



An interdisciplinary perspective on the strengths and weaknesses of the International Dyslexia Association definition of dyslexia

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Received: 26 April 2023 / Accepted: 29 May 2024 / Published online: 13 June 2024
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Abstract

This commentary article describes the results of a Delphi Method discussion between an interdisciplinary team of state dyslexia policy implementers. The authors argue that the International Dyslexia Association (IDA) definition of dyslexia from 2001 skews toward the perspectives of the research community, inadvertently creating implementation challenges for school practice. The article describes how the authors reached this determination; why they believe Vaughn et al.'s (Annals of Dyslexia, 2024) proposed definition marks an improvement over the 2001 IDA definition; and the need for continued support in the dyslexia policy implementation process, including knowledge dissemination efforts and updates to other relevant policy documents. This collaboration between policymakers, educators, and researchers contributes to the special issue by considering how the definition of dyslexia is situated in policy and practice. In so doing, it addresses a longstanding gap in academic research on how policy implementers understand and use the IDA definition.

Keywords Dyslexia · Implementation · Policy · Specific learning disability

Most states in the United States recognize the International Dyslexia Association's (IDA) definition of dyslexia in their laws and educational policies (Gearin et al., 2021; Youman & Mather, 2018). The IDA definition is as follows:

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, 1995a, b, p. 2).

Despite widespread acceptance of the IDA definition by state governments in the United States, it remains subject to debate on various grounds (Catts & Petscher, 2022; Elliott,

2020; Miciak & Fletcher, 2020; Parrila & Protopapas, 2017; Peters & Ansari, 2019; Protopapas & Parrila, 2018, 2019; Snowling & Hulme, 2024; Vaughn et al., 2024; Wolf et al., 2024). Recent debates about the definition of dyslexia tend to be highly nuanced, with disagreements reflecting concerns about how the definition will be used in the real world, rather than simply reflecting disagreements about the “facts of dyslexia” as described by scientific research. To give one example, Parrila and Protopapas (2017) proposed to redefine dyslexia as “a persistent and unexpected difficulty in developing age- and experience-appropriate word reading skills” (p. 333 as cited by Protopapas & Parrila, 2018). The authors did not propose any additional inclusionary criteria, such as phonological deficits (Protopapas & Parrila, 2018). Their rationale did not simply reflect their interpretation of scientific research, but also the potential application of the definition. In the case of phonological deficits, the authors considered such a criterion would be generally redundant and needlessly exclusionary to the minority of students who may have difficulty with word reading without phonological deficits (Protopapas & Parrila, 2018). Similarly, the authors argued that dyslexia should not be defined as a “neurobiological disorder” given that this phrase may be interpreted as implying a qualitative difference in the brains of individuals with and without dyslexia, and possibly promote negative consequences for students (Protopapas & Parrila, 2018, 2019). Still, they acknowledged that “dyslexia exists and is biological” (Protopapas & Parrila, 2019, p. 2) and that the brain is “the physical substrate of behavior” (Protopapas & Parrila, 2018, p. 2). Such complicated considerations, which frequently weigh tensions between how dyslexia is defined in scientific research and educational practice, underscore the need for dialogue between the research and practitioner communities (Dickman, 2005; Mele-McCarthy, 2019; Tønnessen, 1997).

Dialogue between the research and practice communities regarding dyslexia’s definition is especially important because cross-communication is often a point of weakness in efforts to develop policies that reflect scientific research and research agendas that are responsive to on-the-ground realities (Cash et al., 2003; Coburn et al., 2016; Farrell et al., 2023; Penuel et al., 2015; Sarewitz & Pielke, 2007). Lack of communication, miscommunication, and misalignment between research and practice all have the potential to produce undesired outcomes, including policy failure (Coleman et al., 2021; Matland, 1995). Dyslexia policy is an interesting case because there have been many promising examples of bidirectional communication between researchers, practitioners, and policymakers over the past decades. Leaving aside the fact that many educational researchers are themselves current or former practitioners (e.g., Darling-Hammond, 2017; Morris et al., 2023), the IDA definition reflects collaborative efforts insofar as it was developed by researchers in a context where greater scientific validity was needed to buttress the concept of learning disabilities, which already had longstanding policy and practice implications (Dickman, 2005; Lyon, 1995a, b). Meanwhile, the creation and implementation of state dyslexia policy, which the IDA definition helped promote, typically reflects a direct collaborative effort between policymakers, practitioners, advocates, and researchers, as is evidenced by many state dyslexia handbooks (Gearin et al., 2018, 2021). On the other hand, little research has been conducted on how practitioners actually understand and use the IDA definition, even though the subject bares directly on policy outcomes (e.g., Kingdon, 1984; Matland, 1995; Mele-McCarthy, 2019; Sabatier & Weible, 2007; Schneider & Ingram, 1990; Weatherley & Lipsky, 1977).

