National Council on Teacher Quality

STATE OF THE STATES 2024

Five Policy Actions to Strengthen Implementation of the Science of Reading

January 2024

INTRODUCTION

State education leaders across the country are rightly prioritizing efforts to improve elementary student reading outcomes. However, too often these initiatives do not focus enough on the key component to strong implementation and long-term sustainability: **effective teachers**. Only when state leaders implement a literacy strategy that prioritizes teacher effectiveness will states achieve a teacher workforce that can strengthen student literacy year after year. This report outlines five policy actions states can take to ensure a well-prepared teacher workforce that can implement and sustain the science of reading in classrooms across the country.

The Challenge

There are 1.3 million children who enter fourth grade each year unable to read at a basic level—that's nearly 40% of all fourth graders across the country.[1] These students may not be able to identify details from a text, sequence events from a story, and—in some cases—may not be able to read the words themselves.[2] The rate of students who cannot read at a basic level by fourth grade climbs even higher for students of color, those with learning differences, and those who grow up in low-income households, perpetuating disparate life outcomes.[3]

These alarming statistics can be largely attributed to inequities in access to effective reading instruction. Reading skills influence students' likelihood to graduate high school,[4] their career trajectories,[5] and their lifetime earnings.[6]

The Opportunity

Elementary teacher effectiveness is the cornerstone to improving students' ability to read. In fact, estimates suggest that with effective reading instruction, more than 90% of students would learn to read—meaning that every year nearly 1 million *additional* students would enter fourth grade as skilled readers.[7]

Recognizing the power of strong reading instruction to improve academic and life outcomes for children, 32 states passed laws or implemented new policies related to evidence-based reading instruction between 2013 and July 2023.[8] While this momentum is encouraging, nearly every state could take further steps to adopt policies and practices that attend to implementation and sustainability. More specifically, states must consider how elementary teachers are trained and supported to carry out the science of reading.

States that have seen elementary students' literacy rates increase have done so with a long-term commitment to improving teacher effectiveness. They not only changed reading instruction by bolstering teachers' knowledge and skills through initial adoption of strong, aligned, coherent policies, but they coupled these policies with ongoing support and financial resources.

State leaders can act now to improve reading instruction through smart policy focused on preparing teachers in the science of reading, supporting them as they implement it, and dedicating long-term resources.

In This Report

In this report, we focus on five policy actions state leaders can take to strengthen elementary teachers' ability to teach reading based on decades of scientific research. For each of the five policy actions, we identify a set of indicators that show whether a state is strategically and coherently implementing each policy action. The indicators are presented under each policy action to provide explicit guidance for state education leaders, policymakers, and advocates.

Using these indicators, we analyzed the extent to which all 50 states and D.C. are implementing the five policy actions across the country. Based on the evidence and lessons learned from states, we provide recommendations to support strong implementation for each policy action. We highlight promising practices that can yield improved student learning and greater support to teachers.

The policy actions highlighted focus specifically on building elementary teachers' capacity to teach reading. The report does not encompass all evidence-based policies and practices that can help improve student outcomes[9] as part of a state's comprehensive approach.[10]

Five Policy Actions to Strengthen Implementation of the Science of Reading

Policy Action 1: Set specific, detailed reading standards for teacher prep programs	Policy Action 2: Review teacher prep programs to ensure they teach the science of reading	Policy Action 3: Adopt a strong elementary reading licensure test	Policy Action 4: Require districts to select a high-quality reading curriculum	Policy Action 5: Provide professional learning for teachers and ongoing support to sustain the implementation of the science of reading
Indicators:	*Indicators:*	*Indicators:*	*Indicators:*	*Indicators:*
Set specific, detailed reading standards for teacher prep programs that are aligned to the science of reading Include how to teach English Learners in the reading standards for teacher prep programs Incorporate how to teach struggling readers, including those with dyslexia, in the reading standards for teacher prep programs	Conduct program reviews to hold programs accountable for implementing the science of reading Maintain full control over program approval processes Use multiple sources of evidence to gauge implementation of the science of reading Require PK-12 literacy experts as program reviewers	Adopt a strong elementary reading licensure test as a guardrail to ensure new teachers know the science of reading Require all elementary teacher candidates to pass a reading licensure test Publish reading licensure test pass rate data	Require the use of high-quality curricula aligned to the science of reading Collect and publish data on curricula districts are using Allocate resources to help make the transition to new curricula Provide guidance on how to select high-quality curricula that support struggling readers (including students with dyslexia) and English Learners.	Require all current elementary teachers to receive high-quality professional learning in scientifically based reading instruction and to demonstrate their learning Provide districts with resources to support implementation and sustainability such as literacy coaches or support networks Support professional learning to promote skillful implementation of high-quality reading curricula Evaluate results of investments in professional learning

Additional Resource: State Reading Policy Action Guide

See the State Reading Policy Action Guide for more information on *how* states implemented the five policy actions.

ACTION 1: SET SPECIFIC, DETAILED READING STANDARDS FOR TEACHER PREPARATION PROGRAMS

INDICATORS
States should…

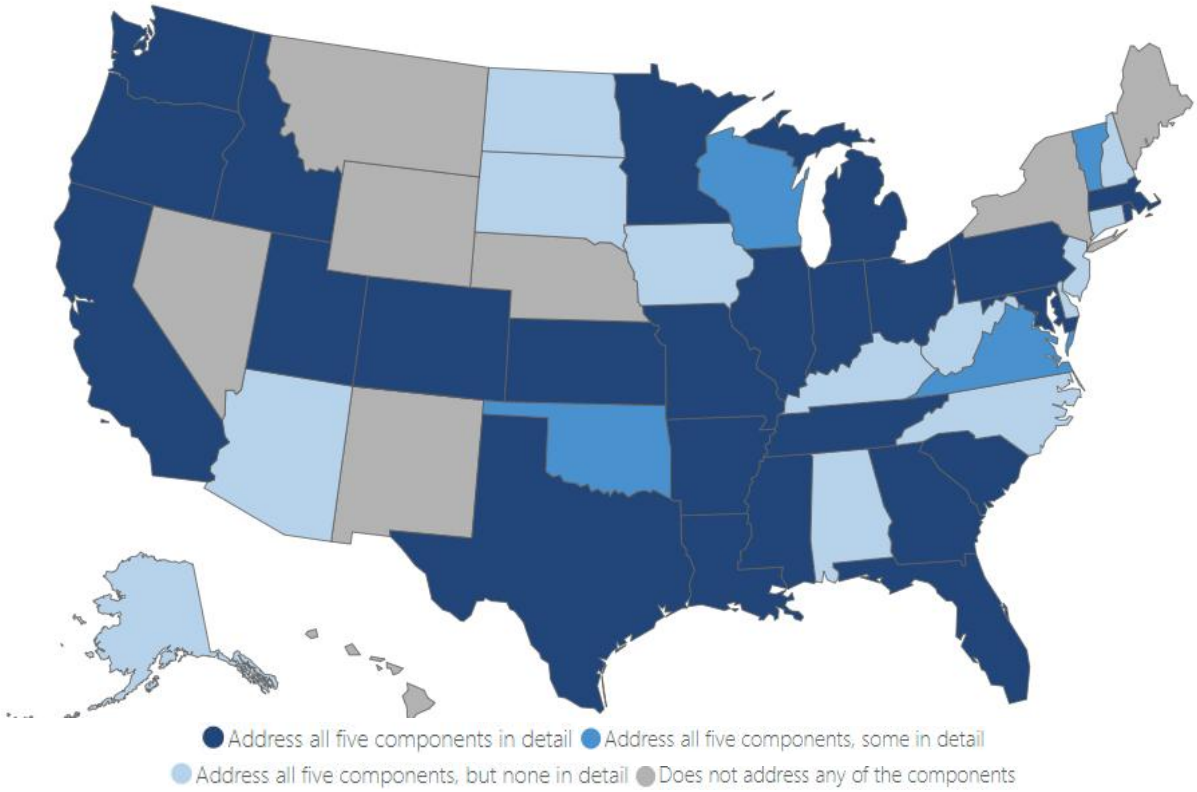
- ✓ Set specific, detailed reading standards for teacher prep programs that are aligned to the science of reading
- ✓ Include how to teach English Learners in the reading standards for teacher prep programs
- ✓ Incorporate how to teach struggling readers, including those with dyslexia, in the reading standards for teacher prep programs

Many new teachers aren't prepared to teach reading because only 26 states provide clear standards to teacher prep programs

Teacher prep programs hold responsibility for making sure aspiring elementary teachers complete their programs knowing how to teach reading, one of the most critical skills for student success. While nearly all states have standards for elementary teacher prep programs that refer to reading, only 26 states provide detailed standards. State standards should not only include the identified five core components of reading[11] (phonemic awareness–including phonological awareness, phonics, fluency, vocabulary, and comprehension), but also provide specific details about what teachers should know and be able to teach for each of the core components aligned to the research.

Figure 1.

Do states address all five components of the science of reading in standards for teacher preparation?



Explicit state standards for teacher prep serve several important purposes:

- Clearly state to preparation programs the skills and knowledge their candidates should attain by the time they complete the prep program
- Provide the state with very specific criteria to apply when providing feedback to programs and especially when reviewing programs for program approval and renewal
- Convey to school districts what their newly hired teachers from the state's prep programs should know and be able to do

Lack of specificity in standards leaves a lot up to chance. If state standards only list "phonics" but do not include what, specifically, aspiring teachers need to know about teaching phonics, the program may not include all the necessary knowledge and skills. Standards may also indicate what programs should not be teaching, such as less effective practices discredited by the research, like "three-cueing," a strategy that teaches students to guess a word rather than sound it out.[12] Sparse standards may allow prep programs to touch upon each component briefly but not give the depth of attention teacher candidates would need to fully understand it.

