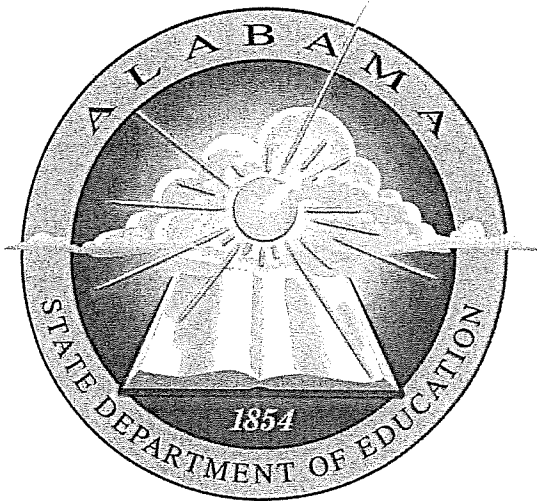**THE BARKSDALE
READING INSTITUTE**

A Review of Alabama's Teacher Preparation Programs for
Alignment to the
Science of Reading and the Alabama Literacy Act #2019-523

A Project Commissioned by the Alabama State Department of Education

STATEWIDE REPORT

Spring 2022

Research in reading should follow the norms of science. Each researcher must try to learn from the work of those who preceded him and to add to a unified body of knowledge—knowing that neither he nor anyone following him will ever have the final word.

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Professional preparation programs have a responsibility to teach a defined body of knowledge, skills, and abilities that are based on the best research in the field. This is no less important in reading than it is in medicine or law.

STATEWIDE REPORT, Spring 2022   i
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

STATEWIDE REPORT

Table of Contents

STATEWIDE REPORT, Spring 2022   i

A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Table of Data Charts

Chart 1	Courses Aligned to the Science of Reading: A statewide view	pg. 7
Chart 2	Science of Reading Basics in Course Content	pg. 11
Chart 3	Percentage of Course Content Statewide by Component	pg. 12
Chart 4	Focus of Preparation Instruction Statewide	pg. 13
Chart 5	Textbooks Aligned to SOR	pg. 14
Chart 6	Textbooks Used by Programs with Two or More Aligned Courses	pg. 15
Chart 7	Most Frequently Used Textbooks Statewide	pg. 16

STATEWIDE REPORT, Spring 2022   ii
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Preface

As the nation comes to terms with the persistent flat line of low reading proficiency as recorded every two years by the National Assessment of Educational Progress (NAEP), Alabama is one of 34 states, plus the District of Columbia, that has responded by enacting legislation to strengthen instruction in early literacy. States have taken a variety of approaches to address this problem. In Alabama's case, the Alabama Literacy Act #2019-523 (ALA) was implemented *"to improve the reading proficiency of public school kindergarten to third grade students and to ensure that those students are able to read at or above grade level by the end of the third grade by monitoring the progression of each student from one grade to another, in part, by his or her proficiency in reading."* The Act broadly mandates that, *"public teacher preparation programs leading to the attainment of an initial elementary teaching certification shall require no less than nine credit hours of reading or literacy coursework, or both, based on the science of learning to read, including multisensory strategies in foundation reading skills."*

In response to the ALA, the Alabama State Department of Education (ALSDE), encouraged by the lead legislative author of the bill, recognized that for the state to fully meet its obligation to ensure grade level reading a deeper examination of those "nine credit hours of reading..." was judicious. They sought the assistance of our Institute and, specifically, the model we have used to examine Mississippi's early literacy courses twice. The first study (2003) in Mississippi led to a required six hours of reading courses for licensure. The second study (2014) resulted in a professional growth model (Mississippi Momentum Partnership) for faculty who teach the literacy courses. The Partnership garnered interest from across the country and The Path Forward--a multi-state initiative to help states embed Science of Reading into pre-service curricula--was formed in 2021.

This history is relevant because there have been many attempts over many decades to strengthen pre-service teacher preparation, yet the spotlight on reading as the foundation of all learning has galvanized a movement to ensure that the job gets done as close to the end of third grade as possible. Teacher preparation programs have an undeniable role in helping to achieve this. The debate about how best to teach reading still rages in some corners, but more and more the hard science—cognitive and linguistic science—has finally entered the educator's arena.

> *"It is simply not true that there are hundreds of ways to learn to read...when it comes to reading, we all have roughly the same brain that imposes the same constraints and the same learning sequence."*
>
> —*Stanislas Dehaene, cognitive neuroscientist and author of Reading in the Brain, 2009.*

Alabama is poised to lead the country in making sweeping changes to how practitioners are trained to be effective teachers of reading and writing. I use the word *sweeping* to mean that it is positioned to make changes that are statewide, not incrementally but uniformly and all at once. And there is compelling evidence to do this. Because there is a right way to teach reading, as the French neuroscientist, Stanislas Dehaene, declares. Hence, program leaders should move with haste to build a nine-hour sequence backed by science that produces teachers who are ready on Day One.

Kelly A Butler
The Barksdale Reading Institute
May 2022

STATEWIDE REPORT, Spring 2022   3
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

STATEWIDE REPORT

I. Executive Summary and Key Findings

A. Purpose of the Study

In the spring of 2020, the Alabama State Department of Education (ALSDE) contacted The Barksdale Reading Institute (Barksdale) in Mississippi with a request to provide an external review of the 9-hour required sequence of early literacy courses in Alabama's 25 public and private Educator Preparation Programs (EPPs). The purpose of the review was to ensure that these courses are aligned with the Science of Reading (SOR) and the intent of the Alabama Literacy Act #2019-523 (ALA).

Alabama Educator Preparation Degree Programs Reviewed							
Educator Preparation Programs	K-2 Early Childhood Bachelor's	K-2 Early Childhood Master's	K-6 Elementary Education Bachelor's	K-6 Elementary Education Master's	K-6 Special Education Bachelor's	K-6 Special Education Master's	Alternative A Master's
25	17	12	26	15	17	11	17
13 Public							
12 Private							
7 HBCUs							

The ALSDE was seeking a replication of the model Barksdale used in 2014 to review Mississippi's legislatively mandated early literacy courses. Therefore, the review process follows the Barksdale model to examine all written course materials and to interview program instructors and candidates, survey recent graduates, observe representative class sessions, and observe several teacher candidates during their field experience. Unlike the Mississippi review, the Alabama review was conducted entirely remotely due to pandemic restrictions.

Scope of the Study								
Syllabi Reviews	Textbook Reviews	Course Observations	Faculty Interviews	Candidate Observations	Candidate Interviews	Univ Sup Interviews	Mentor Teacher Interviews	EPP Lead Interviews
135	156	41	48	41	29	11	19	25

Barksdale assembled a national team of experts in reading science and evidence-based practices (see Appendix A) from thirteen states and the District of Columbia to conduct the external review of courses. The team included senior staff of TPI-US (who has extensive expertise in program reviews—more than 300 in over 20 states--with an emphasis on connections to practice), the founding partners of Readsters, and other experts in the field of literacy instruction, education and cognitive research, special education, and teacher preparation.

The project commenced in January of 2021 with a request to all institutions for course materials for the nine hours of early reading courses required by the ALA and ALSDE for licensure in early childhood, elementary education, and special education programs both at the undergraduate and graduate levels.

Each institution and ALSDE are expecting to receive an individual report with detail about each of the courses reviewed at the respective institutions (see Appendix E for Study Methodology). This Statewide Report provides aggregate data summarizing key findings from the reviews and includes general recommendations for meeting the mandates of the ALA to bring the SOR to Alabama's EPPs. Individual institutions are not identified in the

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Statewide Report. The Barksdale Reading Institute recommends that individual institutional reports remain confidential to ALSDE and the respective programs. It is anticipated that the Statewide Report will be published.

B. 9 Key Findings

1. **Alignment to SOR.** Twenty-three per cent (23%) of courses are fully aligned to SOR and evidence-based practices; sixteen per cent (16%) are not aligned at all. Fifty-one percent (51%) of courses are inconsistent in alignment to SOR, reflecting a confusing mix of SOR and non-SOR practices. However, it is clear there is a growing awareness of what is meant by the Science of Reading and reviewers conclude that Alabama EPPs are moving in the right direction as a result of the ALA. Ten percent (10%) of programs provided insufficient information to determine alignment. Ten programs have at least one course fully aligned.

2. **Textbooks.** Textbooks have a major influence on alignment, and those courses with strong alignment are heavily influenced by a handful of well-aligned sources (e.g.,Teaching Reading Sourcebook, Speech to Print, LETRS, etc.). Conversely, those courses that are inconsistent in alignment derive content from both SOR and non-aligned materials. Textbooks that do not incorporate SOR favor approaches to teaching foundational skills that are not explicit or systematic or may approach learning from a constructivist perspective. Constructivism is appropriate for many aspects of learning; its use in teaching foundational literacy skills is not recommended because of its lack of explicitness. Among the 93 textbooks in use across the state, many (83%) promote non-explicit methods for teaching reading and writing. [83% received a content alignment rating of Fair (30%-59% SOR content) or Minimal (.1%-29%) or None (no alignment.]

3. **Evidence-based Instruction.** There appears to be a lack of understanding about the features of evidence-based instruction for the foundational skills of reading and writing and how they are distinct from less explicit and less systematic approaches that have been invalidated by research. More than half of the courses reviewed show evidence of initial transition toward compliance with the Alabama Literacy Act yet still retain non-SOR practices from their previous iterations.

4. **Faculty Knowledge.** Many faculty have completed or are in the process of completing LETRS training, as provided by ALSDE. With a few exceptions, however, faculty knowledge in the Science of Reading is not deep enough to adequately support course development, effective course delivery, and candidate learning. Among faculty interviewed, 44% could not define explicit, sequential, and systematic instruction; 58% had some awareness of the conceptual models of reading but few could explain their implications for teaching reading and writing.

5. **Modeling of Instruction.** Regular modeling of instruction by professors is not the norm. Successful modeling helps teacher candidates learn how to apply their coursework knowledge. Based on course outlines and interviews, reviewers concluded that only 41% of courses have evidence that modeling is occurring.

6. **Connections to Practice.** Full alignment to SOR falters without connections to practice. These connections are critical and can take various forms. Modeling is one, as mentioned above; others include use of well-curated videos, peer-to-peer teaching, scenarios, simulations, and of course field work—all with the goal of enabling candidates to gain experience putting their knowledge into practice *in front of the course instructor, mentor teacher, or university supervisor.* Field work varies widely across the state from zero hours in some courses to 1,000 hours for the 9-hour sequence. Only twenty-seven percent (27%) of university supervisors and 11% of mentor teachers interviewed had a clear understanding of what is expected of candidates in the 9-hour sequence. Primary responsibility and methods for providing feedback to candidates are inconsistent across the roles of instructor, supervisor, and mentor teacher, pointing to a need for better training and more coordinated planning. In addition, assignments also offer a bridge to application. Too many assignments do not support SOR and explicit and systematic instruction and their purpose is not clearly articulated.

5

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

7. Attention to Learning Differences. Course work is very limited in preparing candidates to address the needs of English language learners (29%) or students with dyslexia and other language difficulties (21%). With few exceptions, this content is underrepresented in programs statewide.
8. Accountability for Mastery. Less than half (45.9%) of courses have a written summative assessment. Although some programs require informal performance assessments, and all programs are required to use edTPA, candidates' knowledge of the science is not uniformly confirmed statewide. [See Section III. D of this report for implications of edTPA to SOR.]
9. Syllabi and the Sequence. Materials are sometimes difficult to navigate and often lack clarity in describing course content and purpose.
   o Course titles and descriptions lack clarity regarding how the course will address SOR and how its purpose is distinct within the 9-hour sequence.
   o Course objectives are written to reflect SOR, but content does not follow.
   o Course objectives are conflated with standards, too many in number, and are not supported by content. Standards, serving as course objectives, may lack specificity to early literacy skills.
   o Occasionally, written materials do not align with materials posted on learning management systems.

C. Determining Alignment to the Science of Reading

Reviewers used a framework for assessing elements of each course based on a range of descriptors which were translated into the final alignment levels:
   ⇒ Aligned: SOR content, evidence-based practices, and connections to practice are in place.
   ⇒ Inconsistently aligned: One or more of the aligned criteria above are not in place. These inconsistencies are explained for each course in the institutional reports. This category is broad and recognizes varying levels of SOR content; however, program leaders are advised that SOR content may be minimal, thus still require extensive program revisions.
   ⇒ Not aligned: Content is not aligned to SOR, and this impacts the other components. Programs in this category require reconstruction of courses and/or the 9-hour sequence.
   ⇒ Insufficient information to determine alignment: Materials provided for review did not include sufficient information to reliably assess alignment.

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Institutions and programs are not numerically scored or ranked; rather, emphasis is placed on providing constructive feedback where misalignment or gaps exist to support programs' next steps for moving closer to fulfillment of the Alabama Literacy Act's intent. Chart 1 reflects alignment to SOR across all <u>courses</u> (not programs) statewide.

Chart 1

STATEWIDE REPORT
Courses Aligned to the Science of Reading
N=133 syllabi

- Aligned (23%; N=30)
- Inconsistent alignment (50%; N=67)
- Not aligned (16%; N=21)
- Insufficient information (11%; N=14)
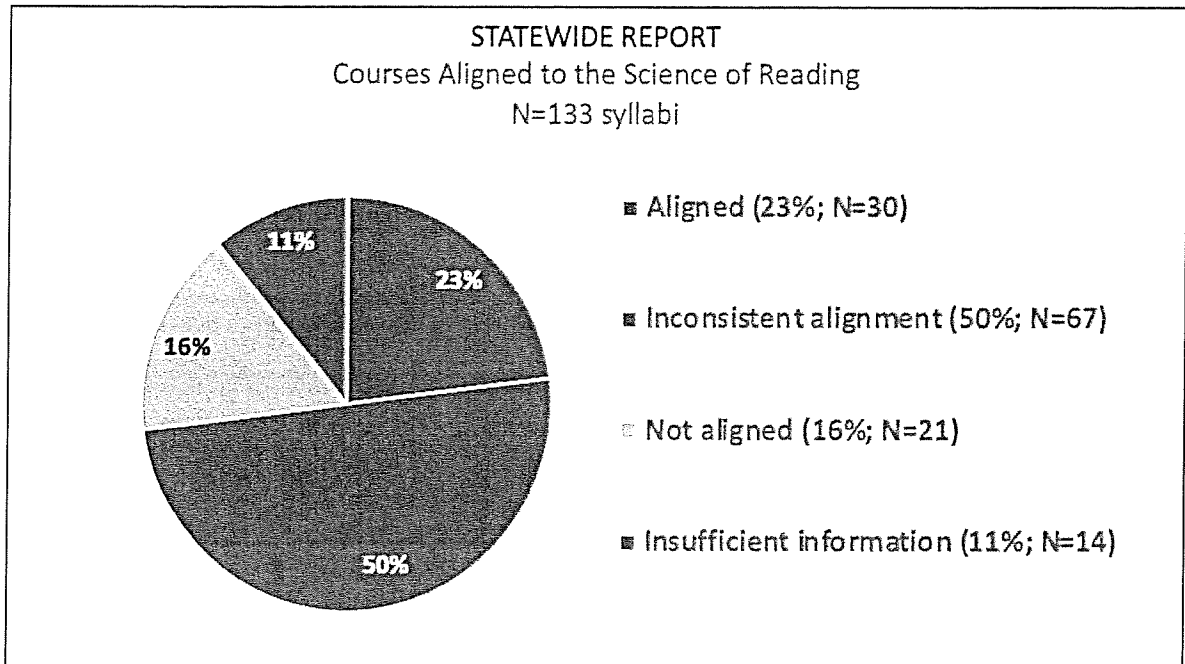
II.   A Common Language for Interpreting Reviews

In addition to discerning the alignment of course materials to the Science of Reading, the study also considered two additional factors to support effective preparation. First was to determine whether candidates had opportunities to observe evidence-based instruction modeled by their instructors or during field experiences. The second was to identify opportunities for candidates to apply knowledge of SOR to their own instruction. For purposes of clarity, we called upon two leading reading researchers and literacy experts in the field to explain what is meant by the Science of Reading, what constitutes alignment, what is meant by evidence-based practices, and what evidence is needed in support of these (Hoover & Adams, May 2022). Readers of this and the Institutional reports are encouraged to use these explanations as anchors for interpreting the findings.

> **Expert Opinion on the Science of Reading, Alignment,
> and Teacher Preparation**
> *by Wes Hoover & Marilyn Jager Adams (May 2022)*

B.1   What do we mean by the Science of Reading?

> The Science of Reading is a body of information about the nature of reading and its development that is built through the principles and practices of science. In applying the scientific method, conventional beliefs are examined through carefully conducted observation and experiment to collect objective evidence on whether, to what extent,

and under what conditions they hold. Even where the evidence of a research study offers strong support of a given claim, the acceptance of its correctness must be deferred until it has been replicated -- that is, until it has been shown to hold repeatedly by other researchers applying other circumstances.

Science leads us to refine our understanding of the nature and workings of ideas found useful even as it provokes us to search for and validate new ideas that may prove even more useful. Certainly, teacher preparation programs are training their charges to be teachers not scientists. But preparation programs should provide prospective teachers with the skills needed to discern whether given claims are likely to have met these criteria.

B.2 What do we mean when we say practice is aligned to the SOR?

Practice that is aligned with SOR must reflect the lessons of scientific research on reading. Such practice must exclude instruction and activities shown to be misguided or ineffective through scientific research. Instruction and activities must be designed to promote the knowledge and abilities on which reading growth depends. Within the Simple View of Reading framework, the knowledge and abilities on which reading depend can be divided into two categories: word recognition and language comprehension. There are strong dependencies between the components, and vocabulary (knowledge of words and their meanings) is included in both categories, as identifying a word and accessing its meaning(s) is the last step of the word recognition process and the first step toward understanding the language and information that the author is trying to convey.

The importance of bottom-up phonics instruction is broadly documented by research. However, research also argues that such bottom-up instruction is not enough: language and meaning matter greatly from the start and at every step along the way. Vocabulary breadth and depth have long been known to strongly predict older students' reading comprehension, but vocabulary breadth (how many words are familiar) also predicts preschoolers' phonemic awareness and beginning readers' decoding development. Vocabulary depth (how thoroughly the meanings and usages of familiar words are known) predicts their comprehension.

Similarly, prior knowledge about the topic of a passage promotes not only understanding and learning, but also fluency and word identification. The goal is not merely to ensure that children know how to read printed words but, beyond that, how to connect those words flexibly and productively to language, knowledge, and thought so that they are quickly and richly accessible in service of reading and writing. The properties of written and spoken language differ. Written language and its understanding depend on vocabulary, syntax, logic, and content knowledge that rarely arise in oral language situations. That so, practice aligned with SOR will engage students daily in reading challenging text. And having students write about the content of those read texts will help both secure and extend their learning.

