Scientifically Based Reading Research

The term scientifically based reading research' means research that
(A) applies rigorous, systematic, and objective procedures to obtain
valid knowledge relevant to reading development, reading
instruction, and reading difficulties; and
(B) includes research that —
   (i) employs systematic, empirical methods that draw on
observation or experiment;
   (ii) involves rigorous data analyses that are adequate to test the
stated hypotheses and justify the general conclusions drawn;
   (iii) relies on measurements or observational methods that
provide valid data across evaluators and observers and
across multiple measurements and observations; and
   (iv) has been accepted by a peer-reviewed journal or approved
by a panel of independent experts through a comparably
rigorous, objective, and scientific review.

Levels of Evidence

Lowest Level of Confidence
- Cardiac – I know in my heart this is the way children learn.
- Belief, philosophy, opinion, tradition.
- Don’t bother me with evidence, I already know the answer.
- Many, many different positions, often held with extreme and emotional conviction.

Higher Level of Confidence
- A controlled, carefully designed study is conducted to test the proposed component or procedure.
- Must have an opportunity not to work.
- Peer review enhances our confidence in the findings.
Levels of Evidence

Even Higher Confidence

- Replication - the controlled, carefully designed study is repeated with different children, different researchers, different interventionists, different procedures.
- Peer review enhances our confidence in the findings.
- Fewer findings are replicated by many researchers.

Meta-Analysis of many studies under varying conditions with varying threats to conclusions and a strong, robust effect is obtained under all or most conditions.
- Again, peer review of the meta-analysis enhances our confidence in the findings.
- Very few findings are examined and summarized by meta-analyses.

Great Confidence

- A panel of experts spends 2 years summarizing 115,000 research studies on early literacy. Selects studies that meet high standards of rigor for design and experimental control. Conducts a meta-analysis of the findings. Distills important components of effective early literacy instruction.
- 5 Core Components meet this level of confidence.

You obtain powerful and persuasive evidence on an ongoing basis regarding the effectiveness of instruction and outcomes for your children.
- Your children, your implementation, your setting, your conditions, current information.
- Immediate, vivid, personal.
- Lots of sites can replicate under lots of conditions.

Levels of Evidence – See for Yourself
Beginning Reading Core Components

#1. Phonemic Awareness – The understanding that individual sounds of spoken language (phonemes) work together to make words. This allows readers to hear, identify, and manipulate the individual sounds.

#2. Phonics – The relationship between the sounds of spoken language (phonemes) and the letters representing those sounds in written language (graphemes). Skill in phonics helps students to recognize familiar words and decode unfamiliar ones.

#3. Fluency – The skill of reading texts accurately and quickly, which allows readers to recognize and comprehend words at the same time.


#4. Vocabulary – The ability to store information about the meaning and pronunciation of words. There are four types of vocabulary: listening, speaking, reading, and writing.

#5. Reading Comprehension – Understanding, remembering, and communicating with others about what has been read. Comprehension strategies help readers to make sense of a text.

Model of Big Ideas, Indicators, and Timeline

Vocabulary and Language Development

Phonological Awareness

Alphabetic Principle

Accuracy & Fluency with Connected Text

Reading Comprehension

Benchmark Goal Timeline for Assessing Big Ideas K-3

Fall Winter Spring Fall Winter Spring Fall Winter Spring

Kindergarten First Grade Second Grade Third Grade

Instructional Goals for Core Components of Beginning Reading

Benchmark Goals to be On Grade Level:

Middle K: Phonological Awareness with 25 - 35 on DIBELS Initial Sound Fluency by mid kindergarten (and 18 on PSF)

End K: Phonemic Awareness with 35 - 45 on DIBELS Phoneme Segmentation Fluency by end of kindergarten (and 25 on NWF)

Middle 1st: Alphabetic principle 50 - 60 on DIBELS Nonsense Word Fluency by mid first grade with at least 15 words recoded (and 20 on DORF)

End 1st: Fluency with 40 - 50 on DIBELS Oral reading fluency by end of first grade (and RTF 25% or more).