Standards, whether established by state boards or state education agencies, are one of the best opportunities for states to provide direction on exactly what aspiring teachers should learn and be able to do when it comes to teaching scientifically based reading instruction. Without explicit standards, states may have a hard time holding programs accountable. Standards alone cannot transform teacher prep programs, but they do provide an essential blueprint for the changes that need to happen. Program approval processes (described in Action 2) are then necessary to ensure that programs are following that blueprint.

> *"Expanding Colorado's reading standards allowed our preparation programs to understand the detail and depth of instruction needed to prepare our future teachers in the science of reading. This led to a deep review of reading courses offered in traditional and alternative programs. The specificity of the standards also allowed us to hold programs accountable through our reauthorization process, ensuring a true shift in how we prepare aspiring teachers to teach scientifically based reading instruction."*
>
> ***—Mary Bivens**, Colorado Department of Education*

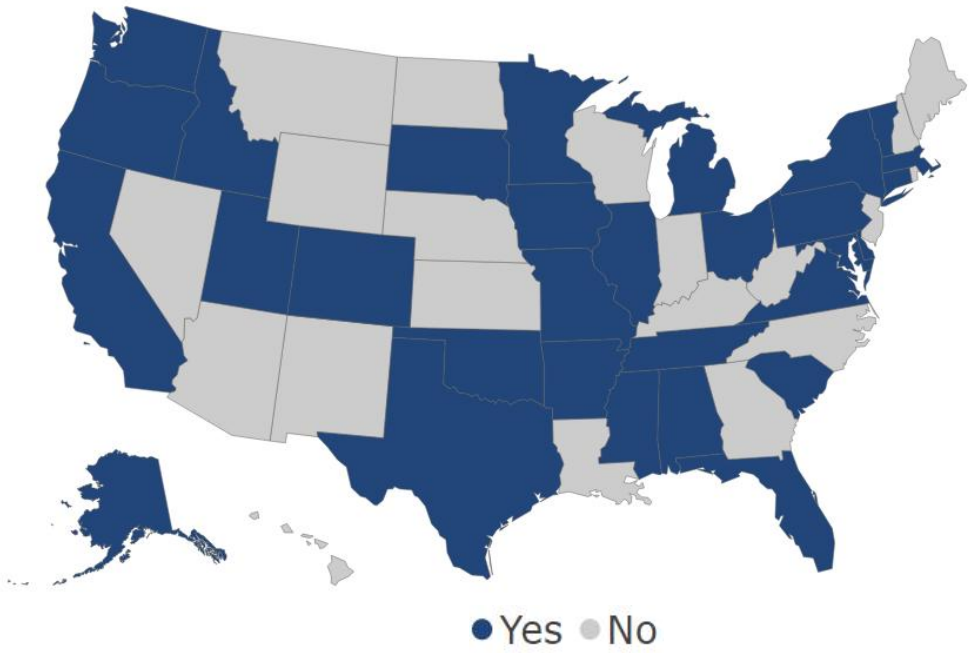
STATE SPOTLIGHT: Utah provides very specific reading competencies for their teacher prep programs. The competencies also include examples of what teaching the skills would look like in a teacher prep program, clarifying expectations for teacher candidates and prep programs alike.

English Learners (ELs) are among the fastest growing group of students, but many states do not set any standards related to supporting them to read

Over 5 million ELs are now enrolled in public schools,[13] an increase of 35% over the last two decades. Despite this growth, our analysis reveals that 21 states do not set any standards for teacher prep related to supporting ELs to read. This key addition to standards can make a difference. In states with reading standards that do include a focus on ELs, prep programs were found to provide slightly more coverage of teaching ELs to read across multiple aspects of instruction (instructional time, assignments, tests, background material, and practice).[14]

Figure 2.

Do state teacher prep reading standards include how to support ELs?



The dearth of attention in state standards may explain prep programs' neglect in preparing teachers to teach ELs to read. NCTQ's recent analysis of teacher prep program reading courses found that only 30% of programs dedicate at least two instructional hours to how to teach reading to ELs. Additionally, only 12% of programs require any practice opportunities for aspiring teachers working with ELs. This lack of preparation means new teachers likely enter classrooms without the knowledge and skills to teach ELs to read.[15]

STATE SPOTLIGHT: Florida competencies specifically address ELs and how instruction needs to be adapted for them. **Massachusetts** recently put forward early literacy program criteria, which include detailed expectations for all teacher candidates. Throughout the document, there is attention to preparing teachers to be successful with students who are multilingual learners (MLLs). For example, the program criteria include a focus on "the unique assets and needs of MLL students and the adaptations to phonological awareness instruction that support their growth and development."

In every state, at least one-third of students struggle to read, but not every state includes how to help struggling readers in their teacher prep reading standards

It's nearly guaranteed that elementary teachers will teach students who struggle to read, including those with dyslexia. Unfortunately, one in five states do not include how to

address struggling readers in their teacher prep reading standards for elementary teachers.

Aspiring teachers must be able to assess and identify which specific foundational reading skills a student is struggling with, what interventions to deploy to address this deficit (including when to bring in a reading specialist or the help of a reading coach), and how to monitor progress based on research-based methods. Furthermore, teachers need to be empowered to recognize children who are at risk or are struggling readers. This includes the ability to not only recognize the signs of dyslexia but also appreciate the intensity and explicitness of the instruction a student may need to become a skilled reader.

This lack of standards is reflected in teacher prep program practices. NCTQ's *Teacher Prep Review* found that only 40% of prep programs dedicate at least two hours of instructional time to teaching candidates how to support struggling readers. Similarly, only 20% of programs require any practice opportunities for teacher candidates to work with struggling readers to learn how to diagnose difficulties and design a plan for addressing them.

STATE SPOTLIGHT: Rhode Island competencies require teachers to gain foundational knowledge on the research behind dyslexia and other language-based learning difficulties, as well as how to differentiate and scaffold instruction to address reading difficulties.

ACTION 2: REVIEW TEACHER PREP PROGRAMS TO ENSURE THEY TEACH THE SCIENCE OF READING

INDICATORS
States should…

- ✓ Conduct program reviews to hold programs accountable for implementing the science of reading
- ✓ Maintain full control over program approval processes
- ✓ Use multiple sources of evidence to gauge implementation of the science of reading
- ✓ Require PK-12 literacy experts as program reviewers

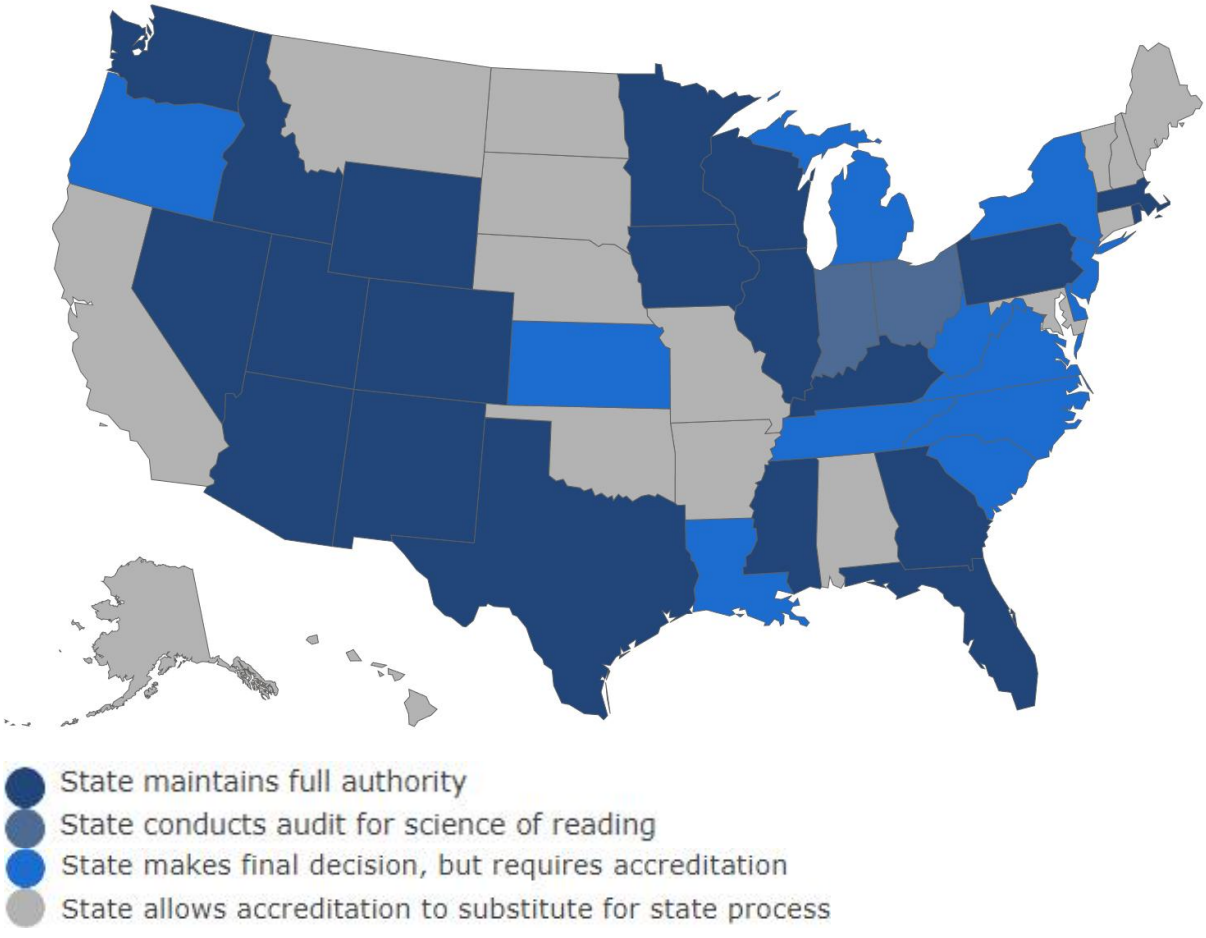
Without detailed reviews, states can't guarantee programs adequately prepare teachers to teach reading

Clear evidence from teacher surveys[16] and our own *Teacher Prep Review* demonstrates that aspiring elementary teachers are not being well taught how to implement scientifically based reading instruction in their preparation programs, despite half of states maintaining detailed standards. What accounts for this gap?