8

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

B.3   What do we mean by evidence-based instruction?

While the science of reading capacities and processes tells us what young readers must come to know and do, it begs questions of how these lessons can be usefully applied in education contexts. Toward answering these questions, scientific methods have also been deployed to examine instructional practices. Evidence-based practices are exactly that: They are instructional practices that, through research built on the principles and methods of science, are aligned with SOR and have been shown to be advantageous in furthering achievement.

Sometimes whole programs of instruction are evaluated for their alignment to SOR. More often, research studies are directed toward validating a particular instructional method aimed at a relatively specific component of reading development, such as phonemic awareness or vocabulary. Such studies must have been carefully designed to obtain objective, unbiased measures of the effects of interest and to minimize the influence of all other factors that might influence performance. The instructional method in focus must be tested over many different studies, collectively contrasting different groups of children, instructional variations and alternatives, and measurement of effects. Sometimes even favored practices are broadly repudiated in such studies. But in advancing our understanding, it is much better to be "precisely wrong rather than vaguely correct."

B.4   What other kind of evidence is critical? The reading/writing connection.

The final kind of evidence needed for practice to be fully aligned with SOR is evidence of the educational progress of students: Teachers must continually monitor the needs and progress of all students -- both individual students and the class as a whole. It is important to select assessments shown to be valid and reliable, rejecting those found to be insensitive or misleading.

Care must be taken that assessment activities do not steal time from learning activities. Remember that SOR emphasizes that the flow runs both ways: gaining information and understanding from any text depends not just on the skills but also on the language and knowledge with which the students approach it. Well-structured writing assignments are shown to enhance what students gain from reading even as they reveal spelling, language, and vocabulary, as well as learning and understanding. Standards may dictate what students must learn but the lessons of the Science of Reading must guide the structure and conduct of every activity. These SOR lessons—what reading is, how it develops, and the role and interrelations of its parts—are precisely what teacher preparation programs must impart.

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To provide clarity for all audiences, a glossary of frequently used terms and acronyms is provided in Appendix B of the Statewide Report and Section VI, Appendix A of the institutional reports. The glossary includes terms related to reading curriculum and instruction, reading concepts and theories, conceptual models, and other research-related topics. The glossary includes definitions of terms and concepts cited frequently in the report such as the Simple View of Reading, structured literacy, balanced literacy, curriculum-based measures, etc.

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

III.   Results of the Study

A.   Science of Reading (SOR) Alignment

SOR Content in Course Materials
The written course materials reviewed include the course syllabus, course schedule or outline, assignments, and exams. When reviewing these materials, distinctions are made between "intended" course work as reflected in the written materials (and represented by course objectives), and "actual' course work as reflected in class sessions. When comparing the two, they often don't align, resulting in a piecemeal effect. In other words, objectives say one thing, but course work doesn't reflect it.

Reviewers honored SOR content wherever it appeared, even if sporadically. Courses with this inconsistent evidence fall into the "inconsistent alignment" category. The level of inconsistency also varies. In some cases, content is strong as described in written materials, but not supported elsewhere in the program (through modeling or assignments). In other cases, SOR language is used in written materials, but there is no evidence that it is being taught. Therefore, program leaders should view courses that fall into the "inconsistent alignment" category as unfinished business and continue working to ensure full alignment of all content. Notes in the individual institutional reports indicate to what degree these inconsistencies were observed.

Generally, the course outlines should serve as a proxy for what is happening in class sessions. Candidates should be able to determine from a course outline what will be addressed session-by-session and what the expectations are for candidate accountability. Unfortunately, most course outlines are vague and lack specific objectives. Often only general topics are listed; standards are frequently cited by number only, and only 14 out of 133 course outlines include specific learning objectives for each session. Modeling of instruction is rarely designated.

Review teams looked for content in ten areas that the Alabama Literacy Act requires and reading experts agree should be addressed in early reading courses. Reviewers examined written course materials for each course (Section IV of the confidential Institutional Reports) to determine if these ten topics were addressed and categorized the evidence based on how the topic was addressed: *general content knowledge*, *instruction*, or *assessment*. If content was reading-related but not evidence-based, this was noted. If content was valid but outside the scope of the course (e.g., building a classroom library in a course dedicated to diagnostic assessment), this evidence was also noted.

10

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Science of Reading Categories

	Science of Reading Basics
1	• Conceptual Models of Reading • General Research/Information • Brain Processes Related to Reading • Dyslexia and Specific Language Difficulties • English Language Learners • Elements of Evidence-based Early Reading Instruction • Types & Purposes of Assessment
2	Early Oral Language Development
3	Phonological/Phonemic Awareness
4	Early Orthographic Skills
5	Phonics: Decoding/Encoding
6	Fluency
7	Writing
8	Morphology
9	Vocabulary
10	Comprehension

General Categories

1	Valid content but outside scope of the course
2	Reading content but not evidence-based
3	Field Work
4	Evidence explained in notes below charts
5	Administrative in nature

In addition, the Science of Reading topics are documented according to the following categories:
- o Elements of evidence-based early reading instruction
- o General SOR research/information
- o Brain processes related to reading
- o Conceptual models of reading (e.g., the Simple View of Reading, Ehri's Phases of Reading Development, and Scarborough's Reading Rope/a metaphor for skilled reading)
- o Information about dyslexia and specific language difficulties
- o Practices related to English language learners
- o Types and purposes of literacy assessments

Chart 2

STATEWIDE REPORT
Science of Reading Basics
N = 133 courses

Category	Percent
Elements of Evidence-based Early Reading Instruction	47%
General Research/Info	41%
Brain Processes	22%
Conceptual Models of Reading	37%
Dyslexia & Specific Language Difficulties	21%
English Language Learners	29%
Types & Purposes of Assessment	38%
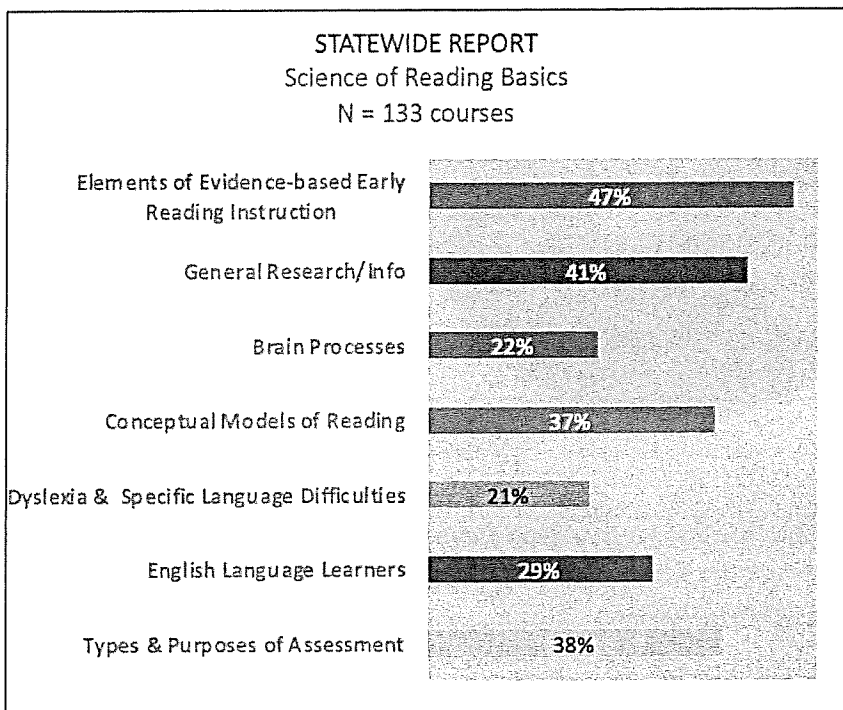
Of the 133 syllabi reviewed, Chart 2 above illustrates the percentage of courses that include references to these specific SOR topics in the written materials (i.e., course descriptions, course objectives, course outlines, assigned textbook readings, assignments, and/or exams). Two-thirds (63%) of courses make no mention of the conceptual models and metaphors for reading (i.e., the Simple View of Reading, the 4-Part Processor Model, Ehri's Phases of Reading Development, and Scarborough's Reading Rope) which form the basic architecture of the reading science. Few programs offer sufficient course work related to English language learners (29% of courses) or to students with dyslexia or specific language difficulties (21% of courses), as called for in the ALA.

Of the 133 syllabi reviewed, Chart 3 below illustrates the percentage of course sessions (based on course outline and textbook analyses) that address nine components of reading and writing. Courses that are fully aligned to SOR rely on this research to shape and drive content. While 58% of faculty interviewed had some knowledge of this research, few could explain the implications for instruction. Similarly, 44% of faculty interviewed could not define explicit, systematic, and sequential instruction accurately.

Chart 3

STATEWIDE REPORT
Percentage of Course Content* Statewide by Component
**N=128 syllabi out of 133 reviewed

- SOR Basics (N=99)
- Oral Language Development (N=26)
- Phonological/Phonemic Awareness (N=30)
- Early Orthographic Skills (N=13)
- Phonics: Decoding/Encoding (N=60
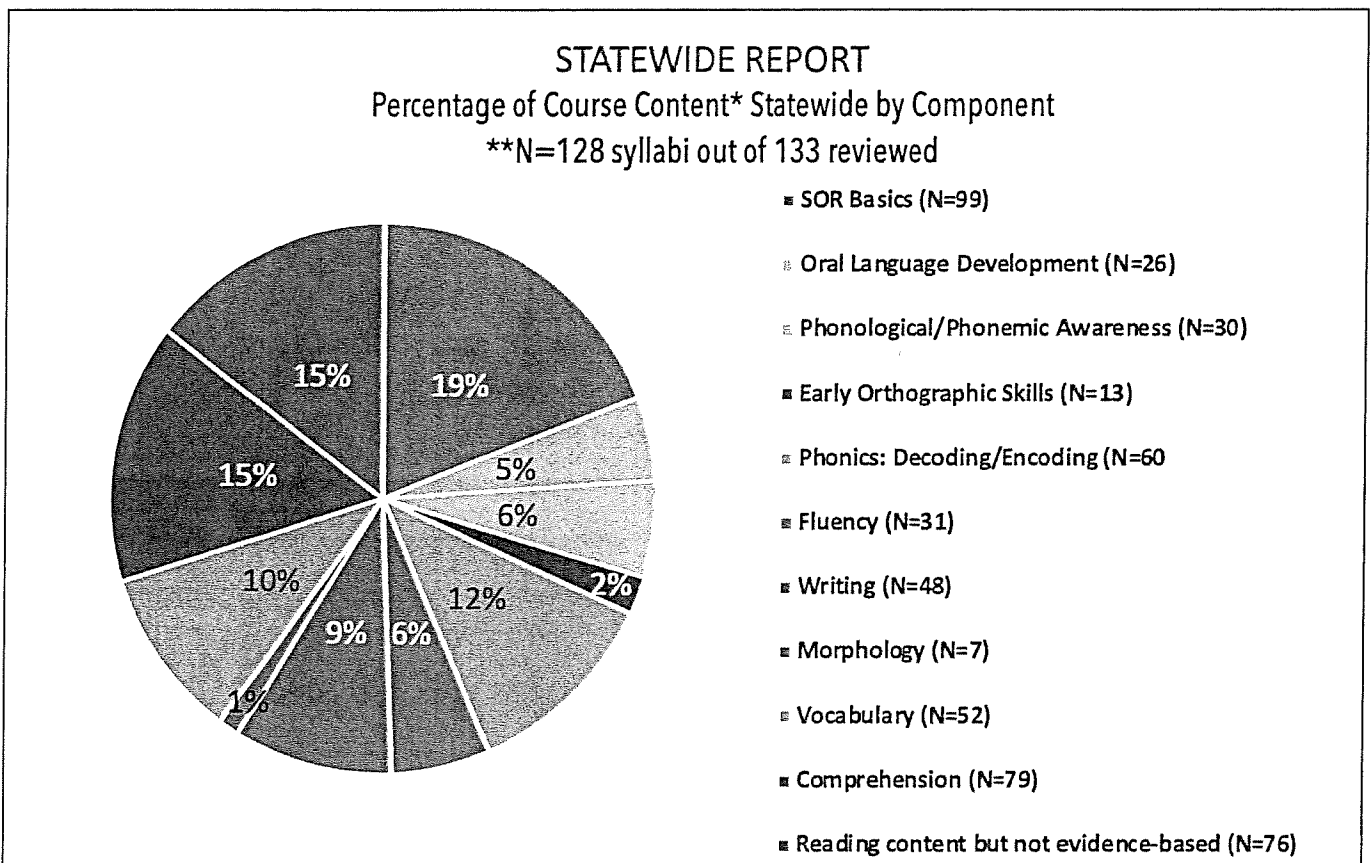- Fluency (N=31)
- Writing (N=48)
- Morphology (N=7)
- Vocabulary (N=52)
- Comprehension (N=79)
- Reading content but not evidence-based (N=76)

*It is not expected that every course should address all components. It is expected that within the 9-hour sequence, all components are adequately addressed. Percentages include courses where at least 5% of content for each component was addressed.

**Five (5) syllabi did not have sufficient information to determine content

12

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Chart 4 below illustrates the types of learning that is occurring in courses. Embedding assessment of early literacy skills when introducing how to teach the skills is appropriate. However, to equip candidates to be effective diagnosticians of reading difficulties, a stand-alone course on assessment and interventions may be warranted. Only 11 EPPs offer such courses.

Chart 4

STATEWIDE REPORT
Focus of Preparation Statewide
*N = 128 syllabi out of 133 reviewed

60%

74%

74%

13%

▥ SOR Basics (N=77)
▥ Content Knowledge (N=95)
▥ Instruction (includes Field Work) (N=95)
▥ Assessment (N=16)
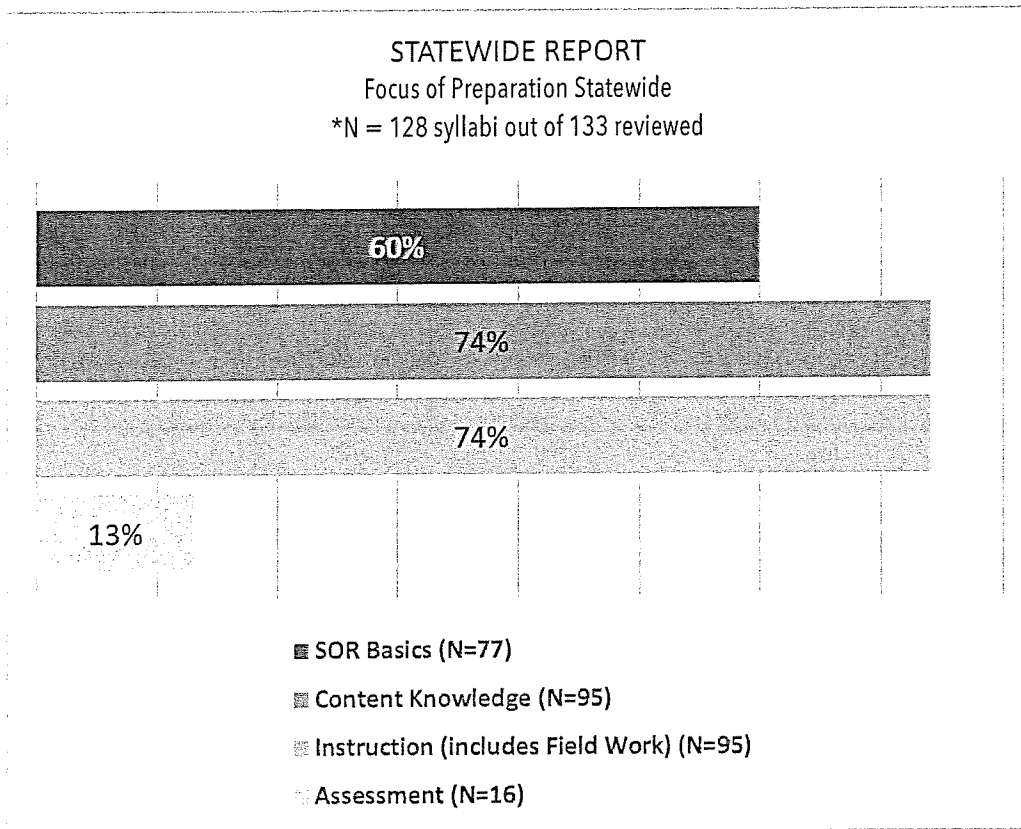
*Five (5) syllabi did not have sufficient information to analyze content for focus of preparation

13

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523
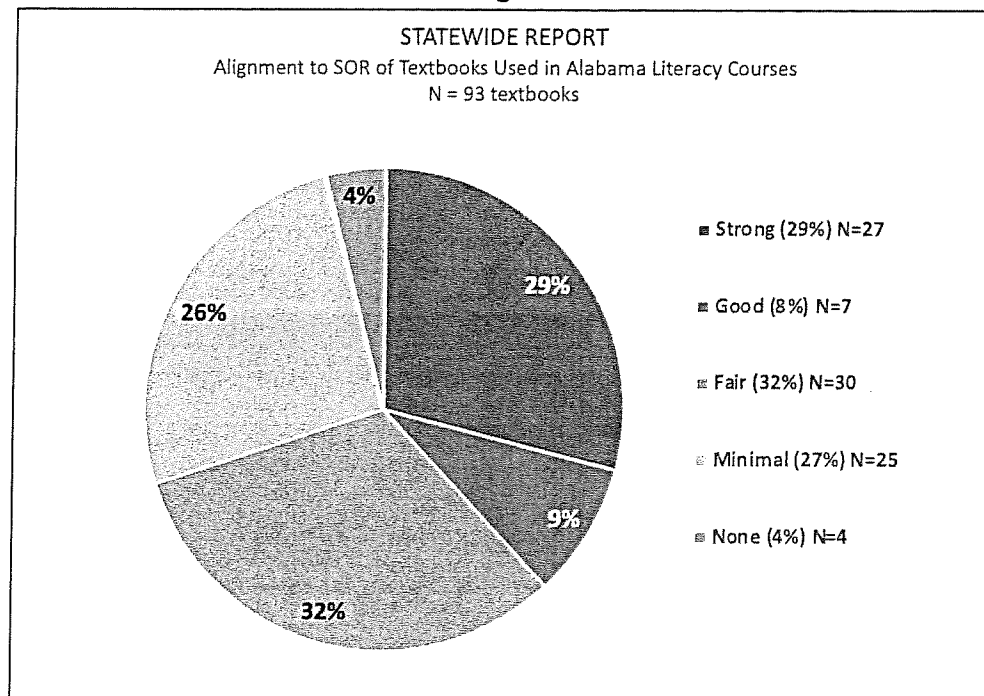
SOR Content in Textbooks

Among the 133 syllabi reviewed, 154 textbook titles are listed as primary or supplemental sources, although not all appear to be used in course content. Occasionally additional titles appear in course outlines without being named in the syllabus. The textbook reviews include only those titles (93) which had specific assigned readings as indicated in course outlines. In some cases, whole chapters and whole books are assigned. These reviews were meticulous and deep to include a section-by-section scan and analysis of the SOR basics and nine reading/writing categories.