In this commentary article, we draw on our experience as advocates, administrators, technical assistance providers, and individuals with direct involvement in the implementation of the IDA definition to identify aspects of the current definition that have the potential to influence its translation into practice. We contend that the IDA definition, as currently

formulated, does not effectively serve the needs of practitioners with respect to implementation practices. Perhaps due to its origins and original purpose of improving research on dyslexia (Lyon, 1995a, b), we believe the IDA definition skews toward the perspectives of the research community, inadvertently creating implementation challenges for school systems. We describe how we reached this conclusion; why we believe Vaughn et al.'s (2024) proposed definition marks an improvement over the 2001 IDA definition; and the need for continued support in the dyslexia policy implementation process, including updates to other relevant policy documents.

Challenges with implementing the IDA 2001 definition

Special education and public policy research have long recognized that the perspectives and actions of individuals across the levels of an education system have the potential to shape a policy's implementation, in turn affecting educational outcomes (Kingdon, 1984; Matland, 1995; Schneider & Ingram, 1990; Weatherley & Lipsky, 1977). Weatherley and Lipsky, (1977) argued that policymaking as an activity is not limited to legislators and their direct appointees, but instead involves a long line of individuals with varying levels of discretion in interpreting and implementing policies and laws. Public employees may be tasked with implementing special education policies within a state, including state, district, and school administrators; school psychologists; specialists; and classroom teachers. Because such individuals often have limited personnel and organizational resources, they have historically tended to routinize procedures, modify goals, ration services, and limit clientele to achieve ends, such as staying within budget or applying a law equally to all children (Weatherley & Lipsky, 1977). In so doing, these individuals effectively create policy through their interpretations, albeit within bounds that were set by preexisting laws and policies (Weatherley & Lipsky, 1977).

The most recent wave of state-level dyslexia policies sets parameters for educational practice, but as is typical in education policy, it leaves considerable room for interpretation to influence implementation (Gearin et al., 2021). For example, state policies often define dyslexia according to the IDA's definition, and promote or require universal screening for dyslexia and instructional interventions (Gearin et al., 2021). While implementing these aspects of a policy, state administrators may evaluate the extent to which specific assessments and interventions meet locally relevant requirements, including the extent to which they correspond to the IDA definition of dyslexia when relevant. District administrators may then select from these state-approved options, leaving it to personnel at lower organizational levels to develop district-wide or building-wide protocols that describe how the assessments and interventions are meant to be used for making dyslexia classifications (Gearin et al., 2021; National Center on Improving Literacy, 2019; National Center on Intensive Intervention, 2018cf. Texas Education Agency, 2018). Because the specifics of this funnel-like process naturally vary across organizational units, one is apt to observe a variety of practices across schools even when they are aiming to implement the same or similar policies. Such variation is not inherently a problem: in a federal system of government, variability is often necessary and even desirable for adapting policies to local contexts and sustaining them over time (Matland, 1995). However, variation can become a problem if a policy is not applied consistently or equitably in schools.

What is unusual about dyslexia policy is that it is relatively technical and complex which creates room for implementation variation due to misunderstanding and competing

interpretations (Coleman et al., 2021; Matland, 1995). Furthermore, both the substance of state dyslexia policies and the relation of these policies to federal laws governing students with learning disabilities can be ambiguous, which adds to implementation challenges (e.g., Gearin et al., 2021; Odegard et al., 2020; Phillips & Odegard, 2017; Worthy et al., 2016). For example, even though the Individuals with Disabilities Education Act (IDEA) of 2004 mentions dyslexia specifically, schools identify special education eligibility for the conceptually broader “specific learning disability” or SLD. Not all students with dyslexia will meet the requirements for an SLD, and the way such determinations are made varies across school systems. Recognizing these challenges, many states have appointed state-level dyslexia specialists and created state dyslexia policy handbooks to guide implementation (Gearin et al., 2021). There are also federally supported technical assistance programs intended to help states navigate technical complexities (e.g., National Center on Improving Literacy, 2019; National Center on Intensive Intervention, 2018; What Works Clearinghouse, 2022).