States expect prep programs to align their instruction with the research and state teacher prep standards, but this does not always happen. States should more fully use their authority to verify that policies are carried out in practice. After all, teacher prep programs have to be approved by states in order to operate.

Figure 3.

Less than half of states maintain full authority by facilitating their own program review processes



Most states lack specific review procedures to ensure teacher prep programs are aligned to the research on reading. Only 23 states conduct their own program approval process (and even that does not necessarily mean they are doing a deep dive on the science of

reading). All other states rely on external accreditation in some capacity. Outsourcing program approval processes or reviews comes with some serious drawbacks. External accreditation processes review the institution as a whole, not a specific program (e.g., undergraduate elementary). Therefore, these entities don't have the time, directive, or expertise to determine if the program prepares elementary teachers aligned to scientifically based reading instruction.

States have two options to use their authority to approve programs as a means to strengthen teacher prep in reading. First, they could revise or deepen state-led program renewal processes (which typically happen every five to seven years) to focus on the implementation of the science of reading (e.g., looking for specific evidence that the program addresses each of the state's reading standards). Second, a state could choose to take on program review focused only on the preparation to teach reading–and leave other aspects of review to other entities.

STATE SPOTLIGHT: Colorado implemented the first option, revising their program approval processes. The state created a matrix (or checklist) for programs that includes specific "look-fors" related to the reading standards. Programs complete the matrix, and Colorado reviewers use it to verify when and where programs are teaching standards, based on evidence like course syllabi and assignment descriptions. Then when state reviewers conduct on-site visits, they include literacy experts who observe classes and talk to teacher candidates and graduates to gauge implementation. Based on this process, the state either recommends approval of the program or issues conditional approval and gives programs one year to remedy any shortcomings. (The state also has the authority to deny approval to programs but chooses to grant conditional approval to allow programs to improve.) Currently 10 states do not have conditional approval as an option, leaving states limited in driving continuous improvement without shutting down programs.

Indiana and Ohio chose to audit teacher preparation programs focusing only on the implementation of the science of reading. Both states legislated these new approaches. States often use this strategy after adopting new teacher prep standards, but it can be enacted at any time. These audits may be more efficient than relying on the whole program approval process because they are targeted specifically to reading. As such, the approach can offer an immediate check on programs' alignment to state reading standards, rather than revising the full program approval process and waiting for institutions to come up again in the program approval cycle. Ohio's new law requires audits of their reading programs to be done for every institution every four years, with summaries of the findings made public.

Few states include literacy experts or use multiple pieces of evidence to inform program approval decisions

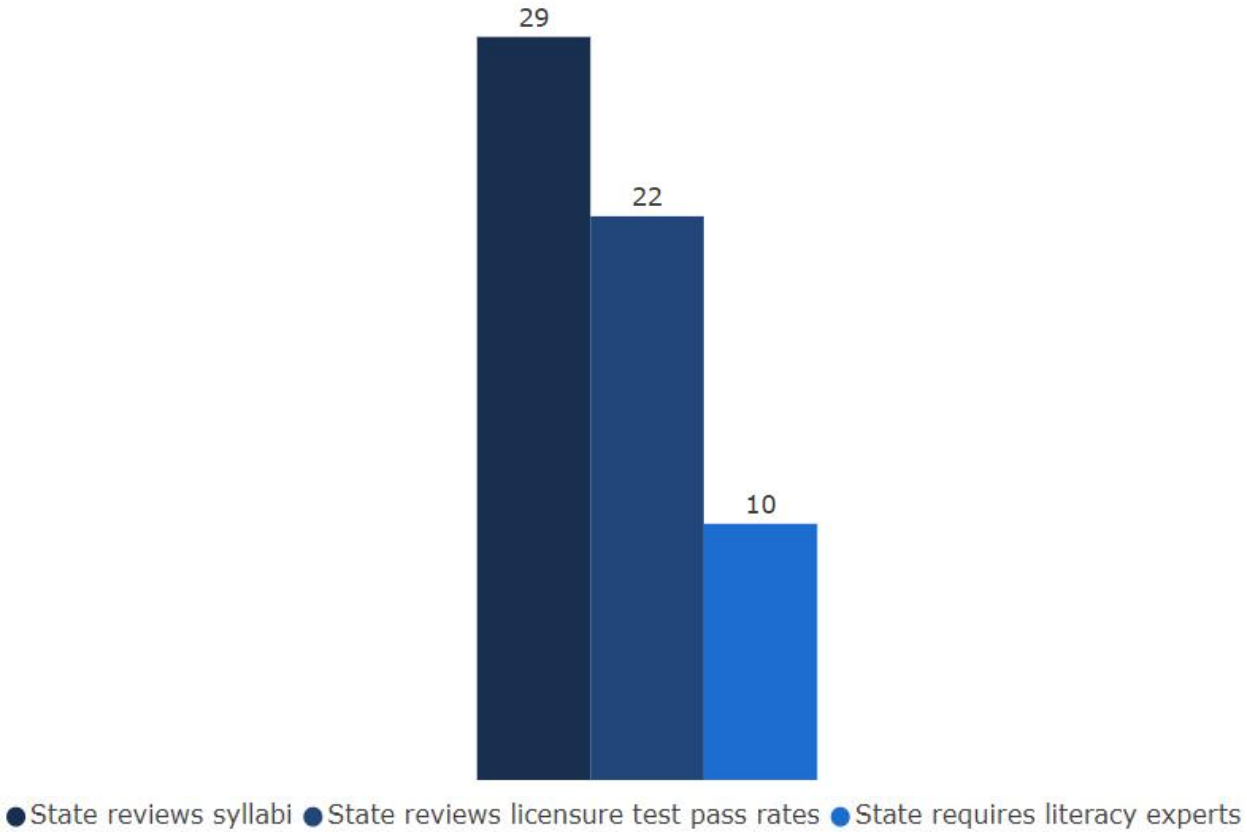
When making evaluations about program quality and standards implementation, it is important to include different types of evidence, such as syllabi of coursework, pass rates

on reading licensure tests, observing classes, and interviewing or surveying candidates and their hiring principals on their readiness to teach reading. States should also broaden their on-site visits to include literacy experts, perhaps using those from districts who will hire the graduates of these programs and have a vested interest in their quality.

- Currently, only 29 states review syllabi of reading courses, which provide insight into whether the required courses intend to teach the core components of reading instruction, for how long, and with what assessment and practice opportunities.
- Only 22 states use reading licensure test pass rates, which provide information about whether aspiring teachers have internalized information about scientifically based reading instruction, as measured by a standardized instrument.
- Reading is a highly complex and specialized area, yet only ten states specifically include literacy experts in their reviews.

Figure 4.

Few states use multiple pieces of evidence and include literacy experts to inform program approval decisions



ACTION 3: ADOPT A STRONG ELEMENTARY READING LICENSURE TEST

INDICATORS
States should…

- ✓ Adopt a strong elementary reading licensure test as a guardrail to ensure new teachers know the science of reading
- ✓ Require all elementary teacher candidates to pass a reading licensure test
- ✓ Publish reading licensure pass rate data

Most states would benefit from either strengthening their current reading licensure test or selecting a different test

Licensure tests provide a scalable and reliable measure that, with other evidence, can determine whether teachers are well prepared in the science of reading. While this is an area ripe for further research, the available evidence suggests that various measures of teachers' knowledge of scientifically based reading instruction correlate with their students' reading achievement gains.[17]

Not all reading licensure tests are created equal.