Chart 5 below illustrates alignment of textbooks to the Science of Reading based on the following scale:

- **Strong alignment (80%-100%)**
- **Good alignment (60%-79%)**
- Fair alignment (30%-59%)
- Minimal alignment (.1%-29%)
- **No alignment (0%).**

Fortunately, there are several excellent textbooks now available to teacher preparation programs, although many programs continue to use texts that do not reflect the research-based practices. Note the scale is fairly generous. A textbook with a rating as "good" can have as much as 40% that is not aligned to the Science of Reading.

Chart 5
Textbooks Alignment to SOR

STATEWIDE REPORT
Alignment to SOR of Textbooks Used in Alabama Literacy Courses
N = 93 textbooks

- Strong (29%) N=27
- Good (8%) N=7
- Fair (32%) N=30
- Minimal (27%) N=25
- None (4%) N=4

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Courses most aligned to SOR adhere to a handful of SOR-aligned textbooks.   In efforts to transition toward fulfillment of the ALA, many syllabi now "name" SOR-aligned texts as sources. Unfortunately, the content for those courses is not driven by these texts—illustrating the "intended" vs "actual" curriculum.   The seven programs that have two or more courses aligned use one or more of the texts shown in **Chart 6**. **Chart 7** shows the most frequently used textbooks statewide.

Chart 6
Textbooks Used by Programs with Two or More Aligned Courses

Birsh, J. R., & Carreker, S. (2018). Multisensory Teaching of Basic Language Skills (4th ed.). Brookes Publishing.	Comprehensive	Strong
Diamond, L.., & Thorsnes, B. J. (Eds). (2008). Assessing Reading: Multiple Measures (2nd ed. rev.). Arena Press.	Specialized (Assessment)	Strong
Honig, B., Diamond, L., & Gutlohn, L. (2000). Teaching Reading Sourcebook	Comprehensive	Strong
Hougen, M.C., & Smartt, S.M. (Eds). (2020). Fundamentals of Literacy Instruction & Assessment, PreK-6 (2nd ed.). Brookes Publishing.	Comprehensive	Strong
Moats, L. C. (2020). Speech to Print: Language Essentials for Teachers (3rd ed.). Brookes Publishing.	Specialized (Phonemic Awareness, Phonics, Morphology, Semantics, Syntax)	Strong
Moats, L. C., & Tolman, C. A. (2017). Language Essentials for Teachers of Reading and Spelling (LETRS) (3rd ed.)., Volume 1. Voyager Sopris Learning	Specialized (Phonemic Awareness, Phonics)	Strong
Moats, L.C., & Tolman, C. A. (2017). Language Essentials for Teachers of Reading and Spelling (LETRS) (3rd ed.). Volume 2. Voyager Sopris Learning.	Specialized (Vocabulary, Morphology, Comprehension, Writing)	Strong

Chart 7
Most Frequently Used Textbooks Statewide

Textbook Title	# of Courses Statewide with Assigned Readings from these Texts	SOR Alignment	Type of Text
Honig, B., Diamond, L., & Gutlohn, L. (2018). *Teaching Reading Sourcebook* (3rd Ed.). Arena Press	13	Strong	Comprehensive
Moats, L. C. (2020). *Speech to Print: Language Essentials for Teachers* (3rd ed.). Brookes Publishing.	8	Strong	Specialized: (Phonemic Awareness, Phonics, Morphology, Semantics, Syntax)
Tompkins, G. E. (2016). *Language Arts: Patterns of Practice* (9th ed.). Pearson Note: The 8th edition of this text is used in an additional course.	6	Fair	Comprehensive
Harvey, S., & Goudvis, A. (2017). *Strategies That Work: Teaching comprehension for Understanding, Engagement, and Building Knowledge, Grades K–8* (3rd ed.). Stenhouse.	5	Minimal	Specialized: (Comprehension and Writing)

The fact that there are only four textbooks used in multiple courses indicates an unnecessary plethora of textbooks for teaching reading and writing. Many of these single-use textbooks are not aligned to the Science of Reading.

SOR Content in Assignments
Well-designed assignments are an essential component of teacher preparation as they provide a mechanism for direct application or reinforcement of content learned during course sessions or from assigned readings. They also help course instructors understand how well teacher candidates are learning and mastering course content. Frequently occurring assignments include case studies, tutoring lessons, written plans for instruction, article reflections, and read alouds. Several programs still have candidates write "literacy autobiographies." This is an assignment that reviewers characterize as lacking a meaningful purpose and promoting the idea that reading instruction is a matter of personal preference as opposed to having a basis in hard science.

Reviewers saw many instances where some content in the session was based on SOR, but assignments did not match the content or support it with evidence-based practices. Sources of reliable SOR course content should include faculty knowledge, textbooks, videos, and journal articles. If these sources are not reliable, programs cannot meet the intent of the ALA.

Many courses that fall into the "inconsistent alignment" category shown in **Chart 1** are addressing some SOR content either in class or through textbook readings. However, assignments tend to be the deal breaker, where instructors have difficulty translating SOR content into meaningful tasks for candidates to apply knowledge to practice. For example, candidates may learn in class about the domains of reading comprehension (word recognition x language comprehension = reading comprehension) as explained in the Simple View of Reading, but the supporting assignment may be a generic read aloud with no defined purpose.

16

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

SOR in Exams
Programs use a variety of methods for assessing candidate knowledge and competencies for teaching. While only 45% of courses administer a written summative exam, some have well-constructed multi-part assignments that require candidates to apply knowledge of instruction and assessment. Several instructors use periodic tests throughout the semester. Most frequent are weekly quizzes assessing knowledge as the semester progresses. These are good practices for monitoring learning along the way and to inform adaptations in course content.

One form of assessment is the edTPA. Alabama candidates are required to pass a teacher performance assessment for licensure, and edTPA satisfies this certification requirement. However, there are challenges presented by the implementation of edTPA (see Section D below), and choices in administration on this performance assessment can potentially dilute impact regarding supporting performance as a teacher of reading and writing.

Exam, test, and quiz construction needs improvement. Very few assessments include application questions. Most are multiple choice; some present confusing, even incorrect, options for answers. This is to be expected if exam items are derived from non-aligned sources, including textbooks, other course material, and instruction by faculty who may not be knowledgeable about the Science of Reading. Some assessment items include relevant but out of scope content such as classroom management, social/emotional learning, family engagement, etc. Reviewers commented frequently about the lack of written summative exams as a missed opportunity to confirm candidate knowledge. Examples of test items from the study illustrate the issue of item construction:

SOR Reflected in Exams & Quizzes		
Well-constructed test item.	**Test item requiring application of knowledge.**	**Poorly constructed test item.**
A kindergarten teacher plans a lesson designed to give students guided practice in learning a phonological awareness skill. Having students participate in which of the following activities best meets the teacher's goal? A - Asking students to follow along as the teacher moves a finger from left to right while orally reading a line of text in a picture book. B – Have students say the word "airplane" and then asking them to say it again without pronouncing "air" C – Distributing a set of plastic letters to students and having them use the manipulatives to form decodable words D – Cutting a student's name card into individual letters and modeling how to put the letters together to form the name.	Explain the difference between formative and summative assessments and give at least three examples of each.	Why should teachers plan how they will monitor and assess students' learning before they implement a thematic unit?

Candidate and Faculty Perspectives Regarding SOR

Emphasizing that the disappointing return rate for surveys is statistically insignificant (15 faculty, 63 pre-service candidates, and 4 recent graduates) the responses provide only a tiny window into the perspectives of current faculty and pre-service candidates. Although the numbers are small, we've included some interesting highlights and acknowledge the time these participants took to complete the survey. As these audiences can provide critical insight about teacher preparation for early literacy instruction, it is recommended that the state consider repeating the surveys under more authoritative conditions to prompt a larger, thus more useful, response.

Familiarity with Science of Reading Concepts	Faculty N=15	Candidates N = 63 29 Graduate Students, 20 Seniors, 13 Juniors, 1 Sophomore
The Simple View of Reading	100%	68%
Essential lesson of Scarborough's Reading Rope	60%	63%
Definition of a phoneme	100%	85%
Characteristics of reading fluency	85%	63%
Correctly identify # of phonemes in a word	100%	85%
Correctly identify # of graphemes in a word	31%	40%
Correctly identify # of morphemes in a word	54%	23%
Correctly identify # of affixes in a word	77%	68%
Recognize the signs of dyslexia	69%	26%
Best practices for differentiating instruction	14%	23%

Candidates' Perspectives on Adequacy of Programs to Address How to Teach Early Reading and Word Recognition Skills N = 63	
Stages of Reading Development	59%
Teaching children to match phonemes to graphemes	37%
Teaching children to use phonics skills to pronounce an unknown word (SOR)	38%
Teaching children to use cueing system to figure out an unknown word (non-SOR)	29%
Using diagnostic assessments to group students for differentiated instruction	48%
Exposure to high-quality materials for teaching phonics	24%
Understanding the morphological structure of words to identify a word	29%

Candidates' Perspectives on Adequacy of Programs to Address How to Teach Vocabulary N = 63	
Understanding the difference between Tier 1, Tier 2, and Tier 3 words	46%
Knowing approximately how many words a child should be expected to add to their vocabulary at each grade level in school	35%
Knowing both direct and indirect instructional methods for teaching meanings of words	38%
Using the morphological structure of words to determine meaning	29%
Teaching children how to use background knowledge to figure out the meanings of words	62%

Candidates' Perspectives on Adequacy of Programs to Address How to Teach Comprehension N = 63	
What the National Reading Panel recommends about the most effective way to teach comprehension	22%
How the Simple View of Reading helps to identify why a student struggles to comprehend	37%
The difference between comprehension products and comprehension processes	22%
Use of text structures to support comprehension	33%
The role of background knowledge and vocabulary in comprehending text	62%
How to incorporate writing to build and support comprehension of texts	35%

Candidates' Perspectives about What Programs Taught about Literacy Assessments N = 63	
Administer a spelling inventory to assess phoneme and phonics skills	37%
Calculate an accuracy score from an oral reading fluency assessment	40%
Locate and apply national norms for oral reading fluency	30%
Administer an oral reading fluency assessment (not a running record)	49%
Administer a running record to assess reading levels (not SOR)	40%
Administer a diagnostic assessment to pinpoint decoding deficits	46%

Ninety-two (92%) of faculty respondents reported that they have taught reading in grades K-2; 86% reported that they felt knowledgeable or expert about an array of early literacy topics, such as teaching phonemic awareness, spelling, or diagnosing foundational skill gaps. Several faculty commented on their appreciation for the collaboration with ALSDE and, in particular, access to LETRS training.

Faculty Perspectives on Program Impacts as Result of ALSDE Professional Development Support N = 15	
Revised syllabus to reflect the Science of Reading	85%
Changed assignments to increase connections to practice	77%
Made different textbook selections that support SOR	62%
Improved quiz and exam questions to move beyond strictly recall questions	54%
Adopted more modeling of explicit instruction	46%

B.   Evidence-based Literacy Instruction (EBI)

EBI in Course materials
Course materials--specifically course outlines--are not precise in describing what kind of instructional or assessment practices candidates are learning about or if they are afforded opportunities to see these modeled. The exceptions to this are those courses which have modules that can be accessed on-line, or the very few syllabi (14 out of 133, or 11%) that specify learning objectives for each session in a course outline. Course observations and interviews with faculty and candidates provide some evidence that modeling is occurring. There is still no guarantee, however, that this modeling reflects evidence-based practices.

Reviewers recognize that the paradigm of "balanced literacy" is still very much active across the country, and it is observed in Alabama. There remains a perception that by adding some phonics—even explicit phonics-- to a whole language program is sufficient for reading development and results in some sort of "balance." Conversely, there remains a perception that phonics proponents have little appreciation for building knowledge by reading challenging and varied texts. As the experts explain in Section II, both well-developed word recognition skills and language comprehension skills are needed for reading comprehension to occur, and that

19

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

writing supports both. Inconsistent application of EBI can create confusion for candidates about what is evidence-based and what is not.

Examples of inconsistencies in methods presented for teaching reading within a course, and sometimes within a single session.

Inconsistent Application of EBI	
Consistent Evidence-Based: Course Content	Both EBI & Non-EBI
Syllabus Sample A: Week 3: Early Literacy – print awareness, letter knowledge, phonological awareness, Ehri's phases LETRS Spelling Screener Week 4: Decoding and Word Recognition	**Syllabus Sample B:** Session 1: Introduction to Science of Reading; understanding Scarborough's Reading Rope Session 2: Reading Workshop & LETRS – What Skills Support Proficient Reading?
Syllabus Sample C: Week 2: What the brain does when it reads Week 3: How children learn to read and spell	**Syllabus Sample D:** Week 6: Graham article on writing strategies Writing Workshop

Examples of EBI Inconsistencies in Exam & Quiz Questions
Q5- Based on your reading of *Put Reading First,* in your own words discuss what research tells us about comprehension instruction. In Literature Circles there are often discussions that occur. All of the following are types of talk during Q16- Literature Circles discussions *except:* 1 – talk about the book 2 – talk about connections 3 – talk about the reading process 4 – talk about how each should respond to the questions

Programs that have been deemed "inconsistent" in their alignment to SOR may have references in written materials to SOR and terminology that suggests evidence-based practices; however, they fall short of meeting the intent of the Alabama Literacy Act because assignments and exams still reflect practices that are not supported by research. A good example of this is the use of running records, a type of assessment that employs the invalid cueing system to analyze student reading errors. Another example is the popularity of Writers' and Readers' Workshops, protocols that de-emphasize explicit instruction, skill-building, and the conventions of writing in favor of loosely scaffolded experiences. These practices are ubiquitous in the American landscape and

Alabama is poised to break the mold that perpetuates practices that are inadequate—some even harmful—to developing skilled readers and writers. There are good models among Alabama's EPPs to show the way.

EBI in Pre-Service Classes
As mentioned earlier, reviewers make a distinction between *intended* content and *actual* content in pre-service course work. The two should align. What's ordered from the menu should be what arrives on the plate.

The review team observed some faculty in programs across the state who exhibited highly organized and effective instruction for their pre-service audiences. The pedagogy is solidly evidence-based, and the content of the class matches what is indicated on the course outline. Topics are nested in a sequence of material that logically unfolds over the course of the semester, culminating in a formal assessment. These pre-service classes begin with clearly stated objectives. They contain (1) substantive content about instruction and/or assessment, (2) modeling of instruction or assessment using appropriate tools and materials, (3) effective questioning techniques to engage candidates in deeper understanding, (4) periodic checks for understanding, and (5) opportunities to practice and receive feedback from peers and the instructor.

In the inconsistently and non-aligned courses, reviewers observed far less focused agendas: no clear learning objective; some mention of SOR content but without context or connection to the rest of the session; demonstration of activities in lieu of how to teach a skill explicitly and systematically; and often several topics that are disjointed or meander. Faculty must have deep knowledge of SOR content that is sufficient to support course design, as well as delivery.

Colleges of Education classrooms should be beacons on a campus where effective pedagogy can be reliably observed. Effective practitioners of reading need to benefit from seeing the skill of delivery modeled, as well as the science behind it.

Pre-Service Classes as Laboratories for Effective Pedagogy		
	EBI in Class Session	**Lack of EBI in Class Session**
Objective	Stated and appearing on slide: To understand the difference between phonological and phonemic awareness.	A slow meandering start with as much as 20 minutes of conversation No objective articulated
Modeling vs Activity	Use of gradual release model. First models explicitly how to recognize syllables as type of phonological awareness. Demonstrates use of manipulatives and Elkonin boxes...	No preamble to the demonstrated read aloud Live observation of a read aloud by instructor No pre-teaching of vocabulary No building of background knowledge before or during the reading No explanation of book choice No identification of grade/skill level of "students"
Connections to Practice	Guided practice and discussion follow modeling. Instructor notes (and demonstrates) that when teaching to students, actions should be executed in reverse (from right to left) so that from the students' perspective the actions are directionally appropriate (left to right).	No candidate questions entertained Unclear what skills were being emphasized or purpose for the read aloud
Recap and check for understanding	*"What is the difference between phonological and phonemic awareness? Name a few activities that can be used to support this instruction?"*	Class dismissed

EBI in Assignments

The paramount question regarding assignments is "what is their purpose?" Many assignments are rooted in very dated and invalidated approaches to teaching the foundational skills of reading. For example, the mini-lesson is not just a brief lesson or a response to a teachable moment; it generally skirts teaching skills within a defined sequence. Similarly, the read aloud is a powerful tool for teaching literacy skills. However, among the many that were observed (conducted both by faculty and candidates) they lacked a defined purpose and structure as a means for building vocabulary, background knowledge, and inferencing skills that support comprehension.

Expectations for EBI in Assignments	
Example of well-constructed assignment with clear instructions and expectations	Example of poorly constructed assignment with insufficient instructions and minimal expectations
This assignment will demonstrate your ability to set reading goals based on assessment results to raise the achievement of a student in a diverse population. During this time you will meet with a struggling reader a minimum of twelve (12) sessions of 30-45 minutes. In order to complete this project, you will need to complete the following: Administer, analyze, and submit assessments* Create and submit tutoring lesson plans** and reflections Complete and submit a tutoring log of each session Complete and submit a parent letter. Specific guidelines and rubric are provided in class and on-line. * Access the video for administration of assessment ** Upload checklist for lesson plan and assessments and the rubric for lesson planning	Create a mini-lesson to teach text factors to a group of students. Your lesson must be any grade between 2-5. Use the lesson plan format provided. Read the section in the text on mini-lessons for guidance. Be sure to include the title of the book and attach any graphic organizers or activity sheets required by students. Be creative.

EBI in the Field

Given pandemic restrictions, field work was compromised or interrupted in many places and reviewers relied on interviews with faculty (41), candidates (41), university supervisors (11), and mentor teachers (19) to paint a picture of this important component. Over half (57%) of courses have a field experience component (outside the internship), and the requirements, levels of support, and knowledge of evidence-based practices vary considerably. Several programs afford full cycles of practice beginning with assessment through instruction and reassessment; at the other end, there are courses where there is no evidence that candidates receive any guidance for what is expected in the elementary setting. Remarkably little communication and planning occurs between instructors and the partner school and the university supervisor and mentor teacher. Among these personnel, eight out of the 11 supervisors and as many as 17 of the 19 mentor teachers report knowing little to nothing about what the 9-hours of course work addresses.