End 2nd: Fluency with 90 + on DIBELS Oral reading fluency by end of second grade (and RTF 25% or more)

End 3rd: Fluency with 110 + on DIBELS Oral reading fluency by end of third grade (and RTF 25% or more)

Adapted from Good, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. Scientific Studies of Reading, 5, 257-288.
The Robin’s Nest

There was a robin’s nest outside our kitchen window. The nest was in a tall bush. The mother robin sat in the nest all day long. One day when I was watching, the mother bird flew away. I saw the eggs she was sitting on. There were four blue eggs.

I watched and watched. The eggs moved. I watched some more. The eggs started to crack. Finally, the eggs hatched. I saw four baby birds. The baby birds opened their beaks wide. I heard them peeping. Soon the mother bird came back. Then the mother bird put worms in their mouths.

Every day I watched the baby birds and their mother. Pretty soon the babies were so fat there was no room for the mother. Then one morning the nest was gone from the bush.

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of standardized, individually administered measures of early literacy development. They are designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills.

The measures were developed upon the essential early literacy domains discussed in both the National Reading Panel (2000) and National Research Council (1998) reports to assess student development of phonological awareness, alphabetic understanding, and automaticity and fluency with the code. Each measure has been thoroughly researched and demonstrated to be reliable and valid indicators of early literacy development and predictive of later reading proficiency to aid in the early identification of students who are not progressing as expected. When used as recommended, the results can be used to evaluate individual student development as well as provide grade-level feedback toward validated instructional objectives.

The DIBELS measures are FREE to download and use. Just go here to login, or sign up for a materials download account if you do not already have one.

NEW! The Spanish version of DIBELS, Indicadores de desarrollo del lenguaje, is La lectura (6ta Edición) (DIBELS) is now available. Log in to the materials download page here and click on the DIBELS link.

We also offer an optional additional service, the DIBELS Data System, which allows you to enter your students’ DIBELS data online and generate automated reports, for $1 per student, per year.

DIBELS Oral Reading Fluency

Please read this (point) out loud. If you get stuck, I will tell you the word so you can keep reading. When I say, “stop” I may ask you to tell me about what you read, so do your best reading. Start here (point to the first word of the passage). Begin.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94

Low risk reader
DORF 40 to 45

At risk reader
DORF 5 to 10

I’ve thrown a lot of rocks into the lake by our cabin. Sometimes I think I’ve thrown in enough to fill the whole lake. But it never seems to get full. As you can tell, I like to throw rocks. But throwing rocks is always a lot more fun with Grandpa. He can make anything….
DIBELS Nonsense Word Fluency

Here are some more make-believe words (point to the student probe). Start here (point to the first word) and go across the page (point across the page). When I say, “begin”, read the words the best you can. Point to each letter and tell me the sound or read the whole word. Read the words the best you can. Put your finger on the first word. Ready, begin.

kik woj sig faj yis
kaj fek av zin zez
lan nul zem og nom
yuf pos vok viv feg
bub dij sij vus tos
wuv nij pik nok mot
nif vec al boj nen
suv yig dit tum joj
yaj zof um vim vel
tig mak sog wot sav

Role of Mid First Alphabetic Principle

- Odds of being on track with ORF in end of first grade when Established with NWF in middle of first grade is 117 out of 136, or 86%
- Odds of being on track with ORF in end of First Grade when Deficit with NWF in middle of first grade is 5 out of 46, or 11%

Similar Odds, Different Outcome

- Odds of being on track with ORF in end of first grade when Established with NWF in middle of first grade are 12 out of 18, or 67%
- Odds of being on track with ORF in end of first grade when Deficit with NWF in middle of first grade are 3 out of 21, or 14%

Similar Odds, Different Outcome

- Odds of being on track with ORF in end of first grade when Established with NWF in middle of first grade are 5 out of 8, or 63%
- Odds of being on track with ORF in end of first grade when Deficit with NWF in middle of first grade are 6 out of 62, or 10%
Similar Odds, Different Outcome

- Odds of being on track with ORF in end of first grade when
  Established with NWF in middle of first grade are
  88 out of 95, or 93%
- Odds of being on track with ORF in end of first grade when
  Deficit with NWF in middle of first grade are 0 out of 0, or 0%

How do I support my children to learn the **alphabetical principle** so well they reach NWF of 50?