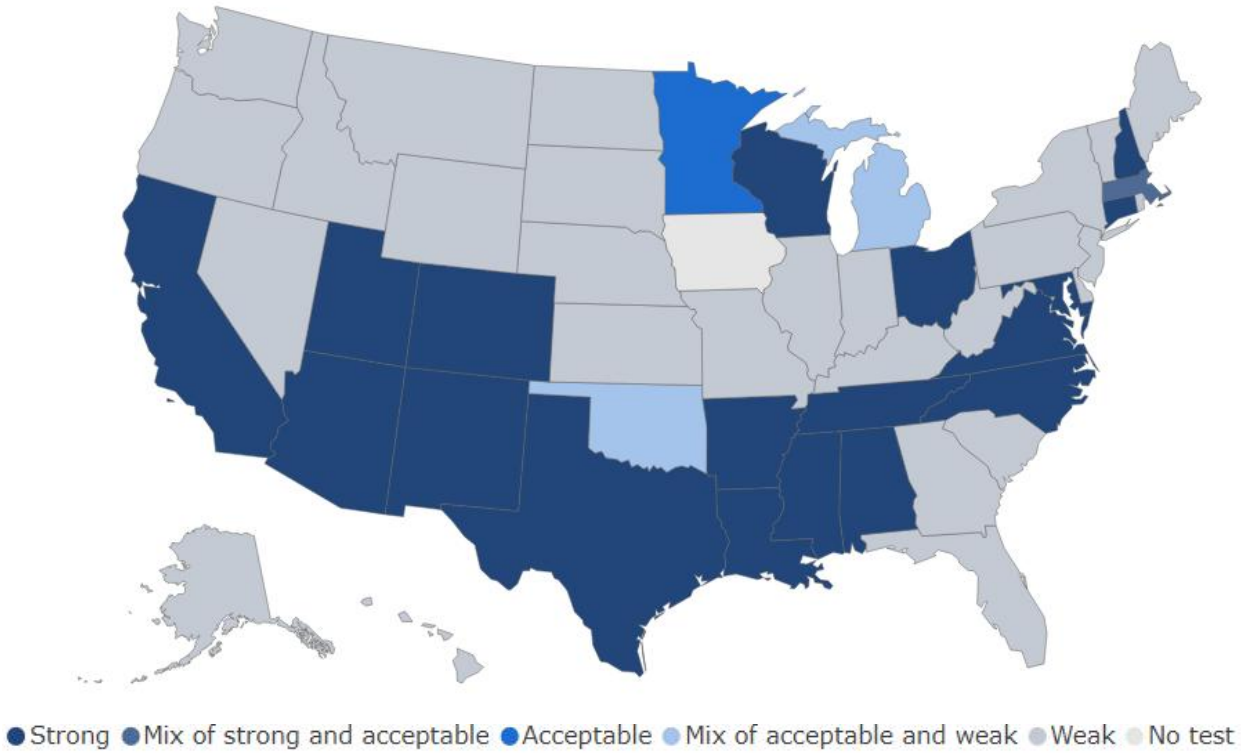
Often these tests have shortcomings or fail to fully address all five core components of the science of reading. Visit NCTQ's *False Assurances: Many states' licensure tests don't signal whether elementary teachers understand reading instruction* to see an evaluation of the quality of each state's reading tests.

Currently, only 20 states require a strong standalone reading test.[18] Most other states require a test that includes reading, but is weak on the science of reading. (Iowa stands out as the lone state without any licensure test addressing reading.) Some states also allow candidates to choose from multiple tests, most often providing a selection of weaker tests.

States with strong licensure tests can use results as early warning indicators of programs' shortcomings. The tests can also help verify that people who earn a teaching license truly do understand the science of reading. A weak test fails on both these counts and costs candidates time and money for an assessment that doesn't tell them, their prep programs, or their hiring districts whether or not they have the knowledge to be successful in teaching children to read.

Figure 5:

Fewer than half of states use strong reading licensure tests



**Louisiana will begin using a strong reading licensure test in 2024.*

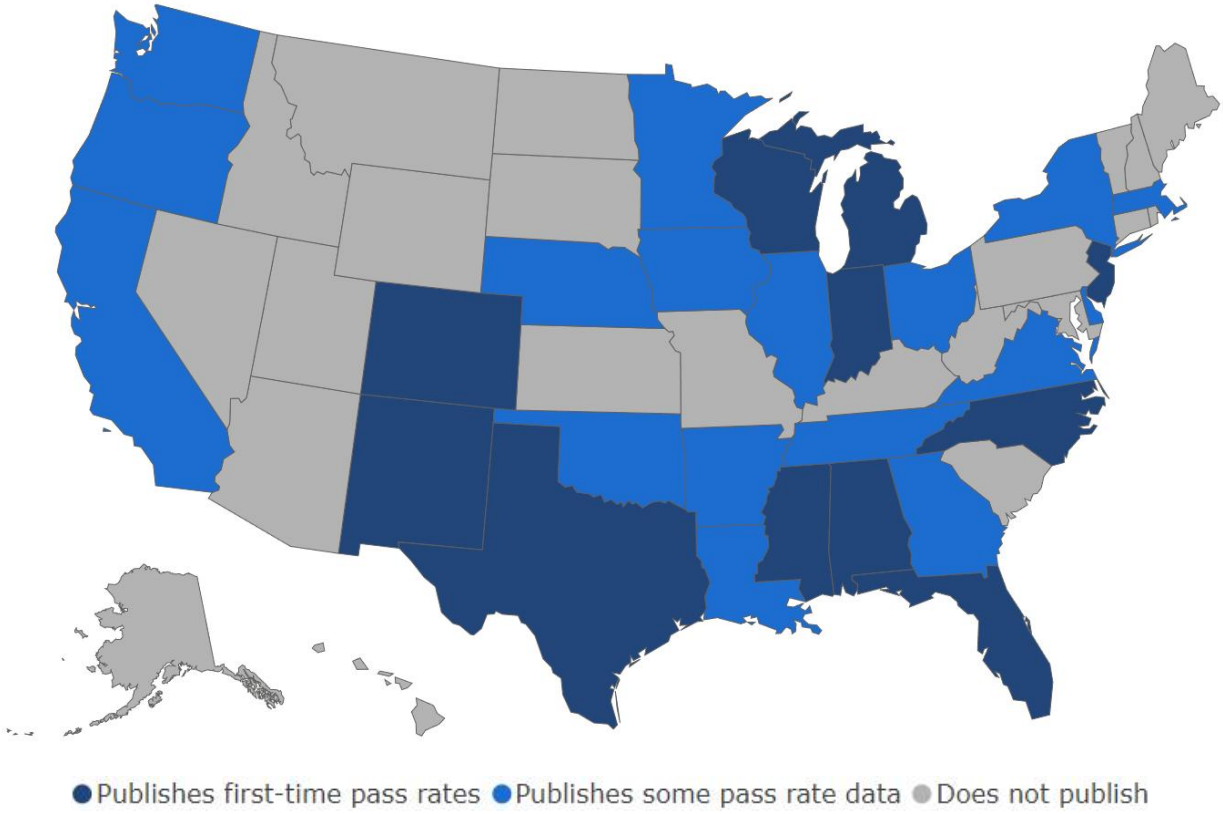
Only 27 states publish data from licensure tests

Licensure test pass rates can be a useful tool to both measure program quality and inform areas for improvement. Publishing pass rate data, and especially first-time pass rate data, can help aspiring teacher candidates identify the programs or institutions that are most likely to prepare them to succeed on these exams.[19] Eleven states currently make first-time pass rates publicly available by program or institution.

Pass rates on these tests also provide another check on whether programs are ensuring that candidates understand the science of reading by the time they complete the program.

Figure 6.

Few states publish first-time pass rates on reading licensure tests



STATE SPOTLIGHT: Texas is a good example of a state that uses a strong reading licensure test, the Science of Teaching Reading Exam, and uses the results as one piece of evidence, along with several others, to inform program approval decisions. Texas considers the percentage of candidates who pass the examination within the first two attempts. **Mississippi** requires programs to report annually the number of program completers scoring at or above the minimum passing score by the number of attempts, which can indicate whether programs intervene early with candidates who are struggling to pass their test. By focusing on both pass rates generally and the number of times candidates take the tests, these states are looking at indicators of program quality and support for their candidates, and they are using the data in program approval decisions.

ACTION 4: REQUIRE DISTRICTS TO SELECT A HIGH-QUALITY READING CURRICULUM

INDICATORS
States should…

- ✓ Require the use of high-quality curricula aligned to the science of reading
- ✓ Collect and publish data on curricula districts are using
- ✓ Allocate resources to help make the transition to new curricula
- ✓ Provide guidance on how to select high-quality curricula that support struggling readers (including students with dyslexia) and ELs

Curricula—often called instructional materials—are the core materials that teachers use to deliver instruction. They are designed to be used by teachers to give students access to grade-level content standards and support a coherent sequence and progression of grade-appropriate knowledge and skills. A curriculum supports teachers' instruction and builds their capacity to deliver research-based, standards-aligned reading instruction. Unfortunately, there are big differences in the quality of the curricula on the market.[20]

"High-quality" curricula have been vetted by the state or a designated partner against a set of standards. This process includes evidence that the curriculum aligns to the state's student standards, helps build content knowledge, and reflects the existing body of research on reading. For example, Ed Reports shares reviews of reading curricula, including an analysis of alignment with the science of reading.

Why focus on curricula? Because high-quality curricula boost student outcomes.[21] In fact, the difference in impact on student learning between high- and low-quality curricula can be greater than the difference between a new teacher and one with three years of experience.[22] Using a high-quality curriculum can also ease the burden on teachers, reducing the time that they might spend searching for materials online and creating lessons from scratch.[23] For state policymakers, requiring a high-quality curriculum is a low-cost strategy, since districts are already purchasing some type of instructional materials. Research shows that improving the quality of the curriculum is 40 times more cost-effective for improving student test scores than reducing class size.[24]

While states potentially spend over 1 billion dollars on reading curricula[25], only nine states require districts to select high-quality reading curriculum materials

Currently, 85% of students[26]—upwards of 40 million—live in states that do not require districts to select high-quality reading curricula. This means that states allow districts to purchase whatever curricula they want, whether or not they follow the research on the most effective ways to teach reading or include teaching methods long ago debunked by the research.