Despite these supports, implementation remains challenging because of ambiguity within the IDA definition and its imperfect alignment with IDEA and the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association, 2013). One of the few studies to directly assess practitioner perspectives and understandings of the dyslexia identification process found that teachers uniformly described it as “lengthy, burdensome, and ambiguous” (Worthy et al., 2016; p. 445). It is unclear from this study what exactly the practitioners deemed ambiguous, but teachers described not understanding what would happen with the data they collected or the results they produced. Parallel findings from analyses of state policy documents and state dyslexia pilot projects suggest that the correspondence between the state dyslexia policies and the IDEA is seldom made explicit (Gearin et al., 2021, 2023), with policies sometimes requiring schools to screen for “characteristics of dyslexia” using assessments that minimally measure phonological and phonemic awareness, sound-symbol recognition, alphabet knowledge, decoding skills, encoding skills, and rapid naming (e.g., Georgia Senate Bill 48, 2019). These dyslexia policies do not describe the correlation between these skills and dyslexia or the implications of the results in terms of IDEA’s requirements (Gearin et al., 2021), leaving administrators and practitioners to fill in the gaps (see Odegard et al., 2020 for a similar discussion). This ambiguity is not inherently a problem or necessarily a direct reflection of the content of the IDA definition. As it stands, however, similar policies could yield incommensurate or even contradictory student outcomes depending on how the definition of dyslexia is interpreted, especially in relation to other policies (e.g., Gearin et al., 2023; Matland, 1995).

There is also ambiguity in terms of how the IDA definition should be interpreted in relation to scientific research (Odegard et al., 2020). For instance, the IDA definition specifies that reading difficulties are “often unexpected in relation to other cognitive abilities.” Historically, this specification was operationalized via reference to IQ scores (Fletcher et al., 2019). However, the validity of IQ-discrepancy classifications of reading disabilities became doubtful after the adoption of the 2001 IDA definition (Stuebing et al., 2002). More recent definitions of dyslexia tend not to reference cognitive abilities at all (Snowling & Hulme, 2024). The ever-evolving research based on dyslexia raises questions as to how practitioners, who are already contending with frequent and basic misconceptions about dyslexia (e.g., Peltier et al., 2022; Washburn et al., 2016; Worthy et al., 2016), can effectively implement policies that reflect both the IDA definition of dyslexia and the current state of scientific research. It is an unavoidable problem that science will from time to time

challenge the assumptions upon which public policies are based, but when this happens, policies and the definitions that appear to drive them may need to be revised.

Emerging empirical research also suggests that revisions to the definition of dyslexia may be needed (Gearin et al., 2023; Odegard et al., 2020, 2021; Phillips & Odegard, 2017). Phillips and Odegard, (2017) found no statistically significant differences in the rate at which SLDs were identified in 2015–2016 in states with dyslexia laws compared to those without. They also compared SLD rates within states before and after the implementation of their respective dyslexia laws and found no significant differences, suggesting the laws are not impacting SLD prevalence. Odegard et al., (2020) found that dyslexia classifications were less likely for minority students and individuals attending schools with a greater proportion of minority students, raising equity concerns. Further, Odegard et al., (2021) found that, in a sample of elementary students who were assessed for reading disabilities in Tennessee, most students who received only core instruction in their schools exhibited the characteristics of dyslexia, raising questions about why they were not receiving more instructional support. These surprising patterns have likely emerged due to the issues of ambiguity and misalignment discussed (see Odegard et al., 2020 for a similar line of reasoning).

To address challenges in translating the IDA definition to school policy and practice, this commentary article begins by summarizing the results of a Delphi Method discussion on how the Dyslexia Pilot Study Collaborative perceives the strengths and weaknesses of the IDA definition. This discussion focuses on perceived areas of ambiguity that may be affecting implementation. By explaining why we think certain revisions are needed to address this ambiguity (and why we do not agree on others), we create a common framework for evaluating Vaughn et al.'s, (2024) proposed definition of dyslexia and for making recommendations to improve implementation. We also address a notable gap in academic discourse on how various policy implementers understand and interpret the definition of dyslexia.

Unpacking dyslexia: voices from policy to practice

The seven authors of this commentary article were asked to comment on the strengths and weaknesses of the 2001 IDA definition of dyslexia because of our practical experience implementing it. All seven authors are members of the Dyslexia Pilot Study Collaborative, a small group aimed at studying how states have implemented dyslexia pilot projects. We were invited to the Collaborative because we have varying types of direct experience translating the IDA definition into practice through state dyslexia pilot projects—state-authorized programs that typically involve a small number of school districts working with a state education agency to implement a dyslexia screening and intervention system (Gearin et al., 2023). We have played different roles in these projects, including policymakers, program implementers, evaluators, and technical assistance providers. Our unique roles allowed us to speak to the different types of pragmatic issues that can arise when translating the IDA definition into practice. Our ability to comment on the IDA definition is further buttressed by our individual backgrounds working with the definition as scientists, technical assistance providers, administrators, advocates, and/or parents. Though we cannot claim our views are representative of the groups to which we belong, we can discuss aspects of the

IDA definition that have created implementation challenges for us personally and that we think may cause challenges for others in the future.

