



The Critical Role of Curriculum and Learning Progressions in Balancing Assessment Systems

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Webinar #2 of the Webinar Series: *Developing and Implementing Balanced Assessment Systems to Support School Improvement and Student Learning*
California Collaborative for Educational Excellence

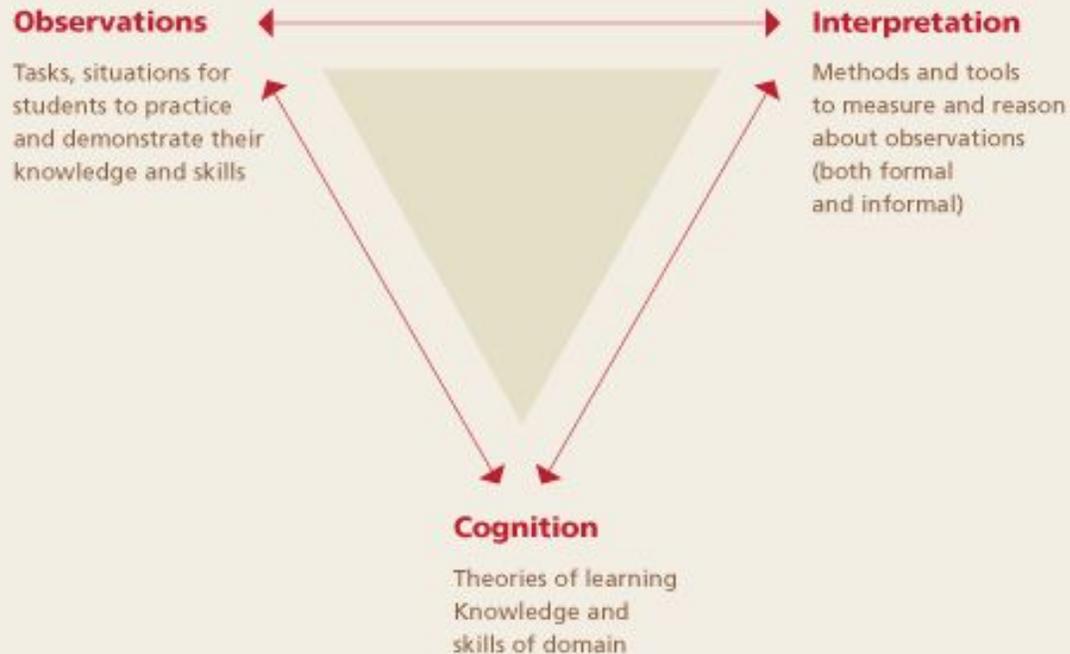
April 13, 2021



Introduction (This session is being recorded)

- This is the **second** of five webinars designed to support California district leaders and others in designing, developing, and implementing balanced assessment systems.
- This webinar focuses on how to instantiate the coherence criteria through implementing high-quality curriculum and balanced classroom assessment systems
- We have written extensively about balanced assessment systems including this paper well that you can download at: <https://www.nciea.org/node/493>

A Call for Balanced Assessment Systems



Assessments at all levels—from classroom to state—will work together in a system that is comprehensive, coherent, and continuous. In such a system, assessments would provide a variety of evidence to support educational decision making. Assessment at all levels would be linked back to the same underlying model of student learning and would provide indications of student growth over time (NRC, 2001, p. 9).

Criteria for Evaluating Balanced Assessment Systems

A **balanced** assessment environment should exhibit three properties (NRC, 2001):

- 1. Comprehensiveness** – “a range of measurement approaches should be used to provide a variety of evidence to support educational decision-making”
- 2. Coherence** – “the conceptual base or models of student learning underlying the various external classroom assessments within a system should be compatible”
- 3. Continuity** – “assessments should measure student progress over time”

Coherence

- Vertical **Coherence** – conceptual base or models of student learning underlying the various **external** and **classroom** assessments within a system should be compatible
- Horizontal **Coherence** – alignment among curriculum, instruction, and assessment along a common set of learning goals

How People Learn



**Learners,
Contexts,
and
Cultures**

Coherence – Based on Modern Theories of Learning

Assessments and assessment systems must be based on research-based models of learning.

Adherence to outdated, naïve, and/or implicit notions of learning are an impediment to assessment literacy and assessment reform.

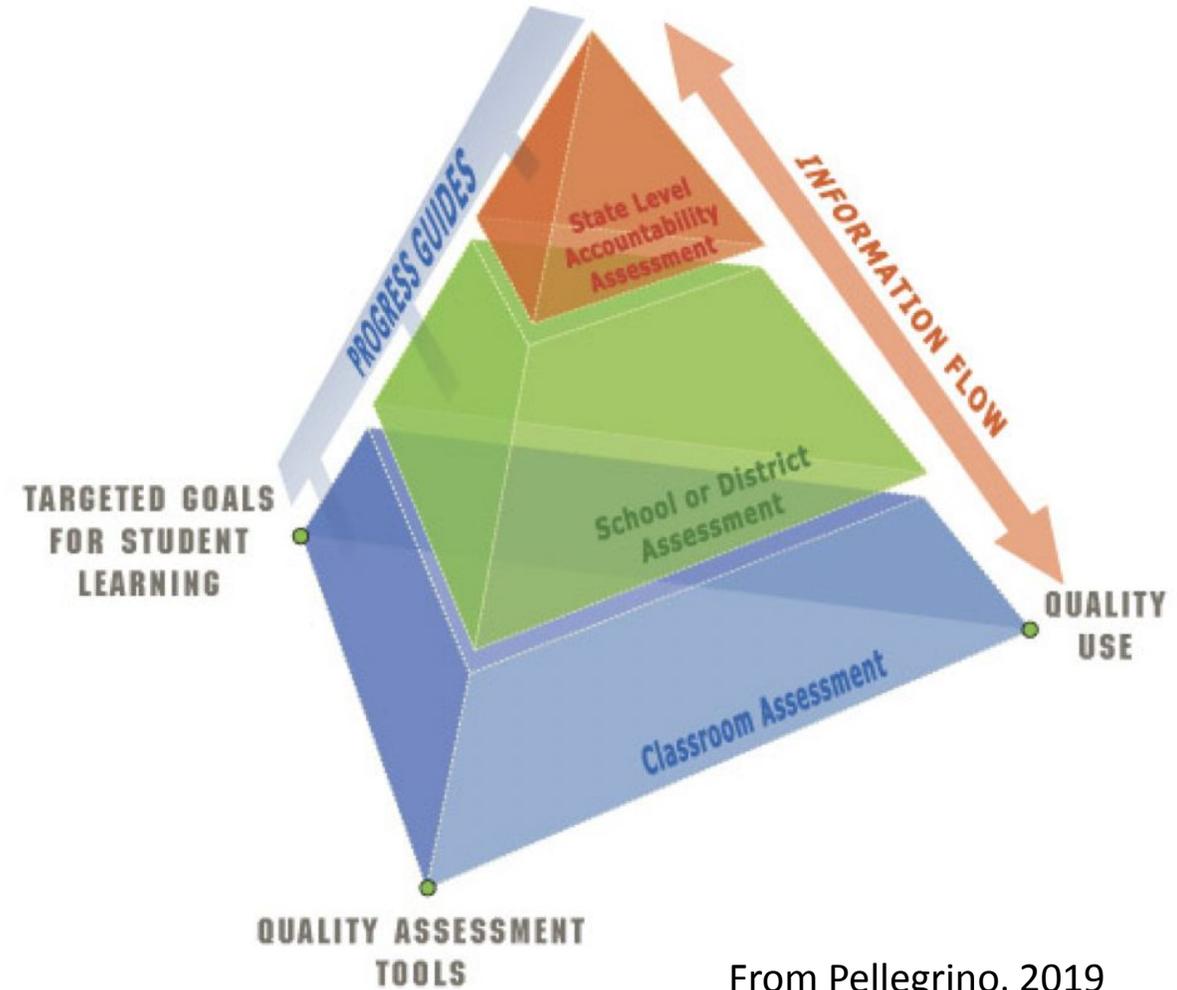
A huge PD issue!

National Academies of Sciences, Engineering, and Medicine. 2018. *How People Learn II: Learners, Contexts, and Cultures*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24783>.

Vertical coherence

Assessment at all levels should be linked to the same underlying model of student learning (NRC, 2001).

Very hard at the state level because of local control, so districts are the appropriate locus of control.



