Strategic Vision 2025
National Assessment Governing Board

Background

In November 2016, the National Assessment Governing Board adopted its first-ever Strategic Vision, designed to focus the Board's efforts on strategic priorities and provide information on American student achievement and progress in the most innovative and effective ways. The vision, intended to focus the Governing Board's efforts through 2020, includes two broad goals: Inform and Innovate.

In August 2019, the Executive Committee recommended that the Board initiate the next iteration of its Strategic Vision, establishing priorities through 2025. Like its predecessor, the next Strategic Vision will guide the essential role the Governing Board plays in informing policymakers, educators, and the public about student achievement in our nation. One key theme that has emerged from the Executive Committee's discussions over the last several months and from an initial query of all Board members in late 2019 is a desire to connect Strategic Vision (SV) 2025 more closely to the third "i" of Impact. There are numerous examples of how NAEP and the Board have an impact, most of which are due to the individual leadership of academics or policymakers. If the Board desires to connect SV 2025 more closely to impact, then an underlying question may be how the Board can maximize the likelihood of positive impacts as a result of its work.

The Board spent nearly two years developing its first Strategic Vision, given the groundbreaking nature of the effort. The Board will draw on lessons learned from the first Strategic Vision as well as accomplishments to date in meeting its priorities. The Board intends to finalize SV 2025 over the next few meetings, taking action in August 2020.

In an effort to determine a process to engage the full Board in creating its next strategic priorities, the Executive Committee held a retreat in January 2020. The Committee tested a logic model framework and structured plans for supporting the engagement of all Board members in development of SV 2025 at the March and May quarterly meetings.

Developing Strategic Vision 2025

In testing a framework for Board discussions, the Committee focused on the implicit statement of intended impact in the first Strategic Vision: that NAEP can and should serve as a tool to help raise achievement for all children in America. What was not clearly articulated in the first Strategic Vision, however, is how NAEP did that, from the Board's perspective. The Executive Committee considered whether and how SV 2025 could be strengthened by examining how

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NAEP and the Board can (and cannot) help the nation achieve that goal. Toward that end, the Committee created a draft logic model (attached) for consideration by the Board in small, cross-committee groups in March. The Executive Committee retreat benefited from support by an external facilitator, who will also join us in El Paso to assist in the launch of SV 2025.

Action Needed: Pre-Work for March Meeting

To start the Board's deliberations on SV 2025, all members are asked to spend some time prior to the meeting thinking about what impact the Governing Board should strive to attain. You will be asked to write your statement of impact when you arrive at the meeting as part of the Friday afternoon agenda items focused on the Strategic Vision.

The materials that follow were identified by the Executive Committee as potentially useful to the Board's discussions in March. The current Strategic Vision is included and is followed by a still-relevant report, *The National Assessment Governing Board's Strategic Planning Initiative: Report on Feedback from External Stakeholders* (EDGE Consulting, February 20, 2016). This report informed the process when the Board created its first vision. Other materials include the previously mentioned accomplishments from the first Strategic Vision and the draft logic model. Additional optional materials include examples of NAEP's current and potential impact.

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National Assessment Governing Board's

Strategic Vision

The Nation's Report Card, also known as the National Assessment of Educational Progress (NAEP), was developed in 1969 to answer the important question: *"How are our nation's students doing?"* The National Assessment Governing Board established this Strategic Vision to not only answer the first question, but also to expand NAEP's impact by addressing a second question: *"How can NAEP provide information about how our students are doing in the most innovative, informative, and impactful ways?"*

Congress created the independent, bipartisan Governing Board in 1988 to set policy guidelines for The Nation's Report Card, which is the largest nationally representative, continuing evaluation of the condition of education in the United States. In statute Congress charged the Governing Board to identify NAEP subjects to be tested, determine the content and achievement levels for each assessment, approve all test questions, and take steps to improve the form, reporting, and use of results.

The Governing Board partners with the National Center for Education Statistics, which administers the NAEP program, to inform a wide range of stakeholders—including policymakers, educators, researchers, business leaders, the media, and the general public—about what America's students know and can do in various subject areas, and compare achievement data over time and among student demographic groups. This allows the nation to understand where more work must be done to improve learning among all students.

The Governing Board fulfills its statutory mission by continuously reviewing and revising its policies and practices to ensure The Nation's Report Card measures and reports meaningful information to the public.

