Oklahoma Educated Workforce Initiative

Recommendations for Oklahoma's College- and Career-Readiness Standards

EXECUTIVE SUMMARY

The Process

The Oklahoma Educated Workforce Initiative commissioned Dr. Schauna Findlay Relue, Director of Learning with Five-Star Technology Solutions and president of the Indiana Association for Supervision and Curriculum Development; and Janet Rummel, Chief Academic Officer of the Indiana Network of Independent Schools, to analyze Draft 3 of the Oklahoma Standards and compile recommendations for Oklahoma's College- and Career-Readiness Standards, released September 14, 2015, by the Oklahoma State Department of Education. Relue and Rummel have both previously been commissioned by other states to conduct reviews of draft state standards, as they are recognized as national standards and assessment experts. Both have served as members of the Indiana Department of Education and have testified numerous times regarding both the content and process of developing college- and career-readiness standards. The recommendations included herein address gaps in content and skills necessary for students to be college- and career-ready as well as wording additions and clarifications which make the standards clearer.

Measuring College- and Career-Readiness

While the Oklahoma Higher Education Regents certified that the current PASS standards meet the content and skills necessary for college- and career-readiness, it is important to note that that endorsement assumes students learn the standards to a proficiency level. While standards lay the foundation for curriculum, the standards must be assessed at the same level of rigor at which they are written, and students must demonstrate proficiency on those assessments in order to be considered academically college- and career-ready.

The Recommendations

There are nearly 100 detailed recommendations listed by standard in this report; nearly 50 in English Language Arts & Literacy Standards and over 40 in Mathematics. In addition, there are recommendations for additional standards documents and resources to be developed to support teachers in implementing the standards. The recommendations below represent the full summary of revisions suggested for the third draft of Oklahoma's College- and Career-Readiness Standards:

English Language Arts & Literacy Standards

Resources to be Developed to Support the Standards:
- Create literacy standards for the content areas for grades 6-12. To be ready for college and careers, students must know how to read and write following the conventions of each discipline. Teachers of history and science are the most expert teachers to teach students how to read primary source documents and scientific texts, for example, and to teach them how to write in the various ways that are required in the disciplines. These disciplinary literacy standards should encompass all disciplines across a student's course of study.
- Add a detailed glossary of all content specific vocabulary used in the standards to ensure consistent definitions are used instructionally.
- Add a comprehensive reading list for specific grades or grade bands which aligns to the qualitative and quantitative measures of text to illustrate "grade-level" reading. Provide guidance on text selections.
- Provide resources/links of recommended sites where current research-based fluency rates and reading levels can be found and used to guide instruction.
- Provide student exemplar writing samples for each genre at each grade level with the task from which the samples were generated. Provided an annotated copy to identify specific elements of the state's rubric that is used to score essays. Ideally, provide samples from the continuum of the rubric.

Standard 1:
- Reading: Add a standard, 1.X.R.4 to grades 6-12 where "Students will delineate a speaker's argument and specific claims, evaluate reasoning and relevance and sufficiency of evidence, and analyze use of rhetoric and its impact."

- Writing: Add a standard, 1.X.W.3 to grades 6-12 where "Students will create engaging presentations that make strategic and creative use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) to add interest and enhance understanding of findings, reasoning, and evidence." This standard could be introduced at a less complex level for middle grades. This standard could also be added to W.1.
- Writing: In grades 9-12, reword 1.X.W.1 to include, "…and integrate multiple sources of information presented in diverse media and formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source."

Standard 2:
- Reading Foundations: For the fluency standards which do not continue beyond Grade 2, add a statement such as, "Students will be expected to build upon and continue applying fluency concepts learned previously at grade level appropriate rates with grade level appropriate texts."

- Reading Foundations: Add CVC words to 2.K.RF.3.C
- Reading Foundations: For standard 2.X.RF.3.E, add examples of word families for each grade level.