- Foundation of Phonemic Awareness
- Systematic and Explicit Instruction
- Start Early and *Move in the Direction*
- Practice
- Assess to inform decisions that change outcomes
- Monitor Progress
- Do Something About Lack of Adequate Progress

Foundation in Phonemic Awareness with Systematic and Explicit Phonics Instruction

Alphabetic Principle, Indicator, Goal, and Timeline
Earlier Intervention and Prevention are Best

Adapted from Good, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading*, 5, 257-288.
Practice? Should I use DIBELS NWF to practice decoding nonsense words?

- Absolutely not.
- Under no conditions should DIBELS assessment materials be used for instruction or practice.
- Reason 1: Children should always be tested cold on the skills. If they aren’t tested cold we don’t know what their scores mean. We don’t know if they are on track or not.
- Reason 2: More important, the DIBELS NWF score is not the point. The alphabetic principle is the point. Our instruction should always focus on the big idea or core component: phonics and the alphabetic principle.

Practice what? Should I never have my children practice reading nonsense words?

- I think practicing decoding and reading words is great: real words and nonsense words both.
- Keep in mind the big idea goal: To have a powerful strategy to encounter an unknown word and confidently obtain a reasonable pronunciation of the word.
- Practice should occur in the context of meaningful and important instruction on the alphabetic principle.
- Don’t forget recoding: using letter sound knowledge to recover the pronunciation of the whole word.
- For example, The Alien Word Game (Source unknown)

The Alien Word Game (Source unknown)

- Start with a set of magnetic or felt letters, a mixture of consonants and vowels, that the students have been learning and practicing. For example, a o i m t l p s r n
- have the students review the sounds of all the letters, group and individual turns, signal for group response so low kids respond at the same time as the group. Make sure low kids are accurate with the letter sounds.
- make a word “tap” and practice reading the word: first sound by sound then say it fast – what word? tap Is it an alien word? No
- next switch out one of the letters – trade the p for an n. read the word: sound by sound, say it fast, what word? tan Is it an alien word? No
- next switch out another letter – trade t for l. Read the word: sound by sound, say it fast, what word? lan Is it an alien word? Yes, it is an alien word. It is not a real word, it is a make believe word. It might be a new word that someone makes up some day.
- - as students develop skill in reading a variety of words with these letters, real and alien, you can fade the sound by sound part so they are reading words and judging what the word is. (i.e., they are recoding the words fluently and automatically)

Reading First:

Four Kinds/Purposes of Reading Assessment

An effective, comprehensive, reading program includes reading assessments to accomplish four purposes:

- **Outcome** - Assessments that provide a bottom-line evaluation of the effectiveness of the reading program.
- **Screening** - Assessments that are administered to determine which children are at risk for reading difficulty and who will need additional intervention.
- **Diagnosis** - Assessments that help teachers plan instruction by providing in-depth information about students’ skills and instructional needs.
- **Progress Monitoring** - Assessments that determine if students are making adequate progress or need more intervention to achieve grade level reading outcomes.

Source: Reading First Initiative: Secretary’s Leadership Academy
Using an Outcomes Driven Model to Provide Decision Rules for Progress Monitoring

**Outcomes Driven** model: Decision making steps

1. **Identifying Need for Support**
2. **Validating Need for Instructional Support**
3. **Planning and Implementing Instructional Support**
4. **Evaluating and Modifying Instructional Support**
5. **Reviewing Outcomes for Individuals and Systems**


---

1. Identifying Need for Support

**Key Decision for Screening Assessment:**

- **Which children may need additional instructional support to attain important reading outcomes?**

**Data used to inform the decision:**

- Compare individual student’s performance to **local normative context** or **expected performance** to evaluate need for additional instructional support.
  - **Local normative context:** First, choose a percentile cutoff. 20th percentile seems a good place to start, but a district could choose 15th percentile or 25th percentile or other cutoff depending on resources.
  - **Expected performance:** A deficit in a foundation skill is a strong indicator that instructional support will be needed to attain later benchmark goals.

---

**Beginning of First Grade**

**Considering Initial Skills, Does Slope Add to Predictions of Outcomes?**

- Students with complete data from 2002-2003 in the DIBELS Data System were examined for level of risk, slope of progress, and reading outcomes.