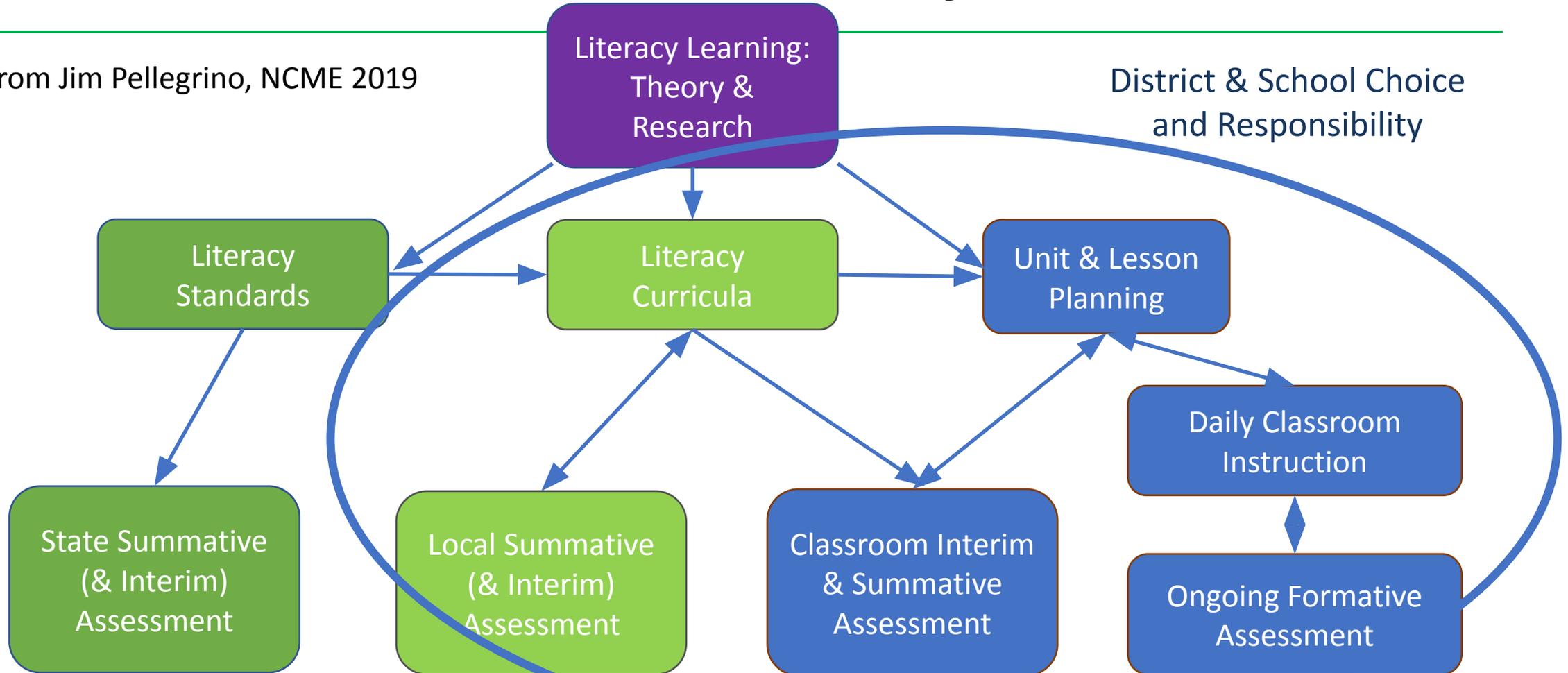
Horizontal Coherence

- Vertical Coherence – conceptual base or models of student learning underlying the various external and classroom assessments within a system should be compatible
- Horizontal Coherence – alignment among curriculum, instruction, and assessment along a common set of learning goals

A “Simple” Model for a Coherent and Coordinated System of Curriculum, Instruction & Literacy Assessments

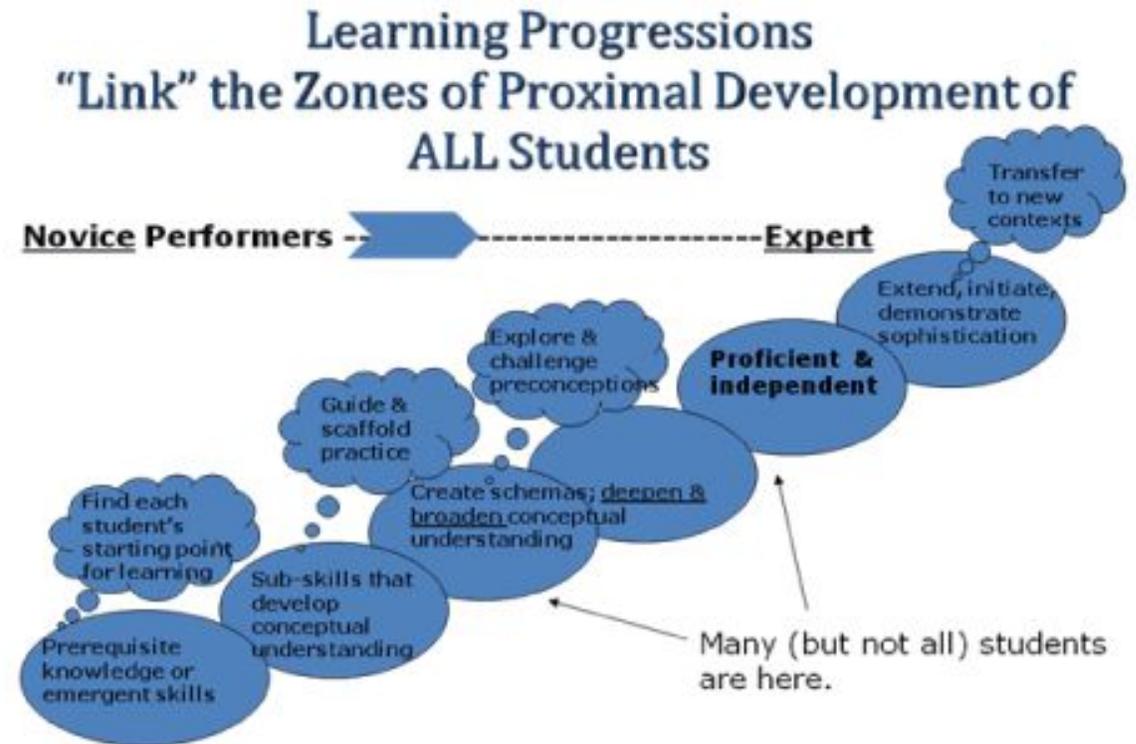
From Jim Pellegrino, NCME 2019

District & School Choice
and Responsibility



Learning Progressions and Curriculum

- The authors of *Knowing What Students Know* and subsequent publications referred to learning progressions or trajectories for instantiating these common models of learning.
- We agree that learning progressions are important, but it is more practical to focus on curriculum that is built on quality learning progressions.



Let's Hear From the Experts

Rebecca Kockler,
Independent
consultant and former
Louisiana Deputy
Commissioner for
Teaching and Learning

What is high-quality curriculum and why is it important as a foundation for learning and assessment systems?



Rebecca Kockler

Jeri Thompson,
Senior Associate,
Center for Assessment

Using high-quality curriculum as the foundation for classroom balanced assessment systems



Jeri Thompson

Curriculum's role in Assessment Coherence



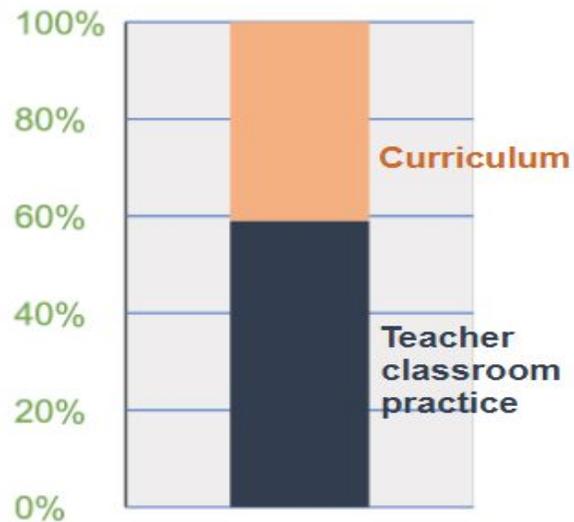
Why start with high quality curriculum?

