

# A Multiple Streams Analysis of Recent Changes to State-Level Dyslexia Education Law

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## **Abstract**

This article provides an overview of recent changes to state-level dyslexia legislation. It begins by applying a variant of Kingdon's multiple streams approach to explain how the dyslexia education "policy window" came to be opened. The article then describes the most likely effects and side effects of the new laws. Likely short-term effects include (a) a greater focus in schools on dyslexia screening and intervention, (b) greater use of multitiered systems of support and explicit instruction, and (c) changes in teacher preparation and training. Possible long-term effects include a reconceptualization of what constitutes "normal" school practice.

## **Keywords**

assessment, disability, evidence, state policies

As of 2018, 41 states have laws concerning the education of students with dyslexia.<sup>1</sup> Most of these states passed the dyslexia legislation within the last 6 years (2012-2018; Youman & Mather, 2013, 2015). At first glance, this trend is somewhat surprising. Not only is dyslexia legislation being

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passed at an unusually fast rate but also the enactment of the legislation is taking place in a political climate that, on its face, appears uncondusive to the legislation's content and intended goals. As a number of educational policy researchers have noted, the period from 2012 to 2018 witnessed a public backlash against state-mandated testing (Brewer, Knoeppel, & Lindle, 2015; Phi Delta Kappan, 2015; Polikoff, Hardaway, Marsh, & Plank, 2016). It also witnessed the continuation of a long-standing debate about the costs and benefits of explicit instruction (e.g., Bonawitz et al., 2011; Kirschner, Sweller, & Clark, 2006). Finally, a public discourse on the neurodiversity of student performance has emerged that frames dyslexia as an "advantage" rather than a condition needing remediation (e.g., Eide & Eide, 2012). Despite these trends, laws are being passed that seek to remediate dyslexia on the grounds that it should be considered a deficit. These laws generally promote the universal screening of early elementary students with standardized tests, and the use of explicit instruction. What explains this turn of events?

To answer this question, we applied a variant of Kingdon's multiple streams approach (MSA) to trace the emergence of what appears to be a dyslexia education reform agenda. We argue that the dyslexia legislation policy window for this agenda was opened by three factors or "streams" that coalesced shortly after the turn of the century. MSA holds that policy ideas float around in a sort of "primeval soup" of discourse until a focusing event and/or policy entrepreneurs cause three streams—the problem stream, the policy stream, and the politics stream—to merge. The problem stream refers to a societal problem that requires a political solution. The policy stream refers to the solutions that experts, advocacy groups, and policy makers propose to address a societal problem. The politics stream refers to the political landscape, including public opinion, existing laws, and other factors that make certain policy solutions viable for addressing the problem stream. Our analysis suggests that in the case of dyslexia education reform, the problem stream was that students with dyslexia have historically been ignored or underidentified and underserved in public schools. To address this problem, intermediary organizations, especially parental and disability advocacy organizations, began to push for legislative reform in earnest around the start of the new millennium. However, this "policy stream" would not gain its force until the 2010s when an array of political factors made specific provisions common to dyslexia legislation politically feasible. These factors, which constitute the "politics stream," include (a) major shifts to research and practice standards during the No Child Left Behind (NCLB) era, (b) related changes to federal law and technical infrastructure, and (c) changing perceptions of dyslexia, both among researchers and the public.

## *Theoretical Framework*

Because our primary objective was to understand the increase in dyslexia legislation, we applied a variant of Kingdon's (1984) MSA, a well-known philosophical framework for analyzing how and why particular policy windows open. The assumptions on which MSA rests make it a useful analytic tool because they help to describe "the phenomenon of a policy idea 'whose time has come'" (Howlett, McConnell, & Perl, 2015). MSA recognizes that policy formation is messy because it conceives of policy formation as something akin to an evolutionary process (Cairney & Jones, 2016). The motives of political actors are often complex, ambiguous, and based on imperfect information. Moreover, the intentions of policy actors alone are not enough to ensure a given outcome because context matters.

Another analytical benefit to Kingdon's MSA is that it helps researchers guard against simplistic, teleological explanations of policy development. The three streams of MSA do not constitute separate and sequential linear stages that occur one after the other (e.g., first there was a problem, then a solution was identified, then politicians implemented the solution). Instead, a fundamental premise in MSA is that policy entrepreneurs often "go looking for problems" because they already have potential solutions in hand. By looking for examples of this solutions-in-search-of-problems dynamic, researchers can often find historical antecedents for policy trends that may have otherwise appeared to spontaneously generate. When used appropriately, MSA also guards against accounts that overemphasize the role interest groups play in shaping policy by calling attention to their inability to perfectly enact their agendas.

The operationalization of MSA, however, is not without its limitations. As Howlett et al. (2015) note, one limitation of MSA is that it focuses chiefly on agenda setting and not the subsequent stages of the policy process. This is a limitation for any policy analysis because it overlooks feedback cycles and the inflow of new actors and ideas that may lead policy actors to adapt their goals and strategies. In educational contexts, the focus on agenda setting is particularly limiting because policy implementation tends to be complicated by both the legislative process, the actual translation of law to practice, and, of course, the very implementation process itself (Cohen-Vogel et al., 2015; Cook & Odom, 2013). Focusing exclusively on agenda setting may be useful in certain instances, but generally, doing so would obscure what happens in schools.

Howlett et al. (2015) proposed a variant of MSA that is better suited to making sense of the decision-making and implementation process in education: the five streams approach (FSA). FSA adds two streams to the MSA

confluence: the process stream and program stream. The process stream acknowledges that institutional processes—which may have nothing to do with a given policy idea—can, nevertheless, affect policy agendas and their implementation. For instance, grant funding cycles, state budget deadlines, and even parliamentary procedures all indirectly affect what happens in schools. The program stream recognizes that policy actors need to integrate new policies with extant ones, which can have unanticipated but important effects on policy adoption and implementation. FSA also extends MSA by recognizing that a specific stream can be dominant at a certain time point. Consequently, it encourages attention to the ways an ideological bent or institutional priority may drive the policy formation process. These pressures may shift as the policy moves from concept to practice, or as new actors, institutions, and ideas enter the policy-making process; but it bares emphasizing that the concept of Maslow's Hammer—that is, if the only tool one has is a hammer, then it is tempting to treat everything as if it were a nail—applies to policy making as much as it does to other human endeavors. Experts may be inclined to solve problems by drawing only on their area of expertise when other solutions may be viable.

