



# A Roadmap to Employability: Integrating Higher-Order Skills Into Curricula and Assessment

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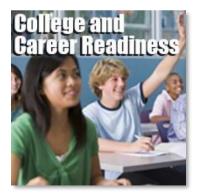
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### About our speakers ...





Before joining Strategos Group, **Johnny Key** served as Secretary of the Arkansas Department of Education from 2019 to 2023 and as Commissioner of the Department from 2015 to 2019, overseeing the state's 237 school districts and 18 charter school systems. Under Johnny's leadership, the department developed a vision to transform Arkansas into a national leader of student-focused education. Arkansas became a national leader in computer science and literacy education. Johnny was also Vice President for University Relations at the University of Arkansas System from 2014 to 2015. Johnny also served as a state senator in Arkansas from 2009 to 2014, holding leadership positions, including Minority Leader and Chair of the Senate Education Committee, among others. Johnny was a state representative from 2003 to 2008.



**Doug Mesecar** ranks among the small number of education consultants who have worked as an education policymaker, entrepreneur, and executive in the private sector. He has built a track record of success with deep knowledge about what drives the K-12 market, from the economic buyer to everyday user. A former teacher, Doug served at the U.S. Department of Education as Deputy Chief of Staff for the Department and Assistant Deputy Secretary of the Office of Innovation and Improvement. He also served in the U.S. Congress as a professional staff member for the House Education and Workforce Committee. He held senior executive positions for companies serving the K-12 market, including IO Education (now Illuminate), Sylvan Learning, and Scholastic Education.



**Dr. Doris Zahner** is the Chief Academic Officer at CAE, where she provides thought leadership and oversees all research and development studies pertaining to CAE's performance-based assessments. Dr. Zahner holds a Ph.D. in cognitive psychology and an MS in applied statistics from Teachers College, Columbia University. In addition to her responsibilities at CAE, Dr. Zahner is an adjunct associate professor at Barnard College and Teachers College, Columbia University, as well as New York University, where she teaches statistics courses to undergraduate and graduate students in the social sciences and public policy.





# **Learning Objectives**

#### Learn:

- How state and federal funding and policy can support the integration of higher-order skills into instruction, curricula, and measurement
- Insights from the former secretary of education of Arkansas about how to design a K12 educational system that truly prepares students for employability and entrepreneurship
- How higher-order skills connect with and complement content knowledge
- Innovative ways districts are teaching and measuring higherorder skills across curricula







### What is your role?

- a. Teacher/instructor
- b. School Counselor
- c. School Administrator
- d. District Administrator
- e. Other









Does your school/district have Portrait of a Graduate?





In your opinion, which of the following higher order skills is the most important for students to master?

- a. Critical Thinking
- b. Creative Problem Solving
- c. Communication
- d. Collaboration
- e. Citizenship





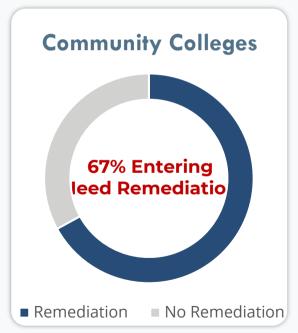


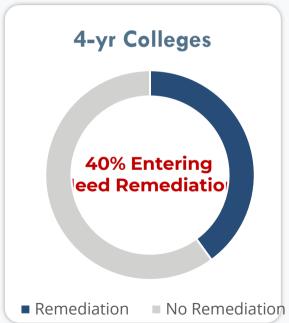


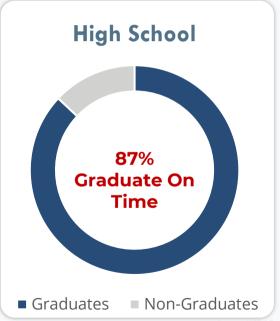


### Are We Preparing Students for Their Next Step?

- Remedial course work for students entering higher ed is very high
- How can this be with a high average national HS graduation rate?