The educational landscape of the 21st century demands increased academic ambition, greater technological sophistication, improved civic participation, and expanded global perspectives for all students. In this time of rapid and accelerating change, it is essential for The Nation's Report Card to support innovation and address the need to improve student achievement, while maintaining its timeless promise to serve as the constant and unassailable measure of student achievement for our nation. To increase the value of The Nation's Report Card as a resource to impact student achievement, the Governing Board adopted this Strategic Vision with a dual focus on innovating to enhance NAEP's form and content and informing stakeholders to expand NAEP's dissemination and use.

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Inform

The National Assessment Governing Board will promote The Nation's Report Card's wealth of information to facilitate the awareness and uses of NAEP in appropriate, timely, new, and meaningful ways. Examples of NAEP resources include: results; trends; test questions and tasks; studies; measurement innovations; frameworks that specify the content and design of NAEP assessments; and contextual variables about student demographics and educational experiences collected from students, teachers, and schools. The Governing Board will:

- Strengthen and expand partnerships by broadening stakeholders' awareness of NAEP and facilitating their use of NAEP resources.
- Increase opportunities to connect NAEP to administrative data and state, national, and international student assessments.
- Expand the availability, utility, and use of NAEP resources, in part by creating new resources to inform education policy and practice.
- Promote sustained dissemination and use of NAEP information beyond Report Card releases with consideration for multiple audiences and ever-changing multi-media technologies.

Innovate

The National Assessment Governing Board will revise the design, form, and content of The Nation's Report Card using advances in technology to keep NAEP at the forefront of measuring and reporting student achievement.
The Governing Board will:

- Develop new approaches to update NAEP subject area frameworks to support the Board's responsibility to measure evolving expectations for students, while maintaining rigorous methods that support reporting student achievement trends.
- Continue improving the content, analysis, and reporting of NAEP contextual variables by considering the questions' relevance, sensitivity, and potential to provide meaningful context and insights for policy and practice.
- Research policy and technical implications related to the future of NAEP Long-Term Trend assessments in reading and mathematics.
- Research assessments used in other countries to identify new possibilities to innovate the content, design, and reporting of NAEP.
- Develop policy approaches to revise the NAEP assessment subjects and schedule based on the nation's evolving needs, the Board's priorities, and NAEP funding.
- Develop new approaches to measure the complex skills required for transition to postsecondary education and career.

This Strategic Vision will focus the work of the Governing Board through the year 2020. By pursuing these priorities, the Governing Board will ensure that The Nation's Report Card provides the country with valuable data that measure and contribute to the improvement of student progress in achieving important knowledge and skills necessary for success as citizens in our democratic society.