### *Research Questions*

In sum, the relatively quick passage of a series of similar state-level dyslexia education laws suggested to us that a dyslexia policy agenda may have formed, and that a policy window facilitating its passage into law had opened by the early 2000s. We, therefore, applied FSA (a variant of Kingdon's MSA) to answer the following research questions:

**Research Question 1:** What is the nature of the state dyslexia laws that were passed at the start of the 21st century? Are there commonalities across the laws that suggest a basic reform agenda?

**Research Question 2:** How did the dyslexia education reform policy window come to be opened? Can the rapid passage of these laws be understood in terms of FSA?

### **Method**

To answer our research questions, we conducted an analysis of five different types of public documents: (a) state and federal dyslexia legislation, (b) newspapers, (c) national and state department of education communications, (d) national and state press releases, and (e) U.S. Congressional testimony. As a research method, document analysis is particularly useful for studies that

aim to produce rich descriptions of a single phenomenon (Bowen, 2009), such as the opening of a policy window. It can be used as a stand-alone method, or to complement another method, such as the qualitative analysis of interview data (Bowen, 2009).

Document analysis is not a useful method for understanding how organizations and individuals actually operate, or for understanding their private motivations (Bowen, 2009). However, this limitation was not a concern for the present analysis because we were primarily interested in obtaining a basic understanding of recent changes in the policy environment (Cairney & Jones, 2016) and the implications for educational practice. Had our primary aim been to contribute to research on how policy entrepreneurs respond to environmental changes strategically (Cairney & Jones, 2016), or how the role of intermediary organizations is changing the policy-making process (DeBray, Scott, Lubienski, & Jabbar, 2014), we would have placed more emphasis on analyzing data that could falsify the “public images” created by the documents we analyzed. An additional reason for our reliance on document analysis is that the documents are stable sources of evidence, and are less likely to create reactivity than interviews and other more intimate forms of data collection (Bowen, 2009). Reactivity, also known as the “observer effect,” is a phenomenon, whereby subjects are affected by the research process or vice versa, which increases the likelihood of erroneous findings (Lavrakas, 2008). We sought to avoid reactivity, not only because it is a threat to validity (Onwuegbuzie & Leech, 2007) but also because we considered the potential for reactivity to be high as a consequence of our professional affiliations.

## *Data*

To locate documents, we searched a number of sites on the Internet from June 2017 to September 2017. These sites include Google; the National Conference for State Legislators bill tracking database; advocacy websites including Dyslexia.com, Understood.org, DyslexiaAdvantage.org, DyslexiaIDA.org (i.e., the International Dyslexia Association), and Nessy.com; and dyslexia research websites including Oxford University’s “The History of Dyslexia” project and the Yale Center for Dyslexia and Creativity. In sum, we located 164 documents (76 legislative documents [i.e., bills, statutes, and administrative codes], 10 newspaper articles, one Congressional Hearing transcript [i.e., House Committee on Science, Space, and Technology hearing, “The Science of Dyslexia,” from September 18, 2014], two federal communications, and 75 state education agency-issued communications [e.g., state dyslexia resource guides, dyslexia-related webpages, and State Systematic Improvement Plans]). We ceased collecting data once we reached saturation

relative to our research questions (Saunders et al., 2018). That is, we comprehensively reviewed state dyslexia education laws to address Research Question 1 (i.e., the data were objectively saturated). Meanwhile, sufficient data had been collected to exemplify MSA/FSA for Research Question 2 (i.e., a priori thematic saturation had been attained).

## Analysis

Data for this study were coded in two phases. In the first phase, dyslexia legislation was coded inductively in a spreadsheet as part of a separate project aimed only at describing trends in dyslexia legislation (i.e., Research Question 1). Inductive analysis involved detailed review of state laws to derive key themes and logics (Miles & Huberman, 1994). Specifically, codes were generated to describe legislation content that described educational practices that were common to at least five states. Seven codes were generated: defining dyslexia, intervention approaches, screening approaches, professional development, preservice preparation, dyslexia specialist appointments, and early prevention. Coding results for this portion of the study were reviewed by five representatives from two parental advocacy groups, as well as eight representatives from state education agencies. Up-to-date coding results that reflect more recent changes in legislation are publicly available online at: <https://improvingliteracy.org/state-of-dyslexia>.

In the second phase of analysis, we coded supplementary documents, including U.S. Congressional testimony, federal communiques, newspaper articles, and portions of dyslexia advocacy websites to answer Research Question 2. We used deductive and inductive coding procedures to situate data within a multiple streams framework. Specifically, we located texts that could elucidate each element of the MSA/FSA framework. Within these texts, we induced themes to describe the MSA/FSA components in terms of dyslexia education reform. For example, Congressional testimonies and the preambles to many state laws explicitly situated changes in dyslexia legislation within the current political landscape (e.g., by making arguments about why dyslexia education had not been adequately addressed previously). Recognizing the relevance of these texts to the politics stream, we developed subcodes to summarize what the texts explicitly argued about the political landscape. Given that our primary objective was to situate texts within MSA/FSA, there were no frequency requirements for inducing codes in this manner. Instead, the main criterion for inducing subcodes within the MSA/FSA framework was explanatory power and relevance to the research questions.

In the next section, we present our interpretation of the coded data using MSA/FSA as an organizational framework. We use our expertise in the

psychology of reading, dyslexia, and the history of reading policy to contextualize empirical findings where appropriate.

## Results

### *Part I: Policy Formation*

*The problem stream.* The MSA/FSA framework suggests that policies are formed in response to a societal problem. Our analysis of the data suggested that dyslexia legislation was aimed at the widespread perception that children with dyslexia were underidentified and undertreated in public schools. Preambles to many state laws indicated that dyslexia was a widespread phenomenon that was not being adequately addressed in schools. Similarly, the House Committee on Science, Space, and Technology held a hearing on “The Science of Dyslexia” in September 2014, in which five of the seven witnesses described the prevalence of dyslexia (with some estimates being as high as one in five students), and the lack of support students with dyslexia receive in schools.