- Ensure more equitable instruction
- Bring concrete coherence to the classroom
- Actively improve a teacher's pedagogy through their use

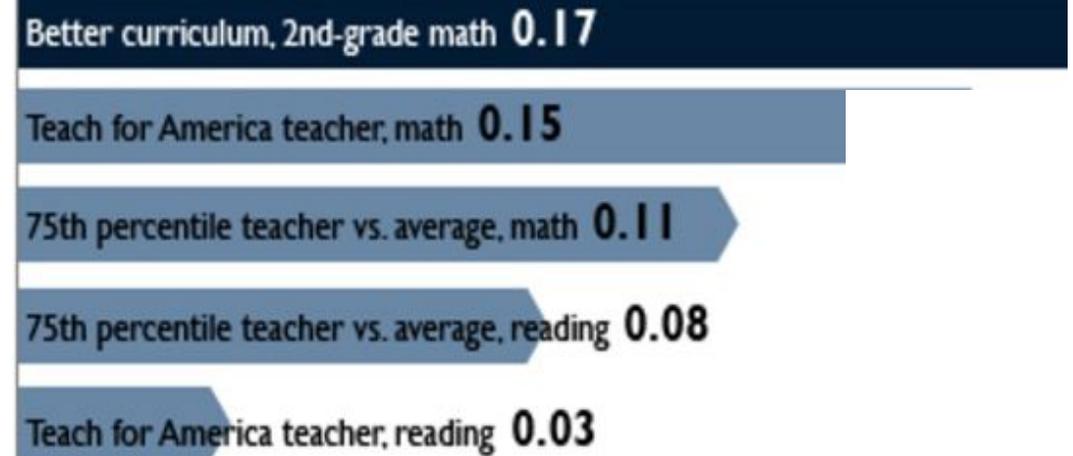


Research demonstrates high quality instructional materials matter to student outcomes

Students in an integrated improvement model gained an estimated **four months of learning** over two years relative to students in the comparison group, 41% of which was **attributable to instructional materials**

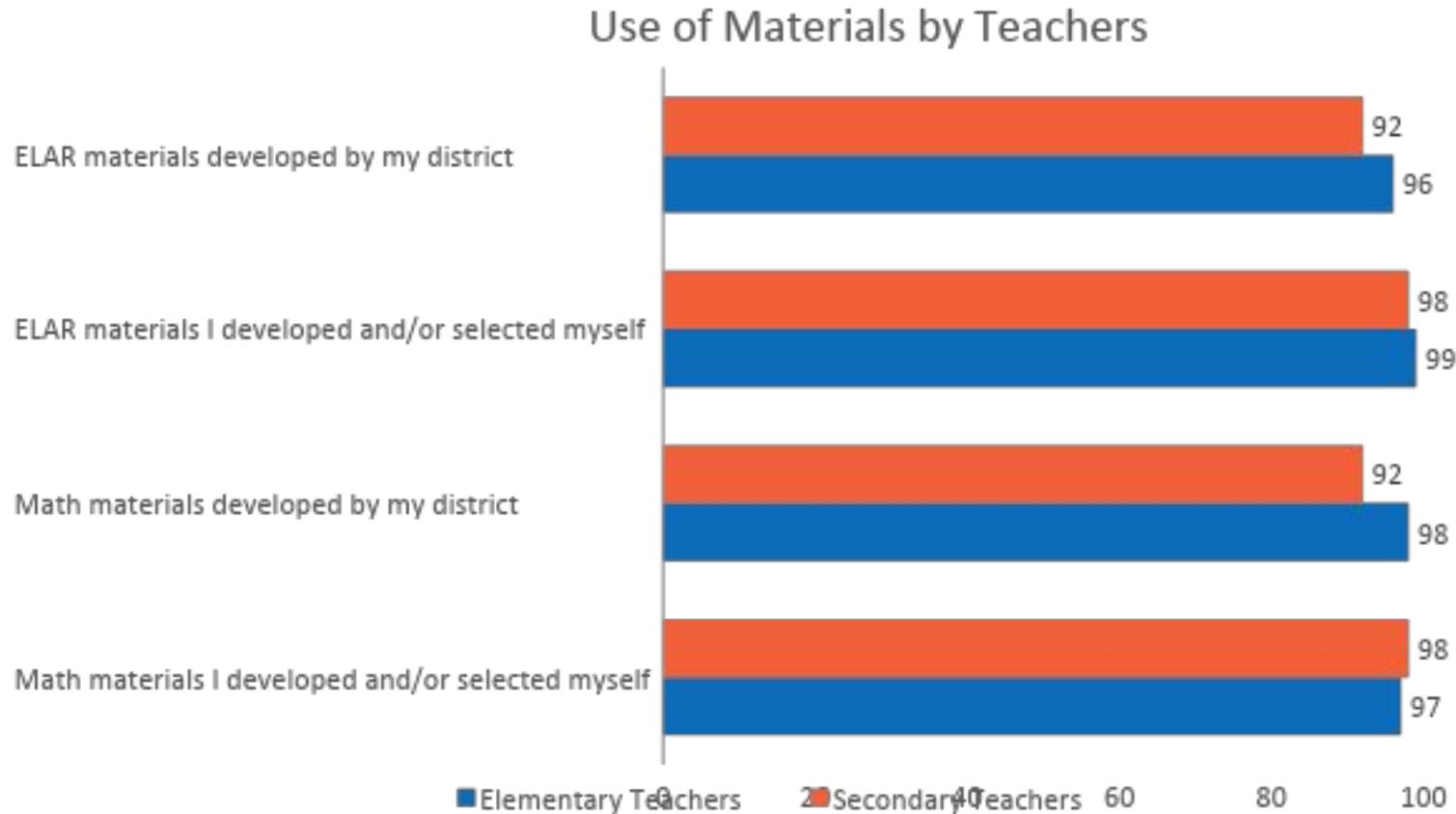


Research demonstrates **high quality instructional materials** has the largest **effect** size of selected interventions on student test scores.



Source: 1) Joseph A. Taylor et al., "An Efficacy Trial of Research-Based Curriculum Materials with Curriculum-Based Professional Development," American Educational Research Journal, 2015, 2) Matthew Chingos and Grover "Russ" Whitehurst, "Choosing Blindly: Instructional Materials, Teacher Effectiveness," Brookings Institution, 2012

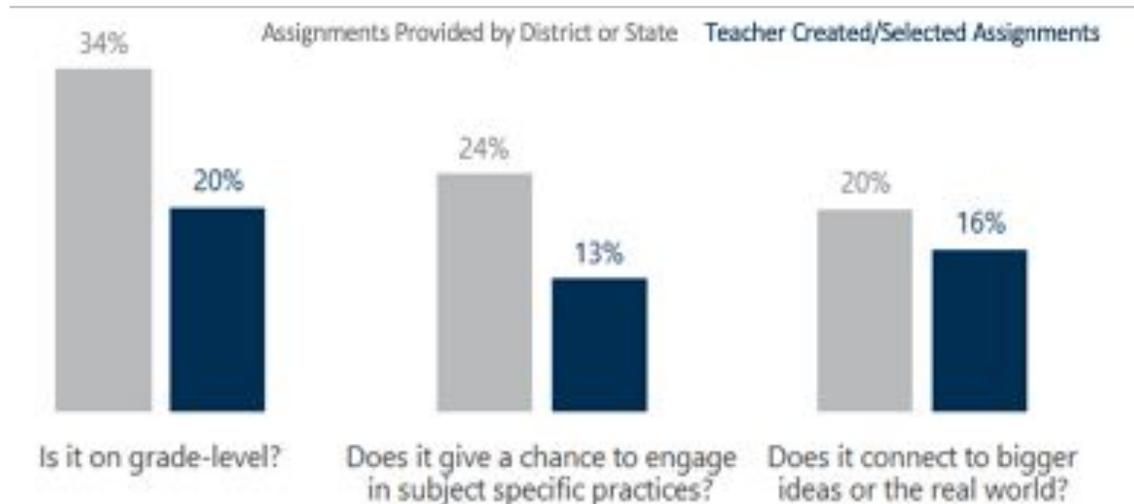
Research suggests teachers often use their own materials



73% of teachers report using materials **found online** more frequently than packaged instructional materials, although use varies by content area and grade level. More than **93% of teachers** report frequently **using their own or locally developed materials.**

Teacher developed materials are often below grade level

Of teachers who **created/selected their own instructional materials**, assignments tended to be lower quality than what the district or state provided. For example, **only 20% of assignments were on grade level.**



Where do teachers find materials?