<table>
<thead>
<tr>
<th>Group</th>
<th>Beginning NWF</th>
<th>NWF Slope</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>At Risk</td>
<td>20739</td>
<td>5.46</td>
</tr>
<tr>
<td>Some Risk NWF 0 to 12</td>
<td>20606</td>
<td>18.08</td>
</tr>
<tr>
<td>Low Risk NWF 13 to 23</td>
<td>38082</td>
<td>34.62</td>
</tr>
<tr>
<td>NWF 24 to 49</td>
<td>12288</td>
<td>70.32</td>
</tr>
<tr>
<td>Hi AP NWF 50 to 255</td>
<td>91715</td>
<td>29.09</td>
</tr>
<tr>
<td>Total</td>
<td>91715</td>
<td>29.09</td>
</tr>
</tbody>
</table>

10/14/04, Buffalo NY (c) 2004
Utility of Initial NWF Risk Categories

- Initial skills on NWF are a very strong predictor of reading outcomes.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Odds of Achieving Benchmark Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Risk</td>
<td>20739</td>
<td>26.52</td>
<td>21.13</td>
<td>22%</td>
</tr>
<tr>
<td>NWF 0 to 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some Risk</td>
<td>20606</td>
<td>42.81</td>
<td>24.47</td>
<td>47%</td>
</tr>
<tr>
<td>NWF 13 to 23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Risk</td>
<td>38082</td>
<td>62.07</td>
<td>28.74</td>
<td>76%</td>
</tr>
<tr>
<td>NWF 24 to 49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi AP</td>
<td>12288</td>
<td>102.19</td>
<td>34.44</td>
<td>97%</td>
</tr>
<tr>
<td>NWF 50 to 255</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>91715</td>
<td>55.08</td>
<td>35.68</td>
<td>60%</td>
</tr>
</tbody>
</table>

Decision Utility of DIBELS Fall of 1st

- LNF >= 37, DIBELS PSF >= 35, DIBELS NWF >= 24
  Instructional Recommendation: Benchmark - At grade level. Effective core curriculum and instruction recommended,
  - Odds of reading 40 or more words correct per minute at the end of first grade: 84%
- LNF < 25, DIBELS PSF < 10, DIBELS NWF < 13
  Instructional Rec: Intensive - Needs substantial intervention:
  - Odds of reading 40 or more words correct per minute at the end of first grade: 18% (unless given intensive intervention)

Value of knowing the instructional recommendation and the goal early enough to change the outcome: Priceless.

2. Validate Need for Support

Key Decision:
- Are we reasonably confident the student needs instructional support?
  - Rule out easy reasons for poor performance: Bad day, confused on directions or task, ill, shy, or similar.
  - More reliable information is needed to validate need for support than for screening decisions.

Data used to inform the decision:
- Repeated assessments on different days under different conditions
- Compare individual student’s performance to local normative context or expected performance to evaluate discrepancy.

Validating Need for Support

- Verify need for instructional support by retesting with alternate forms until we are reasonably confident.
3. Planning and Implementing Instructional Support

Key Decisions for Diagnostic Assessment:
- What are the Goals of instruction?
  - Where are we? Where do we need to be? By when? What course do we need to follow to get there?
- What skills should we teach to get there?
  - Focus on the beginning reading core areas: Phonological Awareness, Alphabetic Principle, Accuracy and Fluency with Connected Text
  - Specific skills based on error analysis or additional diagnostic assessment (e.g., CTOPP).
- How much instructional support is needed?
  - Intensive Instructional Support
  - Strategic Instructional Support
  - Benchmark Instruction

Kindergarten Instructional Goals
- Establish an Instructional Goal for Alphabetic Principle that is moving in the direction of achieving the middle of first grade goal.