One of the key assumptions made by MSA/FSA is that a societal problem may exist for quite some time before a policy window opens to facilitate remediation. We found evidence that this was the case here. The history of dyslexia is quite long. The term “dyslexia” itself was coined by a German ophthalmologist, Rudolph Berlin, in 1887, to describe what he considered to be a form of “word blindness” (Wagner, 1973). The first academic paper on the disability appeared about a decade later. From the 1920s to the 1940s, specialized schools and dyslexia societies were founded in both the United States and the United Kingdom (e.g., the Orton Society [now the International Dyslexia Association], the Millfield School). The passage of Section 504 of the Rehabilitation Act of 1973 was the first civil rights law enacted in the United States. The Education for All Handicapped Children’s Act (EHA) in 1975 and the Individuals with Disabilities Education Act (IDEA) in 1990 ostensibly provided the federal statutory basis for providing special education services to students with dyslexia. Thus, dyslexia education and the perceived undertreatment of students with dyslexia was in no way a new problem at the start of the new millennium.

Why, despite dyslexia’s long history, was it not until the 2000s and 2010s that dyslexia education laws were passed? Drawing on our expertise, we suggest three main reasons:

First, diagnosing and treating an individual with dyslexia has historically been a challenging undertaking due to several interrelated factors. Prior to the 1990s, there was little consensus about the definition of dyslexia (e.g.,

Elliot & Grigorenko, 2014; International Dyslexia Association, 2017; McGuinness, 1997; Stanovich, 1988). There were (and continue to be) technical challenges in the diagnosis of dyslexia (Aaron, 1994; Cotton, Crewther, & Crewther, 2005). There are also debates about how to treat dyslexia (International Dyslexia Association, 2016; International Literacy Association, 2016b). Although these multifaceted debates do not lend themselves to easy summary, it should be noted that they bear historically on the formal diagnosis of dyslexia, as well as questions about special education eligibility. Without a priori conceptual clarity and valid and reliable diagnostic instruments, it is not possible to differentiate students with dyslexia from “garden-variety poor readers” (Stanovich, 1988) who may struggle with reading because of poor instruction or other background factors. By extension, passing legislation to address the needs of students with dyslexia would have been difficult at the time.

Related to the technical challenges described above, two major trends in education policy would have made it difficult to pass state-level legislation concerning the education of students with dyslexia: the passage of IDEA (1990) and the Reading Wars. IDEA (1990) stated that children with disabilities were entitled to a free appropriate public education. Ostensibly, the law provided for students with dyslexia through its protection of individuals with “learning disabilities.” As noted above, however, there have historically been debates about what is meant by dyslexia, how it is diagnosed, and the extent to which it was synonymous with the concept of “specific reading disability” (Vellutino, Fletcher, Snowling, & Scanlon, 2004), arguably, an equally nebulous concept (Spear-Swerling & Sternberg, 2018). Without weighing in on the substance of these debates, it can be noted that the labels “dyslexia” and “specific learning disability” could potentially apply to many children. Some researchers hold that dyslexia is the most common neurobehavioral disorder affecting children (e.g., Shaywitz & Shaywitz, 2005), and the majority of children with learning disabilities have their primary deficits in reading (Lyon, 1996). Under IDEA, school districts and states would bear financial responsibility for providing a free and appropriate public education to these students. The political changes engendered by IDEA may have contributed to difficulties in passing state-level legislation by reducing the perceived need for such laws, while increasing the stakes associated with the identification of dyslexia.

The state of reading research and practice would have also complicated legislative reform. Reading instruction became highly politicized during the 1980s and early 1990s in the so-called “Reading Wars” (Adams, 1990; Kame’enui, 1996; Pearson, 2004). Much of the Reading Wars focused on



beginning reading instruction and the debate between phonics instruction and whole language. Dyslexia was not a central topic in this debate, but it was indirectly caught up in it. Today, dyslexia is generally considered a phonological processing deficit that involves the ability to decode and spell printed words in isolation (Stein, 2018). That is, individuals with dyslexia have difficulty breaking individual words into sounds, and then associating the constituent sounds of a word with the correct printed letters. One of the practical challenges in the identification of individuals with dyslexia is that individuals may struggle with phonological processing for a variety of reasons, including inadequate instruction (Vellutino et al., 2004). As one may infer, there was no consensus about what “adequate instruction” entailed during the Reading Wars, or whether teachers had the knowledge and skills to provide it (Moats, 1994, 2009). Moreover, phonics, one of the now-popular remediation strategies for dyslexia faced extra political scrutiny during this period (International Dyslexia Association, 2017; Pearson, 2004). During the Reading Wars, it would have been extremely difficult to pass laws concerning the identification and treatment of dyslexia without taking a side in the conflict (intentionally or otherwise).

Finally, a combination of factors may have dissuaded parents and schools from advocating for dyslexia intervention until the early 2000s. It has long been noted that there is a stigma associated with receiving special education services, which required a disability category or “label” in the United States (Jones, 1972). Unlike some other disabilities, popular discourse has generally held that individuals with dyslexia tend to be “intelligent” or “bright,” despite having difficulties with reading. As the Yale Center for Dyslexia and Creativity website states, “The definition of dyslexia that has been established scientifically and used for over a century is an unexpected difficulty in reading—unexpected in relation to: intelligence, age/grade level, education and professional status.” This “unexpectedness” may have made the dyslexic and/or special education label particularly undesirable for some students and their families (Barga, 1996; Burden, 2008; Hornstra, Denessen, Bakker, van den Bergh, & Voeten, 2010; Leitão et al., 2017; Riddick, 2000). If we consider the stigma of such labels in conjunction with the general difficulties associated with formally providing students with special education services (e.g., Lee, 2002, 2004; Pasternak, 2004), it is possible that the key actors involved in the identification and treatment of dyslexia in schools (i.e., students, parents, and educators) may have been less inclined to engage in the complicated and potentially expensive process of addressing the needs of students with dyslexia (e.g., Ryder, 2018), especially if prospective benefits were unclear (e.g., Morgan, Farkas, & Wu, 2011; Morgan, Frisco, Farkas, & Hibel, 2010).

There are likely other reasons that education reform for students with dyslexia did not occur with the current level of force prior to the 2000s. However, we reviewed major historical trends that preceded the legislation to emphasize the point that the opening of the dyslexia policy window in the 2000s and 2010s was not the result of dyslexia being newly discovered or because a breakthrough treatment had been developed. Rather, policy actors were able to take advantage of a changing political landscape to push their agendas through. In the next section, we consider the content of an emerging policy agenda, and the changes that precipitated it.