- Reading: Add to standard R.1. "attention to the impact of word choice on meaning and tone."
- Reading: Add "phrases" to standard R.1, i.e., "attention to the meaning of individual words, phrases, and sentences."
- Reading: Add to standard R.1 "…to grade-level or complex literary and informational texts…"
- Reading: Add to standard R.2 for grade 5 "identify author's purpose, point of view and perspective."
- Reading: In standard 6.R.2, change to "summary and/or paraphrase as appropriate to task."
- Reading: In standard 3.X.R.1 in grades 5 and above, the standard needs to end with "to determine meaning of unknown (or new) words."
- Reading: In standard R.2 for grades 6-12, add "central idea(s) and key details." Texts become more complex after elementary and often have more than one main idea, so students need to find the central idea.
- Writing: Add specific writing requirements in terms of genre and length for grades K-5. Define by grade level where opinion writing shifts to persuasive and then shifts again to argument. List specifically the modes of writing which should be addressed each year in addition to stating the focus mode.

Standard 3:
- Reading: In grades PK-5, students should do more than "identify new words." They should "determine the meaning of new words."
- Reading: Beginning in grade 2, students should "Consult reference materials, both print and digital (e.g., dictionary), to determine or clarify the meanings of words and phrases." In grade 5, add "thesaurus."
- Reading: In the upper elementary through grade 12, students should "Analyze the meanings of proverbs, adages, and idioms in context."
- Reading: Beginning in grade 5, students should "determine meaning of figurative language and evaluate its impact on meaning and tone."
- Reading: Beginning in grade 6, students should "Interpret figures of speech in context and analyze their role in the text."

Standard 4:
- Reading: In grade Pre-K and K, students should also retell the events of a literary text.
- Reading: Add "setting" to Literary standards beyond grade 1 and add complexity of how setting impacts the text as grade levels increase.
- Reading: There is a change in organizational numbering of standards from grades PK-2 to grade 3. Adjust numbers to keep Literary and Informational standards numbered consistently in all grades. In grade 12 the organizational structure from the previous grade levels is abandoned. Maintain the separation of Literary and Informational texts for 4.12.R.2 and 4.12.R.3.
- Reading: In standard R.2 for grades 6-12, add "point of view and perspective."
- Reading: In standard R.3 for grades 6-12, add "author's purpose and perspective" and "central idea(s)" rather than main idea.
- Writing: Add the types of writing (format) the students should be expected to use when writing each genre by grade level, e.g., letter, essay, editorial, article, etc. Specify in the primary and intermediate grades where students shift from writing sentences to a paragraph to multiple paragraphs.

- Writing: Add at what grade levels students are expected to reference/paraphrase, quote, and cite evidence in their informative and argument writing. Specify the style(s) of citation that students should use in each grade level once citing begins in the standards.
- Writing: Expand Narrative to include fiction, personal reflections, poetry, and scripts that allow students to demonstrate awareness of literary concepts and genres.
- Writing: Add a high school writing standard which teaches students how to write the kinds of college and career documents to open the door to their next step into the post-secondary world, e.g., *"Read and follow directions to complete an application for college admission, for a scholarship, or for employment."*

Standard 5:
- Reading: In the writing standards, students are asked to write where they apply knowledge of grammar and sentence types. There should be corresponding reading standards for each grade level, where students are asked to identify each grammatical skill or sentence type so that students can identify in authentic application how these skills are used by authors to communicate in writing. Prior to and continuing through high school, students should be asked to analyze the impact grammar, conventions, and rhetorical style has on meaning and tone.
- Writing: The Writing overarching standard statement is not the correct statement for Language standards.
- Writing: For standards which do not continue to the next grade, rather than state "This standard does not continue," state, "This standard should continue to be applied from the previous grade(s)." Standards which currently do not state this, but which fall off after a grade level, should have the statement added as well.
- Writing: Use of Standard American English is not explicitly stated until grade 11. While its use may be implied for earlier grades, it would be clearer to add this statement in preceding grades also.

Standard 6:

- Reading: In grade 4, 6.4.R.3 requires "Students will determine the accuracy and relevance of the information gathered." This standard needs to continued through grade 12, and beginning in grade 7, students need to assess the credibility of the source.

- Reading: Only in grade 12 does standard R.3 require students to comprehend resources. Add "comprehend" to 6.X.R.3 beginning in grade 3.
- Writing: Beginning with 6.7.W.2, specify the style(s) of citation that students should use in each grade level when citing text.
- Writing: In grade 12, only one standard is listed, 6.12.W.1. To be consistent, follow the same format used in other grades with W.1 and W.2.