Unanimously approved November 18, 2016

ACCOMPLISHMENTS AND REMAINING PRIORITIES FOR STRATEGIC VISION 1.0
DISCUSSION DRAFT – January 10, 2020

Strategic Vision 1.0 Inform + Innovate = Impact		Executive Committee		Assessment Development Committee		Committee on Standards, Design & Methodology		Reporting & Dissemination Committee	
		Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities
INFORM The National Assessment Governing Board will promote The Nation's Report Card's wealth of information to facilitate the awareness and uses of NAEP in appropriate, timely, new, and meaningful ways. Examples of NAEP resources include results; trends; test questions and tasks; studies; measurement innovations; frameworks that specify the content and design of NAEP assessments; and contextual variables about student demographics and educational experiences collected from students, teachers, and schools. The Governing Board will:	**SV Priority 1** Strengthen and expand partnerships by broadening stakeholders' awareness of NAEP and facilitating their use of NAEP resources.							•Expanded network of partners and colleagues through regular meetings, conference calls, and social media posts with relevant tags •Maintain database of meetings and points of contacts among stakeholders and partner organizations (i.e., Salesforce), allowing targeted outreach •Promoted work of NCES secondary research grants, i.e., annual poster fair, video •Engage strategically with State Policy Task Force, TUDA Task Force, and membership organizations for state policymakers and district leaders to strengthen relationships with and outreach strategies to state and urban district partners	
	SV Priority 2 Increase opportunities to connect NAEP to administrative data and state, national, and international student assessments.					•Conducted several studies to link NAEP to other assessments and indicators of student achievement	•Determine how to synthesize and report results from NAEP linking studies to provide context for NAEP		
	SV Priority 3 Expand the availability, utility, and use of NAEP resources, in part by creating new resources to inform education policy and practice.				•Develop a set of principles to guide questionnaire revisions in ways that reflect the Board's expectations for how NAEP data should be used (in conjunction with the Reporting and Dissemination Committee)	•Developed a draft statement of intended meaning for NAEP (full Board action planned for the March 2020 Board meeting)	•Conduct additional research on the appropriate and inappropriate uses of NAEP achievement levels as part of implementing ALS Work Plan •Document validity evidence for NAEP achievement levels and scale scores •Disseminate information on technical best practices and NAEP methodologies	•Developed social media toolkits for external partners to disseminate messaging about NAEP •Innovated motion graphics and short videos highlighting NAEP data analyses, along with infographic featuring multiple data points to convey cohesive message about NAEP results	•Create new tools for stakeholders to understand and interpret NAEP data, especially achievement levels
	SV Priority 4 Promote sustained dissemination and use of NAEP information beyond Report Card releases with consideration for multiple audiences and ever-changing multi-media technologies.							•Increased avenues for outreach and dissemination, specifically through emailed newsletters, frequent posts on social media and paid promotions on Facebook and LinkedIn •Social media outreach expansion of NAEP data and event promotion that led to a 20% increase in Twitter followers and a nearly 8% increase in Facebook followers, with the latter gain being above the national benchmark	
INNOVATE The National Assessment Governing Board will revise the design, form, and content of The Nation's Report Card using advances in technology to keep NAEP at the forefront of measuring and reporting student achievement.	**SV 5** Develop new approaches to update NAEP subject area frameworks to support the Board's responsibility to measure evolving expectations for students, while maintaining rigorous methods that support reporting student achievement trends.			•Revised Board policy on Framework Development (approved March 2018) •Initiated framework reviews for NAEP Reading and Mathematics Frameworks •Implemented a NAEP Mathematics Framework Update (adopted November 2019) •Streamlined reviews of NAEP assessment items, paving the way for more proactive NAEP framework reviews	•Implement a NAEP Reading Framework Update (to be presented in August 2020) •Revise the Board's Item Development and Review Policy with additional linkages to framework reviews	•Revised the Board policy on NAEP achievement level setting (approved November 2018) •Formed the Achievement Levels Working Group to develop a comprehensive plan for implementing the remaining recommendations from the recent evaluation of NAEP achievement levels (full Board action planned for the March 2020 Board meeting)	•Complete Achievement Levels Procedures Manual to describe implementation details of the revised policy statement (draft to be discussed at March 2020 COSDAM meeting)		