The Delphi method

To organize our perspectives for this commentary article, we followed a Delphi Method protocol. The Delphi Method is commonly used in academic research to identify a group opinion. The method was originally developed by the RAND Corporation during the Cold War to forecast the impact of technology on warfare (Kaplan et al., 1949). Since then, it has been used in a variety of contexts, including economic forecasting, policymaking and evaluation, and quantitative modeling (Landeta, 2006). For the present article, we employed the Delphi Method to facilitate a structured, in-depth conversation among the seven authors who have diverse experiences and perspectives on the implementation of the IDA definition of dyslexia. We used the Delphi Method because we did not take for granted that we could agree on a single definition. It is crucial to understand that our intent was not to produce empirical research findings but to explore and document the complexities and multifaceted nature of implementing the IDA definition in real-world settings.

Delphi Method protocols can vary considerably in accordance with different study objectives, and there is not a singular way that it is best employed. That said, its core features typically consist of anonymity, iteration, controlled feedback, and group response (Belton et al., 2019; Landeta, 2006; von der Gracht, 2012). Panelists consulted via the Delphi Method are afforded some degree of anonymity by contributing responses through surveys rather than an open discussion or a direct confrontation. Protocols are iterative, with early survey results informing the content of subsequent surveys. Results are provided to panelists throughout the process so they may consider adjusting their responses based on group-level trends. Finally, measures of central tendency are consulted throughout the process because they can usefully indicate the center of a group's opinion, while measures of dispersion can indicate areas of disagreement or heterogeneity in response that may require further investigation and discussion (von der Gracht, 2012).

For the present article, we exchanged opinions over three rounds of surveys. In the first round, group members were presented with the IDA definition of dyslexia and asked to discuss its strengths and weaknesses through constructed responses. They were also asked to rank order each component of the definition in terms of perceived importance and to briefly describe the rationale for their response. In the second round, the results of the first survey were summarized and communicated to group members before posing a series of new questions intended to probe responses to the previous survey. The final survey continued to probe areas of apparent disagreement and asked respondents to comment on hypothetical models to test how the views of the group members might be translated into practice. As suggested above, the purpose of the survey was not to collect data for quantitative analysis or generalizable results but to facilitate an iterative conversation aimed at achieving a deepened, multi-dimensional understanding. The Delphi Method's iterative, reflective, and adaptive process of exchange enabled us to delve more deeply into the nuances of our perspectives than traditional discussion methods would have allowed, while still preserving our ability to fuse conflicting opinions into a cohesive whole (Hsu & Sandford, 2007; Skulmonski et al., 2007).

In the following section of this article, we present a narrative synthesis of our results. We present the results in narrative form both for ease of reading and to reinforce that this

commentary is discursive and not generalizable research. Our use of the Delphi Method was not free from internal validity threats: the authors are members of a predefined group, so no one enjoyed perfect anonymity. It is also possible that our opinions reflect a degree of “group thinking” given that we have worked together on this subject before. However, the use of the Delphi Method was necessary to ensure that we could summarize and synthesize conflicting and potentially irreconcilable differences in opinions, which were more likely to occur than in a typical academic collaboration given our diverse backgrounds and perspectives.

Areas of agreement

The members of the Dyslexia Pilot Collaborative agreed that defining dyslexia as “difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities” was the strongest feature of the definition, closely followed by the specification that these difficulties often “result from a deficit in the phonological component of language.” Written responses suggest that this opinion was informed by the group members’ focus on practical consequences for students and schools (see Catts et al., 2024 for a similar perspective), with most responses indicating that these facets of the definition identify what schools should be minimally assessing when attempting to make dyslexia-related classifications. A variety of free and commercial tests have been published that schools can use to measure these abilities, and technical assistance programs exist to help schools find and use them (e.g., National Center on Improving Literacy, 2019; National Center on Intensive Intervention, 2018). However, as implied by our introduction, the relative strength of these portions of the definition does not imply that the group thought its translation to school contexts would be completely free from ambiguity and competing interpretations.