Candidates were observed delivering lessons acceptable for novice teachers that followed predictable tenets of planning: a stated objective—usually an identified standard, a hook or lead-in, a demonstrated activity, guided practice, and checks for understanding. These lesson plans are often constrained by a required template that includes only certain components and may short circuit effective teaching. These templates essentially result in

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

a lesson that includes very rudimentary steps: introduce (a skill or topic), then move directly to practice without modeling or gradual release. There is no provision for explicitly teaching the skill or concept, and there is insufficient attention to guided practice (You do. We do. I do again, as needed.) Writing is rarely used to support the foundational skills of reading.

Even in the context of edTPA guidelines, stronger and clearer rubrics and guidance are needed to ensure that the features of evidence-based *literacy* instruction are incorporated into candidates' teaching of reading and writing practice. Programs are encouraged to examine how these assignments are evaluated and to look for (1) measurable learning objectives, (2) appropriate sequencing of skills instruction, and (3) clear modeling of instruction using a gradual release model with opportunities for guided and independent practice. There should be a distinction between the narration of explicit content knowledge when teaching a skill vs demonstrating an activity more appropriate for student practice. In other words, narration provides the link between the "what" and the "why" of instruction, while the modeling provides the "how." These types of instruction serve different purposes but are often conflated.

In the individual institutional reports, reviewers recommend revising these templates to include these features.

Supporting EBI in the Field with EBI Lesson Template		
	EBI Lesson Template	Generic Lesson Template
Objective	Stated in measurable terms and specific to a literacy skill.	Restatement of a standard.
Modeling vs Activity	Steps for gradual release: 1 Explain the skill and its importance to reading/writing 2 Teach the skill explicitly, providing examples	"Introduce" the skill by demonstrating an activity
Guided Practice	3 Observe and support students attempt to execute the skill 4 Adjust actions based on student response	Independent Practice with activity
Independent Practice	5 Practice with accountability 6 Incorporate writing	Informally assess

Feedback to candidates also varies widely, from very immediate and formal feedback enabling candidates to adjust their delivery to no feedback at all. Feedback should be specific and actionable. Micro-teaching (use of self-recorded video for reflections and feedback) is used by several programs. Effective feedback also requires sufficient depth of knowledge of SOR on the part of the instructor, supervisor, and mentor to be constructive and meaningful. And candidates get more meaningful feedback when the observer focuses on how teaching impacts student engagement during a lesson as well as student learning during that lesson.

C.   Connecting Knowledge to Practice

In Course materials
Reviewers looked for evidence showing that candidates are connecting knowledge that is learned in class sessions or from the assigned readings and linking it to the practice of instruction. This evidence was collected through course observations or rare descriptions of activities in course outlines. A major weakness in most course outlines is the lack of detail about what is planned week-to-week. Therefore, course materials too often provide candidates with insufficient information about what to anticipate, what is expected of them, and how

they will connect their new knowledge to practice. These are two examples of how opportunities for connecting to practice may or may not be highlighted in course materials:

Information about Connections to Practice in Course Materials	
Course Outline Signaling EBI	**Course Outline Lacking EBI Specifics**
Course Outline Entry for Week __	*Course Outline Entry for Week __*
Class discussion of Fluency Assessment and Instruction	Class discussion of lesson in the field.
Prepare by reading Chapters 9 & 10	1 Was the way you began effective? 2 Was your lesson engaging?
Candidates will administer and analyze assessments with K-1 students in field placement	3 How did you create a respectful environment? 4 Describe something you did well.
[Note: These are modeled in class first, so the connections are clear.]	*[Note: Feedback misses opportunity to check for evidence-based instructional methods.]*

In Pre-Service Classes & Coursework

Forty-five percent (45%) of courses–whether observed or through interviews--revealed specific actions by the instructor that move candidates from the conceptual to the practical. These are most effective when bridged by explicit modeling by the instructor or through videos and followed with reflection and discussion. Peer-to-peer reflections can also be powerful learning opportunities, especially when they are instructor-designed and observed. Reviewers reported observing excellent examples of instructors' careful planning to provide appropriate manipulatives and materials with which to practice, as well as making connections "in the moment."

Connections to Practice in Pre-Service Classes	
Intentional or In-the-Moment Connections	**Missed Opportunities**
Professor Instructing: Why is phonological awareness important? Candidate: Phonics is where children are listening, and phonemic awareness is where they are matching to letters. Professor gives corrective feedback by providing explicit definitions and examples for each.	Professor uses a well-organized slide deck to review a comprehensive list of phonological awareness and phonics terms addressed in the textbook. Provides descriptions of a few, but not all, of the skills. Provides modeling of phoneme blending using letter tiles.
Instructor introduces the phonological awareness continuum. Names and models the specific phonological skill Candidates work in groups to practice Instructor supports practice with corrective feedback	No gradual release providing opportunity for candidates to practice. Closes with "any questions?"

In the Field

This type of connection to practice requires intentional and collaborative planning between the program and the partnering school, otherwise these opportunities are haphazard or missed altogether. In addition to or in the absence of field placements, connections to practice might occur following an in-class video or homework assignment. For example, candidates view the administration of a type of assessment from an on-line video, followed by practice administering the assessment in class with peers and, when possible, later in the field with an elementary student. Quality of practice whether in class or in the field is shaped by assignments from the instructor or opportunities afforded by the mentor teacher. Reviewers noted many excellent video samples in use. Creating a catalogue of these for statewide access would be beneficial to all programs and promote equity of resources.

Connections to Practice Prior to or In the Field	
Clear Expectations	**Missed Opportunity**
Instructor poses these questions to candidates prior to teaching a lesson in the field: 1 Does your lesson demonstrate depth of knowledge in this phonological skill? 2 Do you state the learning target at the beginning of the lesson? 3 Each time you switch a task in your lesson, you should model the new task. Each of these behaviors is modeled by the instructor during the class session.	In a course where there is no field experience, candidates are given an opportunity to build a running list of topics to write about and then given a period of time in class to write. This is not preceded by any instruction or clear objective for the task. Time is not provided for candidates to share their reflections. These reflections appear to be based on previous experiences and future expectations rather than a specific teaching scenario upon which to connect knowledge to practice.

D.   Other Program Practices that Support Literacy Instruction

Clear and Cohesive Syllabi

The Literacy Act's requirement of 9 hours in reading prompted all programs to review how they are preparing teachers to teach reading. This afforded an opportunity to revisit course titles, sequence, descriptions, and course objectives. Reviewers acknowledged the parameters that institutions place on faculty regarding required elements in syllabi (e.g., faculty of record, contact hours, course description, state and SPA [Specialized Professional Association] standards, and a myriad of university policies). In light of this, reviewers applied criteria to determine if syllabi accurately and adequately addressed the goals intended by the ALA: teaching of the Science of Reading. Reviewers considered the following:

- o Clarity and cohesiveness of syllabi and, where applicable, appropriateness for a pre-service audience
- o Course title that adequately and clearly captures the content and reflects where in the 9-hour sequence the course is situated and how its content is distinct from or connected to surrounding courses
- o Course description that is clearly worded and includes language that describes how the components of reading and/or writing will be addressed based on scientific research and accepted practices
- o Course objectives--extracted from state and SPA standards--that describe the professional competencies specific to teaching and/or assessing reading and/or writing that candidates will acquire as a result of the course
- o Titles and editions of required textbook(s) and related readings aligned to the Science of Reading
- o A course outline/schedule embedded in the syllabus that explains to candidates week-to-week how the content that will be addressed, including measurable learning objectives for each session
- o A list and description of graded assignments, including quizzes, tests, and summative exams

25

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

o   A description, if applicable, of field experiences: number of hours, and expectations of work carried out in that setting

Reviewers wondered if higher education authorities might consider bundling the required publishing of policies into an appendix for each syllabus, thereby enabling the essence of the course to be more visible for candidates. In addition, treatment of standards varies widely in the written materials. Often syllabi include a comprehensive list or multiple lists of standards that have little bearing on the course content or connection to the actual course objectives. This is not to suggest that standards are inconsequential. Rather, as currently presented, they don't appear to be informing specific course content or to be used as accountable metrics.

Learning Expectations Week to Week	
Sample Entry in Course Outline with Learning Objective	Sample Entry in Course Outline without Learning Objective
General Topic: Letter/Sound Correspondences Learning Objectives for Session: 1 – Why are letter/sound correspondences taught? 2 – List the four guidelines for sequencing the introduction of letter/sound correspondences 3 – What factor should determine when a new letter is introduced? 4 – Why should letters like *m, s, r, t, a* be introduced before letters like *q, v, w, z?*	General Topic: Phonics Letter/Sound Association

Reviewers found duplications and lack of clarity in course descriptions within programs from one syllabus to the next. In other words, when comparing descriptions across the three (often four) courses, it is difficult to determine how they are distinct and the rationale for the sequence. "The Language Arts" is used to describe a comprehensive set of skills in both reading and writing. This term is used generously to mean different sets of literacy skills. Either the course addresses only a subset of those skills without regard for where the other skills will be addressed, or the course is attempting to broadly address all of them within a single semester. This may be symptomatic of a larger problem: the absence of a program-wide scope and sequence of the totality of skills necessary to become an effective teacher of reading and writing.

	Course A in the Sequence	Course B in the Sequence
Course Descriptions not distinct or obviously sequential	The study of early literacy development and word identification strategies, including phonics, structural analysis…	Build knowledge and skills as it relates to teaching early literacy skills, including the importance of oral language, print awareness, letter knowledge, phonological awareness, phonics…
	The fundamentals in the teaching of reading, including concepts of print, phonological awareness, phonics, words study, and fluency…	Focuses on the methodology, materials and techniques for teaching reading and developing systematic instruction for every child based on assessment…

Comprehensive lists of core standards and/or SPA standards often serve as course objectives but without prioritization. This results in some courses having as many as 42 objectives which go well beyond a focus on literacy skills.

	Generally-Worded Objective	Specific Literacy-Focused Objective
Course Objectives	Develop and implement appropriate lessons and curricular materials for the K-6 classroom that reflects the area of language arts and builds on prior knowledge.	Engage in purposeful planning of lessons based on reading assessments.
	Develop age-appropriate writing skills.	Demonstrate understanding of explicit, systematic handwriting instruction.

In addition, many of the texts currently in use purport to address the totality of language arts (listening, speaking, reading, writing, visualizing). Unfortunately, many of these comprehensive texts do not reflect the decades of research that inform best practices. Specifically, non-explicit methods are presented, especially for assessments and for teaching writing. The following examples illustrate the contrast:

Excerpt from non-aligned textbook	Excerpt from aligned textbook
Phonemic awareness is an understanding of sounds in spoken words. Children who have phonemic awareness understand the rhythmic nature of language and the concept of rhyme. This understanding of the sounds of language is learned naturally, through listening to stories or songs from a young age.	Phonological awareness is an umbrella term that includes the awareness of larger parts of spoken language such as words, syllables, and onsets and rimes—as well as the smaller parts, phonemes. A phoneme is the smallest unit of spoken language that makes a difference in a word's meaning. For example, the phonemes /s/ and /f/ are different; the meaning of the word sat is different from the meaning of the word fat. Phonemic awareness is the understanding that spoken language can be broken into phonemes.

For these reasons, programs are encouraged to construct a matrix to clarify and articulate the professional competencies for teaching and assessing reading and writing to ensure that candidates receive instruction identified in the Alabama Literacy Act and the ten topics identified on page 11 of this report. Such a matrix could also identify the specific field experiences and assessments for each of the topics, thereby painting a comprehensive and clear picture of how the program embeds the ALA throughout. The Rhode Island Department of Education, in partnership with the CEEDAR (Collaboration for Effective Educator Development, Accountability and Reform) Center, has recently launched a free Science of Reading and Structured Literacy Syllabi Refinement Tool that program leaders are encouraged to consider.

Measurable Class Session Objectives
As with any good lesson plan, a measurable learning objective lays the predicate for what candidates should know and be able to do by the end of a class session. Fewer than a dozen (8.5%) of course syllabi reviewed articulate learning objectives for the daily/weekly sessions in the course outline. In addition to supporting a

focus for the session, by engaging in this practice, instructors model a basic tenet of effective pedagogy for candidates who will--in turn--be encouraged to transfer this practice to their own teaching. The following examples compare a named topic to a measurable objective:

	General Session Topic Only	Specific Learning Objective Describing Competency
Class Objective	Fluency: Reader's Theater	Understand the concept of reading fluency and the relationship between reading fluency and reading comprehension.

Written Summative Exams & Implications of edTPA for SOR

Sixty-two out of 133 (46%) courses require some form of *summative* exam—whether a mid-term or final or both. Although *performance* exams provide an important window into a candidate's capacity to plan and execute instruction, a written summative exam gauges the depth of understanding a candidate has regarding research, terminology, and accepted practices addressed during the semester's classes and through readings. This is especially important as it relates to the corpus of knowledge needed to draw upon for teaching and assessing reading and writing. This knowledge is not assessed in this way with edTPA, a requirement of all Alabama candidates as of September 2018.

The edTPA is a widely used method by more than 800 programs in 41 states and the District of Columbia for certifying novice teacher competencies (AACTE, 2021). Two important goals of edTPA are (1) to provide states, school districts, and teacher preparation programs a common framework and language for defining and measuring performance of teacher candidates; and (2) give states the ability to evaluate the impact of teacher preparation on candidate knowledge and skills that lead to greater student learning.

During interviews, candidates lamented the time expended to prepare for edTPA components, and reviewers observed that, when not executed well, the process becomes form over function. Additional concerns relate to how well, if at all, the edTPA process addresses or is aligned with the Science of Reading. The following reflections from national experts on our review team offer some guidance about how to maximize the edTPA requirement in service to effective literacy practices (Cavanaugh, Crowe, Spear-Swerling, & Joshi, 2022):

- *Stay focused on content and let the process take its course.* The logic of the exam (i.e., to measure novice teachers' readiness to teach) as a performance-based assessment is reasonable, overall. However, the materials and instructions can be unwieldy in ways that risk a net negative, draining time and attention from class time and assignments that could be more valuable for teacher candidates. Reviewers observe that programs in Alabama and around the country have gravitated toward a "test prep" mode rather than staying focused on teaching content to satisfactory levels that will support proficiency during the actual edTPA examination. Too often, it becomes the driver rather than the vehicle for candidates to demonstrate what they know and can do. Candidates are expected to complete this during their student teaching semester, but it appears that some faculty work on it during the previous semester, thus compromising time needed to focus on the content and practice that the edTPA is designed to assess.

- *Build a graduated experience across time.* Programs, candidates, and ultimately their students, will be better served by carefully aligning edTPA content and performance expectations with course work and clinical experiences (including accurate observation and feedback from trained observers) from the very

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

first courses and field experiences that candidates have. These should build over time with gradually increasing levels of responsibility and expertise leading up to the culminating internship experience. Practice tasks should be seamlessly incorporated into the literacy coursework.

o *Be flexible in supervisory roles.* Beginning field experiences don't necessarily need to be supervised, especially if they are well-structured (e.g., candidates' observations are centered around looking for evidence-based practices in reading, not just free-form observations). Mid-level and internship experiences should be supervised and there may be benefits to having the course instructor—who is most familiar with pedagogical content—provide this supervision. While not always practical, this approach provides much more seamless support. If different faculty provide supervision, they—and the mentor teacher—need to communicate expectations clearly and uniformly, and to have consensus regarding SOR.

o *Let a structured literacy lesson plan template do the heavy lifting.* The edTPA organization of generic lesson plans and certain other assignments doesn't lend itself well to SOR alignment. However, with good guidance from instructors, candidates can use a more specific—perhaps even more effective (i.e., explicit and sequential) type of lesson template for foundational reading that can be easily adapted to the edTPA format. This takes time of course, and some candidates may find it confusing or overwhelming; however, it can preserve an alignment to SOR that otherwise gets lost. The real benefit is that candidates will be demonstrating an understanding of and ability to link assessment to instruction as part of an ongoing cycle—a hallmark of the Science of Reading.

o *Choose content wisely.* There are some built-in choices in the edTPA process. For elementary education candidates they are to complete one of four elementary options and many times, the option is selected at the EPP level. Two of the four elementary options have a literacy focus, while the others have a greater emphasis on math. Special education candidates can develop their learning segment and supporting evidence for one focus learner on any IEP goal as long as it focuses on academic content. Early childhood candidates have an early childhood specific edTPA handbook that allows them to complete it within the context of a preschool or a kindergarten classroom. Again, with guidance from instructors, the format and focus of edTPA tasks which are generic to be applicable across a range of subject areas, could attend, instead, to specific component skills like phonemic awareness, knowledge of letter sounds/patterns, decoding of phonetically regular words, knowledge of irregular words, text reading fluency, etc., thus joining the essence of literacy instruction with the spirit of edTPA.

o *Resist lowering the bar; after all, we're asking 3rd graders to pass a test, too.* Passing scores vary considerably by state with the trend in the last few years for states to lower the cut scores to boost pass rates. National studies confirm that candidates whose edTPA submissions are scored locally (by their own faculty) get higher scores – and therefore are more likely to pass – than those scored nationally by trained reviewers. With limited training, local faculty can score performance assessments with a reasonable degree of construct and predictive validity. Expect the most from your candidates and your programs.

o *Use the data to switch from compliance to program improvement.* Policies that promote an investment in training faculty to be more reliable scorers, yield useful data that can be accessed prior to program completion as a basis for program reforms (Peck, Young, & Zhang, 2021; Bastian, Henry, Yi, & Pan, 2016). This includes using edTPA artifacts to inform program-level curriculum and other variables related to improvement goals (Bastian, Lys, & Pan, 2018).

29

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

IV. A Call to Action: 4 Big Ideas

The national experts assembled for this project remain committed to providing support to the State of Alabama as may be necessary to reach your goals related to the Alabama Literacy Act. It is recommended that a follow up review be conducted in 12 to 18 months to evaluate progress and make course corrections or accelerations. In the meantime, the review team recommends the creation of a Collaborative Task Force made up of P-K practitioners, ALSDE senior staff, and Educator Preparation Faculty, and guided by an external literacy consultant/coach to take the following action steps.