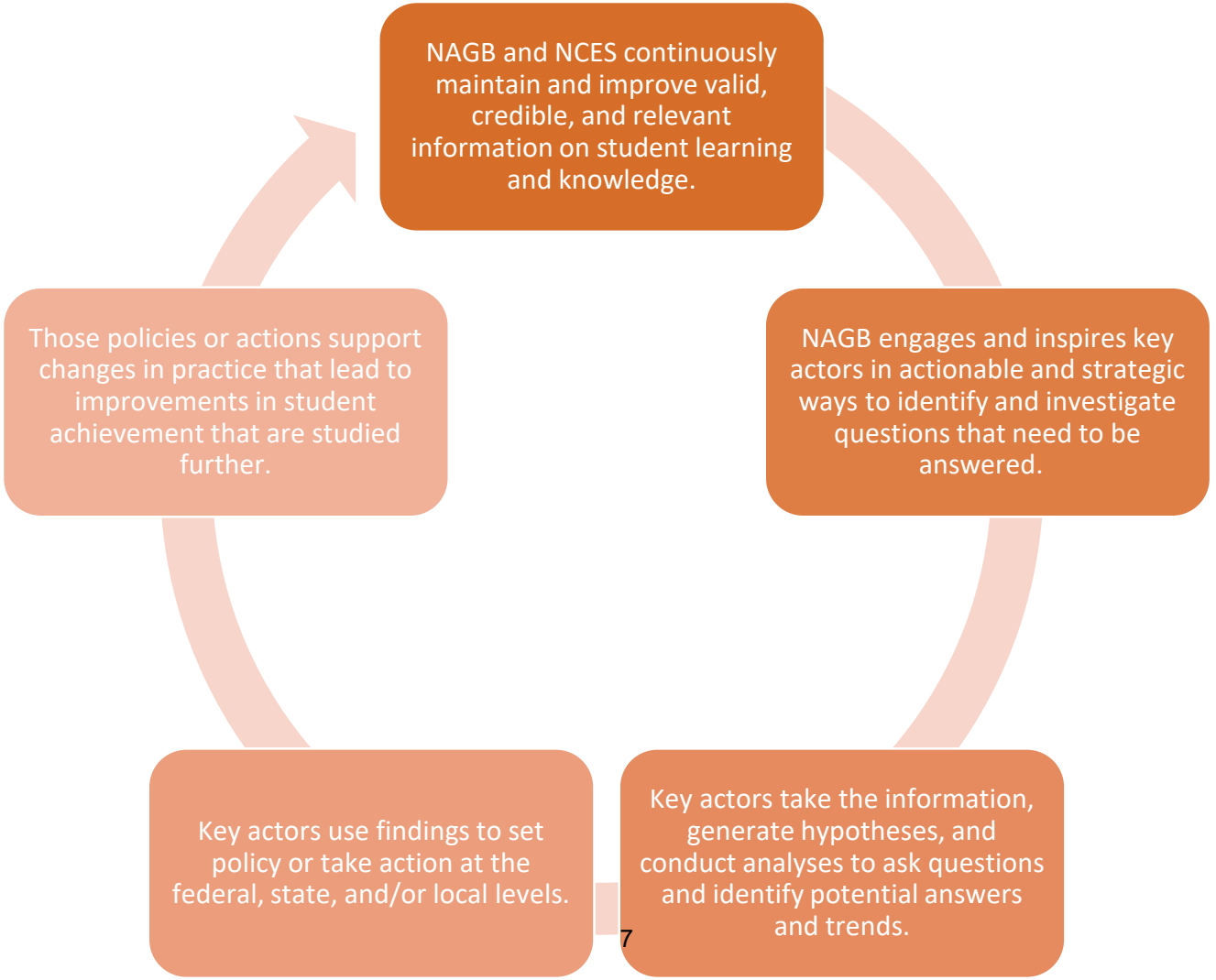
ACCOMPLISHMENTS AND REMAINING PRIORITIES FOR STRATEGIC VISION 1.0
DISCUSSION DRAFT – January 10, 2020

Strategic Vision 1.0 Inform + Innovate = Impact		Executive Committee		Assessment Development Committee		Committee on Standards, Design & Methodology		Reporting & Dissemination Committee	
		Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities	Accomplishments	Remaining Priorities
	SV Priority 6 Continue improving the content, analysis, and reporting of NAEP contextual variables by considering the questions' relevance, sensitivity, and potential to provide meaningful context and insights for policy and practice.							•Produced graphics for dissemination featuring contextual data at least twice per month	•Improve measure of socioeconomic status on NAEP
	SV Priority 7 Research policy and technical implications related to the future of NAEP Long-Term Trend assessments in reading and mathematics.	•Determined to continue LTT with investment to explore feasibility of transadapting to a digital assessment				•Commissioned white papers, organized a symposium, and presented at conferences on the policy and technical considerations of the NAEP Long-Term Trend (LTT)Assessment; updated Assessment Schedule to include a 2020 administration of LTT after receiving appropriations for this specific purpose (approved March 2019)	•Consider future design of LTT as digital-based assessment for 2024 and beyond		
	SV Priority 8 Research assessments used in other countries to identify new possibilities to innovate the content, design, and reporting of NAEP.	•Held international assessment symposium during the March 2017 Board meeting		•Commissioned a white paper on other countries' assessment programs to inform frameworks, framework processes, contextual data, and reporting					
	SV Priority 9 Develop policy approaches to revise the NAEP assessment subjects and schedule based on the nation's evolving needs, the Board's priorities, and NAEP funding.	•Established policy priorities (adopted March 2018) and approved the NAEP Assessment Schedule (May/July 2019)				•Explored technical implications of consolidating frameworks and coordinating assessments •Made changes to design of 2021 Reading and Math assessments	•Consider potential design changes to Technology and Engineering Literacy assessment		
	SV Priority 10 Develop new approaches to measure the complex skills required for transition to postsecondary education and career.	•Established the Ad Hoc Committee on Measures of Postsecondary Preparedness, which recommended pursuing a conceptual framework and dashboard •Created drafts of conceptual framework and dashboard for Board discussion in November 2019	•Determine whether and how postsecondary preparedness should be part of the next Strategic Vision				•Determine how to proceed with the Board's earlier research on academic preparedness for college considering recent efforts to develop a postsecondary conceptual framework and dashboard	•Drafted conceptual framework for postsecondary preparedness and collaborated with NCES on prototype dashboard for postsecondary preparedness	•Determine whether and how postsecondary preparedness should be part of the next Strategic Vision

WHAT IS NAGB'S INTENDED IMPACT?