The group was almost unanimous in identifying the specification that dyslexia is “often unexpected in relation to other cognitive abilities” as the weakest component of the definition. Several interrelated concerns were raised about this portion of the definition. First, it is unclear what cognitive abilities ought to be assessed. Some group members interpreted this portion of the definition as suggesting that processing speed ought to be assessed. Others raised concerns that this portion of the definition promotes, or at least allows, the use of IQ-discrepancy methods, even though the scientific validity of these methods has been critiqued (e.g., Bradley et al., 2002; Stuebing et al., 2002). Second, the qualification that dyslexia is “often unexpected” also raised questions in the minds of some group members about whether cognitive abilities need to be assessed to make a classification, or whether doing so simply improves the likelihood of more effective remediation. Finally, almost all members independently raised concerns that this portion of the definition had the potential to have an adverse impact on students from marginalized backgrounds and/or students with lower-than-average intelligence (see also Rose, 2009; Snowling & Hulme, 2024). For example, “the unexpectedness” attribute could lead to inequitable identification trends within these groups, even though unexpectedness is not required per se. Considering these issues, group members agreed that this portion of the definition needs revision.

Group members also tended to rate the secondary consequences of dyslexia unfavorably (i.e., problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge). However, they provided different rationales for doing so. Some group members raised concerns about the measurability and practical implications of the secondary consequences for schools, with one member

suggesting that they be removed from the definition if assessing them is neither necessary nor sufficient for making a dyslexia-related classification (see Snowling & Hulme, 2024 for similar reasoning). Another group member raised a concern that the list of secondary consequences is incomplete (e.g., McArthur et al., 2020; Reis et al., 2020), which in turn raises questions about why reading comprehension, background knowledge, and vocabulary were singled out in the definition instead of other consequences (see also Snowling & Hulme, 2024). Notably, Catts et al., (2024) made the same observation and argued for *expanding* the list of secondary consequences. Because the group did not agree on the nature of the weaknesses, they were not asked to comment on how they might be best addressed.

Areas of disagreement

Three components of the definition elicited disagreements among group members, two of which were repeatedly assessed to confirm and understand the nature of the disagreements. A fourth component elicited only a minor disagreement, but we describe it here because the cause of the disagreement may be useful for improving the quality of academic discourse on dyslexia:

First, group members were divided on the extent to which it was important to identify dyslexia as a specific learning disability (SLD), echoing the variety of viewpoints that exist in broader academic and policy discussions (e.g., Catts et al., 2024; Snowling & Hulme, 2024; Wolf et al., 2024). Some members saw value in linking dyslexia with SLD because it makes the connection between dyslexia and IDEA more obvious and may therefore have useful effects in the United States, such as promoting the reliable delivery of effective educational services. Others critiqued the SLD component as potentially superfluous and unnecessarily limiting. For example, critics pointed out that dyslexia is already identified as an SLD under United States federal law, making the component redundant, while the “specific” modifier potentially constrained its use to the United States. They also questioned the appropriateness of reducing a range of reading abilities to a binary descriptor, especially because not all students with dyslexia qualify for individualized education programs. Finally, one group member identified stigmatization as a poignant concern because it was perceived that the SLD label, while facilitating access to essential services, could potentially usher in lowered expectations and stigmatization from educational personnel. To be clear, these opposing viewpoints did not advocate for a separation of dyslexia from SLD as a matter of US public policy, but instead considered only the pros and cons of describing dyslexia as an SLD in the IDA definition. Furthermore, they were not based on a misconception that scientific research currently suggests different intervention strategies for students with dyslexia versus students with a specific reading disability.

A second area of disagreement concerned the portion of the definition that specifies that dyslexia is neurobiological in origin. Though no group member questioned the reality of dyslexia or its relation to the brain (see Catts et al., 2024 and Wolf et al., 2024 for fuller discussions), group members disagreed about both the merits of this component and its likely consequences. Most group members indicated that they were concerned about the understandability of the “neurobiological in origin” component by school practitioners. They identified the measurability of this component and its practical consequences for students as related secondary concerns, speculating that some school systems may be attempting to indirectly measure it through family history questionnaires (e.g., Gearin et al., 2021). In brief, it is unclear whether or how

schools should operationalize this component of the definition, which raises questions about whether it ought to be included at all (see Snowling & Hulme, 2024 and Vaughn et al., 2024 for fuller considerations of etiology). In contrast to this perspective, some group members felt strongly that an etiological component of the definition was important for convincing educators that dyslexia is not caused by poor reading instruction, even if the wording needed adjustment. It was presumed from this perspective that if educators understand dyslexia to be neurobiological in origin, it may improve the quality of services they deliver to students with dyslexia. Interestingly, the Delphi process eventually revealed that most critics of the “neurobiological in origin” criterion were willing to concede that knowledge of the neurobiological perspective of dyslexia could potentially improve the quality of services educators provide to students, but nevertheless thought the component of the definition was extraneous. Conversely, one group member argued against the criterion on the grounds that it was likely *insufficient* to change school practice. In their view, meaningful improvement would likely require deeper changes to educator preparation programs and special education policy.