Figure 7.

Only nine states require districts to use high-quality reading curricula

STATE SPOTLIGHT: Arkansas requires districts to select from an identified list of approved reading curricula that have been vetted by the state against rigorous, research-aligned standards. Many states, including Arkansas, partner with Ed Reports, an organization that evaluates the quality of curricula nationwide using teams of educators to help identify a list of high-quality curricula. If districts do not select one of the many approved curricula, the state board can withhold up to 10% of state funding. **Texas** also provides a full review of curriculum materials, including whether they cover state standards, encompass foundational literacy skills, and include support for all learners.

Forty percent of states have no way to know the quality of reading curricula in use

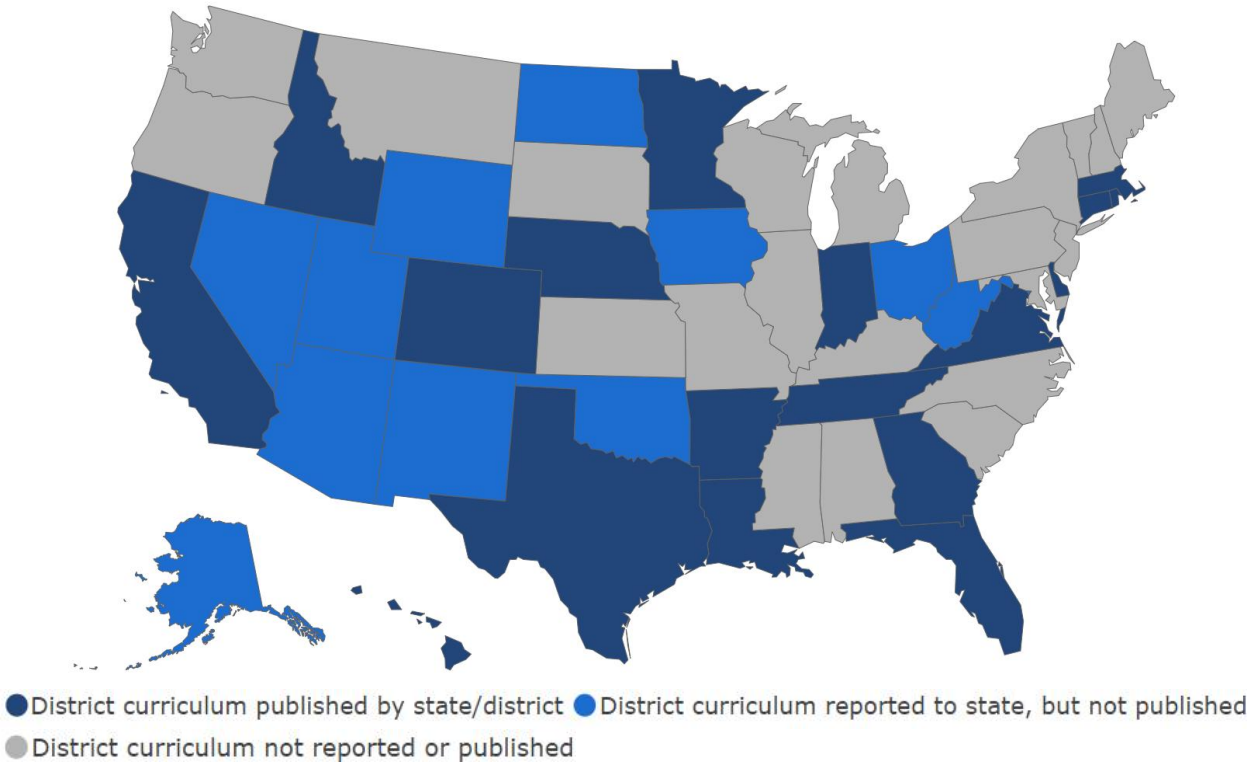
Only 18 states **(AR, CA, CO, CT, DE, FL, GA, HI, ID, IN, LA, MA, MN, NE, RI, TN, TX, and VA)** make curriculum decisions transparent by publishing on the state's website the curriculum each district uses or requiring districts to publish this information. Another 12

states collect information about what curricula their districts are using but do not make it public.

Without knowledge of which curricula districts use, states are missing an opportunity for instructional improvement. They do not know which students are getting access to a research-backed curriculum and which students are being taught mediocre or weak curricula (more likely historically underserved students).[27]

Figure 8.

Forty percent of states have no way to know the quality of their districts' reading curriculum



STATE SPOTLIGHT: Rhode Island serves as a model for giving the public information about district curriculum selection. The state publishes a Curriculum Visualization Tool that allows stakeholders to see not only which curriculum each school is using, but also whether the state has determined it to be high quality or not. The tool allows someone to search by district, school, or curriculum.

Only three states allocate curriculum funds to all districts and also require the use of high-quality reading curricula

Sixteen states currently allocate state funds to all districts to purchase reading curricula—a hefty investment. These states encompass 55% of the student population

nationwide, including 62% percent of students living in poverty.[28] **South Carolina**, **Tennessee**, and **Virginia** are the only states that allocate funds to all districts *and* require districts to select a high-quality reading curriculum from a state list. If states are putting up funds for all districts to buy reading curricula, they should ensure that the funds are well spent to support strong reading instruction. Otherwise states could be wasting their money.

STATE SPOTLIGHT: Ohio recently passed a law to require the Department of Education to create a list for districts to use to purchase high-quality reading curricula and evidence-based reading intervention programs. The Ohio General Assembly also allocated $64 million dollars to aid districts in this transition for buying materials and supporting professional learning for teachers.

Nearly half of states provide no guidance to determine if curriculum materials include supporting ELs

Historically marginalized students suffer the most from lack of access to strong reading instruction, and this is reflected in their achievement scores on national assessments. In the most recent National Assessment of Education Progress (NAEP), two out of three ELs scored "below basic" in fourth grade reading (compared to one out of three of all fourth graders).

To change this pattern, states can provide districts with direction in identifying how core curricula support ELs, and if necessary, identify high-quality supplemental reading curricula to use to support those students. Supplemental reading curricula focus on interventions based on specific learner needs.

Sixteen states include supplemental curricula for ELs in their approved core curriculum lists or recommend a list of curricula that address EL needs. An additional 14 states provide guidance or evaluation tools to help districts select high-quality curricula for ELs. Of the ten states with the highest number of EL students,[29] four states (**GA, IL, NY, WA**) fail to include even guidance on curricula for ELs.

STATE SPOTLIGHT: Rhode Island helps districts select high-quality core curriculum materials that meet the needs of ELs by providing guidance called "Multilingual Learner (MLL) non-negotiables for ELA curriculum selection." This tool helps ensure districts select core curriculum materials that meet the needs of MLLs, rather than addressing the needs of this student population through additional materials. It serves as a checklist that can be used to evaluate curricula to check if they have the necessary rigor in language development, full access to grade-level instructional content, integrated scaffolding without compromising rigor or content, and access to text that increases in complexity, with intentional connections between English language development and English language arts (ELA) instruction.

Mississippi also provides a curriculum assessment tool that offers guidance on assessing curricula, including determining how well the curriculum supports teachers to teach ELs. For example, the tool asks: "Do the materials help ELs access challenging content and

provide teacher guidance for the appropriate use of strategies and scaffolds?" **Texas** also offers guidance **through** specific indicators to look for when assessing curricula for EL supports (e.g., "Is vocabulary developed in the content of connected discourse?").

One-third of states provide no guidance on how curriculum materials address struggling readers

Struggling readers, including students with dyslexia, need specific interventions to become strong readers. To support teachers to meet these students' needs, 23 states provide direction on supplemental curricula to use. Another 13 states provide guidelines or evaluation tools to help districts select supplemental materials for struggling readers.

STATE SPOTLIGHT: Arkansas provides a list of approved dyslexia and intervention programs to help guide districts to select high-quality materials. Identifying high-quality intervention programs is critically important so that time dedicated to additional instruction for students makes a difference and is not wasted with materials that reinforce strategies not aligned to the research.

ACTION 5: PROVIDE PROFESSIONAL LEARNING AND ONGOING SUPPORT TO SUSTAIN IMPLEMENTATION OF SCIENCE OF READING

INDICATORS
States should…

- ✓ Require all current elementary teachers to receive high-quality professional learning in scientifically based reading instruction and to demonstrate their learning
- ✓ Provide districts with resources to support implementation and sustainability such as literacy coaches or support networks
- ✓ Support professional learning to promote skillful implementation of high-quality reading curricula
- ✓ Evaluate results of investments in professional learning

Teachers who are well prepared in scientifically based reading instruction are fundamental to the implementation and sustainability of the science of reading. If teachers have the knowledge and skills to teach reading, they can increase their impact on children's literacy. For example, if a teacher instructs a student to use strategies to

memorize words ten words, a student can read maybe ten words. However, if a teacher instructs a student on the sounds of ten letters and how those sounds blend to words, then the child can read thousands of words.[30] Skillful teachers in the science of reading have exponential positive effects.

Unfortunately, thousands of teachers are in classrooms right now without sufficient knowledge of the science of reading. A survey conducted by *Education Week* found most elementary special education and K-2 teachers (72%) report using literacy instructional methods that incorporate practices debunked by cognitive scientists decades ago[31]—such as teaching students to look at the picture to help guess a word or skipping words they do not know. Not only are these strategies unhelpful,[32] but they also take up valuable instructional time that should be dedicated to research-based reading instruction.[33] Teachers must be given the knowledge and skills they need to help their students learn to read the thousands of words they will encounter.