Source: USDOE



### Supporting Higher Order Skills Through Funding and Police

There are federal programs and policies that can support higher-order skills being integrated into curricula and assessment:

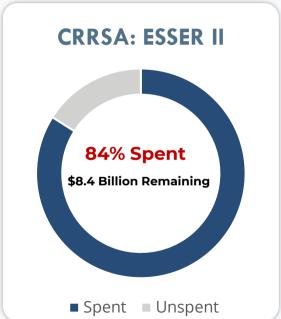
- ESSA requires that state assessments measure "higher order thinking skills and understanding," and explicitly allowing the use of multiple assessments—including "portfolios, projects, or extended-performance tasks"—as part of state systems.
  - However, most states only do this perfunctorily with a few MC questions on state tests
- Innovative Assessment Demonstration Authority
- Competitive Grants for State Assessment (e.g., Georgia)
- Stimulus funding still available!
- Montana federal testing waiver for "through-year" assessment

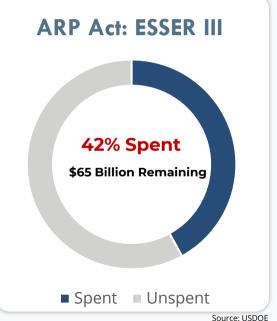


### Federal Stimulus Spending: National View

- ESSER Funding Spent by Stimulus Package (as of 7/31/23)
- \$74 Billion Remaining



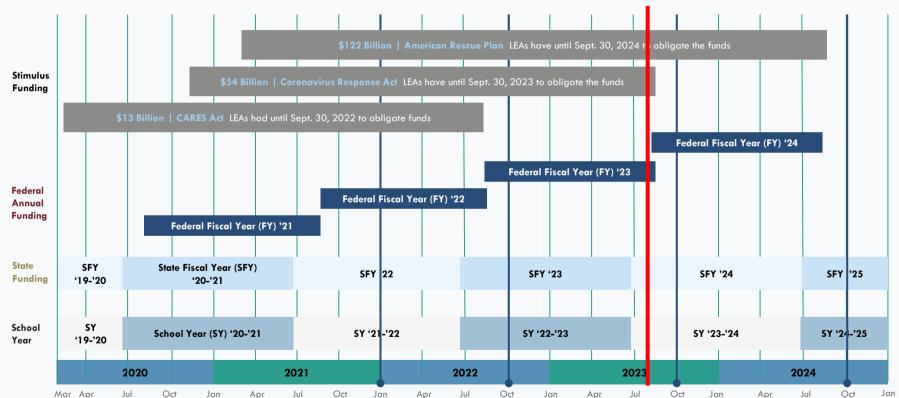




Source. USDUE



### Federal Stimulus Spending Timeline





### Supporting Higher Order Skills Through Funding and Police

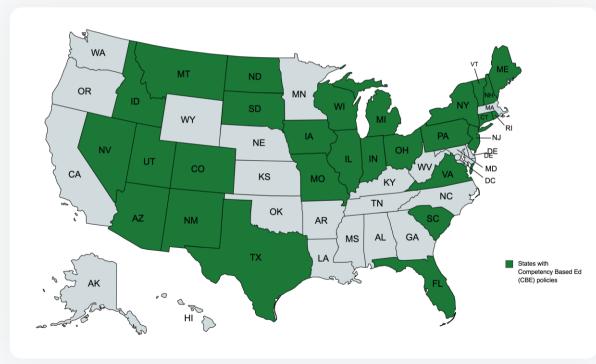
Significant action is at the state level in terms of funding and policy to support the integration of higher-order skills into curricula and assessment:

- 29 States have competency-based education policies or requirements
- 16 States have a Portrait of a Graduate / Graduate Profile
- 15 States are part of CCSSO's Innovation Lab Network
- 6 States are promoting student-centered and/or personalized learning initiatives
- Other State innovations (e.g., Missouri district pilot)