Third, group members differed in terms of how they perceived the portion of the definition that specifies that dyslexia is often unexpected in relation to the provision of effective classroom instruction. However, the group was essentially united in viewing the practical challenges in implementing this portion of the definition as a cause for concern. Some group members viewed this portion of the definition as important for reducing false-positive identifications. That is, some portion of students will perform poorly on assessments because they have not received effective reading instruction at home or at school (see Catts et al., 2024 for similar reasoning). Reading assessments by themselves cannot distinguish these students from students with dyslexia. However, if assessments are used in conjunction with data on classroom instruction, such as intervention fidelity and progress monitoring data, more accurate and reliable classifications can be made. That said, almost all group members expressed concerns about the capacity of schools to implement progress monitoring and multitiered systems of support in practice, which this component seems to support. The majority therefore thought that this portion of the definition should be considered for some level of revision, such as rewording for greater specificity.

Finally, a minority of group members expressed concerns about the phonological deficit portion of the definition. Arguments for and against this aspect of the definition seemed to hinge on the perceived use of the definition, with some members referring to its lack of precision and completeness, and others referring to its potential to help educators take effective instructional action (Catts et al., 2024; Snowling & Hulme, 2024; Vaughn et al., 2024; and Wolf et al., 2024 for fuller discussions of phonological deficits). We only note this minority viewpoint because Tønnessen, (1997) identified the different potential uses of dyslexia’s definition as a likely factor in disagreements over how dyslexia is defined. We thought it was important to note that this dynamic held even within a group of individuals who were primarily concerned with the use of the IDA definition in school contexts. This finding suggests a need for continued research on educator perceptions and understanding of dyslexia and empirical studies of policy implementation and effects (e.g., Burns et al., 2020; Peltier et al., 2022; Phillips & Odegard, 2017; Washburn et al., 2016) because at least some of the disagreements could be resolved through a better understanding of how the IDA definition is actually used in schools. As we discuss further on, it also illustrates a need for continued research dissemination efforts.

Strategies for improving the definition

Despite some disagreements, the group was largely united in thinking that the definition could be improved by using simpler diction. Many group members described the current definition as too technical for typical school contexts. The phrases “neurobiological in origin” and the “phonological component of language,” for instance, were identified as potentially causing confusion among school personnel. Additionally, some portions of the definition were deemed ambiguous. The phrase “effective classroom instruction,” for example, does not identify what instruction should be considered effective. Professional opinion and state law seem to suggest that it should be interpreted as something like “evidence-based reading interventions,” or instruction that adheres to best-practice recommendations (e.g., Foorman et al., 2017; U.S Department of Education, 2016). However, the text of the definition itself does not readily promote this interpretation. The “cognitive ability” component similarly allows diverging interpretations and implications.

To assist future revisions to the definition, we posed questions about the current definition’s readability and interpretability. First, group members were asked to evaluate and provide commentary on the British Dyslexia Association’s definition of dyslexia and that of the Formerly Incarcerated Reenter Society Transformed Safely Transitioning Every Person Act of 2018 (the First Step Act). The British Dyslexia Association’s definition, which follows that of Rose, (2009), is as follows:

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor co-ordination, mental calculation, concentration, and personal organization, but these are not, by themselves, markers of dyslexia. A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention.

The First Step Act, a federal law aimed at criminal justice reform, promotes dyslexia screening and intervention in federal prisons. The law defines dyslexia as:

... an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader, most commonly caused by a difficulty in the phonological processing (the appreciation of the individual sounds of spoken language), which affects the ability of an individual to speak, read, and spell.

All but one group member favored the IDA definition over both the BDA and First Step Act definitions. The remaining group members ranked the BDA definition most favorably. Importantly, all group members believed that their preferred choice was the easiest definition to understand. Thus, even though none of the predominant definitions of dyslexia were deemed sufficiently comprehensible by the group, comprehensibility seemed to be the pivotal attribute. This is not to discount the importance of other attributes. For example, some IDA proponents expressed approval of the BDA definition’s description of dyslexia as a spectrum and its identification of co-occurring conditions. Some group members also expressed disapproval of the First Step Act’s specifications, such as the “unexpectedness in relation to intelligence” component. However, further probing would have likely elicited

disagreements about the strengths and weaknesses of other definitions of dyslexia that paralleled disagreements over the IDA definition.