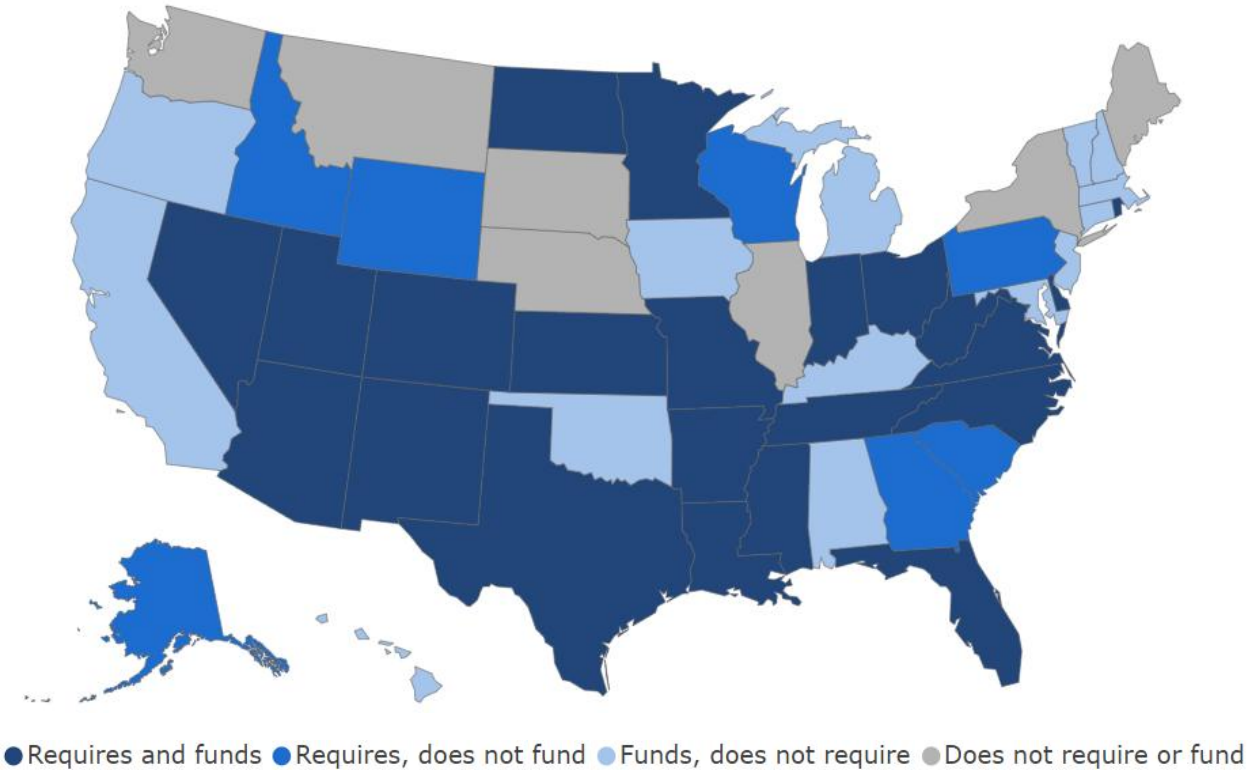
> *"Learning about the science of reading has been life and career changing for me. It continues to be life changing for my students."*
>
> *—**Elisa**, second grade teacher*

Though more than half of states require some type of professional learning on the science of reading and allocate funds for it, over half a million teachers may be left without it

States can help close the gap in teachers' knowledge and skills by offering high-quality professional learning. A little more than half of states (30) require some type of professional learning on the science of reading for in-service teachers, most focusing on early elementary years. Research in Mississippi found that teacher knowledge, quality of early literacy instruction, student engagement in literacy, and teacher competencies all improved for teachers who participated in the Language Essentials for Teaching Reading and Spelling (LETRS) professional development program.[34] While there is limited research on the effectiveness of individual professional learning programs on the science of reading, the research does demonstrate that professional learning is apt to be more impactful when it is focused on content and includes coaching and job-embedded supports.[35]

Figure 9.

The majority of states require and fund professional learning in the science of reading



States would be wise to give all current elementary teachers access to professional learning on scientifically based reading instruction and require teachers to demonstrate their proficiency to deliver it. Currently, states are deploying a myriad of strategies or approaches. In **Texas** teachers must complete a reading academy or demonstrate their proficiency, and in **North Carolina** all elementary teachers will complete LETRS training by 2024. **Indiana** just passed a law that requires all elementary teachers to acquire a literacy endorsement by June 2025, whereby teachers must complete 80 hours of professional learning and demonstrate their proficiency through a written exam.

Mississippi and Tennessee are strong examples of providing professional learning for teachers and supporting ongoing implementation of scientifically based reading instruction by offering literacy coaches and district networks, respectively. Learn how other states approach professional learning in the State Reading Policy Action Guide.

High-quality professional learning matters for skillful implementation of curricula

Professional learning is most useful to teachers when it is regular, frequent, job embedded, and built on the curriculum or instructional materials that teachers use every day in their classrooms.

"*Separating the work of implementing standards aligned curriculum from the ongoing professional learning in which teachers engage is not only inefficient but also incoherent; it undermines the success of both. System leaders have a responsibility to intentionally weave these work streams together.*"[86]

— Connecting Curriculum & Professional Learning in Schools Practice What YouTEACH (2017)

Ongoing professional supports are necessary for sustainability and even more critical in high-poverty schools. A new study found that teachers in high-poverty schools need more support to implement high-quality curricula than their peers in more affluent schools.[37] Teachers in high-poverty schools who experienced effective professional learning opportunities were less likely to report that materials were "too challenging" for their students than those who did not. And when teachers viewed the curriculum as too challenging for their students, they used it less often. So high-quality professional learning matters to support implementation of high-quality curricula.

As states deliberate on how to allocate limited resources, they should consider vetting professional learning providers, funding professional learning aligned to a high-quality curriculum, and allocating resources to support districts' use of coaches, especially in the highest-need schools.

More than half of states (36) invested over $660 million dollars for training current teachers in literacy instruction within the last eighteen months

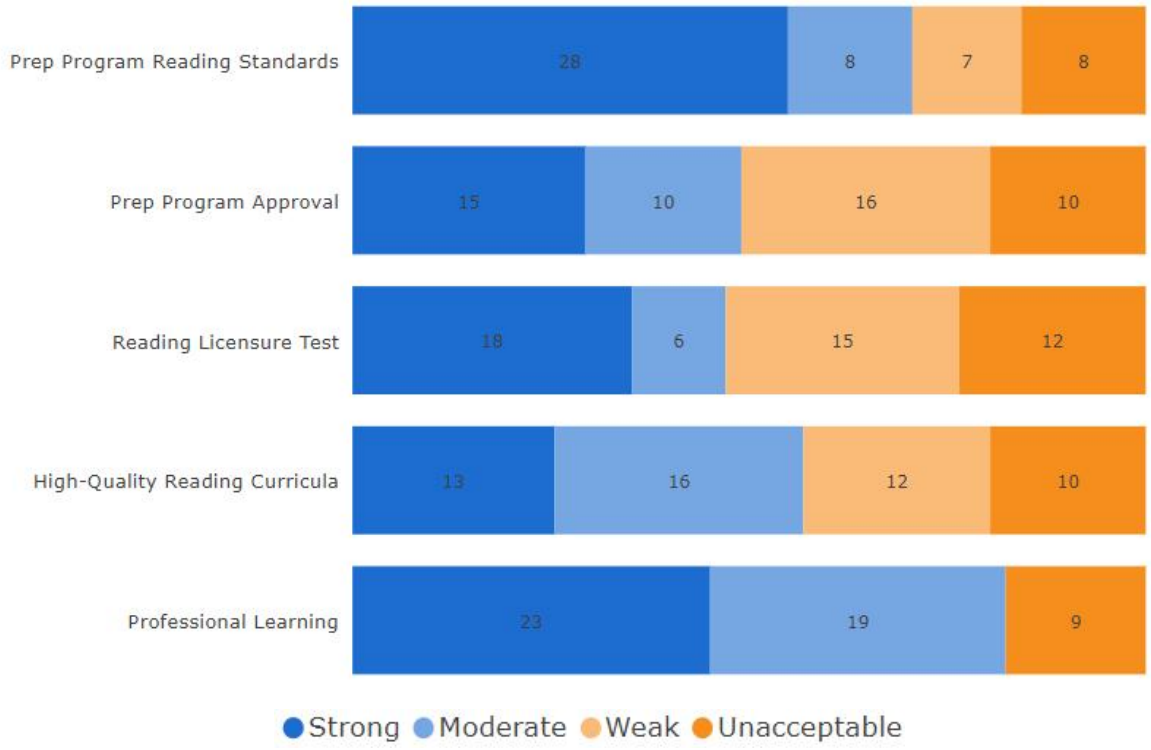
Given the resources that states are dedicating to provide teachers with professional learning in scientifically based reading instruction, states should establish metrics by which they track impact over time to gauge the return on their investment, as Mississippi did to study the effectiveness of LETRS training.

