twitter attacks and other forms of critique in ways that advance oppositional rather than collegial dialogue. Indeed, the recent efforts by the International Literacy Association to advance a collection of papers on the Science of Reading seemed to fall prey to more disagreement than ecumenicalism as some authors and their followers used the platform to continue their questionable attacks on teachers and the field of literacy (see Side Comment III.7b.3; International Literacy Association, 2020).

Side Comment III.7b.2.

The politicization of reading and literacy is particularly evident in the ways in which some educators market ideas and suggestions for reform as “best practice.” For example, in Australia, Jennifer Buckingham has been hugely influential positioning her own reading program (<https://multilit.com/about/our-expertise/jennifer-buckingham/>). In the United States, Emile Hanford uses blogs and tweets to selectively represent her position on dyslexia as well as what she deems essential reading pedagogy (e.g., Hanford, 2018; Loewus, 2019).

A history of literacy education: waves of research and practice

Side Comment III.7b.3.

The Search for the “Science of Reading”

The notion of a Science of Reading dates back several hundred years. In recent history, it has become politicized, employed in lobbying efforts for certain practices over others. The International Dyslexia Association, for example, enlists the term almost as a means of marketing (International Dyslexia Association, 2020b). It is as if the Science of Reading (SOR) has become label—not unlike that of “organic” applied to our foods. Further it is labelling that different groups might appropriate as armament as they continue to pursue a war over what should be taught, when, and how.

When the editors of the Reading Research Quarterly invited scholars to submit articles to address this topic, I envisioned more debate and adamant views. I predicted poorly. The contributors were restrained in their general characterization of the state of reading instruction, the preparation of teachers, and the state of student achievement. My reading of the separate articles suggested that there was a general consensus that we were “not there yet” relative to science being able to offer guidance to teachers about teaching and learning for diverse classrooms and learners. For those contributors drawing from neuroscience, they were more sanguine rather than certain of the educational implications of such findings. Likewise, the reverence that some scholars had held for the “Simple View of Reading (SVR), espoused by Gough and Tunmer (1986), was downplayed—especially when Gough, Hoover, and Peterson (1996) were quoted as declaring, “only a fool would deny that reading is complex. Reading clearly involves many subprocesses, and those subprocesses must be skillfully coordinated” (p. 1). It seemed that all the contributors, regardless of the origins of their perspectives, questioned the state of the Science of Reading. Most notably, they shied away from the translation of research to practice and the implementation of suggestions of practice for all.

Indeed, it seemed that there was little disagreement about the limitations of the present state of the Science of Reading—especially, in terms of providing guidance for teachers. In his contribution, “What constitutes a Science of Reading Instruction,” Tim Shanahan (2020) noted:

Making predictions about what kinds of instruction will be effective on the basis of basic research is a fraught enterprise. When the predictions are incorrect, they encourage poor pedagogy. When they are sound, their value can only be determined by their consistency with the findings of instructional studies. As such, the predictions reinforce what we learn from instructional studies, strengthening our trust in those pedagogical findings through their consonance with the predictions. Again, this does not denigrate the value of basic research for identifying potential pedagogical innovations or insightful explanations that could lead to even greater future innovation. Yet, no matter how good the ideas of basic research, they must be tried out instructionally and shown to be beneficial in improving reading ability or its dispersion in some way before they should be recommended to educators and policymakers. (p. 241)

Even Mark Seidenberg and his colleagues seemed more set upon suggesting future directions, needs, and hypotheses than they were in providing certainties (Seidenberg et al., 2020). Indeed, Seidenberg, who had spurred considerable media attention (e.g., Hanford, 208; Seidenberg, 2017) and some of the debates around the need for a Science of Reading, affirmed that we lacked answers that could guide reading instruction.

Seidenberg and his colleagues advocated the need to move forward with multiple, cross-disciplinary endeavors; studies of teaching practices; avoidance of a narrow focus (e.g. on phonics); more studies on what might be done in different contexts to enhance early learning; a focus on all learners; and an examination of the systems in place that might enhance or detract from improvements to practice.