*The policy stream.* Our analysis of state law suggests that a dyslexia policy agenda began to emerge in the early 2000s. This agenda consisted of seven key objectives:

1. promoting a common definition of dyslexia (specifically, the International Dyslexia Association [2017] definition, or a close variant);
2. promoting early intervention (especially grades K-3) to prevent future reading difficulties;
3. promoting universal screening among elementary school students;
4. promoting the use of “evidence-based” and “multisensory” interventions in response to the universal screening results, especially in a multi-tiered system of supports (MTSS);
5. promoting the use of explicit, direct, and/or structured sequences of instruction;<sup>2</sup>
6. encouraging state education agencies to provide resources and in-service training to teachers, so that they can administer the aforementioned screenings and interventions; and
7. changing university preservice training requirements, so that teachers entering the workforce will be able to administer the aforementioned screenings and interventions.

Two important points are noteworthy about this agenda. First, no one owns this agenda en toto. Although advocacy groups that operate in this area often have explicit political agendas related to dyslexia and literacy education (e.g., Decoding Dyslexia, 2012; International Literacy Association, 2016a), we induced the components of this agenda based on major trends in state legislation. We took this approach because we wanted to understand the laws that have actually been passed and the extent to which they differ from advocacy group positions. We found that 20 states had laws that addressed screening; 13 states had laws that addressed intervention; nine states had laws addressing

explicit, direct, and/or structured sequences of instruction; 18 states required dyslexia in-service training for teachers; nine states had attempted to reform their teacher preparation programs to better serve students with dyslexia; and all the state laws were ostensibly aimed at early intervention. The agenda can be considered bipartisan insofar as 17 bills had a Democrat as the primary sponsor, whereas 22 had a Republican as the primary sponsor. (The remaining bills had either a bipartisan or unclear sponsorship history.)

The passage of these state laws likely reflects the efforts of policy actors in the form of experts, advocacy groups, and policy makers, including the International Dyslexia Association (and its 44 local branches), the Yale Center for Dyslexia and Creativity, the Dyslexia Caucus, and Decoding Dyslexia, a self-described “parent-led grassroots organization” that is active in all 50 states and four Canadian provinces. However, this is not an exhaustive list of actors. Dyslexia handbooks, frequently issued by state education agencies after the adoption of dyslexia legislation, acknowledged contributions of individual educational researchers, organizations such as the K-12 Education Foundation and the National Center for Learning Disabilities, federal technical assistance centers, local learning disabilities associations, and private and public-private education service providers (e.g., New Hampshire Department of Education, 2016; Texas Education Agency, 2014). Finally, politicians, legislative personnel, and interested members of the public also shaped the content of laws as is evident from bill revision histories. Thus, an array of actors helped to establish the policy agenda described in this article.

Second, there was not a single, defining moment at which point this agenda coalesced. One can find journal articles from the Orton Society’s *Annals of Dyslexia* as early as the 1970s that advocated for screening for specific language disabilities (Rawson, 1971). Recommendations on behalf of structured, sequential, multisensory teaching have been advanced since the 1960s when the Orton–Gillingham approach was developed (Gillingham & Stillman, 1960). As early as 1985, Texas had passed an unfunded legislation requiring universal screening for dyslexia, and related training for teachers (Cox & Hutcheson, 1988). There were also numerous attempts during the 1990s to change state law on teacher preparation requirements such that teachers would be better able to provide phonics instruction (Pearson, 2004). Thus, as predicted by MSA/FSA, there is evidence that the individual aspects of the agenda floated around in a soup of ideas decades before they were reflected in state law. In the following section, we consider what historical changes precipitated the rapid uptake of these ideas in the early 2000s.

*The politics stream.* According to Mehta (2013b), the American education policy paradigm shifted from 1980 to 2001. As part of this shift, the Democrat and Republican parties reevaluated some of their long-standing positions on education, the federal government increased its level of involvement in education, and an array of new accountability mechanisms were introduced. Mehta convincingly argues that this transformation left a restructured political landscape in its wake. By 2001, a paradigm emerged that “emphasized schooling’s economic importance, the need for across-the-board improvement, the responsibility of schools rather than society for tackling the reform challenges, and measurement of success by test scores” (p. 314). He notes further that the paradigm “affected the content of what was being discussed, the agenda status of issues, the players involved, their standing to speak, and the venue in which the issue was debated” (p. 316).

With this overarching transformation as a backdrop, we identified four major historical changes that seem to have opened the policy window for the dyslexia agenda. First, the Reading Wars dissipated, in part, because of the national reading research initiatives and reports about the importance of teaching the “big ideas” of beginning reading, including phonological awareness and phonics (Adams, 1990; National Reading Panel, 2000; National Research Council, 2002). Second, a common definition of dyslexia came to be widely supported by the research community. Third, “old policy solutions” became politically and technically viable (Mehta, 2013b). Fourth, the stigma associated with dyslexia was either attenuated or conceived as an advantage. These shifts seemed to have created a dynamic, whereby demand for dyslexia education reform became both more widespread and intervention became more feasible. Thus, there may have been more political willingness to put the dyslexia agenda into action.

*End of the reading wars?* Changes in reading research and professional research standards during the 1990s and early 2000s led to an environment that favored the above dyslexia agenda. Pearson’s (2004) history of the Reading Wars offers some insight into how the overarching changes described by Mehta (2013b) were reflected in reading research and practice:

Somewhere in the mid-1990s, the discourse of literacy research began to take a new turn [i.e., away from the phonics versus whole language debate]. Stimulated by research supported by the National Institute for Child Health and Human Development, a “new” brand of experimental work began to appear, beginning in the mid-1980s and gathering momentum steadily since that time (Lyon, 1995a; Lyon & Chhaba, 1996). This is experimentalism reborn from the

1950s and 1960s, with great emphasis placed on “reliable, replicable research,” large samples, random assignment of treatments to teachers and/or schools, and tried and true outcome measures . . . Two themes from this work have been particularly important in shaping a new set of instructional practices—phonemic awareness and phonics instruction (p. 225).