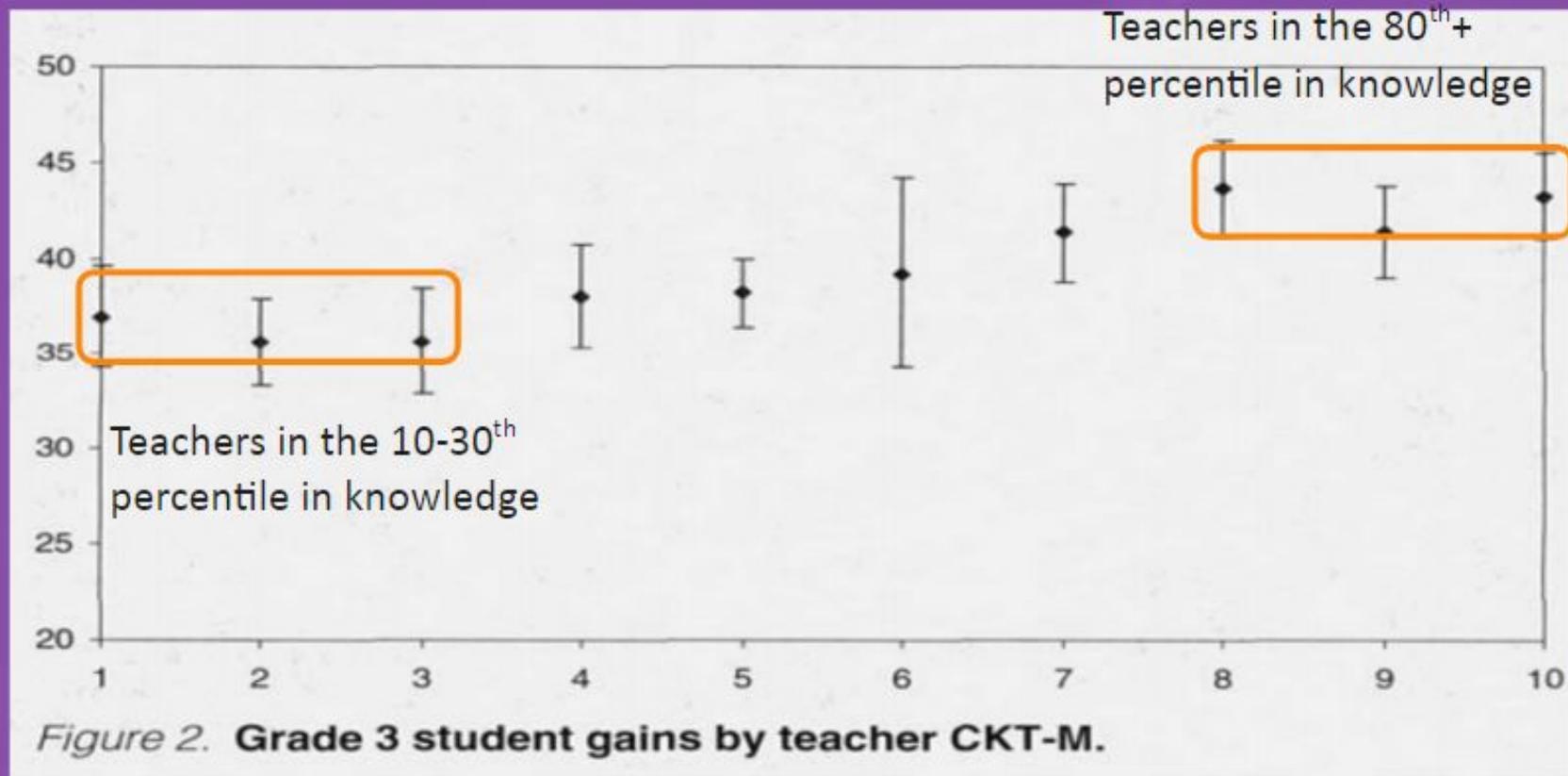
94% say
Google



87% say
Pinterest

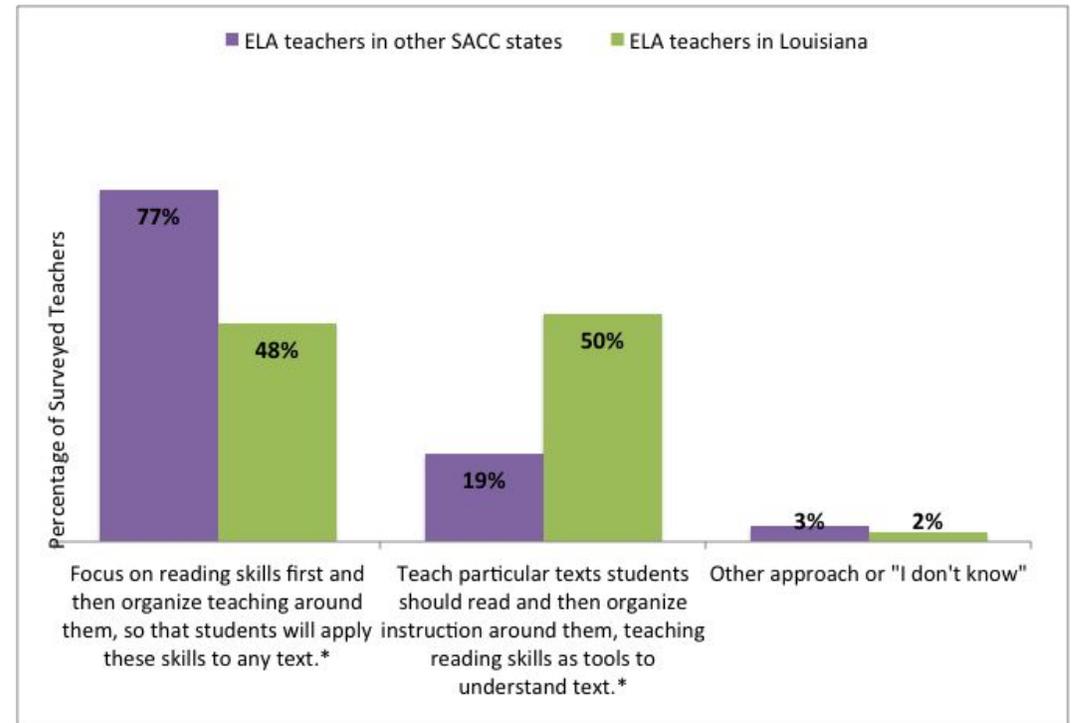
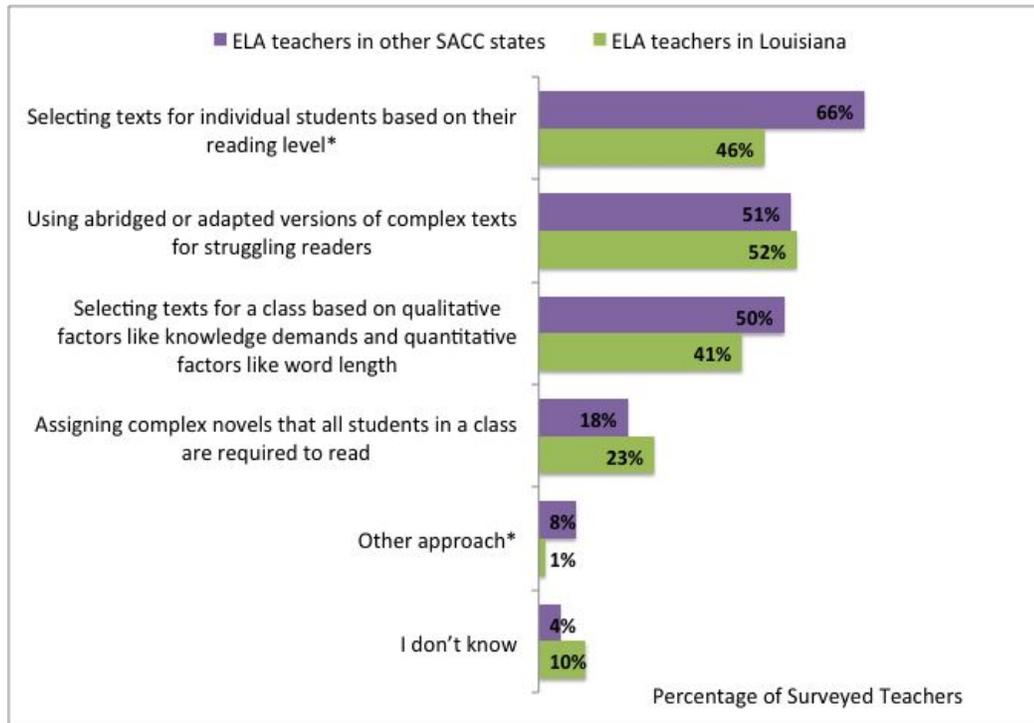
TEACHERS WITH GREATER CONTENT KNOWLEDGE FOR TEACHING HELPS STUDENTS LEARN MORE