Standard 7:
- Reading: Through grades 9-12, students should analyze how people experience media messages based on point of view and culture; analyze the changing role of media and the impact of media in forming opinions on issues based on events; and analyze rhetorical and logical fallacies in media. Add a standard to address these skills.

- Writing: Standard 7.10.W.1 is unclear. The statement made also does not follow the progression of skills being applied from grade 9 to grade 11.
- Writing: The standards should require students to work both independently and collaboratively on products. Products should be publicly shared with an authentic audience. Add standards to address these skills.

Standard 8:
- Reading: Add to the standards that students must read grade-level text with silent and oral fluency, and adjust when reading aloud based on the reading purpose and the nature of the text.
- Writing: Students are not asked to "synthesize information across multiple sources." This skill needs to begin in grade 7.

Mathematics Standards

Resources to be Developed to Support the Standards:
- Create examples for each standard. While it needs to be made clear that such examples do not reflect all of the possible problem types that may be encountered on a state assessment, many of the standards lack clarity in terms of student expectations. Example problems allow teachers to better understand the student expectations.
- Add a detailed glossary of all content specific vocabulary used in the standards to ensure consistent definitions are used instructionally.
- Provide resources/links of recommended sites where high-quality, standards-aligned instructional materials and additional sample problems may be found, particularly because textbook materials will not yet be available that are aligned to these standards.
- As part of a second document, prepare "crosswalk" documents that demonstrate alignments to previous OK standards and to CCSS in order to facilitate teachers' abilities to find high-quality instructional resources aligned to those sets of standards. Be sure to include a short explanation of any differences in student expectations between standards.
- Add comments regarding the Depth of Knowledge (DOK) of each standard and include a discussion of DOK with math examples at each level.

General Notes:
- There are several examples of a lack of vertical articulation between grade levels. In some grades there are cases of misalignment between strands within the grade level. Some examples of these are included below.
- There are certain instances in which the expectations of these standards are lower than other states' college and career readiness standards. Some examples of these are included below.

Algebraic Reasoning and Algebra:
- While students are asked to "describe" patterns beginning in Grade 2, students are not asked to identify a "rule" until Grade 3. Introduce "giving a rule" earlier; students should begin this in Grade K.
- The concept of solving for an "unknown" is introduced in Grade 2; this concept should be introduced earlier.
- Representing an unknown with a symbol begins in Grade 3; this concept should be added as early as Grade 1.
- Ensure consistency. For example, At the Standard level, solving "real-world and mathematical problems" is included in 2.A.1 but not in 1.A.1. The Benchmark 1.A.1.1 does include "real-world situations" in the example. Add "real-world" to 1.A.1.
- Two-step equations need to be added to this strand. First, two-step equations are included in the Data and Probability strand as early as Grade 3, but students are not introduced to the concept in Algebraic Reasoning until later. Second, in order to meet college and career readiness expectations, by Grade 4 students need to be doing more than the example given for Benchmark 4.A.2.2 "*Find the value of the unknown in the following number sentences to make them true. 4 x y = 12; c + 9 = 17.*" Other college career readiness standards require Grade 3 students to do the following (higher level algebraic thinking): Mrs. Moore's third grade class wants to go on a field trip to the science museum. The cost of the trip is $245. The class can earn money by running the school store for 6 weeks. The students can earn $15 each week if they run the store. 1. How much more money does the third grade class still need to earn to pay

for their trip? 2. Write an equation to represent this situation." Further, Grade 4 Number and Operations refers to multi-step problems that are not yet required by the Algebraic Reasoning and Algebra strand; ensure consistency of expectations across standards within a grade level.