Group members were also asked to comment on Miciak and Fletcher's, (2020) proposed hybrid model of dyslexia, which operationalizes dyslexia as low reading achievement and inadequate response to intervention after accounting for exclusionary factors, such as sensory disorders or cultural and linguistic factors that could contribute to poor word reading but which require different types of support. All but one group member viewed this model as a promising way to operationalize dyslexia. Reservations about the model tended to parallel reservations about the IDA definition itself. For example, concerns were raised about the capacity of schools to determine an inadequate response to intervention given their difficulties with implementing multitiered systems of support. Concerns were also raised about the exclusionary factors, with some group members believing that schools would inappropriately use the exclusionary to deny services to students with dyslexia. Finally, questions were raised about the context of the model's use. As indicated above, special education policy in the United States seems to suggest that two distinct but largely overlapping measurement nets are needed for making dyslexia classifications in school contexts: one to identify the presence of the condition and another to determine eligibility for special education services. Though the same measures could potentially be used for both purposes, they would presumably involve nonidentical measurement models, which may lead to implementation challenges. Some group members identified a need for clear examples and non-examples of data patterns that suggest a student has dyslexia and/or should qualify for special education services. Though it is probably unreasonable to expect a definition to provide this level of detail, the sentiment illustrates a justified desire for greater clarity about how various aspects of the definition are meant to inform school practice.

Discussion

Using a Delphi Method protocol, members of the Dyslexia Pilot Study Collaborative exchanged opinions about the IDA definition of dyslexia and its strengths and weaknesses. The members agreed that the strongest features of the definition were (a) defining dyslexia as "difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities" and (b) the specification that these difficulties often "result from a deficit in the phonological component of language." Members also agreed that the specification that dyslexia is "often unexpected in relation to other cognitive abilities" was the weakest component of the definition. They were united in rating the list of secondary consequences in the definition unfavorably. Three components of the definition elicited disagreements among group members, including (a) the extent to which it was important to identify dyslexia as an SLD within the IDA definition, (b) the portion of the definition that specifies that dyslexia is neurobiological in origin, and (c) the portion of the definition that specifies that dyslexia is often unexpected in relation to the provision of effective classroom instruction. Finally, most group members described the current definition as too technical for typical school contexts and felt it could be improved through simpler diction and reduced ambiguity. They also agreed that there was a continued need for technical assistance, collaboration, and research dissemination aimed at helping educators implement the IDA definition; however, it is revised.

Fortified with the insights gained from the Delphi discussion, we argue that the definition of dyslexia offered by Vaughn et al., (2024) is an improvement over the IDA definition

from 2001 and stands to improve school policy. The definition proposed by Vaughn et al., (2024) is:

Dyslexia is a learning disability that involves significant difficulties in reading and spelling single words accurately and with automaticity. These difficulties are observed despite the provision of generally effective reading instruction and supplemental interventions. Word reading and spelling difficulties in dyslexia are often associated with difficulties in phonological processing, but dyslexia is not identified when reading difficulties are the result of second language learning, problems with vision or hearing, or intellectual disability (p. 9).

We view this definition of dyslexia as an improvement for several interrelated reasons. First, the definition is comparably less technical and easier to understand. Second, the definition does not mention “unexpected in relation to other cognitive abilities.” Third, it maintains an emphasis on educational practice and improves clarity by addressing “effective reading instruction and supplemental interventions.” The new exclusionary factors (i.e., second-language learning, problems with vision or hearing, and intellectual factors) were not a focal point of the Delphi discussion, and some group members worried that schools would use such factors to deny services to students with dyslexia. Minor adjustments to the definition and/or clarification in other authoritative and technical assistance documents may be needed to emphasize that individuals with exclusionary factors *can potentially* be identified with dyslexia. As Vaughn et al., (2024) noted, identifying dyslexia when exclusionary factors are present can be difficult at present, but consideration is required by federal law. Otherwise, the addition of the exclusionary factors directly addresses questions about the use of the definition in school contexts, which the group supported. In sum, the revised definition reduces ambiguity and stands to improve issues of educational equity thus making it a useful alternative to the 2001 IDA definition in school contexts. If this definition is adopted by the IDA, we would add that it will be important to ensure that other authoritative documents—such as the DSM-5, IDEA, and state policies—are brought into appropriate alignment.