First Grade Instructional Goals
- Establish an Instructional Goal for Alphabetic Principle that will change odds of being a reader
Oregon Reading First Review of Supplemental and Intervention Programs

- OR Reading First developed review criteria for supplemental and intervention programs and reviewed 106 programs for the percent of criteria met. [http://oregonreadingfirst.uoregon.edu/SIreport.php](http://oregonreadingfirst.uoregon.edu/SIreport.php)
- Phonemic Awareness
  - Early Reading Intervention 96%
  - Road to the Code 80%
  - Phonemic Awareness in Young Children 75%
- Phonics or Alphabetic Principle
  - Reading Master Fast Cycle 96%
  - Read Well 94%
  - Voyager Passport 92%
  - Early Reading Intervention 81%
- Fluency with Connected Text
  - Read Naturally 92%
  - Great Leaps 66%
  - Headsprout 61%

4. Evaluating and Modifying Instructional Support

Key Decision for Progress Monitoring Assessment:

- Is the intervention effective in improving the child's early literacy skills?
- How much instructional support is needed?
  - Enough to get the child on trajectory for Benchmark Goal.
- When is increased support needed?
  - Monitor child’s progress during intervention by comparing their performance and progress to past performance and their aimline. *Three consecutive assessments below the aimline* indicates a need to increase instructional support.

Progress Monitoring

- Repeated, formative assessment to evaluate progress toward important goals for the purpose of modifying instruction or intervention.
- Frequency of Progress Monitoring
  - 3 times per year for students at low risk (All Students)
    - Benchmark
  - 1 per month for students with some risk
    - Strategic
  - 1 per week for students at risk
    - Intensive

Research on Progress Monitoring

- Progress monitoring has been extensively researched in Special Education
- For example:
- With Reading First, progress monitoring is not just for special education any more.
Effects of Progress Monitoring
- Fuchs and Fuchs (1986) found the average effect size associated with progress monitoring was:
  - +0.70 for monitoring progress
  - +0.80 when graphing of progress was added
  - +0.90 when decision rules were added
- A student at the 50th percentile would be expected to move to the 82nd percentile (i.e., a score of 100 would move to a score of 114)
- Perhaps more important, a student at the 6th percentile would be expected to move to the average range (25th percentile) (i.e., a score of 76 would move to a score of 90)

Progress Monitoring Tools
- Meaningful and important goals, waypoints, or benchmarks representing reading health or wellness.
  - Meaningful and Important
  - Public and Measurable
  - Ambitious
- Brief, repeatable, formative assessment of progress toward benchmark goals that is sensitive to intervention.
  - Brief and Efficient
  - Repeatable - weekly or monthly
  - Reliable and Valid indication of risk and growth

Is Progress is Related to Outcomes?
- The logic of the Evaluating and Modifying Support step relies on evidence that amount of progress toward goals is related to important reading outcomes.
- Given or controlling for initial skills, is slope of progress on NWF in the Fall of first grade related to first grade reading outcomes for at risk students?
  - Evaluations of the relation between slope of progress and outcomes must consider the student’s initial skills.

Progress GIVEN initial skills.
- Nora has a slope twice that of Nick, but substantially lower reading outcome because her initial skills are so much lower.

Slope, by itself without considering initial skills is not enough to predict outcomes.
Similar Initial Skills – Slope is related to outcomes

- Nora and Nell have similar initial skills – Nell’s higher slope predicts higher skills in middle of first grade and higher reading outcomes.

Does Slope Add to the Prediction of Reading Outcomes After Risk Level and Initial Skills? [All Students]

- Sequential model predicting first grade DORF reading outcomes from (1) risk category, (2) initial NWF skill given risk, and (3) slope given risk and initial skill.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>R² change</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWF Risk Category</td>
<td>3</td>
<td>0.40</td>
</tr>
<tr>
<td>Initial NWF Skill Given Risk</td>
<td>1</td>
<td>0.08</td>
</tr>
<tr>
<td>Slope Given Risk, Initial Skill</td>
<td>1</td>
<td>0.11</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Risk category, initial skills, and slope combined explain 59% of reading outcomes.

Variance Explained by Slope for Each Risk Category

- A separate analysis was conducted for each risk category.

<table>
<thead>
<tr>
<th>Group</th>
<th>NWF Initial Skills</th>
<th>NWF Slope Given Initial Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Risk</td>
<td>8%</td>
<td>26%</td>
</tr>
<tr>
<td>NWF 0 to 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some Risk</td>
<td>2%</td>
<td>21%</td>
</tr>
<tr>
<td>NWF 13 to 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Risk</td>
<td>8%</td>
<td>21%</td>
</tr>
<tr>
<td>NWF 24 to 49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi AP</td>
<td>25%</td>
<td>11%</td>
</tr>
<tr>
<td>NWF 50 to 255</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

But, is the variance explained by slope (given risk and initial skills) educationally important?