3rd grade student gains in math, by teacher content knowledge for teaching

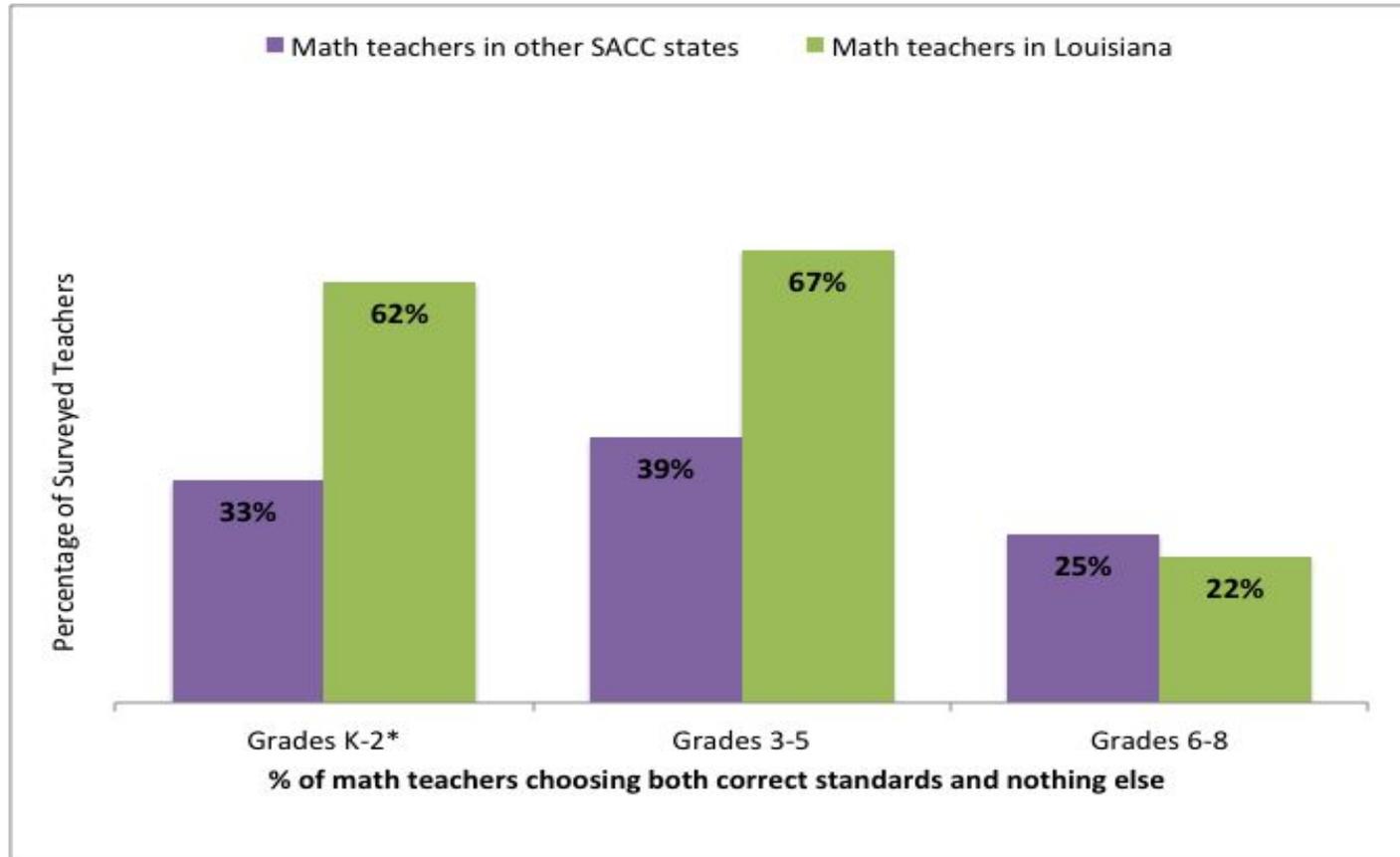


The effect size of teacher math content knowledge for teaching on student learning is similar to that of student SES and ethnicity on their learning.

In 2017, RAND published findings from a study on standards implementation across five states. On a number of indicators, Louisiana’s educators showed signs of increased understanding.



Louisiana ELA teachers at higher percentages were more accurate in their identification of practices to the College and Career Readiness Standards (CCRS), and thought about their instruction in ways that were aligned with CCRS more than when compared to other teachers.



RAND also found that more mathematics teachers in Louisiana, compared to teachers in other states, identified the CCRS-aligned mathematics standards topics at their grade level.

Secondary mathematics teachers in Louisiana were also more likely than those in other states to engage students in some CCRS for Mathematical Practice.

What makes a curriculum high quality?

High-quality materials
that are aligned to
the standards

Support students in
**accessing grade-level
work**

Materials that affirm
the **diverse identities**
of the nation's
students

Curricula that **balance
concepts,
procedures, and
applications**

Complex texts on the
same topic to **build
knowledge**

Quality, integrated
assessments

Ed Reports and the Louisiana Department of Education have reviewed curriculum for quality and are helpful resources



A banner for edreports.org. The background shows a close-up of hands typing on a laptop keyboard. The edreports.org logo is in the top left. The text "Compare Materials • Reports Center" is centered. Below it, "ENHANCED REPORTS" is written in large white letters, followed by "Find out if materials support learning in person, remotely, or in hybrid formats". A yellow "READ MORE" button is at the bottom left.

A section titled "INSTRUCTIONAL MATERIALS REVIEWS". It contains text explaining the purpose of the reviews: "to purchase instructional materials that are best for their local communities. The [blank] an online review of instructional materials listed on this page to determine the [blank] standards to support school systems with these decisions. Each local school system [blank] ate to meet the educational needs of their students." Below this, three tiers are listed: "TIER 1 - EXEMPLIFIES QUALITY:" with criteria and scoring; "TIER 2 - APPROACHING QUALITY:" with criteria and scoring; and "TIER 3 - NOT REPRESENTING QUALITY:" with criteria. A blue button at the bottom says "ACCESS THE COMPREHENSIVE LIST OF TIERED REVIEWS".

Poor Example

MATH CURRICULUM EXHIBIT 1: SAXON MATH.

- Relentlessly procedural.
- Scattershot focus.

viii	Contents	
LESSON 80	"Fraction-of-a-Group" Problems, Part 1	272
LESSON 81	Division Answers Ending with Zero	276
LESSON 82	Finding Information to Solve Problems	280
LESSON 83	Measuring Liquids	283
LESSON 84	Fraction of a Set	287
LESSON 85	Pictographs and Bar Graphs • Tallying	290
LESSON 86	Division with Three-Digit Answers	295
LESSON 87	Ounces, Pounds, and Tons	299
LESSON 88	Grams and Kilograms	302
LESSON 89	Tables	305
LESSON 90	Division with Zeros in Three-Digit Answers	309
LESSON 91	Rounding to the Nearest Thousand	313
LESSON 92	Line Graphs	316
LESSON 93	Sales Tax • Change Back	319
LESSON 94	Area, Part 2	323
LESSON 95	Multiplying by Tens, Hundreds, and Thousands	326
LESSON 96	Multiplying Round Numbers Mentally	329
LESSON 97	Multiplying Two Two-Digit Numbers, Part 1	332
LESSON 98	Division Word Problems with Remainders	335
LESSON 99	Mixed Numbers and Improper Fractions	339
LESSON 100	Multiplying Two Two-Digit Numbers, Part 2	342
LESSON 101	Decimal Place: Tenths	346
LESSON 102	Naming Hundredths with Decimal Numbers	349
LESSON 103	Estimating Two-Digit Multiplication Answers	353
LESSON 104	Two-Step Word Problems	356
LESSON 105	"Fraction-of-a-Group" Problems, Part 2	360
LESSON 106	Average	364
LESSON 107	Writing Mixed Numbers as Decimals	368
LESSON 108	Naming Place Value • Naming Decimal Numbers	372
LESSON 109	Decimal Numbers and Money	376

SAXON MATH™ 1

Note: slide from David Steiner of Johns Hopkins Institute for Education Policy and Rachel Leifer of the Bill & Melinda Gates Foundation

Strong Example

MATH CURRICULUM EXHIBIT 3: EngageNY

Mathematical topics are presented in appropriate depth and sequence within and across grade levels.