Pearson (2004) goes on to argue that there emerged “overwhelming evidence . . . that phonemic awareness is a necessary but not a sufficient condition for the development of decoding and reading” (p. 225). He ties this epistemic, philosophical, and pedagogical shift to a number of changes in professional standards and policy, including the convening of the National Academy of Science’s Committee on Preventing Reading Difficulties in 1996, the Congressionally mandated National Reading Panel in 1997, and the passage of the NCLB in 2001. We note that the American Educational Research Association (AERA) and the National Research Council also changed their evidentiary standards for educational research at about this time (National Research Council, 2002; “Standards for Reporting on Empirical Social Science Research in AERA Publications,” 2006), and that federal policy has increasingly promoted a specific epistemological and methodological interpretation of the concept of “evidence-based” since 2001 (see U.S. Department of Education, 2016, for current guidance).

As Pearson (2004) argued, the publication of the National Academy of Science’s and the National Reading Panel’s reports essentially codified a new reading research paradigm that favored quantitative research methodologically, and phonemic awareness and phonics instruction substantively. As a consequence, the research base for whole language and constructivist approaches (which according to Pearson drew heavily on ethnographies and teacher reports) did not have as much traction in “official conversations” about research-based practices (p. 228). Indeed, popular media outlets began to report the “end of the Reading Wars” shortly after Pearson’s publication (Smydo, 2007; Usable Knowledge, 2005).

Although the codification of the new reading research paradigm has faced criticism from some researchers (Allington, 2006; Pearson, 2004), we infer that it contributed to the passage of state-level dyslexia legislation. Pearson and Hiebert (2010) observed that

the report of the [National Reading Panel] has proved to be amazingly influential in shaping policy and practice at both the federal level (through the Reading First provisions of NCLB) and the state level (by virtue of policies designed by states to be aligned with NCLB–Reading First). (p. 287)

We similarly found in our analysis that most state dyslexia handbooks, which provide guidance on how to implement state law, cite the findings of one or both panels. These handbooks also frequently refer to the IDA's Knowledge and Practice Standards, which, in turn, cites the findings of both panels. In accordance with MSA (Béland & Howlett, 2016; Kingdon, 1984), this dynamic suggests that successful policy entrepreneurs, such as disability and dyslexia advocacy organizations, were able to couple their policy solutions to emerging political opportunities. In this case, the consensus building that took place at the National Reading Panel and other research meetings generated common language and expectations to which policy actors could refer when drafting legislation and collaborating with various parties to get their legislation passed and implemented.

Another example that illustrates the importance of Pearson's (2004) new paradigm is the frequent mentioning of "evidence-based instruction" in state law and Congressional testimony. These texts do not define what is meant by "evidence-based" instruction. However, 11 states describe specific content that should be included in dyslexia education reform; and, this content is roughly in keeping with the National Reading Panel's recommendations for improving reading. The panel recommended several instructional focal points to improve early reading: phonemic awareness, phonics, fluency, guided oral reading, teaching vocabulary words, and reading comprehension strategies. The laws of Minnesota and Florida specifically referred to these "five big ideas" in their respective descriptions of teacher in-service and preservice training. Both states explicitly equated these recommendations with evidence-based and scientifically based instruction. New Jersey's dyslexia handbook similarly equates "evidence-based instruction" with instruction that reflects the findings of the National Reading Panel. Finally, findings from the National Reading Panel are often cited in debates about dyslexia and reading instruction, sometimes to support competing arguments (e.g., International Dyslexia Association, 2016; International Literacy Association, 2016b). Thus, in keeping with both the MSA and Pearson and Hiebert (2010), it appears that the paradigm shift that occurred at the turn of the century narrowed what could be considered a "feasible" policy action by changing research and practice standards.

*Dyslexia "consensus" definition.* Another important shift was the convening of what the International Dyslexia Association (2017) calls "The Dyslexia Consensus Project." Beginning in 1994 (during the so-called "Decade of the Brain"), researchers working with the International Dyslexia Association and the National Center for Learning Disabilities undertook a project to promote the following common definition of dyslexia:

Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge. (Lyon, 1995b; Lyon, Shaywitz, & Shaywitz, 2003, p. 2)

Although there are still debates about the definition of dyslexia (e.g., Elliot & Grigorenko, 2014; International Literacy Association, 2016b), the promotion of a common definition was important because a problem definition sets the trajectory for policy solutions and alternatives (Weiss, 1989). In this case, it also helped situate dyslexia within a developing ontology of brain structure and functioning, which also affects practical nonpolicy solutions (e.g., school-based intervention, research programs). By defining dyslexia in biological terms, policy actors were able to frame dyslexia as something akin to a medical or public health problem requiring treatment. They also drew attention to relevant proximate variables, and even suggested a causal origin. Others have noted that invoking neuroscientific explanations in public discourse in this manner has considerable rhetorical power (Gabriel, 2018; O'Connor, Rees, & Joffe, 2012). Based on the definition of dyslexia above, a “common sense” response to dyslexia would be to intervene on the most malleable psychological variables, or to establish an infrastructure that facilitated this goal. The dyslexia laws generally furthered these two ends. Conversely, blaming individuals (e.g., the student, the student’s parents or teacher) for a dyslexic child’s reading difficulties or denying that dyslexia “is real” may seem less justifiable (O’Connor et al., 2012).

*Agenda becomes more technically and politically feasible.* The dyslexia policy agenda also became more feasible in the 2000s due to the increasing federal presence in educational decision making. We stated earlier that technical challenges related to screening and identification may have prevented a policy window from opening, despite dyslexia being a problem for more than a century. We are unaware of any major technological shifts in testing or intervention practices that would have made the dyslexia policy agenda significantly more feasible in the 2010s than in the 1990s. Although there have been steady incremental improvements to diagnostic tests and intervention practices, many of the educational products that are directly or indirectly promoted through the state dyslexia laws have their origins in the 1990s, if not earlier. In other words, there was simply no “steam-engine or nuclear fission moment.”



That said, the shift toward federal control of education described by Mehta (2013b) led to the implementation of an array of accountability mechanisms, as well as a vast expansion to the bureaucratic institutions that disseminate and vet educational research and products (e.g., Institute of Education Sciences, What Works Clearinghouse, federal comprehensive centers). These changes were such that by 2014, Dr. Sally Shaywitz of the Center for Dyslexia and Creativity, could claim before a House Committee Hearing, “In dyslexia, there is an abundance of high-quality scientific knowledges so that we do not have a knowledge gap but an action gap.”