Such tempered responses were echoed in the paper by those involved in the Reading for Understanding report for the National Academy of Education (Cervetti et al., 2020). Offering a cautionary note about the Simple View of Reading (SVR), Cervetti et al. (2020) stated:

the temptation to draw implications for pedagogy must be tempered by a countervailing cautionary disposition to avoid drawing unwarranted inferences about the efficacy of pedagogical alternatives that have not themselves been rigorously examined. One of the important limitations of the public “science of reading” debate has been the use of just such unwarranted inferences. Caution is particularly appropriate in this discussion of research that has highlighted the importance of the language component of the SVR. (p. 168)

In a similar vein, Pat Alexander (2020) argued:

The reality is that reading does not begin or end with phonics or whole-word instruction (Seidenberg, 2013). It is far broader and more complex. Reading, broadly conceived, is any interaction between a person—be it a child, adolescent, or adult—and written language ... That interaction can involve written language at many levels, from words and sentences, to paragraphs, to entire volumes ... Also, reading can be performed for many reasons, from purely personal to largely academic, and in many contexts, both in and out of school, as well as online or in print.

This reconceptualization of reading also requires some adjustment in what qualifies as text. Certainly, texts still encompass many well-known, traditional forms, such as works of fiction, exposition, folk tales, picture books, biography, and poetry. Yet, for today’s students, fondly referred to as the iGeneration or iGens, many nontraditional, nonacademic, and ever-evolving forms of text are part of their reading experiences. Those alternative texts commonly found online and in social media include text messages, tweets, blogs, websites, memes, and podcasts. (p. 90)

It was impressive that most contributors questioned whether or not they were in a position to make strong claims from their own research about teaching practice. At times, they seemed to question the evidence supporting some of their own cases for doing so. For instance, a compelling critique of the attacks upon the quality of teachers and their preparation was pursued by James Hoffman, Michiko Hikida and Misty Sailors. Hoffman et al. (2020) questioned the bases, credentials and posture of many critics of teacher education at the same time as they argued for more voice for teachers and teacher educators and suggested the worth of design experiments. As they stated:

The SOR is being used to silence the literacy teacher preparation community through its unfounded claims regarding what matters, what is known, and what must be done. To question these claims or inquire into their scientific base (as many have done) is met with charges of ignorance, incompetence, and/or ideological bias Those silenced are not only teacher educators preparing the future generations of teachers but also teachers and students, especially in schools serving linguistically rich and culturally diverse communities. Also, as we argued earlier,

the silencing withholds the truth from the public regarding the complexity of the field's work to improve practice.

For the literacy teacher preparation profession, the SOR version of science works to corrupt our efforts to become better at what we do. The science that matters in growing more powerful literacy teacher preparation practices is the version of science that invites us to imagine, dialogue, design, and innovate. (p. 264)

Numerous contributors argued a range of similar concerns about the gaps in the research from the populations that are addressed and the adjustments to systems and the fluidity of change (e.g. Milner; Woulfin & Gabriel). Additionally, as Stephen Graham argued, there was a concern about the curriculum frameworks and their shortcomings:

If teachers are to use reading and writing instruction more regularly in mutually supportive ways, this must be championed by multiple parties, including policymakers, professional organizations, and school administrators. How much time and attention teachers devote to such instruction is dictated in part by national, state, district, and school policies. It is unlikely that current reading and writing practices will change to accommodate more connected reading and writing activities if the importance of these practices is not understood and advocated by all constituents. ...classroom change involves more than creating better teachers. It also involves creating better systems. This will not happen magically. (Graham, 2020, p.42)

If we ask the proverbial question, Are we there yet? The answer is an agreed upon: "No.". The Science of Reading might be better positioned as an ecumenical pursuit for inquiry-based educational endeavors rather than a competition for converts to prescribed practices or a prescribed marketing label. Hopefully, we can continue to learn together rather than view the "Science of Reading" as a race to a set destination.

The politicization of reading and literacy research has extended throughout the modern period—especially as politicians, the media and certain groups have lobbied for what seems like preset views. Most notable, the debate about beginning reading methods has involved diehard advocates, with passions that at times seem like manipulative practices especially relative to what is and is not endorsed as best practice. In the 1960s, despite the finding from the major federally-funded comprehensive study that supported eclecticism and no one best approach to teaching reading, advocates of a restricted phonics emphasis seemed intent on cherry picking conclusions to support their position (Bond & Dykstra., 1967). In the 1990s, efforts to do the same manifested themselves in a narrow view of what research might be funded, what research might count and the basis for determining best practice. In the United Kingdom, Australia and the United States, key reports were written by groups or individuals with pre-existing allegiances to such an advocacy and counters to such reports were dismissed (e.g., Adams, 1994; National Reading Panel, 2000; Rowe, 2005). It was noticeable in the studies that informed such syntheses that certain findings were excluded as evidence and national and state achievement data were interpreted in ways that were questionable and designed to advance certain arguments over others. *For instance, in the 1990s, lagging achievement results were erroneously attributed to fledging practices. Further, longitudinal studies that confirmed the limitations of a restricted emphasis on decoding were avoided. Adding to such biases, exclusionary practices—including the "blackballing" of opposing views and approaches—also occurred.* Unfortunately, despite efforts to move beyond the