Suggestions for knowledge dissemination and continuous learning

It is important to note that, despite the improvements in the definition, schools will continue to contend with ambiguity and competing interpretations. These challenges are not a simple consequence of the substance of the definition: they can also arise from the situation of the definition in a larger research, policy, and practice ecosystem. As new research is conducted and other policies are implemented, questions will invariably arise about how aspects of the definition should be interpreted and put into practice. No definition can anticipate all such changes, but it can be safely assumed that the practitioners’ knowledge of basic research on dyslexia will lag that of researchers. It is therefore evident that irrespective of any potential modifications to the IDA definition, a continual effort in clarifying and disseminating knowledge about the evolution of dyslexia research will be crucial for policymakers and implementers if the IDA definition is to promote better reading outcomes for individuals with dyslexia. To enhance practical applications and policy effectiveness, the Collaborative proposed several strategies aimed at fostering continuous learning and adaptation:

- First, create accessible, user-friendly summaries of scientific research, tailored for non-research audiences. These summaries may come in many forms, such as infographics, video summaries, interactive web tutorials, policy briefs, podcasts, social media campaigns, Q&A sessions, and toolkit development. Such resources can assist in the direct application of research into policy and practice. They will be especially important for keeping educators abreast of evolving research on the broader spectrum of dyslexia manifestations and its implications for instructional intervention (e.g., Hall et al., 2023; Share, 2021; Steacy et al., 2023). The need for such information by policy implementers is evidenced by the varying and sometimes conflicting interpretations revealed through our discussion.
- Second, create and maintain avenues for continuous learning among policymakers and implementers. These avenues may include the type of professional learning workshops and webinars that often preceded state dyslexia policy implementation efforts; technical assistance resources and events from organizations such as the National Center on Improving Literacy and the National Center on Intensive Intervention; and continued support for the completion of high-quality professional learning programs focused on reading research, such as Language Essentials for Teachers of Reading and Spelling (Moats & Tolman, 2019). Researchers, meanwhile, could inform continuous improvement efforts by exploring new data sources that shed light on school-based classifications. For example, there is a clear need for descriptive research on state screening practices and their results. These studies need to go beyond measuring teacher perceptions and document how student data are being used in screening and identification processes to make dyslexia classifications. Analyses of state complaints filed and the forms that districts use to determine SLD eligibility could shed additional light on how the IDA definition is being interpreted and operationalized by schools.
- Third, promote more collaboration and feedback loops between practitioners and researchers. Researchers and advocates would benefit from a better understanding of the on-the-ground challenges policy implementers face, while practitioners stand to gain insights into research on dyslexia. Collaborative forums in which researchers, policymakers, and implementers can come together have successfully been used to promote shared learning and collaborative decision-making in other educational contexts (e.g., Farrell et al., 2023; Green et al., 2020). They should be continued and expanded in the context of dyslexia education policy, and perhaps place greater emphasis on disseminating new research and implementing comparatively new technical practices (e.g., Gaab & Petscher, 2022).

Conclusion

This article considered the perspectives of policymakers and policy implementers as part of the ongoing discussions about the definition of dyslexia. Using a Delphi Method protocol, members of the Dyslexia Pilot Study Collaborative exchanged opinions about the IDA definition of dyslexia and its strengths and weaknesses. Based on the results of these discussions, we concluded that the IDA 2001 definition of dyslexia was too technical for typical school contexts and felt it could be improved through simpler diction and by reducing areas of ambiguity. We argue that the definition of dyslexia proposed by Vaughn et al., (2024) features such improvements and is therefore a useful alternative to the IDA 2001 definition where school practice is concerned. That said, challenges with ambiguity and

competing interpretations are a perennial problem, especially because research constantly refines our understanding of dyslexia. There is a consequent need for technical assistance, collaboration, and research dissemination aimed at helping practitioners understand current and future research on dyslexia. Likewise, there is a need for collaboration and research that will help the research community understand how and why dyslexia research is (or is not) translated into policy and practice. These types of continuous improvement efforts will play a decisive role in systematically improving reading among students with dyslexia.

Author contribution All authors contributed to the study's conception and design. Material preparation, data collection, and analysis were performed by Drs. Gearin and Turtura. The first draft of the manuscript was written by Drs. Gearin and Turtura, and all authors commented on subsequent versions of the manuscript. All authors read and approved the final manuscript.

Declarations

Ethics approval and consent to participate Ethics approval was not required for this study because it is not a human subject research.

Competing interests The authors declare no competing interests. In the interest of transparency, it can be noted that Dr. Gearin was employed by Lexia Learning, the publisher of LETRS, a program mentioned in this article, at the time of submission. Any opinions or viewpoints expressed in this manuscript are those of the authors and not official positions of their institutions, organizations, or employers.

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