Literacy policy approaches that focus on teacher effectiveness are the most likely to result in meaningful improvement and sustainability

The five policy actions outlined in this report aim to provide a framework for state policymakers of the steps they can take to ensure they have the teacher workforce necessary to implement the science of reading and sustain it for the long term. Overall, states are doing a better job at setting standards for prep programs and providing professional learning opportunities. They are further behind in embracing strong prep program approval practices, requiring a strong reading licensure test, or ensuring districts use high-quality reading curricula aligned with the science of reading.

Figure 10.

How do states perform across the five policy actions?



All five policy actions are connected, and when they are implemented together, states have an opportunity to greatly increase teacher capacity to teach reading and improve student outcomes. While many states have taken action over the last few years, there is still room for improvement, focusing explicitly on building the capacity of teachers.

METHODOLOGY IN BRIEF

NCTQ identified 18 key indicators within the five policy actions and analyzed the extent to which states are implementing them. (See the full methodology in Appendix).

How we calculated each state's score

1. Teacher Preparation Standards (20%)
Indicators we looked for: • Does state law or regulation include specific, detailed standards for all five core reading components for elementary teacher prep programs? • Does the state include how to teach ELs in the reading standards for teacher prep programs? • Does the state incorporate how to teach struggling readers, including those with dyslexia, in the reading standards for teacher prep programs?
2. Program Review Processes (20%)
Indicators we looked for: • Does the state maintain full control of program approval processes? • Does the state review the syllabi for reading courses to determine integration of all reading standards and the science of reading as part of the program renewal process? • Does the state require reading specialists/experts in review of reading instruction in elementary teacher prep programs as part of the program approval process? • Does the state include pass rate data as part of the program approval process?
3. Reading Licensure Tests (20%)
Indicators we looked for: • Does the state require at least an acceptable reading test for elementary teacher candidates? • Does the state require all elementary teacher candidates to pass a reading licensure test? • Does the state publish pass rate data on reading licensure tests?
4. High-Quality Instructional Materials (20%)
Indicators we looked for: • Does the state require districts to select reading core curriculum materials from an identified list? • Does the state have a policy that requires districts to publish the curriculum they are using?

- Does the state publish district-level information about the curriculum used in each district on the state's website?
- Does the state provide guidance and/or evaluation tools to districts to aid in the selection of high-quality supplemental materials for interventions for struggling readers?
- Does the state provide guidance and/or evaluation tools to districts to aid in the selection of high-quality supplemental materials for ELs?
- Does the state allocate funds toward HQ reading curriculum materials?

5. Professional Learning (20%)

Indicators we looked for:

- Does the state require professional learning for in-service elementary teachers in scientifically based reading instruction?
- Does the state allocate funds toward professional learning in implementing scientifically based reading instruction?

States fall into one of four categories based on the extent to which they have implemented the five policy actions to build teacher capacity to implement scientifically based reading instruction.

Reading Policy Category Definitions

State Category	Category Description	Qualifying Score
Strong	Numerous policies in place across the five actions	State earned 75% or more of the possible points
Moderate	Some policies in place across the five actions	State earned 50–74% of the possible points
Weak	A few policies in place across the five actions	State earned 25–49% of the possible points
Unacceptable	Little to no policies in place across the five actions	State earned 0–24% of the possible points

Strong states have numerous policies, moderate states have some policies in place, weak states have few policies in place, and states rated as unacceptable have minimal policies in place.

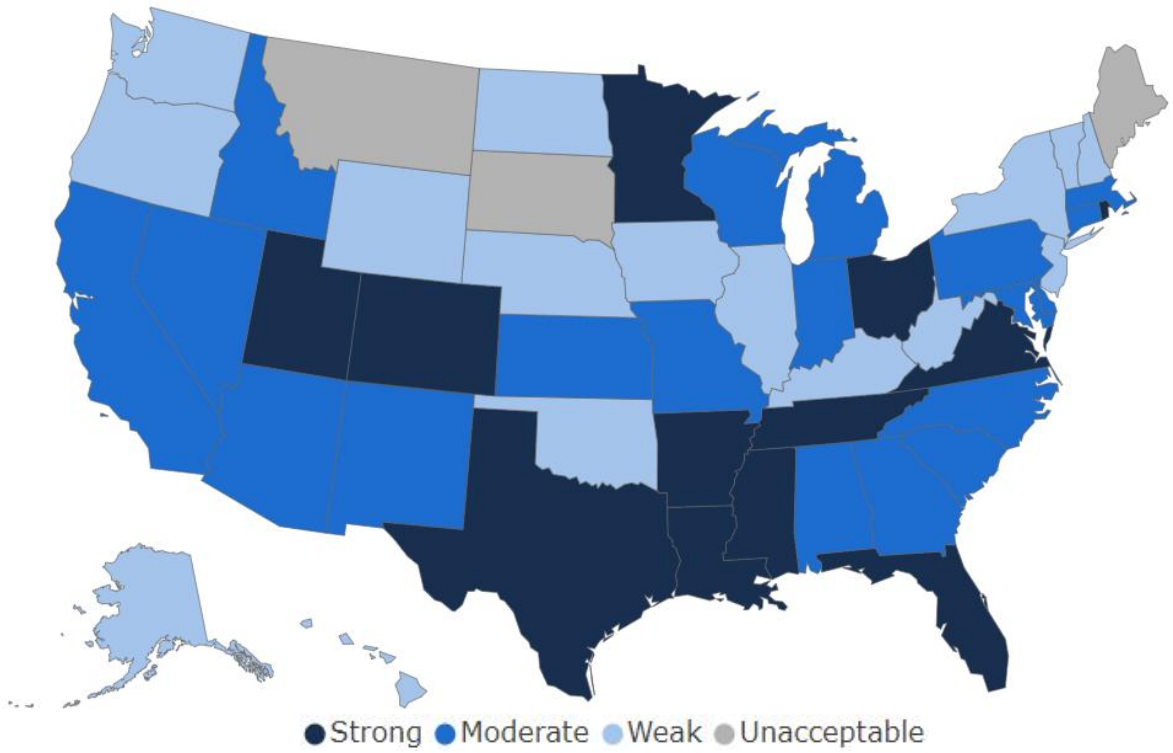
Summary of state performance

States identified as strong include **Arkansas, Colorado, Florida, Louisiana, Minnesota, Mississippi, Ohio, Rhode Island, Tennessee, Texas, Utah, and Virginia**. These states nearly always address all five actions and a majority of indicators to support teachers in

the implementation of science of reading. On the other end of the continuum, three states **(Maine, Montana, and South Dakota)** only engage in one or two actions, if any.

Figure 11.

State progress on implementing policies and practices to build teacher effectiveness in the science of reading



RECOMMENDATIONS

If elementary teachers implement scientifically based reading instruction, more than 90% of students can learn to read. But we won't achieve this goal unless teachers are given the knowledge, skills, instructional materials, and professional learning they need to be successful. State education leaders can play a pivotal role by enacting and/or strengthening existing policies or carrying out promising practices that will help improve reading outcomes for students. Below are a set of recommendations for states based on research and promising practices.

Action 1: Set specific, detailed reading standards for teacher prep programs

- **Strengthen teacher prep programs by requiring specific, detailed reading standards for teacher prep programs** that go beyond just listing the five core components of reading. Specific standards that explicitly state what teachers should know and be able to teach, such as Utah's standards, allow states to hold teacher prep programs accountable and create consistency in the quality of preparation in literacy instruction across the state.
- **Include how to teach ELs and struggling readers, such as those with dyslexia, in the reading standards for elementary teacher prep programs.** Teachers must be prepared to meet the unique needs of *all* students. With strong state policy, education leaders can ensure teachers receive the preparation they need. Massachusetts' draft program standards include preparation in how to plan appropriate entry points for learners of all language backgrounds. **Rhode Island's** competencies include how to differentiate, accommodate, and scaffold instruction to address the reading difficulties demonstrated by students with dyslexia and other language-based learning disabilities.

Action 2: Review teacher prep programs to ensure they teach the science of reading

- **Rather than relying on external accreditation organizations, states should lead efforts to revise their program approval processes or create a specific audit process to evaluate programs' implementation of the science of reading. Colorado** is leading the way in implementing strong program approval processes and maintaining full authority to do so, and in setting ambitious timelines for improvement and monitoring progress specific to reading. **Indiana** and **Ohio** have both passed new audit processes beginning in the next year to gauge implementation of the science of reading, rather than waiting years until programs are up for their next renewal cycle.
- **Use multiple sources of evidence to inform program approval decisions.** States should review course syllabi and pass rates for reading licensure tests as key evidence sources.

- **Require literacy experts.** States should also use reading literacy experts when conducting site visits to evaluate implementation of the science of reading, as Florida has done.

Action 3: Implement a strong reading licensure test

- **Select a strong reading licensure test** to provide one measure of the extent to which elementary teacher candidates know core knowledge of scientifically based reading instruction. Reading licensure tests can serve as a barometer to ensure that aspiring teachers are well prepared to deliver on the promise of evidence-based reading instruction. (View NCTQ's analysis of reading licensure tests to determine which are strong tests.)
- **Require all elementary teachers to pass a reading licensure test before they become a teacher of record.**
- **Publish reading licensure test pass rate data.** Publishing pass rates provides public transparency and delivers an indicator to aspiring teachers as to program quality.