### **Competency-Based Education**

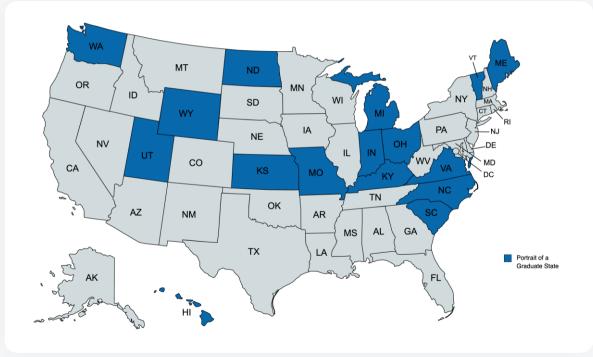
- Many states have some form of competency-based education (CBE) policy in place
- CBE allows for emphasis on higher order skills





### Portrait of a Graduate States

- 16 states with a version of a Portrait of a Graduate / Graduate Profile
- Emphasize higher-order skills, but lack measurement
- Many are struggling to implement





# The Challenge – Creating Greater Learning Opportunity for ALL Students

- Make learning relevant Students need to see the application of content knowledge "IRL"
- The adults must create the pathways
- The pathways must start early, and they must be diverse
- The pathways must have vertical progression



# The Challenge – Creating Greater Learning Opportunity for ALL Students

#### Creativity/STEAM

Odyssey of the Mind, Destination Imagination, eCYBERMISSION

#### Robotics

VEX, FIRST

**Economics and Entrepreneurship** 

- Economics Arkansas (Council for Economic Education councilforeconed.org)
- Network for Teaching Economics (nfte.com)
- CTE Student Organizations FBLA, FFA, FCCLA



# Community Partnerships

#### **Engage Community Organizations**

- Business and Industry
- Cultural
- Faith-Based
- State, Local, and Federal Government Entities

#### **Create Collaborative Communication**

- Establish meaningful dialogue (more than just events)
- Seek partner expectations and share your standards
- Celebrate success



### Project Future Story Southside School District – Batesville, AR

- Partnership between the district and the White River Regional Chamber of Commerce
  - University of Arkansas Community College Batesville
  - Manufacturers Bad Boy Mowers, Spartan Mowers,
  - Medical White River Health System

"...when you put young men and women in charge of their future, they will own it, and they'll take it to a level that I and others had not event anticipated."

Roger Ried, Principal

https://www.whiterivernow.com/2019/12/17/localbusinesses-southside-students-participate-in-projectfuture-story-celebration/



# Springdale Schools of Innovation

- Don Tyson School of Innovation (6-12)
  - Personalized and accelerated learning connected to arts, business and industry, and post-secondary
  - Clear expectations/proficiency scales
  - Focus on student agency
- Jim D. Rollins School of Innovation (Elementary)
  - Age-appropriate elements aligned with DTSOI
  - Personalized, project-based learning







## Academies of Central Arkansas – Ford Next Generation Learning



The missing piece...?

Measurement!







If you are measuring your students' higher order Portrait of a Graduate skills, how are you doing so?

- a. Classroom observation
- b. Classroom assessment
- c. Summative assessment
- d. Student survey
- e. Other





If you are teaching your students' higher order Portrait of a Graduate skills, how are you doing so?

- a. Embedded in coursework
- b. Dedicated module/class
- c. Self-study
- d. After school activities
- e. Other







### Why are higher order skills important?



Our research shows that students who perform better on our performance-based assessment of these skills have:

- **Higher cumulative GPAs** at the end of their senior year of college (Zahner & Steedle, 2012).
- Positive post-university outcomes as measured by employment, salary, and graduate school enrollment as well as employer ratings (Zahner et al, 2022).