#1 – Standardize Pre-Service Curricula

There is plenty of room in teacher preparation hours for programs to distinguish themselves but when it comes to early literacy instruction, candidates and their students will be best served by ensuring that the 9-hour sequence for early literacy is fully aligned to the Science of Reading. For greatest and most immediate impact to benefit all children, the above-named Task Force should be charged with the following:
- Identify the professional competencies needed for effective teaching and assessing reading and writing. The Knowledge and Practice Standards, 2nd edition (IDA, 2018) can provide guidance for this task.
- Design standardized syllabi as a requirement for licensure. For assistance with this task, we recommend the Science of Reading and Structured Literacy Syllabi Refinement Tool
- Vet and established an approved list of high-quality textbooks; identify options that include addressing ELL, dyslexia, and assessment specifically.
- Develop a repository of exemplar assignments that link knowledge to practice; there are examples in programs that are aligned.
- Create multiple forms of a comprehensive and rigorous summative exam that includes knowledge and application items related to SOR knowledge, instruction, and assessment.

#2 – Require and Support Professional A Growth Model for Deep Understanding of SOR by Faculty

Faculty cannot teach what they do not know, and their own advanced degrees may not have included content that was informed by the cognitive and education sciences now broadly available. A number of faculty have completed some form of professional development (primarily LETRS), however this is inconsistent across the state and challenging for smaller programs where instructors assume multiple roles. Release time and/or compensation should be arranged to enable faculty to get up to speed quickly in order to support program improvements including modeling of evidence-based practices and design of purposeful assignments that link knowledge to practice. In addition, faculty benefit from coaching in the same way that in-service professionals do. For maximum impact, establish a statewide professional learning community supported by a higher education literacy coach to focus on evidence-based instruction. Develop a repository of video resources that can aid faculty in developing and honing their knowledge base for teaching complex SOR content, and can be used in pre-service courses to complement and supplement modeling.

Related to this is capacity-building for reviewing edTPA products. As discussed elsewhere in this report, national studies confirm that data from edTPA can be used to inform program improvement when faculty have proper training for evaluating their own candidates.

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

#3 – Design a Seamless System for High-Quality Field Experiences

New models of field experiences and internships are being piloted in a few places across the country to strengthen dialogue and cement partnerships between districts, schools, and EPPs. The goal of these partnerships is to ensure that instructional practices on *both* sides (pre-service courses and in-service settings) are aligned to SOR to support meaningful connections to practice and engage in collaborative planning for candidate experiences and expectations. There are several examples in the state where this is already occurring. Again, CEEDAR, offers a useful guide for supporting planning and execution of field experiences that support evidence-based practices. The responsibilities of all parties, including mentor teachers and university supervisors, should be clarified and supported by ALSDE-approved training. Field placements and internships, done well, can secure the workforce pipeline; school administrators should be part of these discussions.

More immediately...
- o Lesson plan templates should be amended to provide stronger guidance for delivering evidence-based practices in the field that include a measurable learning objective, lesson planning based on assessment data, explicit direct instruction, modeling, gradual release model, sufficient guided and independent practice, checks for understanding, and associated writing tasks.
- o Incorporate micro-teaching (self-videos) as a regular feature to promote regular reflections with purposeful feedback.
- o Minimally, provide orientation to mentors and university supervisors regarding goals and content of the 9-hours.

#4 – Build Equity Across Institutions by Providing Support to Smaller Programs

When it comes to preparing teachers of reading for Alabama, several programs have a single instructor teaching all of the early literacy courses, as well as managing the field placement experiences. On the one hand, these small programs present opportunities for greater alignment and consistency across the 9-hours; on the other hand, candidates may be at a disadvantage by relying on the knowledge level of a single instructor and restricted time for meaningful feedback. Options for bolstering support to smaller programs might take several forms: (1) standardize curriculum enabling programs to share resources for instruction; (2) underwrite facilitator training for LETRS and/or ARI for faculty and area K-3 teachers to deepen knowledge and to increase pool of qualified instructors; (3) fund a pool of professionals at the state level who can be trained and dispatched for the distinct role of supervising field experiences.

V. Appendices

APPENDICES

A Review of Alabama's Teacher Preparation Programs for
Alignment to the
Science of Reading and the Alabama Literacy Act #2019-523

A Project Commissioned by The Alabama State Department of Education

32

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523
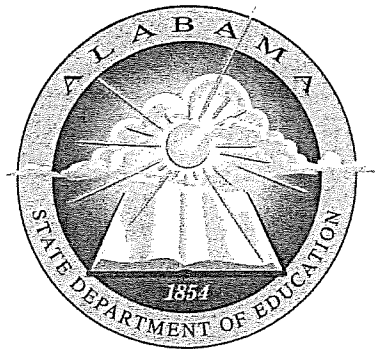
Appendix A: National Review Team Members and Affiliations

National Review Team Members and Affiliations

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STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

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And special thanks to Kate Walsh at the National Council on Teacher Quality for sharing NCTQ's comprehensive reviews of EPP textbooks nationwide..		

Textbook Review Team   #Statewide Survey Team

Appendix B: Glossary of Terms

Glossary of Terms
Acronyms & Terms Used Frequently in the Institutional Reports

ACRONYMS

ALA - Alabama Literacy Act #2019-523 [*AL Code § 16-6G-5 (2020)*]

ALSDE – Alabama Stated Department of Education

ARI - Alabama Reading Initiative

CAEP - Council for the Accreditation of Educator Preparation

CBM – Curriculum-based Measure

CEA - Commission on English Language Program Accreditation

DIBELS – Dynamic Indicators of Basic Early/ Literacy Skills

ECE/EE/SPED – Early Childhood Education/Elementary Education/Special Education

ELA – English Language Arts

ELL – English Language Learner

IDA – International Dyslexia Association

IEP – Individual Education Plan

IES - Institute of Education Sciences

ILA – International Literacy Association

InTASC – Interstate Teacher Assessment and Support Consortium

LETRS - Language Essentials for Teachers of Reading and Spelling

MSV - Meaning, Syntactic, Visual

ORF - Oral Reading Fluency and related national norms

PAST – Phonological Assessment Skills Test

SIM – Strategic Instructional Model

SOR – Science of Reading

SRSD - Self-regulated Strategy Development

SVR – Simple View of Reading

GLOSSARY OF TERMS

Alphabetics – Also known as the Alphabetic Principle. The science of how spoken speech sounds are represented with letters.

Analogical approach – Reading by analogy. An approach to phonics instruction in which students learn to recognize a new word because it shares a spelling pattern with a known word (e.g., I can read the unfamiliar word 'bike' because I recognize 'ike' from the known word 'like').

Analytic phonics approach – An approach to teaching decoding. Students learn to analyze letter-sound relations by paying attention to the whole word first, then sounding out the word letter by letter. Analytic approaches tend to focus on reading words and may de-emphasize spelling.

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Authentic text – Text in which vocabulary and sentence complexities have not been altered to achieve a specific readability level. Also, sometimes called "real text." This term is used to make a distinction from decodable text which is designed to support the practice of reading words with phonics patterns that have been taught (see definition for Decodable text).

Background knowledge (also known as domain and topic knowledge) – Knowledge individuals have acquired formally in school or other learning situations or informally, through experience, reading, etc. Background knowledge is one of the cognitive capacities that impacts (among other traits) language, bias, literacy knowledge, ability to make inferences, which are all important to the task of reading and comprehension.

Balanced literacy – An approach to reading instruction that has many definitions. Most definitions include these elements:
- Students apply skills and strategies using authentic literature, or words from authentic literature, that can be either a read-aloud, or a text they read themselves.
- Instruction is adjusted based on the teacher's perception of the students' needs, which may be based on observation or informal assessment.
- A combination of whole-group and small-group instruction is included in daily lessons, and small group instruction is generally guided reading with leveled readers.
- Phonics is taught implicitly in mini-lessons and/or with a "word study" approach. A weak or no phonics skills sequence is followed.
- Instruction is not explicit or systematic, preferencing "discovery" learning based on a constructivist philosophy.

Basal textbooks –Texts written specifically as a core reading program that spirals and builds in skill difficulty throughout the grade levels. Narratives, expository passages, and poems are chosen to illustrate and develop specific skills, which are taught in a predetermined sequence. Teacher's editions provide lesson plans. Some basal programs may include student workbooks or on-line activities, and some include trade books and decodable readers.

Bottom-up approach – see **Synthetic phonics**

Constructivism – A philosophical approach to learning and teaching. Constructivists believe students create their own knowledge and understanding from what they encounter and by reflecting on their own experiences. The constructivist philosophy of reading instruction favors a holistic, **whole language** approach to reading.

Context – Context, when reading, comprises all of the elements that influence how we read in different situations. The context includes: 1) the setting, 2) the text, and 3) the purpose for reading. Context refers to the information surrounding an unknown word which may assist a proficient reader with understanding the word meaning. Novice readers and poor readers guess unknown words based on context.

Cueing system – see **Three-cueing system.**

Curriculum-based Measurement (CBM) – A method of monitoring student progress through direct and continuous assessment of academic skills. CBMs are standardized, timed assessments that assess student performance against criterion-referenced benchmarks and national norms. CBMs are most often used to measure basic skills in reading and mathematics.

Decoding – The process of translating print into speech. Beginning readers decode words by matching a letter or combination of letters to their sounds and blending the sounds into spoken words. Efficient decoding is based on phonemic awareness and the automatic recognition of spelling patterns for words and syllables. The Simple View of Reading demonstrates that decoding (also called Word Recognition) is essential for comprehending text.

Decodable text – Text that is written only with words a student has been explicitly taught to decode and irregularly spelled high frequency that have been specifically taught. Used to make the distinction from other kinds of text, specifically "authentic" text (see authentic text)

DIBELS (Dynamic Indicators of Early Literacy Skills) – One of several nationally normed curriculum-based assessments used in grades K-6 for benchmark and progress monitoring assessment. DIBELS is available for free download from https://dibels.uoregon.edu.

Direct instruction – An instructional approach including planned, teacher-directed instruction of new materials in clearly explained small steps. Teachers provide guided practice and systematic feedback while encouraging high levels of student response.

Discovery learning - Discovery learning is a method of instruction based on constructivism. It emphasizes students discovering learning for themselves, looking into problems, asking questions, and constructing their own learning. This can be an effective approach for content-area learning for students who can read and write.

Embedded phonics instruction – Teaching students to analyze letter-sound relations using words from texts students are reading. Embedded phonics lessons are often mini-lessons based on either words the teacher selects from the text or words the students have missed while reading. This instruction does not teach basic phonics patterns before more complex patterns.

Emergent literacy – A term used to describe the stage of development during which children acquire the foundational knowledge about language and print required for learning to read and write. For most children, the emergent literacy stage begins at birth and continues through the preschool years.

Evidence-based – Refers to practices that have been shown to be successful in improving reading achievement. The success of these practices is demonstrated in two ways: by research-study data collected according to rigorous design, and by consensus among expert

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

practitioners who monitor outcomes as part of their practice. These results—whether scientific data or expert consensus—must be valid and reliable and come from a variety of sources (Reading Excellence Act, 1999).

Explicit instruction – Instruction that directly teaches what the student is expected to know and will be assessed on, builds from the simple to the complex, and is cumulative. In explicit, systematic, sequential instruction, what is taught follows a planned and ordered progress. Concepts are explained and taught directly with examples and plenty of practice. Explicit instruction may be applied to any instruction, not just reading.

Four-part Processing Model – The model describes four processing units that are involved in reading any word. The four-part processing model is derived from the triangle model (Seidenberg & McClelland, 1989). The triangle model established that three distinct, interactive, and necessary processes contribute to word recognition: phonology (speech sounds), orthography (letters/print), and semantics (meaning). Later, Harm and Seidenberg (2004) demonstrated that word recognition is faster and the instant word vocabulary grows more quickly when both orthographic and phonological processes are engaged to read words. Brain research indicates that the orthographic and phonological processors are active first, working together to identify the word's pronunciation and potential meanings. The fourth processor, context, supports specifying the word's meaning by disambiguating homographs (tear/tear), specifying the meaning of homophones (ball /bawl), and deepening knowledge of a word's meaning. The research behind the four-part processing model indicates that each processor's contribution is necessary for accurate and fast word reading; one processor cannot compensate for another.

Five essential components of reading – In 2000, the report of the National Reading Panel's meta-analysis of the literature on reading instruction focused on 5 components of reading that were deemed essential for the most effective reading programs: **phonemic awareness, phonics, fluency, vocabulary,** and **comprehension.** These are sometimes referred to as the "five elements of reading instruction". Recently, fluency is considered to be an outcome of reading instruction more than an element of instruction (Fletcher et al., 2018).

Fluency – The ability to read with accuracy and reasonable speed. Oral reading fluency (ORF) is the ability to read aloud with accuracy, reasonable speed, and appropriate expression (prosody) as measured by normed ORF measures.

Formal assessment – Standardized measures that have data supporting the conclusions made from the test. Scores such as percentiles, stanines, or standard scores are most commonly from this type of assessment.

Four-cueing system – See **Three-Cueing system**

Grapheme - Letter or groups of letters used to represent phonemes (speech sounds). Graphemes do not always have a one-to-one correspondence with letters in words. For example: the word *fun* has three letters and three graphemes: *f-u-n*. The word *light* has five letters but only three graphemes: *l-igh-t*

Guided reading – A method of literacy instruction that is open to many interpretations. In their review of the history of the term, Ford and Opitz (2008) state: "Regardless of decade or author, all agree that guided reading is planned, intentional, focused instruction where the teacher helps students, usually in small group settings, learn more about the reading process." Guided reading is an instructional practice or approach where teachers support a small group of students to read a text independently. The focus is on comprehension and typically, the focus is on *supporting* readers not explicit or systematic instruction.

Guided reading in a Structured Literacy Approach - Small group reading instruction that applies explicit and systematic teaching processes (see Structured Literacy). Assessment is used to identify the areas of need, and lessons are carefully designed to teach those identified areas of weakness. Additional extended practice opportunities are provided.

High Frequency Words – a set of the most common words in running text that when read instantly, assist with fluent reading. Many of these words are decodable, and the ones that are irregular are taught using multisensory methods such as the Heart Word method (Farrell & Hunter).

Informal assessment – Assessment used to evaluate an individual student's skills, performance, and progress. Informal assessment does not compare a student against a statistical norm. There are many types of informal assessments, including teacher observation, running records, end-of-unit tests, pop quizzes, etc.

Informal reading inventory (IRI) – An individually administered informal oral reading assessment used to determine a student's independent, instructional, and frustrational reading levels. There are many informal reading inventories available, including the Analytical Reading Inventory (Woods & Moe), the Comprehensive Reading Inventory (Cooter, Flynt & Cooter), and the Qualitative Reading Inventory (Caldwell & Leslie) (which are texts listed for courses observed in this study).

Implicit instruction, phonics – An approach to teaching phonics where students discover phonics patterns from known words during planned literacy activities or while reading "authentic" text. Word study with an emphasis on word sorts is an example of implicit phonics instruction. This instruction does not teach basic phonics patterns before more complex patterns and may not provide adequate practice for many students.

Irregular High Frequency Words – a set of high frequency words that readers cannot "sound out" because they do not apply dependable grapheme phoneme relationships, i.e., does, was, were, etc. However, some graphemes in most irregular words can be decoded (e.g., /d/ in does). Only about 12% of high frequency words are irregular, the remaining high frequency words can be decoded.

Jigsaw – A method for addressing written material where individuals or groups of individuals within a class are responsible for reading a subset of material (e.g., chapter of a textbook, section of an article) and summarizing its content for the benefit of the class.

Language comprehension – Understanding and taking meaning from oral language. In the Simple View of Reading, language comprehension is measured with a listening comprehension assessment. Language comprehension is sometimes referred to as "linguistic comprehension".

Language-experience activity – An activity during which a child tells about an experience (or a group of children each contribute a sentence about a shared experience), and the teacher prints exactly what the child says. The teacher reads the printed passage aloud one or more times while pointing to each word as it is read. Next, the children and the teacher read in unison as the teacher points to each word. This activity helps children understand that print represents speech, learn that reading and writing move from left to right and top to bottom, and think about experiences that they can describe.

Learning styles - A theory that states people think and learn best in different ways. Educators grasped this theory and developed instruction that would support students' "learning style". No research supports using this theory to individualize instruction. (See Willingham, Scientific Studies of Learning Style Theories.).

LETRS - A professional development series of books, workshops, and on-line courses about reading, writing, spelling, and other language-related skills for K-12 teachers, administrators, and paraprofessionals. LETRS is a professional development program adopted by many State Education Agencies (SEAs) as part of their state's literacy policy and/or legislation.

Leveled text – Text that has been assigned a reading level based on various factors (e.g., vocabulary, number of different words, support from context, support from pictures, page layout). Leveled texts contain high frequency words and other words that may not be decodable. Reading these texts may help children practice words that they already know, but it does not teach them how to decode unfamiliar words accurately. Instead, they predict words from context and use picture clues to guess new words.

"Look-say" approach – See **whole word approach**

Mini-lessons – Mini-lessons are short lessons (5-15 minutes) that focus on teaching students a procedure, behavior, or strategy. The teacher bases the mini-lesson topic on the observed or assessed needs of the students. A mini-lesson may include an explanation about why the lesson is important for reading. During a mini-lesson, the teacher describes and models what is being taught. Student practice follows the modeling. Mini-lessons may be planned or extemporaneous, and they can be taught individually, in a small group, or to a whole class. Often the mini-lesson is related to a larger lesson to follow; typically they are not part of a planned and developmental sequence of skills.

Miscue analysis – An analytical procedure for assessing a student's word reading and reading comprehension based on samples of oral reading. Miscue analysis is predicated on the belief that students' mistakes when reading are not random errors but, actually their attempt to make sense of the text with their experiences and language skills. Miscues are used in running records according to one of three categories: semantic, syntactic, or graphophonemic. Miscues that do not affect meaning are typically not counted as errors.

Modeling – An element of explicit instruction where the teacher demonstrates a skill or task or verbalizes thought processes while reading or writing. Modeling should follow an "I do, we do, you do" progression that gradually transfers more responsibility to the student.

Oral language –The development of oral language is a critical foundation for reading comprehension. Oral language activities and phonological awareness activities are sometimes confused. Oral language activities build vocabulary, listening comprehension, and the ability to use spoken words appropriately. On the other hand, phonological awareness activities (which include phonemic awareness activities) build awareness that spoken words are made up of sequences of speech sounds, such as syllables, onset-rimes, and phonemes.

Orthography -The spelling system whereby phonemes in a language are represented by letters and groups of letters.

Phonemic awareness – the ability to identify, distinguish, and manipulate the individual sounds (phonemes) in a spoken word without reference to letters. Phonemic awareness is the most advanced level of **phonological awareness.** Phonemic awareness activities draw attention to the sounds in spoken words by helping children feel the sounds in their mouth as they say the word. Instruction may use blank tokens to provide a visual support that helps children hold the sounds in working memory. Awareness of phonemes in words is necessary for learning how letters map onto sounds.