TO RAISE ACHIEVEMENT AND CLOSE GAPS FOR ALL U.S. STUDENTS

HOW?



EXAMPLES OF INFORMATION

- Achievement data
- State and local reporting
- Achievement level descriptions
- Contextual variables
- Assessment schedule
- Frameworks
- Comparisons or linkages to international assessments
- Quality and design of assessment

EXAMPLES OF KEY ACTORS

- Congress
- Governors
- State boards of education
- State legislators
- State superintendents and commissioners
- Local superintendents, principals, and educators
- Education researchers
- Universities
- Philanthropy
- Nonprofits

Discussion draft for the
National Assessment Governing Board
March 2016 Meeting

The National Assessment Governing Board's Strategic Planning Initiative

Report on Feedback from External Stakeholders

Submitted by

James Kohlmoos, Partner
Ruth Goltzer, Partner

EDGE Consulting, LLC
February 20, 2016

Report prepared under contract to the National Assessment Governing Board.

Overview

The National Assessment Governing Board (Governing Board) is in the process of developing a Strategic Plan to guide its work on the National Assessment of Educational Progress (NAEP) for the next five years. As a part of that development process, the Board contracted with us at EDGE Consulting, LLC to collect input from a diverse group of education stakeholders and experts representing different parts of the education policy community who are familiar with NAEP and its various uses and components. The Governing Board sets policy for NAEP and the National Center for Education Statistics (NCES) administers the NAEP program. The advice collected from these stakeholders about NAEP did not always account for the distinctions between Governing Board and NCES responsibilities for the NAEP program. Using a set of general "trigger" questions relating to NAEP, we conducted one-on-one telephone conversations with 22 stakeholders over a three week period in January and February of 2016.

In this report of the conversations, we provided a summary of the common themes and noteworthy individual comments that emerged from five sets of questions about different aspects of NAEP. In the conclusion, we summarized the feedback gathered through these conversations to offer ideas for the Board's consideration.

Participating Stakeholders

- Jack Buckley, former NCES Commissioner, Senior Vice President for Research, The College Board
- Michael Casserly, Executive Director, Council of the Great City Schools
- Matthew Chingos, Senior Fellow, Urban Institute
- Michael Feuer, Dean of the Graduate School of Education and Human Development, George Washington University
- Checker Finn, former Board Chair, Distinguished Senior Fellow and President Emeritus, Thomas B. Fordham Institute
- Kati Haycock, President, The Education Trust
- Freeman Hrabowski, III, President of University of Maryland, Baltimore County; Chair of President's Advisory Commission on Educational Excellence for African Americans
- Jack Jennings, retired Executive Director, Center for Education Policy
- Richard Laine, Director of Education, National Governors Association
- Dane Linn, Vice President, Business Roundtable
- Sarah Theule Lubienski, Professor of Mathematics Education, University of Illinois at Urbana-Champaign
- Margaret McCloud, Deputy Vice President, National Council of La Raza
- Joe McTighe, Executive Director, Council for American Private Education
- Chris Minnich, Executive Director, Council of Chief State School Officers
- Mark Musick, former Board Chair, President Emeritus, Southern Regional Education Board
- Michael Petrilli, President, Thomas B. Fordham Institute
- Delia Pompa, Senior Fellow, Migrant Policy Institute
- Roberto Rodriguez, Deputy Assistant to the President for Education, White House
- Eric Rodriquez, Vice President, National Council of La Raza
- Andrew Rotherham, Co-Founder and Partner, Bellwether Education Partners
- Greg Toppo, Education Writer, USA Today
- Robert Wise, President, Alliance for Excellent Education

Approach

We employed an exploratory research approach to gather feedback about a predetermined set of basic "trigger" questions about the various components of NAEP and the Governing Board's preliminary priorities. Best suited for the earlier stages of planning, this approach allowed us to focus on the discovery of ideas and insights as opposed to conducting a formal survey. It is commonly used for further defining issues, identifying and prioritizing areas for potential action and considering alternative courses of action. Our goal was to create an open and informal conversational telephone "atmosphere" for eliciting candid and informed observations and opinions about the key issues thus far identified for the strategic planning process. Specific components of our approach included:

Participants: Pre-selected by the Governing Board staff, the participants reflected a sampling from eight pre-arranged categories of different, yet overlapping perspectives (policy, think tank, research, teacher/parent, non-public education, business, media, and Governing Board alumni). Special considerations were also made to ensure gender and racial/ethnic diversity. The stakeholders voluntarily agreed to the conversations and were made fully aware that, while their participation in the conversations would be made known to the Board, the content of the conversations would be confidential with no comments directly attributable to any one participant.