#### How can we measure these skills?







Real-World Scenarios

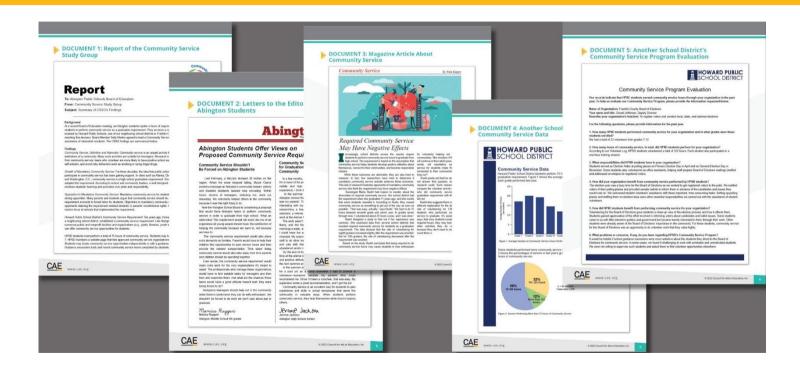
**Recommend a Solution** 

"Performance assessments can provide extensive and nuanced evidence of student abilities, including meaningful insight into student thinking and performance."

(U.S. Department of Education: Strategies for Using American Rescue Plan Funding to Address the Impact of Lost Instructional Time, Washington, DC, 2021.)