Phonological awareness – The conscious awareness of all levels of speech sounds in words, including syllables, onset-rime, and phonemes. Phonological awareness activities including identifying, blending, segmenting, and manipulating syllables, onset-rime, and phonemes in words. Phonemic awareness is a subcategory of phonological awareness. Phonological awareness activities are oral and may use blank tokens to help children hold the sounds in working memory.

Phonics instruction – A way of teaching reading that stresses the acquisition of letter sound correspondences and their use in reading and spelling. The primary focus of early phonics instruction is to help beginning readers understand how letters are linked to sounds (phonemes) in order to read and spell words. Children apply phonics patterns to decode new words, which helps them become confident, independent readers.

Predictable text – A text that contains words or phrases that are repeated over and over again, often with words that aren't repeated having a close alignment with pictures or some aspect of the text, such as rhyming words. Predictable text makes it easier for children to guess at words, which may initially seem to help with reading fluency. However, when children guess they are not developing their ability to read words confidently with decoding. By grade 4, most text will not be predictable and guessing from context will not be an effective approach to word recognition.

RAND study- called "Reading for Understanding: Toward an R&D Program in Reading Comprehension" includes a heuristic for thinking about reading instruction. The study suggests that teachers consider the Reader, Text, the Task, and Context when teaching reading comprehension.

Readability level – A level of textual difficulty based on objective measurements of factors such as the average number of words per sentence and the average number of syllables per word.

Reading Comprehension - The ability to derive accurate and reasonable meaning while reading written material and to extend that meaning to other texts. Reading or text comprehension is the goal of reading instruction. The Simple View of Reading tells us that both strong decoding skills (word recognition) and strong linguistic (language) comprehension abilities are necessary for reading comprehension.

Reading Rockets - A web-based resource for reliable information about teaching reading and writing; hosted by WETA/PBS in Washington, D.C.

Research-based – Founded on an accumulation of evidence obtained from accepted scientific research.

Response to Intervention – (commonly abbreviated RtI or RTI). An approach to the early identification and support of students with learning and behavior needs. RtI mandates the use of research-based academic and/or behavioral interventions. RtI includes universal screening of all children and generally includes three tiers of instruction. Tier 1 is high quality, code-based classroom instruction. Tier 2 is targeted supplemental instruction for students not making adequate progress in the regular classroom. Tier 3 is intensive, targeted intervention for students not making adequate progress in Tier 2. Students who do not achieve the desired level of progress in response in Tier 2 or Tier 3 intervention are referred for a comprehensive evaluation and considered for eligibility for special education services. Multi-tiered System of Support (MTSS) is a term related to RtI. Sometimes the terms are used interchangeably, but the approaches differ in several ways. Among several distinctions between the two approaches is that MTSS emphasizes a system-wide responsibility for student support, at all grade levels and throughout the district or state, whereas RtI can be implemented at any level (e.g., classroom, grade, school, district).

Running record – an informal assessment during which a teacher listens to a student read a text aloud and records errors made while reading and also notes other reading behaviors. The text used for the running record is what the teacher considers to be the student's reading level. Teachers record errors that interfere with meaning by type (e.g., substitutions, omissions, insertions, self-corrections, and context based). Errors are then categorized, based on the cueing system, as semantic, syntactic, or grapho-phonemic. Running records are used to inform instruction and to move students up or down in their reading levels. Running records are problematic because students get credit for guessing words with a similar meaning even if they read the printed word incorrectly.

(SRSD) Self-regulated Strategy Development - an instructional approach designed to help students learn, use, and adopt the strategies used by skilled writers. It is an approach that adds the element of self-regulation to strategy instruction for writing.

Sight word – Any word that is instantly recognized in print, read with meaning accessed. Once a student can read a word instantly, then it is a sight word for that student. The term sight word can also refer to words that are irregular (*said*) and can only be partially decoded. Also known as heart words (Farrell & Hunter).

Structured Literacy, also referred to as Structured Instruction - Structured literacy (SL) approaches emphasize highly explicit and systematic teaching of all important components of literacy. These components include both foundational skills (e.g., decoding, spelling) and higher-level literacy skills (e.g., reading comprehension, written expression).

Synthetic phonics (also known as **bottom-up approach**) – An approach to teaching decoding. Instruction starts with teaching the phonemes (individual sounds) and graphemes (spellings of individual sounds) in isolation. Students are taught to write and read words by blending letter sounds (synthesizing) together. One-to-one spellings are mastered first (e.g., cat spells /k/ /ă/ /t/) and more complex spellings later (e.g., bleach spells /b/ /l/ /ē/ /ch/).

Systematic Instruction – Systematic instruction teaches skills that build from simple to complex following a sequence that is cumulative with lots of extended practice to build automaticity.

Text set – A collection of resource materials with different reading levels, genres, and media organized around a specific topic or theme.

Three-cueing system – A model that includes three strategies, or cues, readers use to "solve" unfamiliar words in text: semantic, syntactic, and grapho-phonemic. Some cueing systems include a fourth cue, pragmatics (use of language in social context). The grapho-phonemic cue is usually applied last if the others fail to confirm the word. Good readers prioritize grapho-phonemic information to read words accurately.

Top-down approach – See **Whole language approach**

Trade book – Published literature, sometimes referred to as Authentic Text. Used for the purpose of teaching vocabulary, comprehension,

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

and developing background knowledge.

Universal screener - Quick, low-cost, repeatable tests of age-appropriate skills to all students. Schools typically administer universal screeners to all students three times a year. These assessments provide two important pieces of information. First, they provide evidence about how well the core curriculum and instruction are working in the school. Second, universal screening identifies those students who may not be making expected progress and who may need additional diagnostic assessment and/or intervention. Universal screening is part of the **Response to Intervention** process. **Curriculum-based measurements** are popular universal screeners.

Vocabulary instruction – Instruction about the meanings of words. There are two types of vocabulary to be considered during instruction: oral and print. Oral vocabulary includes words we understand when others speak and words we use when speaking to others. Print vocabulary includes words we understand in print and words we use when writing. Potential vocabulary words can be divided into three categories: Tier 1 words are used in everyday speech; Tier 2 words are academic terms, and words occurring in texts across the subject areas: Tier 3 words are specialized to advanced subjects (McKeown, Beck, Kucan). In K-4, vocabulary instruction should begin with the oral presentation of a written word followed by a spoken description of its meaning, then practice using it in spoken sentences, then practice spelling the word and writing it in sentence contexts.

Whole language approach (also known as **top-down approach**) – A holistic approach to reading instruction. The focus of all reading instruction, including early reading instruction, is on 'making meaning'. Accurate word reading is not considered important if a word can be discerned using context and the reader's interpretation of the word does not impair comprehension of the text. The whole language approach relies on the constructivist theory for how learning occurs (Hattie, 2009).

Whole word approach (also called the **"look-say" approach**) – An approach to early reading instruction. Children are taught to read words as whole units. In early reading instruction, students learn whole words through flash card drills and exposure to texts in which topics are familiar, words are repeated, and illustrations support meaning. If phonics is taught, it is based on discovering phonics principles from known sight words.

Appendix C: Textbook Reviews

C.1 Review Methodology

Reviews of 92 textbooks were conducted to determine whether assignments listed in the course syllabus or schedule aligned with SOR basics and nine reading/writing categories. The procedure to review the texts was:

1. Identify texts and specific assignments from the texts for each course.
2. Determine which text assignments could not be specified:
   - Some courses had texts listed on the syllabus, but no specific assignments listed in the syllabus or on the course schedule. These texts were not reviewed for these courses.
   - Some courses had chapter assignments listed on the syllabus or course schedule, but no text was specified. These texts were not reviewed for these courses.
3. Quantitatively review the parts of texts that are and are not aligned with the SOR. (See Appendix E, Section E.5. for an overview of the protocols used to identify SOR content.)
   - The content of each assignment for each text was reviewed page-by-page.
   - The percentage of the text in the assigned pages that aligned with SOR content was determined.
4. The total assigned readings for each text were categorized based on the percent of each assignment that aligned with the SOR.
   - Strong Alignment – 79.5% - 100%
   - Good Alignment – 59.5% - 79.4%T
   - Fair Alignment – 29.5% - 59.4%
   - Minimal Alignment – 0.1% - 29.4%
   - No Alignment – 0%

C.2 Overview of Textbook Reviews

The alignment to the SOR for each of the 92 texts reviewed is shown in the five tables on the following pages.

Table	Alignment to SOR	# Texts	Percent of Texts
C.2.1	Strong	27	29%
C.2.2	Good	8	9%
C.2.3	Fair	29	32%
C.2.4	Minimal	24	26%
C.2.5	None	4	4%

The textbook's alignment to the SOR was based on the chapters reviewed. The tables on the following pages show whether the entire text was reviewed, or only certain chapters. Of the 92 textbooks reviewed, the entire text was reviewed for 46 texts and only certain chapters were reviewed for 46 texts.
- The entire text was reviewed if:
  o All the chapters were assigned in one course, OR
  o Two or more courses assigned certain chapters, and all the chapters were assigned among the various courses that used the text.
- Only certain chapters were reviewed if all chapters were not assigned among the courses using the text.

Of the 92 texts reviewed, 34 were comprehensive because they covered comprehension and at least four of the seven other major categories of reading instruction (oral language, phonological/phonemic awareness, phonics, fluency, vocabulary, morphology, and writing). Fifty-eight texts were specialized because they covered fewer than five major categories or they did not cover comprehension. The tables on the following pages show whether texts were comprehensive or specialized. If the texts were specialized, the specialization is listed.

41
STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Table C.2.1
27 Texts with Strong Alignment to SOR

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
1	Teaching Reading Sourcebook, 3rd Ed. (Honig)	13	Strong	All	Comprehensive
2	Teaching Reading Sourcebook, 2nd Ed. (Honig)	1	Strong	3-6, 11	Comprehensive
3	Speech to Print: Language Essentials for Teachers, 3rd Ed. (Moats)	8	Strong	All	Specialized: Phonemic Awareness, Phonics, Morphology, Semantics, Syntax
4	LETRS, Vol 1, 3rd Ed. (Moats)	4	Strong	All	Specialized: Phonemic Awareness, Phonics
5	LETRS, Vol 2, 3rd Ed. (Moats)	2	Strong	All	Specialized: Vocabulary, Morphology, Comprehension, Writing
6	Multisensory Teaching of Basic Language Skills, 4th Ed. (Birsh)	4	Strong	1-11, 14-18, 20	Comprehensive
7	Put Reading First, the Research Building Blocks for Teaching Children to Read, K-3, 3rd Ed.	4	Strong	All	Specialized: Foundational Skills
8	Fundamentals of Literacy Instruction and Assessment, Prek-6, 2nd Ed. (Hougen)	3	Strong	2, 7-14, 18	Comprehensive
9	A Fresh Look at Phonics: Common Causes of Failure and 7 Ingredients for Success (Blevins)	2	Strong	Section 1	Specialized: Phonics
10	Essentials of Assessing, Preventing, and Overcoming Reading Difficulties (Kilpatrick)	2	Strong	All	Specialized: Research, Assessment
11	Assessing Reading: Multiple Measures, 2nd Ed. (Diamond)	1	Strong	All	Specialized: Assessment
12	Content Enhancement Series: The Survey Routine (Desher)	1	Strong	All	Specialized: Comprehension
13	Direct Instruction Reading, 6th Ed. (Carnine)	1	Strong	1-12, 15	Comprehensive
14	Fundamentals in the Sentence Writing Strategy Instructor's Manual (Schumaker)	1	Strong	All	Specialized: Sentence Writing
15	Main Idea Strategy—Teacher Materials, 3rd Ed. (Bouday)	1	Strong	All	Specialized: Main Idea
16	Phonics and Word Study for the Teacher of Reading, 11th Ed. (Fox)	1	Strong	All	Specialized: Phonics
17	Teaching Phonics & Word Study in the Intermediate Grades, 2nd Ed. (Blevins)	1	Strong	All	Specialized: Phonics - Intermediate Grades
18	Building the Reading Brain, Prek-3 (Nevills)	1	Strong	1-9	Comprehensive
19	Improving Adolescent Literacy: Content Area Strategies at Work, 5th Ed. (Fisher)	1	Strong	1-4, 6-10	Specialized: Comprehension, vocabulary, writing
20	LETRS for Early Childhood Educators (Paulson)	1	Strong	Pgs ix-14	Specialized: EC oral & written language, phonological
21	Literacy Foundations for English Learners (Cardenas-Hagan)	1	Strong	All	Specialized: English Learners
22	Locating and Correcting Reading Difficulties, 10th Ed. (Cockrum)	1	Strong	All	Comprehensive
23	Preventing Reading Difficulties in Young Children (Snow)	1	Strong	All	Specialized: Research
24	Proust and the Squid (Wolf)	1	Strong	All	Specialized: Research
25	Ready to Read: A Multisensory Approach to Language-Based Comprehension Instruction	1	Strong	All	Specialized: Comprehension
26	The Reading Comprehension Blueprint: Helping Students Make Meaning from Text (Hannessy)	1	Strong	All	Specialized: Comprhension
27	The Reading Mind (Willingham)	1	Strong	All	Specialized: Research

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Table C.2.2
8 Texts with Good Alignment to SOR

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
1	Best Practices in Writing Instruction	1	Good	All	Specialized: Writing - part of book is for secondary students
2	Data Collection Toolkit - Everything You Need to Organize, Manage, and Monitor Classroom Data, 2nd Ed (Golden)	1	Good	4-8	Specialized: Data Management
3	Making Sight Words: Teaching Word Recognition from Phonemic Awareness to Fluency, 2nd Ed. (Murray)	1	Good	1-10, 12	Comprehensive
4	Teaching Reading in the 21st Century, 5th Ed. (Graves)	1	Good	All	Comprehensive
5	Teaching Children to Read: The Teacher Makes the Difference, 8th Ed. (Reutzel)	4	Good	1-8, 10-12	Comprehensive
6	Making Sense of Phonics: The Hows and Whys, 2nd Ed. (Beck)	1	Good	5-10	Specialized: Phonics
7	Teaching Writing: Balancing Process and Product, 7th Ed. (Tompkins)	1	Good	1-4, 6, 8-11	Specialized: Writing
8	Words Their Way: Vocabulary for Middle and Secondary Students, 2nd Ed. (Templeton)	1	Good	1-3, 5	Specialized: Phonics and Word Study for Intermediate Grades

Table C.2.3
29 Texts with Fair Alignment to SOR

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
1	Language Arts - Patterns of Practice, 9th Ed. (Tompkins)	6	Fair	All	Comprehensive
2	Language Arts - Patterns of Practice, 8th Ed. (Tompkins)	1	Fair	All	Comprehensive
3	Literacy: Helping Students Construct Meaning, 10th Ed. (Cooper)	3	Fair	All	Comprehensive
4	All Children Read: Teaching for Literacy in Today's Diverse Classrooms, 4th Ed (Temple)	2	Fair	All	Comprehensive
5	All Children Read: Teaching for Literacy in Today's Diverse Classrooms, 5th Ed (Temple)	1	Fair	2, 8-10, 12-14	Comprehensive
6	Already Ready: Nurturing Writers in Preschool and Kindergarten (Ray)	1	Fair	All	Specialized: Writing in Preschool and Kindergarten
7	By Different Paths to Common Outcomes: Literacy Learning and Teaching (Clay)	1	Fair	All	Specialized: Oral langauge, concepts of print, story reading
8	Children's Books in Children's Hands: A Brief Introduction to Their Literature, 6th Ed. (Temple)	1	Fair	1-3, 5-10	Specialized: Primarily a lists of books by category with some information about each category
9	Common Core Companion: The Standards	1	Fair	All	Specialized: Common Core standards K-2
10	Creating Literacy Instruction for All Students, 10th Ed. (Gunning)	1	Fair	1-13	Comprehensive
11	Early Childhood Language Arts, 6th Ed. (Jalongo)	1	Fair	1-12	Specialized: Focus on infants, todlers, and preK students: language development, read-alouds, early reading and writing
12	How to Plan Differentiated Reading Instruction: Resources for Grades K-3, 2nd Ed. (Walpole)	1	Fair	1-7	Comprehensive
13	Intervention Strategies to Follow IRI Assessment: So What Do I Do Now?, 3rd Ed. (Caldwell)	1	Fair	All	Comprehensive
14	Literacy for the 21st Century - A Balanced Approach, 7th Ed. (Tompkins)	1	Fair	1-4, 7-10	Comprehensive
15	Principles of Effective Literacy Instruction	1	Fair	1, 4-8	Comprehensive
16	Qualitative Reading Inventory-6 (Leslie	1	Fair	Sect. 1-	Specialized: Assessment of reading skills

43

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Table C.2.3
29 Texts with Fair Alignment to SOR - Continued

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
17	Reading Problems: Assessment and Teaching Strategies, 7th Ed. (Jennings)	1	Fair	All	Comprehensive
18	Starting Out Right: A Guide to Promoting Children's Reading Success (Burns)	1	Fair	All	Comprehensive
19	Teaching Reading and Writing: The Developmental Approach (Templeton)	1	Fair	All	Comprehensive
20	Teaching Reading in Today's Elementary Schools, 12th Ed. (Roe)	1	Fair	1-10	Comprehensive
21	Literacy in Grades 4-8, 3rd Ed. (Cecil)	2	Fair	All	Comprehensive
22	Literacy in the Early Grades: A Successful Start for Prek-4 Readers and Writers, 5th Ed. (Tompkins)	2	Fair	1-4, 6-11	Comprehensive
23	Strategies for Teaching Students with Learning and Behavior Problems (Vaughn)	2	Fair	2, 3, 7-9	Specialized: Teaching students with learning and behavior problems, focuson reading and math
24	What's After Assessment? Follow-Up Instruction for Phonics, Fluency and Comprehension	2	Fair	All	Comprehensive
25	Genre Study: Teaching with Fiction and Nonfiction Books, Grades K-8+ (Fountas)	1	Fair	1, 4, 7, 8, 12, 13	Specialized: Teaching students with learning and behavior problems, focuson reading and math
26	Language Development: An Introduction, 10th Ed. (Owens)	1	Fair	All	Specialized: Lists of books, lists of elements of type of fiction and non-fiction, activities, reading and writing conferences
27	Literacy Development in Early Years: Helping Children Read and Write, 9th Ed. (Morrow)	1	Fair	All	Comprehensive
28	Mentor Texts: Teaching Writing Through Children's Literature, K-6, 2nd Ed. (Dorfman)	1	Fair	1, 4, 7	Specialized: Writing
29	Words Their Way Word Study for Phonics, Vocabulary and Spelling Instruction, 6th Ed. (Bear)	1	Fair	1-5	Specialized: Phonics, vocabulary, spelling

Table C.2.4
24 Texts with Minimal Alignment to SOR

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
1	Content Area Reading: Literacy and Learning Across the Curriculum, 11th Ed. (Vacca) (Reviewed 11th edition. Course used 13th edition, which is online.)	2	Minimal	1-11	Specialized: Comprehension, vocabulary, writing
2	Welcome to Writing Workshop: Engaging Today's Students with A Model That Works (Shubitz)	2	Minimal	All	Specialized: Writing
3	Becoming Literate: The Construction of Inner Control (Clay)	1	Minimal	All	Comprehensive
4	Blended Practices for Teaching Young Children in Inclusive Settings, 2nd Ed. (Grisham-Brown)	1	Minimal	1-4, 8-12	Specialized: Creating a classroom and instruction for typically developing students and students with diverse learning challenges.
5	Learning Theories: An Educational Perspective, 8th Ed. (Schunk	1	Minimal	3-8	Specialized: Not about reading or writing. About various learning theories
6	Literature Circles: Voice and Choice (Daniels)	1	Minimal	All	Specialized: Establishing and managing book circles and reading groups in all grades, primary through high school
7	Making the Most of Small Groups (Diller)	1	Minimal	All	Comprehensive
8	Reading Strategies Book: Your Everything Guide to Developing Skilled Readers (Serravallo)	1	Minimal	1, 12	Comprehensive
9	Teaching Students with Moderate and Severe Disabilities, 2nd Ed. (Browder)	1	Minimal	1-7, 9-17	Specialized: Strategies for teaching students with moderate and severe difficulties. 3 of 17 chapters are about literacy.