Discussions: All of the discussions were conducted via the telephone at pre-scheduled times. The conversations lasted on average 40 minutes. We used a number of "trigger" questions initially drafted by the Governing Board staff to facilitate open-ended conversations regarding different aspects of NAEP. It should be noted that we orally shared the Governing Board's four preliminary priorities with the participants but did not provide any draft materials created by the staff. To further create a candid conversational "atmosphere" over the telephone, we chose to use our own manual notetaking system for documenting responses rather than using an audio recording device during the telephone discussions. Using this conversational approach, we found that stakeholders provided rich descriptive responses to the various prompts.

Analysis: Using an online spreadsheet program, we were able to cross-tabulate our notes from all of the conversations into topical categories. This allowed us to more readily identify common themes that emerged from the comments, as well as unique and noteworthy individual observations and considerations. The summary of the feedback in this report is organized in this fashion.

Summary of Feedback

We asked each stakeholder a standard set of questions covering four core topic areas: greatest value, usefulness, key components, proposed priorities. For each category, we asked more specific sub-questions when appropriate, as well as cross-cutting questions relating to missing features and new ideas.

Greatest Value

We began our conversations with an open-ended question about the greatest value of NAEP in today's educational landscape. The answers were quite consistent across all stakeholders with some important individual observations.

COMMON THEMES ABOUT VALUE

- **A barometer at its best:** There was near unanimous agreement among the stakeholders that NAEP's greatest value to the education landscape is in the way it provides a national snapshot of performance at a particular time and tracks national trends in achievement over time. This core value was expressed in a variety of different ways using nouns such as "barometer", "benchmark", "yardstick", "rubric", "marker of progress", "indicator", "validator", and "gold standard". Each of these connotes a different nuanced meaning but it was clear that the core measurement factor was viewed as highly valuable.

- **Highly positive adjectives:** Almost all of the stakeholders used very positive adjectives to further describe the value of NAEP. The comments fell into two different but interrelated groups. The first group of descriptors related to NAEP's independence (e.g., "independent", "free of political distortion" "respected', "third party"), while the second grouping was focused on the methodological integrity and stability (e.g., "reliable", "unimpeachable", "consistent", "ongoing", "realistic" ,"trustworthy", "'Rock of Gibraltar"). One stakeholder went so far as to call NAEP a "national treasure" emphasizing that the trove of data and information is of jewel-like value to the country.

- **A catalyst for policy:** Most stakeholders commented on the value of NAEP as a catalyst for policymaking by raising awareness about strengths and weaknesses in performance. There was general acknowledgement that the Governing Board does not provide solutions but rather spotlights problems and challenges requiring further action. In this way, NAEP was generally viewed as an attention-focusing tool for policymaking without taking sides. One stakeholder described NAEP as a "clarion call".

NOTEWORTHY INDIVIDUAL OBSERVATIONS ABOUT VALUE

- **Elevating education research:** NAEP has elevated the credibility of education research as a field. NAEP results over the past 40 years have helped the education research community establish a role in the policymaking arena even though evidence is still not used frequently or well by policymakers

- **Comparisons of rigor:** The value of NAEP has increased as the challenges to the Common Core State Standards have intensified and increased. The stakeholder based the comments on a perceived fundamental need in education policymaking for state comparisons about the relative rigor of various states' standards, as well as actual results about student performance within the states.

- **De facto national standards:** Two stakeholders stated that NAEP is the penultimate measure of student achievement and suggested that NAEP serves as a de facto set of national standards and therein lays its greatest value.

- **International comparisons:** A number of stakeholders believe that one of NAEP's greatest values is the data that can eventually be used to make international comparisons about student performance. One stakeholder in particular suggested embedding a number of questions from Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) in NAEP assessments.