Rather than reviewing every change that may have contributed to Shaywitz’s perception that there was an action gap, we note three major shifts revolving around (a) infrastructure upgrades stemming from NCLB and Race to the Top (RTTT), (b) the reauthorization of IDEA in 2004, and (c) results-driven accountability mechanisms.

NCLB and RTTT provided states with additional incentives to address early reading difficulties. They also expanded the capacity of states and schools to do so. NCLB’s introduction of testing requirements, adequate yearly progress objectives, and sanctions for failure made schools and states more accountable to the federal government (Mehta, 2013b). It increased instructional time on reading, as well as spending on instructional and support services (Dee, Jacob, & Schwartz, 2013). These shifts seem to have supported the state dyslexia laws in two ways. First, they may have pressured states to address low reading achievement levels through policy changes and through the purchase of instructional support materials. We found that most dyslexia laws were passed prior to 2014, the point at which the NCLB timeline for obtaining 100% proficiency on state measures of achievement was set to expire. Less concretely, NCLB’s accountability mechanisms are often thought to be symbolic of a decades-older cultural shift, whereby schools needed to be held accountable for “failing” students and society (Mehta, 2013b). Gabriel and Woulfin’s (2017) analysis of a state legislation hearing reports that speakers (especially parents) often described teachers and schools as having failed their child to justify the legislation in question. Change in cultural attitudes may have opened new avenues for garnering political support for the state laws (e.g., appealing to different values, cooperating with different groups).

NCLB and RTTT also prompted the revamping of state and federal educational infrastructures (Dee et al., 2013; Dragoset et al., 2016; Richardson, 2002). Broadly speaking, these technological changes favored the dyslexia policy agenda by increasing awareness of scientific findings, such as those produced by the National Reading Panel (e.g., Gersten, Dimino, Jayanthi,



Kim, & Santoro, 2010; Pearson & Hiebert, 2010), and by increasing the prevalence of many relevant technologies, such as potential dyslexia screeners, early reading interventions, and the data management systems needed to use them efficiently. Some states even issued communications explicitly promoting the idea that many schools are already using the technologies needed to implement the dyslexia laws (e.g., Oregon Department of Education, 2016b).

Other major shifts occurred following the reauthorization of IDEA in 2004. For example, the reauthorized IDEA required schools to shift away from what has been called a “wait-to-fail” model of special education to a proactive “child-find model.” Many states responded to this shift by implementing MTSS strategies, such as response to intervention (RTI; Musgrove, 2011). It has been argued that this shift helped to “blur the lines of special education” such that special education, as originally conceived, represented more of a continuum than a binary concept (Fuchs, Fuchs, & Stecker, 2010). In accordance with this larger cultural shift, we found that state dyslexia laws frequently recommended or required the use of screening and MTSS, which would allow schools to locate students suspected of having dyslexia on this continuum. Less frequently, the laws also promoted specific intervention strategies, a phenomenon that is also in accordance with the MTSS/RTI framework insofar as higher tiers often involved changes in instructional delivery (e.g., using scripted or partially scripted lessons; Fuchs et al., 2010). Along similar lines, the U.S. Office of Special Education Programs (OSEP) required states to select state-identified measurable results as part of the results-driven accountability initiative in 2014. Twenty-two states selected literacy-related goals that were at least roughly aligned with the provisions of the dyslexia laws, which enabled them to pursue two aims at once. In sum, changes to federal special education policy that were only indirectly related to dyslexia ultimately contributed to the groundwork that made the dyslexia agenda feasible.

*Disability stigma reduced.* A third factor in the emergence of the dyslexia policy agenda may be the waning of the stigma associated with dyslexia. We cannot estimate the extent to which this is so based on our data, but one can now find popular texts promulgating the idea that dyslexia can be *advantageous* rather than a disadvantage in the form of a disability. Books such as *The Dyslexic Advantage* (Eide & Eide, 2012) and *The Gift of Dyslexia* (Davis & Braun, 2010) are just two of the publications signaling a shift in attitudes about dyslexia. Business magnate Sir Richard Branson, even proposed a dyslexic-only sperm bank, albeit probably as an April Fool’s joke (Branson, 2017).

The change in perception is due, in part, to a concerted political effort to change the way the public thinks about dyslexia. In the 2014 Congressional dyslexia hearing, Congressman Lamar Smith stated shortly after the hearing's opening, "For most people, dyslexia is a disability. But if we change the way we approach it, we can turn disability into possibility and give millions of individuals a brighter and more productive future." Several speakers also spoke positively about dyslexia, making claims such as, ". . . many scientists, innovators and other outside-the-box thinkers have dyslexia, such as Albert Einstein, Leonardo da Vinci, and Galileo"; and individuals with dyslexia "think" and "view the universe" differently than other people. Congressman Smith also stated at one point, "I have known a number of people with dyslexia. None of them were dumb. Even though dyslexia is a lifelong condition, with proper diagnosis and instruction, individuals with dyslexia can succeed in school and go on to have successful careers." Finally, one parent explicitly stated in her testimony that the risk of stigma or a label never deterred her from seeking a diagnosis. Together, these documents and events suggest there may be less of a stigma associated with dyslexia due, in part, to the inclusion of famous thinkers as dyslexic and what it means practically for learning and everyday living. (We note, however, that arguments about the benefits of dyslexia remain subject to debate in the scientific literature [e.g., Brunswick, Martin, & Marzano, 2010; Ritchie, Luciano, Hansell, Wright, & Bates, 2013].)

Whether a cause or a consequence of changing perceptions about dyslexia, it is important to point out that the parental advocacy groups, such as Decoding Dyslexia, have come to play an important role in lobbying for state-level legislation. The network, which formed in 2011 (Johnson & Lynam, 2015), is comprised of state chapters. These chapters often provide talking points, model legislation, legislation tracking, and grassroots movement starter-kits through their websites. In testimonials for state legislation, they also seek to counter the idea that their children are "lazy" or "dumb" (Gabriel & Wouffin, 2017). Although we did not attempt to quantify the influence of groups such as Decoding Dyslexia, we note that the founding of the organization coincides with an uptick in the introduction and passage of dyslexia legislation in 2011. However, this influence postdates the introduction or passage of at least 20 bills (Youman & Mather, 2013). The long "fits-and-starts" history of state dyslexia legislation underscores the utility of MSA, which recognizes the importance of advocacy groups in shaping law, while recognizing the limitations of assigning causal primacy to individual organizations

## *Part II: The Consolidation and Decision-Making Phases*

Thus far, we have considered how the dyslexia policy agenda began to emerge through the confluence of Kingdon's three streams. As an extension of Kingdon's approach, FSA holds that after the streams coalesce, the policy agenda is consolidated as more actors respond to it during the decision-making and implementation phases. Given that the decision-making and implementation processes surrounding dyslexia legislation is ongoing, it would be premature to provide a general account of the later phases of the FSA model. However, several key events and trends are already evident, making it possible to describe emerging feedback loops, and the process and program streams.