Action 4: Require districts to select high-quality reading curricula

- **States should require districts to select reading curricula from a state-approved list of high-quality reading instructional materials.** This saves districts time and effort while still preserving the ability for districts to maintain local autonomy in their selection. Arkansas provides a good example of making clear which reading curricula meet expectations and which do not.
- **Require transparency about which curriculum materials districts are using.** Many states do not know which curriculum materials districts are using. Given the ample evidence that high-quality materials can make a large difference for students and teachers alike, at a minimum states should **require districts to identify and publish the curriculum materials they are using**. Ideally, states should post which instructional materials districts are using and identify their quality, as **Rhode Island** does with their Curriculum Visualization Tool.
- **Provide funding to support the transition to high-quality instructional materials**. This past year, **Ohio** required the state department of education to identify a list of high-quality reading materials and provided $64 million to help districts make the transition and support teachers to be skillful in implementation.
- **Create guidance to support the selection of high-quality instructional materials for ELs and struggling readers, such as students with dyslexia.** Mississippi and Rhode Island stand out as exemplars in this area by providing guidance and tools for what districts should look for in instructional materials to help address diverse learner needs.

Action 5: Provide professional learning and ongoing supports to sustain implementation of the science of reading

- **Require all current elementary teachers and leaders to receive high-quality professional learning in scientifically based reading instruction and demonstrate**

their learning. States have an opportunity to help teachers and leaders gain the knowledge and skills they need to implement scientifically based reading instruction.

- **Provide districts with resources to support teachers' implementation and sustainability such as literacy coaches or support networks.** States such as Mississippi and Tennessee have focused on sustained supports, such as professional learning aligned with high-quality curriculum and embedding literacy coaches, and reaped the benefits in student outcomes. Tennessee convenes districts in networks, with one model district serving as a guide to other districts doing the same work, focused on professional learning and skillful implementation of reading curricula. States need to stay the course and dedicate funds to support implementation.
- **Support high-quality professional learning to promote skillful implementation of high-quality reading curricula.** Research has found high-quality, aligned professional learning opportunities to be a key factor in helping teachers implement high-quality curricula, with the need more pronounced in high-poverty schools.
- **Evaluate results of investments in professional learning.** With large investments in professional learning, states (and the larger education community) would benefit from understanding the extent to which these investments are successful. For example, school leaders could conduct observations or informal classroom walkthroughs that specifically look for evidence that teachers are implementing these new practices. Or the state could track student growth data linked back to the professional learning opportunities teachers engaged in. States could also work with local universities to develop studies to gauge the effectiveness of professional learning using multiple measures.

APPENDIX: METHODOLOGY

Each state's ***Progress on Reading Policies*** category is based on 18 indicators in five policy actions that support building teacher's capacity to implement scientifically based reading instruction. The five action areas are weighted equally. Below is a detailed description of the methodology.

1.) **Identify the key state actions (policies and practices) to build teacher capacity to implement scientifically based reading instruction.** Each policy action includes several indicators.
2.) **Assign a total value to each policy or practice indicator.** Each policy or practice indicator is worth one or two points. Policy actions that can earn two points typically are in law or regulation or are tied to funding, as these actions require greater stakeholder engagement and buy-in and are more significant to achieve. Indicators worth one point are tied to practices states can take to support the overall action, but do not necessarily require a policy or law. These may include developing guidance tools to aid in the selection of high-quality reading curricula or publishing data related to pass rates.
3.) **Allocate points for state policies**. It is possible to earn partial points for some indicators. For example, for the question related to the state's role in the selection of high-quality instructional materials, states were coded as either "the state created a list districts are *required* to select from," "the state created a list districts are *recommended* to select from," or "neither of these actions is present." In this instance, if the state *requires* districts to select from a list identified as high-quality reading curricula, the state receives two points. If the state creates a list for which districts are *recommended* to select their curriculum, the state receives one point or partial credit. If the state does not have any recommendations or requirements in terms of high-quality reading curricula, they earn no points. In some instances, the value may be binary (e.g., 0 = "no" and 1 = "yes"). See the example below with this methodology applied:

Policy Action	Indicator	Total possible value	Coded response and assigned value
Teacher Preparation Standards	Does state law or regulation include specific, detailed standards for all five core reading components for elementary teacher prep programs?	2	2 points = Yes (must have detailed standards on all 5 components) 1 point = Provides detail on some, but not all standards 0 points = No (missing one or more components, or standards are not detailed)
Teacher Preparation Standards	Does the state include how to teach reading to ELs in the reading standards for teacher prep programs?	1	1 point = Yes, includes ELs in teacher prep reading standards 0 points = No
Teacher Preparation Standards	Does the state incorporate how to teach struggling readers, including those with dyslexia, in the reading standards for teacher prep programs?	1	1 point = Yes, includes how to address struggling readers in teacher prep reading standards 0 points = No
Program Approval	Does the state review the syllabi for reading courses to determine integration of all reading standards as part of the program renewal process?	1	1 point = Yes (syllabi/coursework are reviewed, and there's evidence that the review considers all reading standards) 0 points = No
Program Approval	Does the state require reading specialists/experts in review of reading instruction in elementary teacher preparation programs as part of the program renewal process?	1	1 point = Yes 0 points = No
Program Approval	Does the state include licensure pass rate data as part of the program renewal process?	1	1 point = Yes 0 points = No
Program Approval	Does the state maintain full authority over prep program approval?	2	2 points = Yes 0 points = No

Licensure Tests	Does the state use at least an acceptable reading test for elementary teacher candidates?	2	2 points = Yes (test is acceptable or strong) 0 points = No (test is weak or no test is required
Licensure Tests	Does the state require all elementary teacher candidates to pass a reading licensure test?	2	2 points = Yes, all elementary candidates must take and pass this test to earn a teaching license 0 points = No, tests are optional, or teachers can teach for several years before passing the test
Licensure Tests	Does the state publish any pass rate data on reading licensure tests?	1	1 point = Yes 0 points = No
High-Quality Instructional Materials	What is the state's role, if any, in the selection of reading core curriculum materials?	2	2 points = State requires districts to select from an identified list of high-quality instructional materials 1 point = State recommends districts to select from an identified list of high-quality instructional materials 0 points = Neither
High-Quality Instructional Materials	Does the state have a policy that requires districts to publish curricula they are using?	2	2 points = State requires a list to be publicly available 1 point = State collects information but does not require it to be published 0 points = Neither
High-Quality Instructional Materials	Does the state publish district-level information about the curriculum used in each district on the state's website?	1	1 point = State publishes district-level information in one place about the quality of curricula used by districts 0 points = No
High-Quality Instructional Materials	Does the state provide guidance and/ or evaluation tools to districts to aid in the selection of high-quality supplemental materials for interventions for struggling readers?	1	1 point = Yes 0 points = No

High-Quality Instructional Materials	Does the state provide guidance and/ or evaluation tools to districts to aid in the selection of high-quality supplemental materials for ELs?	1	1 point = Yes 0 points = No
High-Quality Instructional Materials	Does the state allocate funds toward high-quality reading curriculum materials?	2	2 points = State provides funding opportunities to all districts for high-quality curriculum materials 0 points = State does not provide any funding directed toward high-quality instructional materials
Professional Learning	Does the state require training for in-service elementary teachers in scientifically based reading instruction?	2	2 points = Yes 0 points = No
Professional Learning	Does the state allocate funds toward professional learning in implementing scientifically based reading instruction?	2	2 points = Yes 0 points = No

4.) **Calculate the proportion of policy action points the state earns.** Each policy action (teacher prep standards, program approval, licensure tests, high-quality instructional materials, and professional learning) is weighted equally in states' overall score. Within each policy action, calculate the proportion of total available points a state earned. For example, if a state earned 3 of the 4 possible points under the teacher prep standards action, that would equate to the state earning 75% of the available points for the high-quality instructional materials policy lever.

The proportion of points earned for each policy action are averaged across the five actions for a total score, as illustrated below.

Example State

Policy action to improve teacher capacity	Total points earned/Total points available	Proportion of points earned
Teacher prep standards	4/4	100%
Prep program approval	3/5	60%
Licensure test	3/5	60%
High-quality reading curricula	7/9	78%
Professional learning	4/4	100%
TOTAL PROPORTION OF POINTS EARNED		**80%**

5.) Categorize states. Each state is categorized using the following cut scores:

a.) Strong: States earning an average of 75% or higher of the possible points across the five policy actions

b.) Moderate: States earning an average of 50–74% of the possible points across the five policy actions

c.) Weak: States earning an average of 25%–49% of the possible points across the five policy actions

d.) Unacceptable: States earning an average of 0–24% of the possible points across the five policy actions

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Author
Shannon Holston
Chief of Policy and Programs

Data Collection
Jamie Ekatomatis, Kelli Lakis, Rebecca Sichmeller, Lisa Staresina
Senior Analysts

Research and Data
Hannah Putman
Managing Director of Research

Tina Tibbitts
Director of Data Engineering

NCTQ Leadership
Dr. Heather Peske
NCTQ President

Communications and Advocacy
Ashley Kincaid, Lane Wright, Hayley Hardison

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END NOTES

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Acceptable tests address at least half of all topics identified within each of the five components (phonemic awareness, phonics, fluency, vocabulary, and comprehension), do not combine reading with other subjects (e.g., math or science), and include few practices contrary to the research. For more details on the methodology for analyzing licensure tests, see the appendix of *False Assurances*.

Weak tests either address less than half of the topics in one or more components, combine reading with one or more other subjects (e.g., math or science), or include four or more practices contrary to the research (without clearly identifying that these are undesirable teaching practices).

Unacceptable tests cover none of the topics in one or more components, or do not cover all five components adequately and also include four or more contrary practices.

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