“reading wars” (Ewing, 2006; Flippo, 2012; Snyder, 2008) research has taken more of a backseat to reform initiatives or has been enlisted only selectively in the interest of changes that seem more tied to political interests or what seems akin to passionate partisan advocacies (e.g., Parson, 2019).

Perhaps these forces will be countered with a reawakening to the concerns raised in earlier periods—when a multiplicity of research approaches was embraced and the commitment to best practices was countered with considerations of the rich but varied backgrounds, circumstances, needs and interests of students at the hands of professional educators. As Hoffman and Duffy (2002) remarked:

Classrooms and schools ... are multilayered and vary from context to context. One size does not fit all. So when we impose the seductively simple idea of implementing “research-based” correlates, we see only superficial improvements in teaching and only get gains in low-level literacy skills.

Creating substantial forms of instructional effectiveness and substantive forms of literacy achievement requires that we examine the deeper structures guiding teachers' and school leaders' enactment of teaching. This enacting is not a simple matter of technical competence with observed correlates of effectiveness. Rather, the best teachers weave a variety of teaching activities together in an infinitely complex and dynamic response to the flow of classroom life, and the best school leaders weave school conditions together in an infinitely complex response to life in schools. It is more like orchestration than a straightforward implementation. (p. 376)

Such views align with the views espoused by the International Literacy Association when they discussed “evidence-based” practice. As IRA’s position indicated:

Time and again, research has confirmed that regardless of the quality of a program, resource, or strategy, it is the teacher and learning situation that make the difference (Bond and Dykstra, 1967/1997). This evidence underscores the need to join practices grounded in sound and rigorous research with well-prepared and skillful teachers

In its simplest form, evidence-based reading instruction means that a particular program or collection of instructional practices has a record of success. That is, there is reliable, trustworthy, and valid evidence to suggest that when the program is used with a particular group of children, the children can be expected to make adequate gains in reading achievement. ... In addition to evaluating the quality of the data by which programs or practices are judged, teachers also must ask if the children in their

classroom closely resemble the children from whom the evidence was collected
[I]f the answer to all of these questions is yes, then teachers might conclude that there is a good fit and that their children might be expected to make similar achievement gains with the same program or practice. If, however, the answer to some or all of our questions is no, then it is difficult to predict whether similar results might be achieved. The quest to find the “best programs” for teaching reading has a long and quite unsuccessful historyThe challenge that confronts teachers and administrators is the need to view the evidence that they read through the lens of their particular school and classroom setting. (International Reading Association, 2002, pp. 232–236)

Likewise, in a statement of the Board of the International Literacy Association prefacing the 2020 Science of Reading discussion, the organization offered a similar position:

The sciences of our readings are complex, dynamic and multidimensional. Reading educators in their efforts to support diverse literacy learners need to adroitly, discerningly and adeptly support reading development attuned to different circumstances. In our classrooms, it would be amiss not to draw upon multiple sciences—psychological, sociological, and others. Educators must navigate different circumstances from an embrace of offerings from all of the sciences.

Final Word

Looked at through a wide lens, reform developments fit with the overall metaphor of waves. Befitting the ocean metaphor, there is both beauty and ugliness in what might be encountered. One can relish the earnest desire of educators to improve learning. However, there is a danger in the adamancy if it is done without respecting the elements involved, including: 1) The differential background and needs of learners; 2) The teacher as a professional; 3) Local knowledge to guide, adjust and customize any reform effort; 4) An understanding of the goals of the project in terms of sustained transferable abilities; and 5) How these elements all connect in time and space with people in different ways.