GRADE 8 • MODULE 2

Topic A
Definitions and Properties of the Basic Rigid Motions

8.G.A.1

Focus Standard: 8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations:

- Lines are taken to lines, and line segments to line segments of the same length.
- Angles are taken to angles of the same measure.
- Parallel lines are taken to parallel lines.

Instructional Days: 6

Lesson 1: Why Move Things Around? (E)¹

Lesson 2: Definition of Translation and Three Basic Properties (P)

Lesson 3: Translating Lines (S)

Lesson 4: Definition of Reflection and Basic Properties (P)

Lesson 5: Definition of Rotation and Basic Properties (S)

Lesson 6: Rotations of 180 Degrees (P)

Students experience balanced practice with concepts, procedures, and real-world problem-solving.

NYS COMMON CORE MATHEMATICS CURRICULUM

A Story of Ratios Curriculum Overview

	Grade 6	Grade 7	Grade 8	
20 days	M1: Ratios and Unit Rates (35 days)	M1: Ratios and Proportional Relationships (30 days)	M1: Integer Exponents and the Scientific Notation (20 days)	20 days
20 days	M2: Arithmetic Operations Including Dividing by a Fraction (25 days)	M2: Rational Numbers (30 days)	M2: The Concept of Congruence (25 days)	20 days
20 days	M3: Rational Numbers (25 days)	M3: Expressions and Equations (35 days)	M3: Similarity (25 days)	20 days
20 days	M4: Expressions and Equations (45 days)	M4: Percent and Proportional Relationships (25 days)	M4: Linear Equations (40 days)	20 days
20 days		M5: Statistics and Probability (25 days)		M5: Examples of Functions from Geometry (15 days)
20 days	M5: Area, Surface Area, and Volume Problems (25 days)	M6: Geometry (35 days)	M6: Linear Functions (20 days)	20 days
20 days	M6: Statistics (25 days)		M7: Introduction to Irrational Numbers Using Geometry (35 days)	20 days
20 days				20 days

Approx. test date for Grades 6-8

Key:	Number	Geometry	Ratios and Proportions	Expressions and Equations	Statistics and Probability	Functions
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A Story of Ratios: A Curriculum Overview for Grades 6-8
Date: 8/10/13



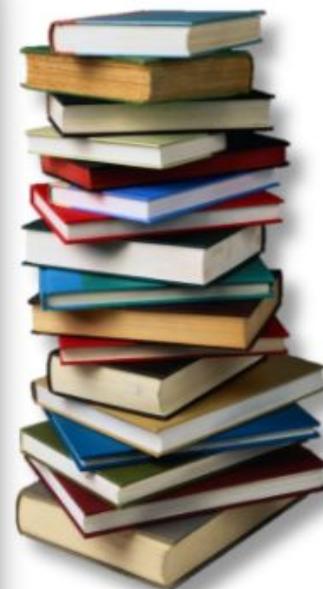
Note: slide from David Steiner of Johns Hopkins Institute for Education Policy and Rachel Leifer of the Bill & Melinda Gates Foundation

Poor Example

ELA CURRICULUM EXHIBIT 1: JOURNEYS.

	SPELLING	GRAMMAR	WRITING
<p><i>struggled</i> <i>staggered</i> <i>wobbled</i> <i>collapsed</i> <i>numb</i> <i>shifted</i></p> <p><u>Vocabulary Strategies</u> Using Context</p>	<p><u>Spelling Principle</u> Short Vowels</p> <p><u>Spelling Words</u> Basic Words: <i>breath, wobble, blister, crush, direct, promise, grasp, numb, hymn, shovel, gravity, frantic, swift, feather, comic, bundle, solid, weather, energy, stingy</i> Review Words: <i>bunch, district, track, pleasant, odd</i> Challenge Words: <i>instruct, distress, summit, massive, physical</i></p>	<p>Complete Sentences</p>	<p><u>Writing Mode</u> Write to Express</p> <p><u>Writing Form</u> Narrative Paragraph</p> <p><u>Focus Trait</u> Ideas</p>
<p><u>Target Vocabulary</u> <i>function</i> <i>delicate</i> <i>adjusted</i> <i>operator</i> <i>flawed</i> <i>acute</i> <i>version</i> <i>axis</i> <i>simulate</i> <i>tethered</i></p> <p><u>Vocabulary Strategies</u> Prefixes <i>non-, un-, dis-, mis-</i></p>	<p><u>Spelling Principle</u> Long a and Long e</p> <p><u>Spelling Words</u> Basic Words: <i>awake, feast, stray, greet, praise, disease, repeat, display, braces, thief, ashamed, sleeve, waist, beneath, sheepish, release, remain, sway, training, niece</i> Review Words: <i>stale, afraid, freedom, eager, explain</i> Challenge Words: <i>terrain, succeed, betray, motivate, upheaval</i></p>	<p>Kinds of Sentences</p>	<p><u>Writing Mode</u> Write to Express</p> <p><u>Writing Form</u> Descriptive Narrative</p> <p><u>Focus Trait</u> Voice</p>
<p><u>Target Vocabulary</u> <i>debate</i> <i>inflated</i> <i>shaken</i> <i>decorated</i> <i>gradually</i> <i>hesitated</i> <i>scanned</i> <i>stalled</i> <i>beckoned</i> <i>prodded</i></p> <p><u>Vocabulary Strategies</u> Multiple-Meaning Words</p>	<p><u>Spelling Principle</u> Long i and Long o</p> <p><u>Spelling Words</u> Basic Words: <i>sign, groan, reply, thrown, strike, mighty, stroll, compose, dough, height, excite, apply, slight, define, odor, spider, control, silent, brighten, approach</i> Review Words: <i>sigh, twice, shown, tonight, remote</i> Challenge Words: <i>require, reproach, defy, plight, opponent</i></p>	<p>Compound Sentences</p>	<p><u>Writing Mode</u> Write to Express</p> <p><u>Writing Form</u> Dialogue</p> <p><u>Focus Trait</u> Word Choice</p>

- Very modest cognitive demands on students.
- Decontextualized skill practice.
- Lack of scaffolding.
- Disconnected student tasks.



Note: slide from David Steiner of Johns Hopkins Institute for Education Policy and Rachel Leifer of the Bill & Melinda Gates Foundation

Strong Example

ELA CURRICULUM EXHIBIT 3: WIT & WISDOM.

- Explicit focus on knowledge domains.
- Attention to depth of understanding.
- Links are established across content matter
- Curriculum remains explicitly standards-based.