- In most grade levels, there is a need to add language to the benchmarks in the Algebraic Reasoning and Algebra strand that matches the grade-level expectations of the Number and Operations strand. For example, if students are working with fractions in Number and Operations, then the expectations of the Algebraic Reasoning and Algebra strand should require students to utilize fractions in at least some of these benchmarks.
- Slope is not introduced until Pre-Algebra, which is too late for college and career readiness standards. The Pre-Algebra Benchmark, PA.GM.2.1 requires students to, "Understand and apply the relationships between the slopes of parallel lines and between the slopes of perpendicular lines. Dynamic graphing software may be used to examine these relationships." While the Algebra I Benchmark, A1.A.4.2 requires students to, "Use the slope to differentiate between lines that are parallel, perpendicular, horizontal, or vertical." Besides representing needless repetition of content, the Pre-Algebra benchmark is written at a higher DOK than the Algebra I benchmark.
- College and career readiness standards generally require students in Algebra I to find and interpret zeros of a quadratic function, using a graph or by factoring for example. The first time zeros appear in these standards is in Algebra 2, Benchmark A2.A.1.4 "Find and interpret the meaning of zeros of polynomials from a graphical perspective." This should be included in Algebra I.

Number and Operations:
- The first time comparative symbols ($<$, $=$, $>$) are required is in Benchmark 2.N.1.6. Most states' college and career readiness standards require this in Grade 1.
- In Grade 2, expand the requirement to locate a whole number on a number line from 100 to 1000 to match the rest of the standard 2.N.1 requirements.
- Remove fractions from Grade 2 and add more fraction concepts to Grade 3. This will narrow and deepen the focus. In Grade 3, students should be able to compare fractions and place them on a number line. This prepares students for the fraction computation expectations of Grade 4 and teaches and reinforces the notion that fractions are numbers rather than merely pieces of a whole. Replace the fraction content in Grade 2 with a deeper understanding of place value.
- Add to Grade 5: Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. This builds a deeper foundational understanding of both multiplication and prepares students for ratios.
- It is not clear that the Benchmarks for Standard 6.N.2 ensure a full understanding of the concept of ratio. For example, Benchmark 6.N.2.1 should include that student "interpret" rather than "identify." Also rather than "compare", students should be looking at relative sizes.
- The definition of an irrational number presented in Benchmark PA.N.1.3 is incomplete, and no other definition is listed.

Geometry and Measurement:
- In order to develop depth of understanding, rather than including a wide number of content expectations in each grade level, it is more developmentally appropriate to include fewer concepts in each grade level, allowing for a deeper understanding of those concepts.
- Benchmark 1.GM.2.1 requires students to use "standard measuring tools to measure the lengths of objects," but it is not until Grade 2 Benchmark 2.GM.2.2 where students use a ruler. It is not

at all clear what standard measuring tool Grade 1 students are supposed to use; clarity is needed. It would be more developmentally appropriate to move the concept of length to Grade 2 – particularly Benchmark 1.GM.2.3 in which students need to describe why measurements using different units are different; this is a fairly abstract concept, and developing skills in Number and Operations is of greater foundational importance in Grade 1.

- Generally speaking, the Geometry and Measurement standards should be narrowed in each grade level, allowing for greater depth in specific grade levels. Further, it should be ensured that the content relates to other standards in the grade level. For example, the requirement that students measure temperature with an analog thermometer in Grade 3 does not seem to relate to any other standard. Determine where this skill is required in Science.
- The concept of congruence does not appear until high school geometry, which is much less rigorous requirement than other states' college and career readiness standards. Transformations are introduced as early as Grade 4, but it is unclear why. Again, narrowing and deepening the concepts is preferred. The concept of congruence as related to transformations should occur before high school.
- The concept of similarity is introduced in Grade 7, but similarity is not mentioned again until high school Geometry. Similar triangles should be introduced in middle school, and like congruence, the concept of similarity should be related to transformations.

Data and Probability:
- Grades PK-5 standards and benchmarks are appropriate and well-written.
- Rather than introducing probability concepts in Grade 6, Standard 6.D.1 should be expanded to include a greater depth of understanding with respect to an analysis of data with respect to their context.
- Add to Grade 6-8 a discussion of sampling and the idea that statistics can be used to make conclusions about a populations based on a sample of the population. Random sampling should be discussed as well as the impact of sample sizes.
- The concepts described in Benchmarks A2.D.2.1 and A2.D.2.2 regarding understanding that how data are displayed can influence its interpretation and investigating misleading data need to be moved much earlier. Even English Language Arts standards require students to think critically about data and claims; these are essential opportunities for students to exercise critical thinking skills.

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Jennifer Monies, Executive Director
405-272-4460 | www.okeducatedworkforce.org