Rate of progress in alphabetic principle is especially important for students who are at risk for low reading outcomes.
Slope of Progress for At Risk Students

- **Goal Slope.** The slope of progress necessary to achieve the Alphabetic Principle Benchmark Goal of 50 on NWF in the middle of first grade and predict successful first grade reading outcomes. **Adequate Progress.**

- **High Slope.** One standard deviation above the mean – the 86th percentile compared to other children at risk for reading difficulty. Indicates a very effective intervention is in place. **Adequate Progress.**

- **Typical Slope.** Average or typical progress. Most students continue to be at risk. **Not making adequate progress.**

- **Low Slope.** One standard deviation below the mean – the 14th percentile compared to other children at risk for reading difficulty. Indicates the lack of an effective intervention. Most at risk students continue to be at risk. **Not making adequate progress.**

Differences in Slope are Educationally Meaningful for At Risk Students

- Predicted reading outcomes are substantially different. Goal slope predicts 40 end of first DORF.

Conclusions: Validity of DIBELS NWF Slope

- Initial risk status and initial skills on DIBELS Nonsense Word Fluency are very important in predicting reading outcomes in first grade, explaining 48% of variance in outcomes.

- An increasing pattern of scores through the first semester of first grade on DIBELS Nonsense Word Fluency appears to be a very important predictor of reading outcomes for students who are at risk, and indeed for each risk category.

- We can be confident that increases in DIBELS Nonsense Word Fluency reflect improved performance on alphabetic principle skills that contribute to important end-of-year reading outcomes.

5. Reviewing Outcomes

Key Decisions for Outcome/Accountability Assessment:

- Does the **child** have the early literacy skills predictive of successful reading outcomes?

- Does the **school** have *core curriculum and instruction* as well as a *system of effective instructional support* so their students achieve literacy outcomes?

Data used to inform the decision:

- Evaluate individual student’s performance with respect to benchmark goals that with the odds in favor of achieving subsequent literacy goals.

- Compare school/district outcomes to goals and outcomes from previous year.

- Evaluate *core curriculum* and *system of additional support* for each step to identify strengths and areas for improvement.
Model of Big Ideas, Indicators, and Timeline

Adapted from Good, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. Scientific Studies of Reading, 5, 257-288.

Reviewing Outcomes: Effectiveness of Benchmark Instruction (Core Curriculum)

- For each step toward literacy outcomes, a school with an effective core curriculum and instruction supports students who are on track (i.e., low risk or benchmark) to achieve the goal.
- For students with the odds in favor of achieving literacy goals, it is the job of the core to teach the core components so that all students (100%) achieve the goals.

Evaluating Effectiveness

I. Outcomes Criterion

95% of students achieve the early literacy goal.

II. Adequate Progress Criteria

- Core: Benchmark students make adequate progress
- Strategic Support: Strategic students make adequate progress
- Intensive Intervention: Intensive students make adequate progress

I. Outcomes Criterion

- Strength – The schoolwide instructional system is a strength, including research-based effective reading core curriculum and delivery of that curriculum, strategic support, and intensive intervention.
- **Absolute Standard**: 95% or more of students achieve the next literacy goal.
- If outcomes criterion is not met, evaluate the effectiveness of core curriculum, strategic support, and intensive interventions using the **Adequate Progress Criteria**.
Evaluating Effectiveness

- First, clarify the primary goal for the first half of first grade.
- **Core Component:** Phonics or Alphabetic Principle
- **DIBELS Indicator:** Nonsense Word Fluency (NWF)
- **Goal Skill Level:** 50 letter sounds correct per minute with recoding
- **Timeline:** by the middle of first grade.