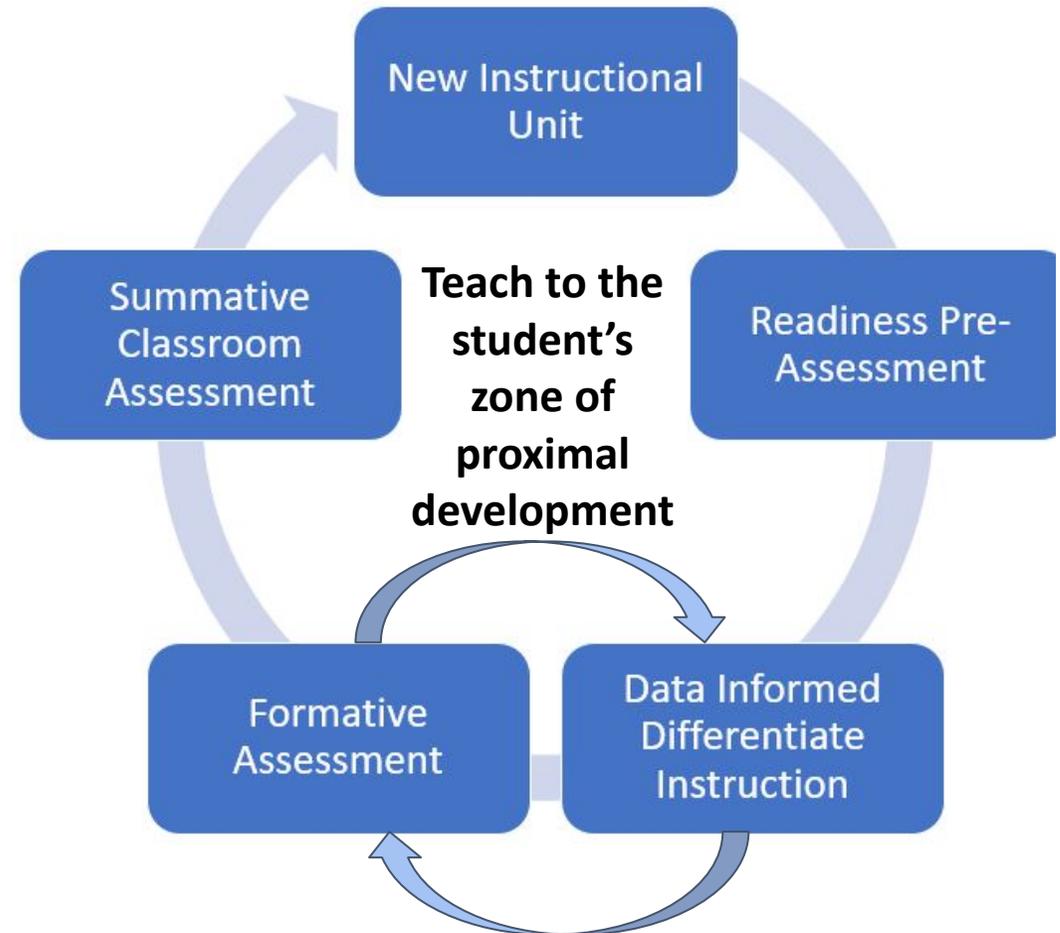
GRADE	MODULE 1	MODULE 2	MODULE 3	MODULE 4
K	The Five Senses	Once Upon A Farm	America, Then and Now	The Continents
1	A World of Books	Creature Features	Powerful Forces	Cinderella Stories
2	A Season of Change	The American West	Civil Rights Heroes	Good Eating
3	The Sea	Outer Space	A New Home	Artists Make Art
4	A Great Heart	Extreme Settings	The Redcoats Are Coming!	Myth Making
5	Cultures in Conflict	Word Play	A War Between Us	Breaking Barriers
6	Resilience in the Great Depression	A Hero's Journey	Narrating the Unknown: Jamestown	Courage in Crisis
7	Identity in the Middle Ages	Americans All (WWII)	Fever	Language and Power
8	Poetics and the Power of Storytelling	The Great War	What is Love?	Teens as Change Agents

Content Stage	Content Framing Question	Student Thinking and Actions	Standards Explored
<i>Wonder</i>	What do I notice and wonder about this text?	Students read the text with curiosity and attention and ask key questions about what they read.	R.1, R.4 (Determine word meaning.)
<i>Organize</i>	What is happening in this text?	Students organize their thinking on what the text is about, demonstrating their literal comprehension of a text.	R.2 (Summarize key ideas and details.), R.5
<i>Reveal</i>	What does a deeper exploration of [text-specific element] reveal about the text?	Students go deeper into the text, explore the author's craft and word choices, analyze the text's structure and its implicit meaning, and attend to other unique features of the text.	R.3, R.4 (Analyze word choices.), R.5, R.6, R.7, and/or R.8
<i>Distill</i>	What is the essential meaning of this text?	Students synthesize their understanding of a text's elements to discern the full impact of the elements they studied. They seek to understand the text as a sum of its parts, with the goal of achieving a profound understanding of the whole work.	R.2 (Interpret central ideas or themes.)
<i>Know</i>	How does this text build my knowledge of [specific topic]?	Students consider the text in the context of their own knowledge and learning. They examine the impact of the text on their world of knowledge and articulate the transferrable knowledge and skills they have acquired during the course of studying a text.	R.9

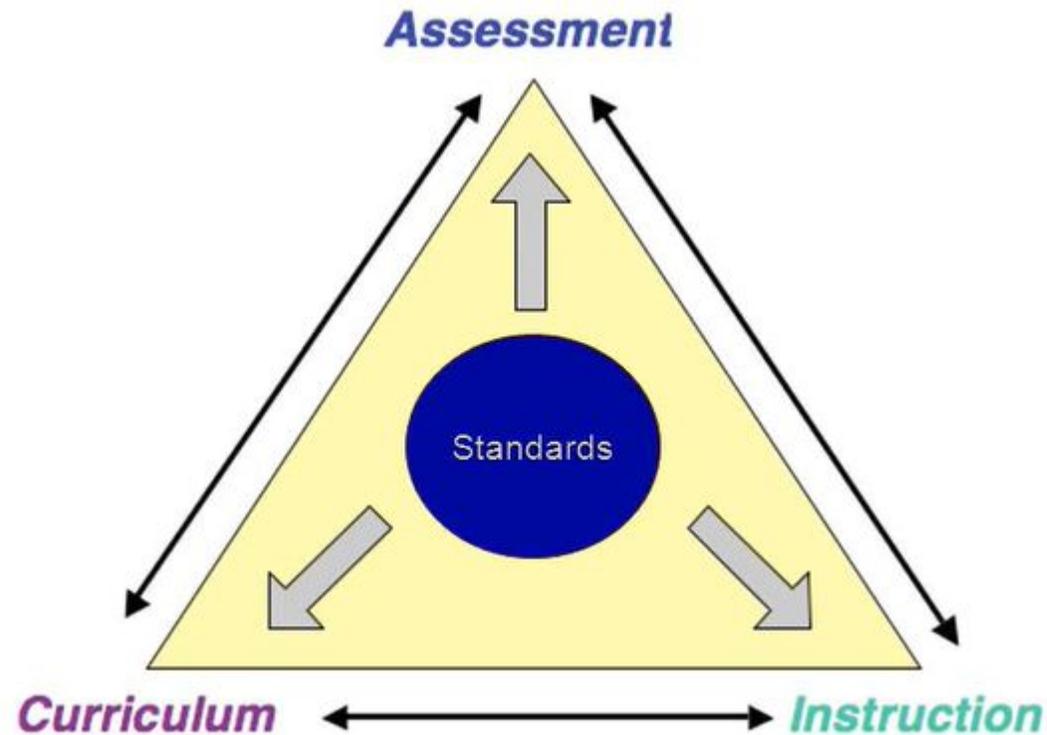
Note: slide from David Steiner of Johns Hopkins Institute for Education Policy and Rachel Leifer of the Bill & Melinda Gates Foundation

Classroom Assessment System

*A classroom assessment system is **the collection of the formative** assessment processes and **summative classroom assessments** administered over the course of a year to gather evidence of student learning.*



Classroom Assessment System



How do you know if you have a **random** collection of assessments, or a **coherent** classroom assessment system?



Defining Formative Assessment Process

“...a planned, ongoing process used by all students and teachers during learning and teaching to elicit and use evidence of student learning to improve student understanding of intended disciplinary learning outcomes and support students to become self-directed learners.”

Council of Chief State School Officers (2018, p. 2). Revising the Definition of Formative Assessment. Retrieved from <https://ccsso.org/resource-library/revising-definition-formative-assessment>

Essential Features of the Formative Assessment Process

1

Formative assessment is a process that is inseparable from instruction

2

Formative assessment must gather worthwhile information for teachers *and* students

3

Feedback is fundamental, and useful feedback has certain characteristics

Embedded Formative Assessment Strategies

	Where the learner is going	Where the learner is now	How to get there
Teacher	Clarifying, sharing, and understanding learning intentions and success criteria	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learning forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

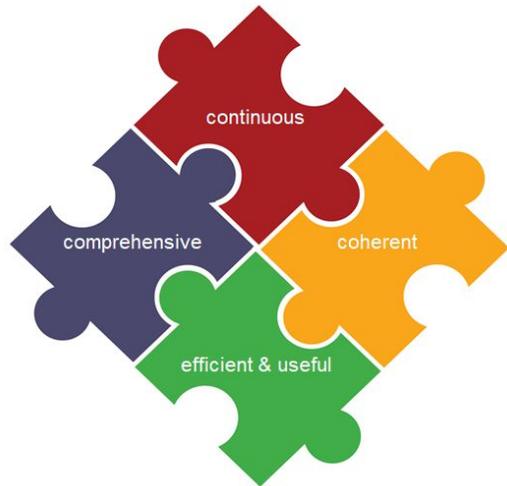
William, D. (2018). *Embedded formative assessment, 2nd ed.* Bloomington, IN: Solution Tree Press.