*Consolidation and federal-level feedback.* An early example of a feedback loop involves the entry of federal actors into the agenda-setting process—an entrance that occurred after many states had passed dyslexia legislation, but which seems to have prompted other states to adopt the agenda. Federal actors took a major step in promoting the dyslexia agenda when the bipartisan Dyslexia Caucus was formed in 2012. The objective of this caucus was to raise awareness of dyslexia to provide a better education for children with dyslexia. In September 2014, the Caucus sponsored the aforementioned Congressional hearing. In keeping with the Caucus' objectives, the hearing was meant to raise awareness about dyslexia, and to change the way people thought about it.

Shortly after the hearing, the U.S. Department of Education's Office of Special Education and Rehabilitative Services (OSERS) issued a "Dear Colleague" letter to state education agencies clarifying that, "there is nothing in the IDEA that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluation, eligibility, determinations, or IEP documents" (Yudin, 2015). The publication of the "Dear Colleague" letter is evidence of a feedback loop because it is an instance of the federal government responding to state-level activism with the intention of supporting further state-level change. After the "Dear Colleague" letter was published, many state departments of education issued communications reiterating points originally made in the letter. Several states mention the letter specifically (e.g., Oregon Department of Education, 2016a; Wisconsin Department of Public Instruction, 2016), and at least one state explicitly cited the letter as a catalyst for taking action to change dyslexia education practices (Tennessee Department of Education, 2016).

FSA holds that feedback loops, such as federal actors intensifying state-led dyslexia education reform, sometimes serve to consolidate policy agendas.

Evidence of this dynamic is found in the bipartisan legislation, Research Excellence and Advancements for Dyslexia (READ) Act, that Congress passed in 2016 (Smith, 2016). The READ Act, which was introduced by the cochairs of the Congressional Dyslexia Caucus, allocated US\$2.5 million for dyslexia research for each year of 2017 to 2021, especially in the areas of early identification of dyslexia, professional development for teachers and administrators, and the development of curricular tools. Although the law's provisions are related to the dyslexia agenda, they do not overlap perfectly. They are also less politically divisive because they do not include mandates or protracted changes. In short, they are arguably a consolidated version of the state-led agenda.

*Evidence of a process stream.* The content of the READ Act also supports the idea that policy agendas can be modified as they pass through process streams, where institutional dynamics may exert their influence on the policy agenda (Howlett et al., 2015). Normally, one would not expect the House Committee on Science, Space, and Technology to lead reform in dyslexia education, given that there are usually several education-specific caucuses better positioned to do so. However, during the House dyslexia hearing, several Representatives reported taking an interest in dyslexia due to personal connections to the issue, such as having a child with dyslexia. Because their personal interests could not completely trump their institutional priorities (e.g., funding science), Congressional speakers seem to have intentionally framed dyslexia education as an issue pertinent to their mission. Representatives did this by arguing that the state of dyslexia education and dyslexia research evinced the importance of funding scientific research in general. The READ Act, which ultimately funded *research* rather than mandating changes to educational *practice*, illustrates how the agenda was modified by the process stream when it reached the federal level.

*Evidence of the program stream.* Finally, there are two lines of evidence supporting the idea of a program stream on dyslexia education reform. First, the substance of the dyslexia agenda was clearly made with an appreciation for the policy program that schools are already required to implement. This dynamic is most noticeable in what policy options are *not* reflected in the dyslexia education agenda. In an ideal world, an array of policies might have been adopted to support students with dyslexia: The school day could have been lengthened to teach *more* content to struggling readers (as opposed to simply promoting the National Panel's five big ideas), extensive curricular reform could have been implemented, more out-of-school levers might have been pulled, and so on. Instead, state laws generally aim to (a) screen for

early reading difficulties and (b) accelerate teaching and learning in certain areas of early literacy. Although one can debate the feasibility and potential efficacy of these strategies, there is nothing unusual about them when considered in the context of the predominant reform strategies of the past two decades (see Yeh, 2006, for instance). They also seem to recognize that schools face financial and temporal constraints that are more difficult to modify than teaching and testing practices. Thus, they seem to reflect an understanding of current school programming.

Variation in state dyslexia laws may also provide some insight into the program stream because some of the variation likely stems from opposition to the dyslexia agenda, particularly for reasons related to preexisting policies and practices. As noted previously, 40 states had some type of law addressing dyslexia education. However, only four states had laws addressing screening, intervention, in-service training, *and* preservice training together. The other 36 states addressed various combinations of these elements. One reason for the lack of legislative uniformity is that various elements of the dyslexia agenda have been opposed at the state level. Although it is beyond the scope of this article to systematically analyze opposition to the agenda, we found that objections to dyslexia legislation have been raised by an array of parties, including fiscally conservative politicians, teacher unions, and professional organizations (e.g., associations of school psychologists). The primary objections we found related to (a) lack of funding to implement the law, (b) a perception that existing laws needed to be better enforced before adding new regulations, (c) a belief that the reporting requirements would be overly burdensome for schools, and (d) a perception that the number of students who might be at risk of dyslexia could be very large. In Mississippi, opposition was also raised to a proposed dyslexia law because it provided funds for students to attend out-of-state private schools, but we did not encounter similar arguments in other states. Bill revision histories lead us to assume that there were debates about the degree to which states should regulate specific intervention and screening requirements (e.g., Which tests or interventions should be used? What happens if schools do not use them?). In sum, extant policies and practices seem to be related to trends in the adoptions of the dyslexia education reform agenda.