#### **Performance Task Documents**



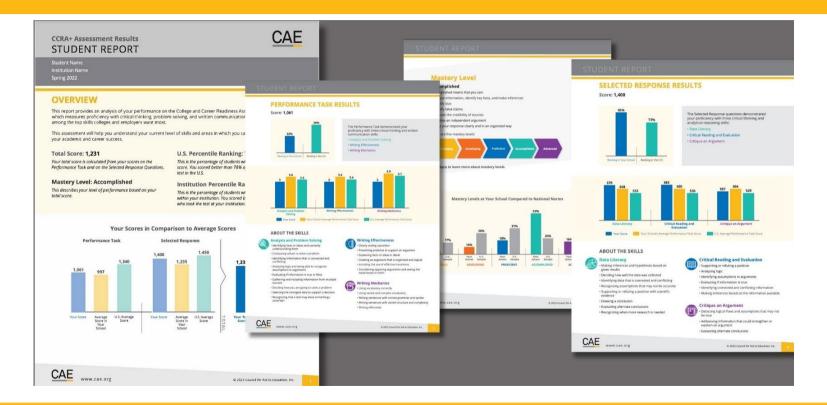


### **Performance Task Scoring Rubric**

	1	2	3	4	5	6
Analysis and Problem Solving Making a logical decision or conclusion (or taking a position) and supporting it by utilizing appropriate information (facts, ideas, computed values, or salient features) from the Document Library.	May state or imply a decision/conclusion/ position Provides minimal analysis as support (e.g., briefly addresses only one idea from one document) or analysis is entirely inaccurate, illogical, unreliable, or unconnected to the decision/conclusion/ position	States or implies a decision/ conclusion/position Provides analysis that addresses a few ideas as support, some of which is inaccurate, illogical, unreliable, or unconnected to the decision/conclusion/ position	States or implies a decision/ conclusion/position Provides some valid support, but omits or misrepresents critical information, suggesting only superficial analysis and partial comprehension of the documents May not account for contradictory information (if applicable)	States an explicit decision/ conclusion/position Provides valid support that addresses multiple pieces of relevant and credible information in a manuerate analysis and comprehension of the documents, some information is omitted May attempt to address contradictory information or alternative decisions/ conclusions/positions (if applicable)	States an explicit decision/ conclusion/position Provides strong support that addresses much of the relevant and credible information, in a manner that demonstrates very good analysis and comprehension of the documents Refutes contradictory information or alternative decisions/conclusions/ positions (if applicable)	States an explicit decision/ conclusion/position Provides comprehensive support, including nearly all of the relevant and credible information, in a manner that demonstrates outstanding analysis and comprehension of the documents Thoroughly refutes contradictory evidence or alternative decisions/ conclusions/positions (if applicable)
Writing Effectiveness Constructing organized and logically cohesive arguments. Strengthening the writer's position by providing elaboration on facts or ideas (e.g., explaining how evidence bears on the problem, providing examples, and emphasizing especially convincing evidence).	Does not develop convincing arguments; writing may be disorganized and confusing Does not provide elaboration on facts or ideas	Provides limited, invalid, over-stated, or very unclear arguments; may present information in a disorganized fashion or undermine own points Any elaboration on facts or ideas tends to be vague, irrelevant, inaccurate, or unreliable (e.g., based entirely on writer's opinion); sources of information are often unclear	Provides limited or somewhat unclear arguments; presents relevant information is not woven into arguments on the that information is not woven into arguments  Provides elaboration on facts or ideas a few times, some of which is valid; sources of information are sometimes unclear	Organizes response in a way that makes the writer's arguments and logic of those arguments apparent but not obvious Provides valid elaboration on facts or ideas several times and cites sources of information	Organizes response in a logically cohesive way that makes it fairly easy to follow the writer's arguments Provides valid elaboration on facts or ideas related to each argument and cites sources of information	Organizes response in a logically cohesive way that makes it very easy to follow the writer's arguments Provides valid and comprehensive elaboration on facts or ideas related to each argument and clearly cites sources of information
Writing Mechanics Demonstrating facility with the conventions of standard written English (agreement, tense, capitalization, punctuation, and spelling) and control of the English language, including syntax (sentence structure) and diction (word choice and usage).	Demonstrates minimal control of grammatical conventions with many errors that make the response difficult to read or provides insufficient evidence to judge Writes sentences that are repetitive or incomplete, and some are difficult to understand Uses simple vocabulary, and some vocabulary is used inaccurately or in a way that makes meaning unclear	Demonstrates poor control of grammatical conventions with frequent minor errors and some severe errors. Consistently writes sentences with similar structure and length, and some may be difficult to understand. Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.	Demonstrates fair control of grammatical conventions with frequent mi nor errors. Writes sentences that read naturally but tend to have similar structure and length. Uses vocabulary that communicates ideas adequately but lacks variety.	Demonstrates good control of grammatical conventions with few errors  Writes well-constructed sentences with some varied structure and length Uses vocabulary that clearly communicates ideas but lacks variety	Demonstrates very good control of grammatical conventions  Consistently writes well-constructed sentences with varied structure and length Uses varied and sometimes advanced vocabulary that effectively communicates ideas	Demonstrates outstanding control of grammatical conventions.  Consistently writes well-constructed complex sentences with varied structure and length Displays adept use of vocabulary that is precise, advanced, and varied



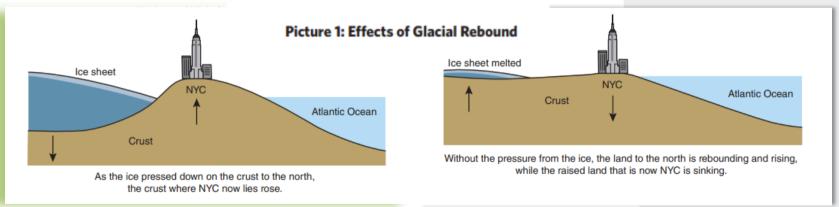
### **Performance Task Scoring Rubric**





### Part A: How is NYC Sinking?

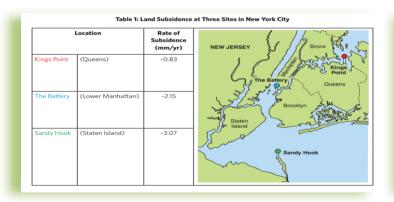
About 100,000 years ago, an ice age began that affects New York City even today. During the ice age a sheet of ice, called the Laurentide Ice Sheet, expanded across modern-day Canada and the northern United States. The ice sheet covered almost 15,000,000 square kilometers and was up to 3,048 meters thick in some areas. The ice mass pressed down on the North American Plate of Earth's crust in the north, forcing the crust down into the mantle. South of the ice sheet, the crust rose up. Think of this much like how a teeter-totter works: push down on one side and up goes the opposite side.

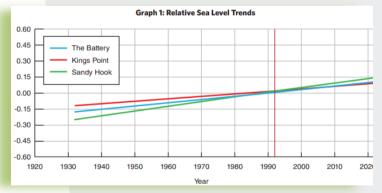


Question 1: Explain the reasons why New York City is sinking. Use evidence from the text and graphics to support your answer.