Embedded Formative Assessment Strategies

	Where the learner is going	Where the learner is now	How to get there
Teacher	<p>Big Idea:</p> <p>“Evidence about student learning is used to adjust instruction to better meet students’ needs. In other words, teaching is adaptive to the learner’s needs.”</p>		
Peer			
Learner			

Wiliam, D. (2018). *Embedded formative assessment, 2nd ed.* Bloomington, IN: Solution Tree Press, p. 52.

Classroom Summative Assessment Audits



- Assessment audits are intended to **facilitate discussions** about the **features of balanced assessment systems** and the ways the collection of assessments in the classroom layer may need to be changed to support a high-quality system of assessments.
- You can think of **classroom assessment maps** like an **assessment scope and sequence**.

What are the interacting set of classroom summative assessments you are using to gather evidence about students' learning relative to the state content standards?

Assessment maps are meant to be a flexible tool.

Standards	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
3OA1	Short Summative 1	PBA 1		Unit Test 1			Some Unit of Time (Semesters, Months, Quarters, Etc.)				
3OA2											
3OA3											
3OA4											
3OA5	Short Summative 2										
3OA6											
3OA7											
3OA8								Short Summative 7			
3OA9											
3NBT1			Short Summative 3			Unit Test 2	PBA 2				
3NBT2											
3NBT3											
3NF1					Short Summative 4						
3NF2											
3NF2a											
3NF2b											
3NF3											
3NF3a											
3NF3b											
3NF3c											
3NF3d											
3MD1											
3MD2											
3MD3											
3MD4								Short Summative 5	PBA 3		
3MD5											
3MD6											
3MD7											
3MD7a											
3MD7b											
3MD7c											
3MD7d											
3MD8								Short Summative 6			
3G1											
3G2								Short Summative 7			

Short Summative = shorter classroom summative assessment

PBA = performance-based assessment

Unit Test = longer classroom summative assessment

What do you notice?

Consider:

Will these assessments provide different types of information about student learning?

Why do we care if they provide different, or the same information?

Does this assessment system appear coherent with learning theory and comprehensive in nature?

Reflecting on the Quality of the Classroom Assessment System

Is this collection of assessments coherent, comprehensive, continuous, efficient and useful?

1. *What are the strengths and weaknesses of your classroom assessment system given a desire to elicit evidence of higher-order thinking and deeper learning?*
2. *Are the assessments aligned to how you believe people learn?*
3. *Do the assessments probe the depth and breadth of the content standards?*
4. *Are students provided multiple and varied assessment experiences over the course of the year?*
5. *How many summative assessments are administered over the course of the year?*
6. *Are there redundant assessments or assessment that can be removed because the information is not used?*

What about across classrooms within a school or district?

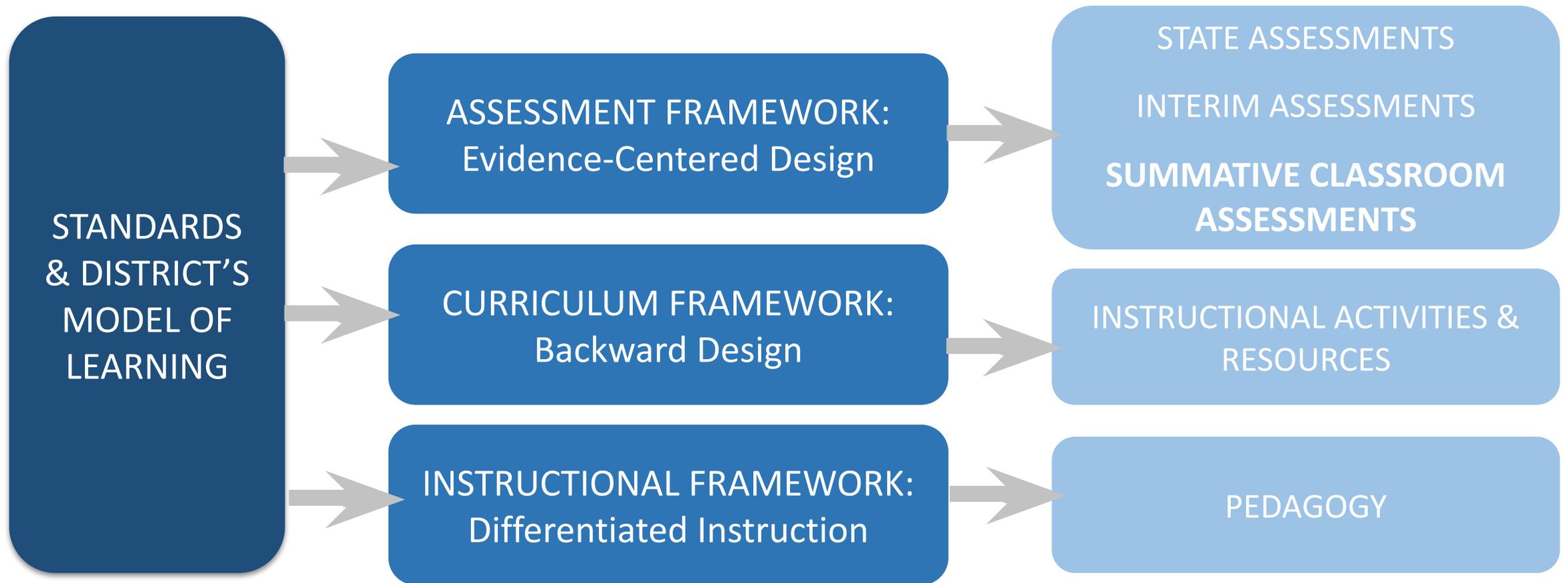
1. *Is there coherence across grade levels or content areas?*
2. *How would a student experience the assessment system from K-12?*

Nested Layers of Assessment Systems

Classroom assessments are nested within district and state assessment systems so the decisions made at the district and state layer can have positive or negative effects on teacher instruction (e.g., teaching to the state test; reduced time for instruction).



Classroom Summative Assessments: Alignment Process



How Do You Know if the System is Working Well

District Assessment System Audits

Examine the number and purpose of district-required assessments over the year and the extent to which the assessments support their intended use. Add, eliminate, or revise assessments based on findings.

Classroom Assessment System Audits

Examine the number and type of assessments by month of the year and the relationship of those assessments to the depth and breadth of the state content standards. Add, eliminate, or revise assessments based on findings.

Concluding Thoughts



- Developing a high-quality classroom assessment system is **not a one-size-fits-all** endeavor.
- There is flexibility within the bounds of quality criteria.
- Remember that Rome wasn't built in a day: **it will take time** to improve the quality of your classroom assessment system.

Questions and comments

- How do you as a district/school leader protect classroom assessment systems from incoherence as a result of incoherent external assessments (district and state)?
- What are your remaining questions, concerns, and comments?

Coherence Take Home Message

Just to recap, here are some of the first things you should do to implement a balanced assessment system:

1. Check the quality of curriculum.
2. Check the quality of embedded assessments.
3. Conduct an assessment audit and streamline your assessment requirements.
4. Organize professional learning that integrates curriculum, instruction, and assessment.



DEVELOPING AND IMPLEMENTING BALANCED ASSESSMENT SYSTEMS TO SUPPORT SCHOOL IMPROVEMENT AND STUDENT LEARNING

Facilitated by Scott Marion, Ph.D.
Executive Director,
Center for Assessment



4/01 Introduction to Balanced Systems of Assessment

4/13 The Critical Role of Curriculum and Learning Progressions in Balancing Assessment Systems

4/20 The Components of Balanced Assessment Systems

5/11 Theories of Action as a Tool for Developing & Implementing Balanced Assessment Systems

5/27 Does it Quack Like a Duck? Would I Know a Balanced Assessment System if I Saw One?

SESSION MATERIALS
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