Ideally, literacy pursuits could integrate support for a reform agenda that also rewards teachers and educators for their innovations and critical reflexivity. They might herald teachers for their professionalism while pursuing ways to connect those students, teachers, and educators engaged in improving practices and frameworks for literacy development and the study of change. Certainly, some exciting new curriculum possibilities have emerged,

including the “New Basics and Rich Literacy Tasks” that emanated from Allan Luke and Peter Freebody’s work (Education Queensland, 2000a & b; Freebody & Luke, 1990; Luke, 1999). In terms of meeting the needs of at-risk students and monitoring their efforts, initiatives such as *Reading Recovery* (Clay, 1993; Pinnell, Deford & Lyons, 1988) and *Success for All* (Slavin, Madden, Dolan & Wasik, 1996) reflect unparalleled initiatives in terms of success.

From a disciplinary orientation, we are also seeing support for “content-rich” teaching, with approaches like “The Seeds of Science/Roots of Reading” (e.g., Pearson, Moje, Greenleaf, 2010) as well as those that involve socio-cultural frameworks, as seen in the approaches proposed for the 2025 National Assessment of Educational Progress (National Assessment Governing Board, 2020) and the pursuit of scenario-based assessment (Sabatini, et al., 2016; Sabatini, et al., 2019).

In addition, we are seeing creative studies of reform forces, as literacy educators continue to explore the development of learning communities (Rogoff, Turkanis, Goodman, & Bartlett, 2001) and notions of materiality, mobility and space (Figure 11). For example, in her book *Place Stories: Time, Space and Literacy in Two Classrooms*, Margaret Sheehy (2008) examined literacy practices related to school change within the framework of “place” that may enable or obstruct school reform, change, and development. Via discourse analyses, Rachel Gabriel (2019) traced the evolution of reform movements such as those advocated by proponents for dyslexia, while Stornaiuolo, Smith, and Phillips (2017) explored dimensions such as emergence, uptake, resonance, and scale. Bringing these elements to the surface, they argue, serves as a way of capturing “different kinds of relations among people and things—whether in horizontal, vertical, rhizomatic, or other relationships—systems that (re)produce, exacerbate, and/or challenge social inequities” (Stornaiuolo Smith, & Phillips, 2017, p. 84).

There are also new perspectives, technologies and practices in the offering. In terms of perspectives, critical theory and global developments are contributing to major shifts in our orientation, focus, and paths forward. For example, critical theory represents ways of challenging the systemic forces in place that reproduce privilege and perpetuate discriminatory practices. In terms of technology, the advent of online literacies has entailed a shift in the digital from a palate of tools to a portal through which we engage with our informational, social, and media worlds (social, economic, cultural, scholarly and political). In terms of practices, there are significant shifts afoot in our views of learning and research on learning. In particular, there is a growing appreciation of the situatedness of learning, including research shaped by sociocultural understandings of literacy practices and their

diverse underpinnings for different peoples (e.g., Flood & Anders, 2005; Gunderson, 2006; Hare, 2013; Hare, 2016; Henry, 2017; Marshall & Toohy, 2010; Rogers & Soter, 1997; Rogers, Marshall & Tyson, 2006; Shapiro, 1996; Shapiro, Anderson & Anderson, 2002).

Befitting these developments, there has also been a shift to research that is action-oriented and geared toward formative pursuits, rather than that which is pre-set and sanitized (Design-Based Research Collaborative 2003; Reinking, & Bradley, 2008; Stahl, King, & Lampi, 2019). Such pursuits involve forms of participatory engagements (Jenkins, 2009); and strategies for engaging with our world through a multidisciplinary lens that capitalizes and builds upon the different expertise of various fields of study (e.g., Halliday & Martin, 1993; Shanahan & Shanahan, 2008). Growing out of grounded studies of literacy practices, views of comprehension have expanded to embrace disciplinary reading—tied to how experts in different fields (e.g., physics, chemistry, geography, history, medicine, computer science) might read, problem solve, and conduct their inquiries. As Shanahan and Shanahan (2008) suggested, this entails a shift to literacy in the future that is more differentiated in meeting the changing needs of learners. As they stated, it involves “...a literacy curriculum that directly guides students to better meet the particular demands of reading and writing in the disciplines than has been provided by traditional conceptions of content-area reading” (p. 57).

These developments befit this whirlpool of activity around participatory learning, disciplinary comprehension, project-based learning, and design experiments. Further, they capitalize upon the virtual tools afforded by digital engagements, exploring the different ways of knowing reflected across a planet of varied and diverse peoples with different interests and ways of seeing the world.

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