## General Discussion

Applying MSA/FSA to our data led us to conclude that a confluence of changes led to the opening of a policy window for dyslexia legislation in the 2000s and 2010s (see Figure 1). Technological advancements, shifting standards for research and educational practice, and emerging neurodiversity



discourse stand out as key macrolevel catalysts that made policies aimed at screening and treating dyslexia in schools more feasible politically, fiscally, and pedagogically. Many of these changes can themselves be understood as part of a paradigm shift in education policy, whereby policy actors began to stress the economic importance of school, the need for widespread improvement as measured by tests, and the responsibility of schools for improving educational outcomes. A 2015 press release from Representative William O'Brien of Rhode Island weaves together many of the themes discussed in this article:

Both Massachusetts and Connecticut provide early screening for dyslexia and reading disabilities and their English SAT scores are significantly higher than Rhode Island's, with Connecticut's scores being 10 points higher and Massachusetts' score being 19 points higher than Rhode Island's scores . . . It's time we stop failing our children who are in need of our help the most. We need to screen early, identify the problems and give our children the tools, support and opportunities they need and deserve to compete and thrive in the world. With the implementation of this legislation and its practices, Rhode Island's SAT score will go up 20 points. (Carulo, 2015)

### *Short-Term and Long-Term Changes*

We next consider the implications of the dyslexia education reform effort along two dimensions: short-term and long-term changes. To avoid speculation, we limit our discussion to areas of change already underway. Specifically, we focus on short-term changes to school practice, as well as long-term changes to education as a human enterprise.

*Short-term changes.* Some of the clear short-term changes resulting from the new dyslexia laws are (a) a greater focus on dyslexia screening and intervention in schools, (b) increased use of MTSS and explicit instruction, and (c) changes in teacher preparation and training. We anticipate these changes because they are frequently required or encouraged by state law, and consistent with broad research-to-practice efforts and theories of reform (e.g., Fuchs & Fuchs, 2006; Mehta, 2013), which means there is already some momentum behind them. Moreover, many states still have pending dyslexia legislation. We cannot know what effects, if any, these changes will have on student achievement or school practice because policy implementation is a critical factor but a complicated process (Cohen-Vogel et al., 2015; Cook & Odom, 2013). We think it is important to emphasize that recent legislative changes may or may not lead to an increase in the number of students that are ultimately identified as having dyslexia. The formal identification of dyslexia as

a specific learning disability under IDEA is a process that is distinct from the type of screening promoted by state reform. Although it is possible that increased rates of screening may lead to more students being identified as having dyslexia, it is also possible that it will lead to early remediation and lower rates of dyslexia identification. Yet, another possibility is that it will have no effect on the likelihood of identification because schools may not utilize the screening data. In short, the actual effects will depend on how the laws are implemented in schools.

It can also be noted that the implementation of the state laws will have their own consequences, some of which will be unintended. As schools rush to meet new screening requirements and intervention requirements, school and district personnel will have to make choices about which products to adopt. However, tests and interventions vary in terms of technical adequacy and usability. If schools tend to adopt products that are ineffective or difficult to use (e.g., due to time constraints or knowledge demands), support for the laws may wane. If support for the laws wanes, it would likely have ramifications for the implementation, and ultimately, the efficacy of the laws.

*Long-term changes.* Long-term changes are obviously harder to anticipate. It is possible that changes in dyslexia education may improve rates of reading proficiency, after all, this is their primary aim. However, this possibility would best be considered through a quantitative analysis of initial results. Here, we consider how the laws may change the nature of education as a human endeavor. Over the past few decades, there have been debates about the nature and future of teacher professionalism (e.g., Dubinsky, Roehrig, & Varma, 2013; Labaree, 1992; Mehta, 2013), educational research (e.g., Labaree, 2011; Raudenbush, 2015), the ideal scope of services provided by schools (e.g., Dowdy, Ritchey, & Kamphaus, 2010), the ontological foundations and institutional logics that drive school practice (Millei & Joronen, 2016; Varma, McCandliss, & Schwartz, 2008), the use of commercial products as educational tools (Apple, 1981), and of course, the nature of effective reading instruction and dyslexia. There are fundamental and pressing questions about what schooling will mean in the 21st century, and how it will relate to learning, education, general well-being, and governance. The dyslexia education reform effort will have implications for each of these debates. The new laws require educators to utilize research and instruments from psychology and neuroscience to a greater extent than ever before. In so doing, they raise questions about who has the authority to identify dyslexia in students (e.g., school personnel vs. medical doctors), the feasibility of legislating educational practice in a diverse world, and the ethical implications of having schools pay more attention to neurobiological differences (e.g., Hruby, 2012; Ramus,



2014). In sum, the changes engendered by the new state laws represent an incremental but potentially critical shift in educational practice.

## **Conclusion**

Over the past two decades, substantial changes to state-level dyslexia legislation have occurred. These changes were precipitated by three factors. First, students with dyslexia have historically been underidentified and undertreated in public schools. Second, in response to this underidentification and undertreatment, intermediary organizations, especially parental activists and disability advocacy organizations, began to push for legislative reform around the start of the new millennium. Third, by the 2010s an array of political factors had made specific provisions common to dyslexia legislation politically feasible, including (a) major shifts to research and practice standards during the NCLB era and (b) changing perceptions of dyslexia, both among researchers and the lay public.

Various short-term and long-term changes resulting from dyslexia education reform efforts are already underway. These changes include (a) a greater focus on dyslexia screening and intervention in schools, (b) the use of MTSS and explicit instruction, (c) changes in teacher preparation and training, and, ultimately, (d) a shift in how the populace at large conceives of education as an enterprise. Although the initial impacts of changing dyslexia legislation are already visible, we predict ongoing changes to educational practice as states continue to enact new legislation. Future research should continue to analyze and document these trends.

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## **Notes**

1. For our study, we considered any law that used the word “dyslexia” in the context of K-12 education to be dyslexia education legislation. Thus, laws such as

Massachusetts General Law Chapter 15A Section 30, which concerns college entrance exams for individuals with dyslexia, are not reflected in our count. For an alternative coding scheme, see <https://dyslexiaida.org/>

2. The laws do not define these terms, though they may provide additional details about the nature of suggested or required instruction, such as requirements that instruction be “evidence-based.” It can be noted that the International Dyslexia Association defines structured literacy as instruction that “explicitly teaches systematic word-identification and decoding strategies” (Cowen, 2016).

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