### Part B: Sinking Lands and Rising Seas

Just how do scientists determine that New York City is sinking? They use the same technology that we use to travel to a place we haven't been to before: GPS (Global Positioning System). GPS readings are made based on the distance between specific markers and GPS satellites. While we use these readings to help us find a route to a store or home, the readings can also be used by scientists to measure elevation, or the height of the land.



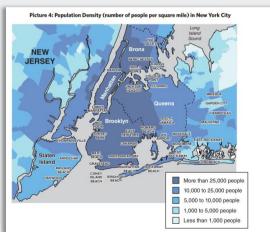


Question 2: How quickly are parts of New York City sinking, and which factor, sea-level rise or subsidence, is contributing most?

### Part C: New York City and Coastal Flooding

Worldwide, the oceans are rising. The amount of increase varies by location. The main causes are ice melt from global warming and expansion of seas due to warmer water temperatures. Along the east coast of North America, scientists predict the slowing of the Gulf Stream current will also affect rising seas.

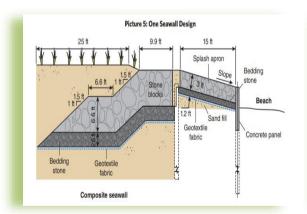


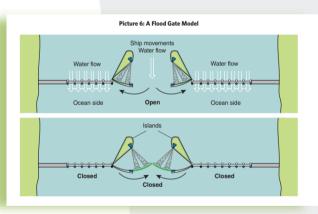


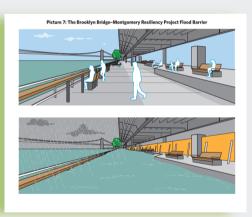
Question 3: Evaluate which areas of NYC are most vulnerable to sea-level rise and land subsidence in the next century and describe the factors you considered in your evaluation.

### **Part D: Finding Solutions**

New York City has 64 locations that need flood protection, and each has several possible solutions. Solutions may be structural, non-structural, or nature-based, with some on land and some in the water. Structural solutions are building projects such as seawalls, flood gates, more efficient storm drains, and moveable or temporary barriers. Non-structural solutions might include early warning systems or better wetland management. Nature-based ideas include seeding oyster reefs, increasing plant cover on beaches and in marshes, and restoring natural wetlands.

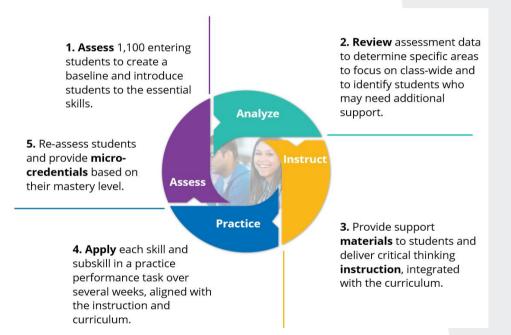






Question 4: Consider one of the three sites on the map in Picture 8 and explain why one of the structural solutions to a sinking NYC would work best in that location.

## **Integrating Curriculum and Measurement**



 This model adopts the logic of the Instructional Improvement Cycle (Cherasaro et al., 2015), in which instructors develop instructional strategies based on student data, implement these strategies, and then assess student success to inform further teaching practices.

Cherasaro, T. L., Reale, M. L., Haystead, M., & Marzano, R. J. (2015). Instructional improvement cycle: A teacher's toolkit for collecting and analyzing data on instructional strategies. (REL 2015-080). Regional Educational Laboratory Central. https://files.eric.ed.gov/fulltext/ED556126.pdf

What is or would be the greatest challenge to teaching and/or measuring higher order skills?

- a. Time to create assessment or materials
- b. Available class time
- c. Too many other requirements
- d. Teacher and/or administrator buy-in
- e. Budget









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www.cae.org

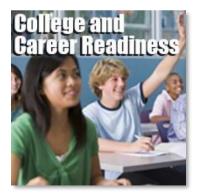
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