Table C.2.4
24 Texts with Minimal Alignment to SOR - Continued

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
10	What Did I Write: Beginning Writing Behavior (Clay)	1	Minimal	All	Specialized: Writng
11	Strategies That Work, 3rd Ed. (Harvey)	5	Minimal	All	Specialized: Comprehension and writing
12	7 Keys to Comprehension (Zimmerman)	1	Minimal	1-3	Specialized: Comprehension
13	About the Authors: Writing Workshop with Our Youngest Writers (Ray)	1	Minimal	1-7	Specialized: Writing
14	An Observational Survey of Early Literacy Achievement, 4th Ed. (Clay)	1	Minimal	1-4	Specialized: Asessment of early reading skills and strategies
15	BADER Reading and Language Inventory, 7th Ed. (Bader)	1	Minimal	Parts 1 & 2	Specialized: Assessment of reading skills and strategies
16	Book Whisperer: Awakening the Inner Reader in Every Child (Miller)	1	Minimal	Foreword, Intro, 1-6	Specialized: A teacher's account of how she inspires her students to enjoy reading
17	Charlotte Huck's Children's Literature: A Brief Guide (Keifer)	1	Minimal	1, 2, 6, 7, 11	Specialized: Many lists of books by category with some information about each category and what to teach
18	The Fountas & Pinnell Literacy Continuum, Expanded Edition (Fountas)	1	Minimal	Pgs 1-19, 103-109, 400-409	Specialized: Lists of continua for different aspects of the authors' guided reading literacy and instructional framework
19	Integrating Environmental Print Across the Curriculum	1	Minimal	All	Specialized: Using environmental print as the primary tool for teachig beginning reading
20	Literacy Through Play (Owocki)	1	Minimal	All	Specialized: Developmentally appropriate play so preK and primary students construct knowledge about the work and learn about written language
21	Reading and Learning to Read, 10th Ed. (Vacca)	1	Minimal	3, 5-13	Comprehensive
22	Teaching Students with Mild and High Incidence Disabilities at the Secondary Level, 3rd Ed. (Sabornie)	1	Minimal	1-3, 5-8, 10-11	Specialized: Teaching students with mild and high-incidence disabiliites. 2 of 11 chapters are about literacy.
23	Writing Strategies Book (Serravallo)	1	Minimal	Goals 1, 3-5, 8-9	Specialized: Writing
24	Creative Literacy in Action: Birth Through Age Nine, 1st Ed. (Towell)	1	Minimal	All	Comprehensive

Table C.2.5
4 Texts with No Alignment to SOR

	Textbooks	Used in # courses	Alignment to SOR	Chapters Reviewed	Comprehensive or Specialized: Category
1	Daily 5: Fostering Literacy Independence in the Elementary Grades, 2nd Ed. (Boushey)	1	None	1-5	Specialized: Classroom organization
2	Playing Their Way into Literacies: Reading, Writing, and Belonging in the Early Childhood Classroom (Wohlwend)	1	None	All	Specialized: ". . understand the relationship between play as a mediated activity and literacy and design as facilitating symbolic representation of the world through a range of modes." pg x.
3	Writing Workshop: Working Through the Hard Parts (Ray)	1	None	1-12	Specialized: Writing
4	On Solid Ground (Taberski)	1	None	1-3, 5-10	Comprehensive

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Appendix D: Recommended Texts and Readings for Teacher Preparation

Recommended Textbooks for Instruction and Assessment Practices

Archer, A.L., Hughes, C.A. (2011) *Explicit instruction: Effective and efficient teaching.* New York: The Guilford Press.

Beck, I.L., McKeown, M.G., Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd Edition). New York: Guilford

Beck, I.L., (2013) *Making sense of phonics: The hows and whys.* (2nd edition). New York: The Guilford Press.

In Birsh, J. R., & In Carreker, S. (2018). *Multisensory teaching of basic language skills.* Baltimore: Brookes Publishing Co.

Cain, K. (2010). *Reading development and difficulties.* Great Britain: BPS Blackwell.

Consortium on Reaching Excellence (2018). *Teaching Reading Sourcebook: For All Educators Working to Improve Reading Achievement, 3rd Edition.* Berkeley, CA: Arena Press.

Consortium on Reaching Excellence (2008). *Assessing reading: Multiple measures for kindergarten through twelfth grade.* Novato, Calif: Arena Press.

Farrall, M.L. (2012). *Reading Assessment: Linking language, literacy and cognition.* New Jersey: Wiley

Henry, M.K. (2005). *Unlocking literacy: Effective decoding & spelling instruction* (2nd Ed.). Baltimore: Brookes Publishing Company.

Hochman, J., Wexler, N., & Lemov, D. (2017). *The writing revolution: A guide to advancing thinking through writing in all subjects and grades.* San Francisco: Jossey-Bass, Inc.

Hougen, M. C., & Smartt, S. M. (Eds.). (2012). *Fundamentals of literacy instruction and assessment, Pre-K–6.* Baltimore, MD: Paul H. Brookes.

Oakhill, J., Cain, K., Elbro, C. (2015). *Understanding and teaching comprehension: A handbook.* New York: Routledge.

Spear-Swerling, L. (Ed.) (2022). *Structured literacy interventions: Teaching students with reading difficulties, Grades K-6.* Guilford.

Stone, L. (2019). *Reading for life: High quality literacy instruction for all.* New York: Routledge

Such, C. (2022) *The art and science of teaching primary reading.* Corwin

Recommended for Foundations of Research

Dehaene, S. (2010). *Reading in the brain: The new science of how we read.* New York: Penguin Books.

Klinger, J., Vaughn, S., Boardman, A. *(2015). Teaching reading comprehension to students with learning difficulties, 2nd edition.* New York: Guilford Press.

McCardle, P., Chhabra, V., Kapinus, B. (2008). *Reading research in action: A teacher's guide for student success.* Baltimore, MD: Brookes Publishing.

McIntosh, K. & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS.* New York: Guilford.

Moats, L.C. (2020). *Speech to print: Language essentials for teachers* (3rd edition). Baltimore: Paul H. Brookes Publishing Co.

O'Connor, R. (2014). *Teaching word recognition: Effective strategies for students with learning difficulties* (2nd edition). New York: The Guilford Press.

Rathvon, N. (2004). *Early reading assessment: A practitioner's handbook.* New York: Guilford

Seidenberg, M. (2017). *Language at the speed of sight: How we read, why so many can't, and what can be done about it.* New York: Basic Books.

Torgesen, J. K. (1998) Catch them before they fall: Identification and assessment to prevent reading failure in young children . *American Educator,* American Federation of Teachers. Retrieved from https://www.aft.org/sites/default/files/periodicals/torgesen.pdf

Willingham, D.T. (2017). *The reading mind: A cognitive approach to understanding how the mind reads.* Jossey-Bass, An Imprint of Wiley.

Additional Readings

Abbott, M.G. (2018). Beyond a Bridge to Understanding: The Benefits of Second Language Learning. *American Educator.* American Federation of Teachers. https://www.aft.org/ae/summer2018/abbott

Adams, M.J., Foorman, B., Lundberg, I., Beeler, T. (2014) *Phonemic Awareness in Young Children. Reading Rockets.* http://www.readingrockets.org/article/phonemic-awareness-young-children

Biemiller, A. (2015). Which words are worth teaching? *Perspectives on Language and Literacy* pp. 9-13.

Bowers, P., & Cooke, G. (2012, Fall) Morphology and the common core: Building students' understanding of the written word. *Perspectives on Language and Literacy, 38*(4) 31-35

Boyles, N. (2012). Closing in on close reading, *Educational Leadership,* 70, 36-41. http://www.ascd.org/publications/educational-leadership/dec12/vol70/num04/Closing-in-on-close-reading.aspx

Castles, A., Rastle, K, & Nation, K. (2018). *Ending the reading wars: Reading acquisition from novice to expert.* Psychological Science in the Public Interest, 19, 5-51.

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47

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

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A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

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49
STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

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STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Appendix E: Review Methodology and Structure of the Institutional Reports

Review Methodology and Structure of the Institutional Reports

E.1 Review Teams
Each institution was assigned to one of four teams for review. Careful attention was paid when assigning reviewers to avoid any conflicts of interest, such as authorship of a reading textbook, alumni status, or other contractual precedents.

Team A	Team B	Team C	Team D
Auburn University	Huntingdon College	Alabama A & M University	Alabama State University
Auburn University at Montgomery	Samford University	Athens State University	Birmingham-Southern College
Miles College	Stillman College	Talladega College	Faulkner University
Oakwood University	The University of Alabama	The University of South Alabama	Jacksonville State University
The University of Mobile	The University of Alabama at Birmingham	Troy University	Spring Hill College
The University of West Alabama	The University of Alabama at Huntsville	University of Montevallo	The University of North Alabama
Tuskegee University			

A separate textbook team reviewed all required assignments for textbook readings for each course. A list of reviewed textbooks is located in Appendix C of the Statewide Report. Assigned readings from textbooks are reflected in Chart 1 for each course (Section IV), when applicable.

E.2. Three Essential Questions to Inform Alignment
The reviews were guided by Three Essential Questions:

1. How well do the 9 hours of required reading courses ensure that teacher candidates graduate with a secure **knowledge of the science of reading** as outlined in the Alabama Literacy Act #2019-523?

2. How well do the 9 hours of required reading courses provide information about and **modeling of evidence-based literacy instruction**?

3. How well do the 9 hours of required reading courses afford opportunities for candidates to **connect knowledge to instructional practice** during classes and/or through field opportunities and observations?

Reviewers used a framework for assessing elements of each course based on a range of descriptors which were translated into the final alignment levels:
  ⇒ Aligned: SOR content, evidence-based practices, and connections to practice are in place
  ⇒ Inconsistently aligned: One or more of the aligned criteria above are not in place. These inconsistencies are explained for each course in the institutional reports. This category is broad and recognizes varying levels of SOR content; however, program leaders are advised that SOR content may be minimal, thus still require extensive program revisions.
  ⇒ Not aligned: Content is not aligned to SOR, and this impacts the other components. Programs in this category require reconstruction of courses and/or the 9-hour sequence.
  ⇒ Insufficient information to determine alignment: Materials provided for review did not include sufficient information to reliably assess alignment

Institutions and programs are not numerically scored or ranked; rather, emphasis is placed on providing constructive feedback where misalignment or gaps exist to support programs' next steps for moving closer to fulfillment of the Alabama Literacy Act's intent.

51

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

E.3. Information Requested for Review
Information requested for each course submitted for the review included:
1. Written course materials
   o Syllabus and course schedule (incorporating required textbook reading assignments)
   o Class assignments
   o Exams
2. Course Session Observation
   o Pre-recorded session of a faculty member teaching one class session for the course
   o The opportunity to remotely interview the faculty member about the class observed

Additional information and interviews requested from each EPP included the following. These were not necessarily specific to a particular course:
3. Candidate teaching in the elementary setting
   o Pre-recorded session of at least one candidate teaching during the practicum or internship
   o The opportunity to remotely interview the candidate about their preparation experience
4. Opportunity to remotely interview individuals in the following positions at each institution
   o Program leader
   o University supervisor
   o Mentor teacher
5. CSV files of candidates' email addresses for the sole purpose of disseminating a survey. The anonymous survey supplanted candidate focus groups when scheduling became difficult.

E.4. Summary of Anticipated Changes
During the review period, several programs had already commenced revising syllabi in response to the legislation. According to policy, new syllabi must be approved by ALSDE. However, the review teams made every attempt to accommodate a review of new syllabi provided to them even though they had completed reviews of subsequently obsolete materials initially submitted. In cases where revisions were not yet finalized, program leaders were requested to submit a written summary of anticipated changes to ensure the most accurate accounting of course content.

E.5. Quantitative Review of Written Materials
Course reviewers examined the written materials following normed protocols based on the Mississippi model and refined by the leadership team. Written materials for each course included: syllabus, course outline, class assignments, and exams. Course reviewers and textbook reviewers looked for SOR content in nine areas that the Alabama Literacy Act requires and reading experts agree should be covered in early reading courses.

Reviewers examined course materials to determine if these ten topics were addressed, and categorized evidence based on how the topic was addressed: *general content knowledge*, *instruction*, or *assessment*. If content was reading-related but not evidence-based, this was noted. If content was valid but outside the scope of the course (e.g., building a classroom library in a course dedicated to diagnostic assessment), this evidence was also noted.

Science of Reading Categories	

	Science of Reading Basics
1	• Conceptual Models of Reading • General Research/Information • Brain Processes Related to Reading • Dyslexia and Specific Language Difficulties • English Language Learners • Elements of Evidence-based Early Reading Instruction • Types & Purposes of Assessment
2	Early Oral Language Development
3	Phonological/Phonemic Awareness
4	Early Orthographic Skills
5	Phonics: Decoding/Encoding
6	Fluency
7	Writing
8	Morphology
9	Vocabulary
10	Comprehension

General Categories	
1	Valid content but outside scope of the course
2	Reading content but not evidence-based
3	Field Work
4	Evidence explained in notes below charts
5	Administrative in nature

In Section IV of the Institutional Reports, charts for each course show the proportions of class content aligned to the above-named categories as reflected in: (1) the syllabus and course outline (incorporating textbook readings, where applicable), (2) assignments, and (3) exams.

E.6. Qualitative Review of Course Materials

Reviewers provided a narrative review of important information in the written materials that could not be captured in the quantitative review. For example, this information included clarity and cohesiveness of the syllabus, course objectives, and course outline; an explanation about why or why not the coursework was deemed to be aligned with the SOR; and other structural elements of the 9-hour sequence, including connections to practice. Recommendations for improvement were provided for each course reviewed.

E.7 Capturing Information from Interviews and Observations

Written course materials are but one source of evidence. Review teams valued opportunities to interview faculty, teacher candidates, and related program personnel. Interviews provided opportunities to explain different aspects of program materials and corroborate findings.

E.8 Anonymous Surveys

Anonymous surveys were conducted statewide to glean program perceptions and familiarity with the Alabama Literacy Act's requirements, SOR content, and perceptions of preparedness. These were especially important given that pandemic burdens made it difficult to schedule virtual focus groups, which are part of the Mississippi model and a critical source of information. Programs provided email addresses for candidates and faculty. ALSDE provided emails addresses for recent graduates (two to five years from graduation). Aggregate statewide data from the surveys are reported in Section __ of this report.

E.9 Limitations of the Study

Pandemic issues and program demands. Due to the pandemic, all activities were conducted via Zoom or through pre-recorded sessions between January of 2021 and March of 2022. Teams made every effort to accommodate other demands on programs, such as preparations for CAEP and/or IDA reviews occurring simultaneously at some institutions.

53

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Acquisition of materials. EPPs were generally slow to respond to multiple requests for materials and, as a result, time was lost during the Spring 2021 semester for conducting interviews. Multiple syllabi were submitted for the same course by several institutions, requiring teams to revisit and update reviews. As a result, a 60-day extension was granted to enable review of materials that were being submitted as late as mid-March 2022. Ultimately, 16 of the 25 institutions submitted all materials that were requested for a thorough review; the remaining nine provided syllabi and one or more other items. Institutional Reports include the list of artifacts made available.

Syllabi in transition. As indicated in Section C above, program leaders were requested to provide written summaries of anticipated changes in syllabi that weren't fully available for review. Many programs were making changes during the review process, only four programs provided the written summary.

Anonymous surveys. Even though surveys were anonymous and confidential, there are recognized disadvantages to surveys that rely on self-reporting, as respondents may not reply independently or may show bias. Approximately 10,000 surveys (8,324 – candidates; 154 – faculty; 2,262 recent graduates) were disseminated with a return rate of less than 100 from all categories. These limited results are included in the Statewide Report. Some consideration might be given to repeating the survey under more authoritative conditions to prompt a better response

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54

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

Appendix F: Highlights of Perspectives and Research Influencing Early Reading Instruction in the United States

1798   **The American Spelling Book – Noah Webster**
Promoted the synthetic phonics approach dominant in American classrooms at the turn of the century. Spelling was taught before reading, and the focus was on spelling rules.