Examine the outcomes

- **Outcomes Criterion:**
  - 95% Established on DIBELS NWF then
    - Core curriculum and instruction is effective
    - System of additional interventions is effective
  - For Example, school on next slide has
    - Established: 42% of students
    - Emerging: 43% of students
    - Deficit: 15%

Examine Outcomes

- **Middle 1st Histogram Report**

II. Adequate Progress – Benchmark Students
Core Curriculum and Instruction

- **Strength** – Research-based effective reading core curriculum and delivery of that curriculum.
  - Logic: The core curriculum and instruction should support benchmark students to achieve literacy goals.
  - **Absolute Standard:** 95% of benchmark students achieve the next literacy goal.
  - **Relative Standard:** Upper third of effectiveness of core curriculum and instruction compared to other schools.
  - Meet either the absolute standard or the relative standard and the effectiveness of the core is a strength for the school.
Needs Support
Core Curriculum and Instruction
- Needs Support – School (a) does not meet the Outcome Criterion, (b) does not meet the absolute standard for adequate progress and (c) the school is in the middle third of effectiveness compared to other schools.
- The school needs support in terms of professional development, curriculum materials, integrity of delivery, or time investment to increase the effectiveness of the core.

Needs Substantial Support
Core Curriculum and Instruction
- Needs Substantial Support – School (a) does not meet the Outcome Criterion, (b) does not meet the absolute standard for adequate progress and (c) the school is in the lower third of effectiveness compared to other schools.
- Schoolwide priority for professional development, curriculum materials, integrity of instruction, and time investment.

Examine progress of Benchmark Students
– Are benchmark students reaching goal?
- Effective core curriculum and instruction should support benchmark students to achieve essential early literacy goals.
- Use Effectiveness Report
  - Focus on schoolwide summary
  - Classroom report illustrates individual children
- For example, school on next slide has
  - 67% of Benchmark students are reaching the middle of first grade goal.

Schoolwide Summary of Effectiveness
Beginning First to Middle First Phonics/Alphabetic Principle Instruction

<table>
<thead>
<tr>
<th>District: Test District</th>
</tr>
</thead>
<tbody>
<tr>
<td>School: McKinley</td>
</tr>
<tr>
<td>Date: September, 2001-2002</td>
</tr>
<tr>
<td>Step: Beginning of 1st Grade to Middle</td>
</tr>
</tbody>
</table>

Effectiveness of Core Curriculum and Instruction

<table>
<thead>
<tr>
<th>Students at Benchmark at Beginning of Year</th>
<th>Beginning NWF Score</th>
<th>Middle NWF Score</th>
<th>Check If Reached Middle NWF Goal of 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>School: McKinley</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School-wide</td>
<td>Count: 22 / 33</td>
<td>Percent: 67%</td>
<td></td>
</tr>
</tbody>
</table>
Beginning First to Middle First
Middle of first grade outcomes for students with benchmark, strategic, and intensive instructional recommendations in the beginning of first grade

A typical (middle) school had 59% to 75% of benchmark students achieve the middle of first grade goal of 50 or more with recoding on DIBELS NWF.

Schools with 58% or fewer of their benchmark students achieving the middle first grade NWF goal are in the lower third of effectiveness.

Schools with 76% or more of their benchmark students achieving the middle first grade NWF goal are in the upper third of effectiveness.

Compare to Decision Rules and Other Schools to evaluate effectiveness

- Effective core curriculum and instruction supports 95% of benchmark students to achieve the goal.
  - Not met.
- Compared to other schools, the school is in the
  - Upper Third - Strength
  - Middle Third - Support
  - Lower Third – Substantial Support

Step by Step, Core and Intervention

<table>
<thead>
<tr>
<th>Step</th>
<th>Effectiveness of Core</th>
<th>Effectiveness of Strategic Support</th>
<th>Effectiveness of Intensive Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Phonemic Awareness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: Phonemic Awareness and Phonics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3: Phonics and Fluency</td>
<td>Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4: Fluency and Comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5a: Fluency and Comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5b: Fluency and Comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 6a: Fluency and Comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 6b: Fluency and Comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Themes

- Don’t loose track of the bottom line. Are we getting closer to important and meaningful outcomes?
- Monitor Progress on -- and teach -- what is important: Phonemic Awareness, Alphabetic Principle, Accuracy and Fluency with Connected Text
- Oral Reading Fluency is an important instructional goal and target of progress monitoring.
- Use progress monitoring to make decisions that change outcomes for children.
- Progress monitoring should be efficient and purposeful.
- Start early! Trajectories of reading progress are very difficult to change.