1826   **Primer of the English Language – Samuel Worcester**
Critical of alphabetics, represented first formulation of the word method. From Lesson I: "Let the teacher remember, that a suitable portion for one lesson or exercise, is first to be read by the scholar, if the scholar can read it ; if the scholar cannot read it, the teacher must read it until the scholar can do it. The letters of each word are next to be learned, and the words to be carefully pronounced. The sense of the word is to be given, so far as it can be." (Worcester, circa 1826)

1836   **Eclectic Readers – William McGuffey**
A series of graded readers. Before McGuffey, reading was taught through spelling books (primarily Webster's books) in early grades, and "readers" were used for older children. The innovation from McGuffey was to use short stories about children in familiar settings to teach beginning reading and to continue reading instruction in the same series with grade-level texts. With the McGuffey series, the speller was supplanted by a reading instruction text, and the spelling book assumed the role as the text for teaching spelling. (Smith, 2008)

1844   **Report to the Massachusetts Board of Education – Horace Mann**
Mann depicted letters as "skeleton-shaped, bloodless, ghostly apparitions" and encouraged teaching children to read whole words. (Mann, 1844)

1896   **The University School – John Dewey**
Dewey, the father of progressive education in the U.S., promoted learning to read through experience. He wrote, "It is one of the great mistakes of education to make reading and writing constitute the bulk of the school work the first two years. The true way is to teach them incidentally as the outgrowth of the social activities at the time…." (Dewey, 1896)

1925   **Orton-Gillingham Approach to Teaching Reading – Samuel Orton & Anna Gillingham**
Orton, a clinician and prominent dyslexia researcher, hypothesized that normally developing readers suppress the visual images reported by the right hemisphere of the brain because these images could potentially interfere with input from the left. In the1930s, Gillingham used Orton's work to develop what became known as the Orton-Gillingham multisensory approach to teaching reading. Initially targeted for dyslexic students, the explicit, systematic approach used with Orton-Gillingham has proven to be successful not only with dyslexics but also with ELL and the general population. Contemporary and sophisticated brain research has confirmed the efficacy of explicit, systematic instruction through functional Magnetic Resonance Imaging (fMRI) technology. (Gillingham, 2014)

1929   **"Dick and Jane" Reading Series – William Gray & Zerna Sharp**
Gray and Sharp created the "Dick and Jane" reading program first published by Scott Foresman. Gray remained involved with the program until 1956 when he became the first president of the International Reading Association (now International Literacy Association) founded that same year. "Dick and Jane" books, or subsequent editions that were renamed, were widely used to teach children to read from the 1930s until the 1970s. The books rely on the whole word and sight word method, with much repetition of words throughout the series. (Gray, 1956)

1938   **Literature as Exploration – Louise Rosenblatt**
Influenced by Dewey, Rosenblatt makes the case that when constructing meaning the reader brings something unique to the text and creates a "transaction" between reader and the text, thus yielding something entirely new. Essentially, Rosenblatt promoted the right of readers to find their own meaning. Her views differ from the conclusion of the RAND Study (RAND, 2002) where (1) comprehension is dependent on the text, the reader's background/existing knowledge, and the task of reading; and (2) meaning does not change based on the reader's schema. Rosenblatt's theory also differs from Common Core State Standard's (CCSS) viewpoint of constructing meaning. The CCSS are based on finding evidence in the text to support findings from the reading. With both Rand and CCSS, the text influences the reader, but the text is static, although the reader's response can be dynamic. (Rosenblatt, 1995)

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

1955   Why Johnny Can't Read and What You Can Do about It – Rudolph Flesch

Flesch's popular book made the case that from the late 1920s until the early 1950s, the teaching of reading was dominated by the whole word method, which is why reading scores were falling across the country. He advocated a move back to phonics. (Flesch, 1993)

1966   Teaching to Read: Historically Considered – Mitford Mathews

Mathews' writings reflect an early swing of the pendulum towards a code-emphasis approach. "The attitude of professionals and laymen alike appears now to be more favorable than it once was to the conclusion that no matter how a child is taught to read, he comes sooner or later to the strait gate and the narrow way: he has to learn letters and the sounds for which they stand. There is no evidence whatever that he will ultimately do this better from at first not doing it at all." (Mathews, 1966)

1967   The Cooperative Research Program in First Grade Reading Instruction – Guy Bond & Robert Dykstra

A compilation of twenty-seven individual studies conducted during the 1964-67 school years to investigate different early reading issues, including instructional approaches. It was one of the first in a series of U.S. national reports to point to the advantage of using a code-emphasis in early reading instruction. (Bond & Dykstra, 1967)

1967   Reading: A Psycholinguistic Guessing Game – Kenneth Goodman

Goodman is generally credited with developing and promulgating the whole-language approach to reading instruction in the U.S. In this article, he lays out the theoretical underpinnings of the whole language movement. He advocates "word centered" (as opposed to "phonics centered") approaches to early reading instruction in which the emphasis is on constructing meaning. He refutes that reading "is a precise process [that] involves exact, detailed, sequential perception and identification of letters, words, spelling patterns, and large language units." His use of the term "miscues" (as opposed to errors) when decoding, implies that the student was missing some component of knowledge that causes his guess about the word to be incorrect. According to Goodman, "Skill in reading involves not greater precision, but more accurate first guesses..." (Goodman, 1967)

1967   Learning to Read: The Great Debate – Jeanne Chall

An inquiry into the science, art, and ideology of old and new methods of teaching children to read from 1910 – 1965. The book is an attempt to bring consensus from research about how and when to begin reading instruction and what to emphasize. Chall recommended a code-emphasis approach, but not exclusively. (Chall, 1967)

1980   Toward an Interactive-Compensatory Model of Individual Differences in the Development of Reading Fluency – Keith Stanovich

A pivotal review of research examining three approaches to reading instruction: top-down, interactive, and bottom-up. One major implication of this review is that a combination of general comprehension strategies and rapid context-free word recognition are the most important differences between good and poor readers. This conclusion is contrary to the "psycho-linguistic guessing game" theory that differences between good and poor readers are based on individual differences in use of context to "guess" words with minimal attention to graphics (letters and phonics). (Stanovich, 1980)

1983   A Nation at Risk: The Imperative for Educational Reform, National Commission on Excellence in Education – David Pierpont Gardner, Chair

A report by Ronald Reagan's National Commission on Excellence in Education to investigate the perceived national crisis from low levels of academic achievement among American students and the need for "world-class" standards of learning. The report contributed to the assertion that American schools were failing and was the impetus for efforts at local, state, and federal education reform. (National Commission on Excellence in Education, 1983)

1985   Becoming a Nation of Readers, National Commission on Reading – Richard Anderson, Chair

Response to A Nation at Risk by the Center for the Study of Reading at University of Illinois. Four of the 17 recommendations in the report were:

- *Teachers of beginning reading should present well-designed phonics instruction.*
- *Reading primers should be interesting, comprehensible, and give children opportunities to apply phonics.*
- *Teachers should devote more time to (direct) comprehension instruction.*
- *Teacher education programs should be lengthened and improved in quality. (Anderson, 1985)*

1986   Decoding, Reading, and Reading Disability – Philip Gough & William Tunmer

Posits "The Simple View of Reading" (SVR) wherein reading comprehension can be predicted based on its constituent skills of decoding and language. The SVR was proposed to scientifically resolve the primary issue between reading ideologies which is whether accurate decoding skills are or are not necessary to achieve reading comprehension. The SRV formula was shown to have high correlations by Gough & Hoover's work in 1990, thus providing evidence that accurate decoding is an essential component of reading comprehension. (Gough & Tunmer, 1986)

1990   **Beginning to Read: Thinking and Learning about Print – Marilyn Adams**

This book originated from a Congressional mandate to appraise the place of phonics in teaching children to read. Adams critically evaluated an enormous range of research and information in this highly readable book. Adams' conclusion is that early reading instructional approaches that include code-based instruction result in "word recognition and spelling skills that are significantly better than those that do not" and "comprehension skills that are at least comparable to programs without code instruction." Adams notes that this is the same conclusion Chall drew 25 years earlier. She also concludes that evidence converges on the vital importance of instructing children to understand the alphabetic principle. (Adams, 1990)

1995   **Meaningful Differences in the Everyday Experience of Young American Children – Betty Hart & Todd Risley**

This seminal study identified the substantial word gap across socioeconomic status (SES) in pre-school children. The study's findings were astonishing. In the first four years of life, a child in a poverty-level family would have been exposed to about 13 million words, in a working class family the number would be 26 million words, and in a professional family the number would be almost 45 million words. By age 4, the average child in poverty might have been exposed to 30 million fewer words than a child in a professional family. This study pointed to the importance of a child's pre-school experience and the urgent need for early intervention. (Hart & Risley, 1995)

1998   **Preventing Reading Difficulties in Young Children – Committee on the Prevention of Reading Difficulties in Young Children, Catherine Snow, Chair**

Analysis and synthesis of partially convergent, and sometimes discrepant, research findings to provide an integrated picture of how reading develops and how reading instruction should proceed. Although the focus is on students with reading difficulties, recommendations offer insight into best ways to teach reading to all children in preschool through grade 3. All members agreed "that the early reading instruction should include direct teaching of information about sound-symbol relationships to children who do not know about them and that it must also maintain a focus on the communicative purposes and personal value of reading. (Snow, 1998)

1998   **Reading Excellence Act (REA)**

A bipartisan coalition, including the U.S. Department of Education, the White House, and Congress agreed to support scientific research in reading instruction. The REA provided competitive grants to states to improve reading skills of students and the instructional practices of teachers of reading by using the findings from "scientifically-based reading research."

2000   **Report of the National Reading Panel: Teaching Children to Read**

A 14 member panel (including a Mississippian) commissioned by Congress conducted a rigorous assessment of evidence-based research studies concerning the effectiveness of various approaches to teaching reading in the areas of <u>alphabetics</u> (phonemic awareness instruction and phonics instruction), <u>fluency</u>, and <u>comprehension</u> (vocabulary instruction, text comprehension instruction, and teacher preparation and comprehension strategies instruction). The goal was to provide an authoritative synthesis and analysis that would summarize scientifically-based research findings to inform classroom instruction. The NRP findings included:

- *Teaching children to manipulate phonemes in words was highly effective and signficiantly improves their reading more than instruction that lacks attention to PA.*
- *Systematic phonics instruction produces significant benefits for students in grades K-6 and for struggling readers. Systematic, synthetic phonics instruction specifically positively affects disabled readers and low-achieving students who are not disabled.*
- *Guided oral repeated reading procedures that include guidance from teachers, peers, or parents had a significant and positive impact on word recognition, fluency, and comprehension across a range of grade levels.*
- *Vocabulary should be taught both directly and indirectly. Repetition and multiple exposures to vocabulary items are important. Depending on a single vocabulary instruction method will not result in optimal learning.*
- *Teaching a combination of reading comprehension techniques is most effective." However, "questions remain as to which strategies are most effective for which age groups.*
- *In order for teachers to use strategies effectively, extensive formal instruction in reading comprehension is necessary, preferably beginning as early as pre-service. (National Reading Panel, 2000)*

2001   No Child Left Behind (NCLB) Act of 2001

NCLB is a reauthorization of the Elementary and Secondary Education Act (ESEA) which supports standards-based education reform and requires any school that receives federal funding to give assessments to all students at certain grade levels. Reading First is the part of NCLB that provided aid to schools with disadvantaged students in grades K-3. Schools receiving Reading First funds were required to use a portion of their funds to provide professional development to teachers on the five essential components of reading instruction and to offer scientifically-based instruction and assessment in the following areas: phonemic awareness, phonics, fluency, vocabulary, and comprehension. These have become commonly known as the "five essential components of reading." (No Child Left Behind Act, 2001)

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

2001 A Meta-Analysis of Studies Examining the Effect of Whole Language Instruction on the Literacy of Low-SES Students – William Jeynes & Stephen Littell

This meta-analysis of 14 studies examining whether whole language instruction increases the reading skills of low-SES students in grades K-3 concluded that they do not benefit from whole language instruction when it is compared to basal instruction. The report cited as problematic the difficulty in gaining consensus on the varying definitions of the whole language approach, even, among its advocates. (Jeynes & Littell, 2000)

2001 Connecting Early Language and Literacy to Later Reading (Dis)abilities: Evidence, Theory, and Practice – Hollis Scarborough

Conceptualizes the "Reading Rope" to illustrate the interactive strands of skilled reading:

- *Word Recognition: phonological awareness, decoding, sight recognition*
- *Language Comprehension: background knowledge, vocabulary, language structures, verbal reasoning, literacy knowledge. (Scarborouth, 2001)*

2002 Reading for Understanding, RAND Reading Study Group – Catherine Snow, Chair

Funded by Office of Educational Research and Improvement (OERI), the RAND Study Group, constructed a national framework for research in reading comprehension to build on existing evidence. The 3-part heuristic for defining comprehension as: reader, text, and activity was conceptualized in this study. RAND proposed three key areas for additional research: instruction, teacher preparation, and assessment. (Snow, 2002)

2002 What Works Clearninghouse (WWC)

Established by the US Department of Education's Institute of Education Sciences (IES) to provide educators, policy makers, researchers, and the public with a trusted source of scientific evidence of what works in education.

2003 Overcoming Dyslexia – Sally Shaywitz, M.D.

Dr. Shaywitz draws on recent scientific breakthroughs to explain how children can become good readers and why children have reading difficulties. She addresses why everyone speaks, but not everyone reads and how it is that some smart people cannot read. Although the book's title indicates a focus on dyslexia, Dr. Shaywitz includes important information about the best evidence-based instruction to teach all children to decode. (Shaywitz, 2003)

Language Essentials for Teachers of Reading and Spelling (Moats, et al., 2003, 2009, 2010, 2019)

The brain child of Louisa Moats, LETRS was first published in 2003 with subsequent editions in 2009, 2010, and 2019. LETRS® is a professional development series of books, workshops, and on-line courses for K-12 instruction in reading, spelling, and related language skills, as well as bridges to practice. Mississippi adopted LETRS for statewide training of K-3 teachers and administrators in 2013 following the Literacy-Based Promotion Act, a contributing factor in the state's meeting the national average on the National Assessment of Educational Progress for 4th grade reading in 2019. The state now uses LETRS in its professional growth model for pre-service faculty.

2005 The Clackmannanshire Report

The results of a seven-year study published by Scottish researchers Rhona Johnston and Joyce Watson. Twenty minute a day for 16 weeks of synthetic phonics instruction was found to be more effective than analytic phonics or phonemic awareness plus analytic phonics instrution.

2005 Rowe Report - Rowe, K., & National Inquiry into the Teaching of Literacy (Australia)

The report reviews research about literacy teaching approaches, the extent to which prospective teachers are taught effective reading teaching approaches, the ways in which research evidence in Australian schools can best inform classroom teaching practice and support teacher professional learning, examine the effectiveness of assessment methods, and offer best practices in effective approaches to teaching and learning, both at classroom level and in the training of teachers.

2006 Independent Review of the Teaching of Early Reading (The Rose Report) – Jim Rose

The report concluded that the case for systematic, synthetic phonics instruction is overwhelming. The key features include teaching letter-sound correspondences in a defined, incremental sequence, applying blending phonemes all through a word to read it, segmenting words into phonemes for spelling, and the reciprocal nature of blending and segmenting.

2008 Developing Early Literacy: Report of the National Early Literacy Panel (NELP) – Timothy Shanahan, Chair

Funded by the National Center for Literacy, the report was a synthesis of the scientific research on the development of early literacy skills in children ages zero to five. The primary goal of the report was to identify interventions, parenting activities, and instructional practices that promote language and literacy in young children. The report emphasized (a) the importance of early skills to later reading and spelling and (b) the statistically significant effect of code-emphasis on children's literacy skills. (NICHD, 2008)

58

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523

2009 Reading in the Brain: The New Science of How We Read – Stanislas Dehaene

Dr. Dehaene is a neuroscientist who explains how children learn to read, and why some children don't, based on findings from neuroscience and the wealth of brain-imaging research that has explored what the brain does when it reads. He takes issue with whole language because it is counter to how the brain is wired to process written language. (Dehaene, 2009)

2010 Knowledge and Practice Standards for Teachers of Reading, International Dyslexia Association

A set of standards articulating the knowledge base required for skilled reading instruction for the purposes of accrediting universities and other teacher training programs as well as credentialing teachers who have been prepared in the structured literacy approach to reading instruction. These were updated in 2016.

2013 The Science of Reading and Its Educational Implications – Mark Seidenberg

An attempt to answer the question: "If the science is so good, why do so many people read so poorly?" The author considers three possible factors and draws several important conclusions:
- The fact that English has a deep alphabetic orthography is not a factor in why so many people read so poorly because other English speaking countries score much higher than the U.S. on international reading assessments.
- How reading is taught is a factor in which so many people read so poorly, and the reason is that many colleges of education train teachers based on theories that evidence-based research does not support.
- The impact of linguistic variability as manifested in the Black-White achievement gap needs to be examined further, but the evidence points toward this variability being a factor. (Seidenberg, 2013)

2014 The term "structured literacy" coined by the International Dyslexia Association

The term structured literacy was chosen as the name to describe explicit and systematic instruction as a contrast to the term whole language.

2015 Every Student Succeeds Act

The Every Student Succeeds Act (ESSA) replaces No Child Left Behind (NCLB), which was the reauthorization of the Elementary and Secondary Education Act (ESEA). ESSA provides flexibility to states regarding the accountability requirements of NCLB in exchange for comprehensive state plans to close achievement gaps and improve outcomes for all students.

2015 Formation of The Reading League

Founded by Dr. Maria Murray, the mission of this non-profit organization is to advance the awareness, understanding, and use of evidence-aligned reading instruction. To accomplish their mission, they recruit members, offer professional learning, and make resources available on their website and through social media. TRL published a formal definition of the Science of Reading in 2022.

2016 IES Practice Guides, Institute for Education Sciences

Based on reviews of research, the experiences of educators, and the expert opinions of a panel of nationally recognized experts, the Practice Guides offer recommendations and materials for implementing research in classrooms.

2017 Evidence for ESSA

A website providing the evidence to support educational programs according to the Every Student Succeeds Act of 2015.

2018 Hard Words - Emily Hanford, APM Reports

The first in a series of four audio documentarie that uncover the lack of scientific evidence behind popular approaches to reading intruction, and the pervasive yet inaccurate beliefs and methods used to train most educators in the US. Subsequent titles in the series include At a loss for words, What the words say, and Hard to read.

2018 Ending the Reading Wars: Reading Acquisition from Novice to Expert - Castles, Rastle and Nation.

The "reading wars", which began over 200 years ago, involve disagreement between those who favor phonics instruction vs whole language. In spite of strong scientific consensus on the vaue of phonics instruction, the debate continues, perhaps due to lack of understanding about why phonics works and lack of awareness of phonics as a necessary but not sufficient foundation of reading comprehension.The authors make the case for teacher knowledge of reading development as the solution to closing the gap between research on effective reading instruction and typical classroom instruction.

2020 Reading Research Quarterly, Special Issues on the Science of Reading (Sept 2020 & June 2021)

2021 Two special issues of the journal were devoted to examining the research on the science of reading. The first explored support for, critiques of, and questions related to the topic. The second expanded on these ideas and also the models, theories and conceptualizations of the science of reading.

2022 The Science of Reading: A Defining Guide - The Reading League

Written by a coalition of educators, the Defining Guide articulates a firm definition of the science of reading and how reading research can be used by all stakeholders to improve the effectiveness of reading instruction.

Two publications commissioned by the World Bank, May 2022
How Children Learn to Read : Toward Evidence-Aligned Lesson Planning (Louisa Moats, Ed.D.)
How to Provide Effective Reading Instruction (Timothy Shanahan, Ph.D.)

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60

STATEWIDE REPORT, Spring 2022
A Review of Alabama's Teacher Preparation Programs for Alignment
to the Science of Reading and the Alabama Literacy Act #2019-523