- **Causality or not:** Several stakeholders mentioned that many policymakers are tempted to use NAEP to make causal claims about a particular policy or intervention even though NAEP program experts advise against doing so. These stakeholders also observed that policymakers who use NAEP properly to comment on correlations and general tendencies while avoiding issues of causality tend to value NAEP very highly.

- **Questions not answers:** Several stakeholders emphasized that NAEP is and should remain fundamentally a stimulus for asking the right questions rather than answering them. As a credible source of data about performance, NAEP serves as the critical reference point for further research and development work in identifying root causes and generating potential solutions.

Usefulness

We asked the stakeholders to comment on the relative usefulness of NAEP to six different audience groups (i.e. policymakers, researchers, administrators, teachers, parents, students). In order to allow for a broad range of answers, we purposely used general descriptions of each audience. We also encouraged the stakeholders to share their perceptions of how each audience group currently uses NAEP and how it should be used in the future.

COMMON THEMES ABOUT USEFULNESS

- **The big challenge about utilization:** Awareness and understanding of what NAEP is and what it offers goes hand in hand with its utility among the various potential audiences. Most stakeholders commented that there is confusion about NAEP and how it compares with and relates to PISA, TIMSS and state assessments. Some stakeholders admitted that even they lacked a full understanding about the differences, including the differences between what one stakeholder referred to as “old NAEP and new NAEP”, presumably relating to the Long-Term Trend and Main NAEP assessments.

- **Very useful to some federal and state policymakers:** There was near unanimous belief among the stakeholders that NAEP is most useful to federal and state policymakers by informing their decision making about education. But many stakeholders also indicated that policymakers tend to use NAEP in ways that best suit their individual interests at a particular point in time during the policymaking process. While these interests vary widely by circumstance and timing, they fall into three general categories: 1) to bring attention to a particular educational problem or issue; 2) to help formulate a policy or one’s own position within a policy area; 3) to justify or legitimize already-established beliefs. Stakeholders also cautioned that many policymakers tend to do superficial, less-nuanced analyses of NAEP data which can lead to misinterpretations and misuse particularly in terms of causation. Many stakeholders mentioned that, while the Governing Board cannot control how others use the NAEP data within the policy arena, the Governing Board should continue to provide and improve upon user guidelines and tools for what NAEP can and cannot tell us. Focusing additional attention on helping policymakers make meaning of NAEP results was urged by most stakeholders.

- **Highly useful to certain types of researchers:** Stakeholders also indicated that, similar to policymakers, NAEP can and should be highly useful to researchers,

particularly those who are conducting descriptive research, identifying problem areas for additional research or using the contextual data to draw correlational relationships. Several stakeholders noted the significant differences between researchers involved in advocacy and those engaged in knowledge-building and problem solving. The latter group tends to clearly acknowledge the limitations of what NAEP can tell us in terms of causality and variation. On a somewhat contrary point, several stakeholders commented that, while NAEP is and should be highly useful to researchers, it is still underutilized by researchers for a variety reasons, including insufficient training in using and analyzing NAEP data.

- **Very mixed views about administrators' use:** According to most stakeholders, the majority of local administrators do not find NAEP data useful for improvement or decision-making purposes primarily because of the lack of data specific to their particular systems. When NAEP data are used, it is usually for the purpose of setting a general national or state context for understanding more specific issues related to a school district. The exceptions to this are those administrators from Trial Urban District Assessment (TUDA) districts. Most stakeholders viewed TUDA as an exemplary initiative for how NAEP data can be translated into strategies for instructional improvement. But, when pressed for specifics, the stakeholders tended not to be fully aware of specific examples for how this is done by the TUDA districts beyond recognizing general patterns in broad areas. Several stakeholders were concerned that both state and TUDA data are used to make "horse race" judgements about states or districts without a full understanding of contextual factors.

- **Not so relevant for most teachers, students, parents:** The vast majority of stakeholders believed that NAEP is minimally useful to teachers, students and parents because the data do not give them meaningful information about individual student performance. While national, state and TUDA results could provide some useful contextual information about systemic issues affecting individual performance, most stakeholders felt this was not commonly done by these audiences. One stakeholder mentioned that in a meeting with state Teachers of the Year most were not aware of NAEP findings. Several stakeholders did mention, however, that teachers and parents, as well as students who are involved in some form of advocacy, are potential big users of NAEP. Three stakeholders who are deeply involved in advocacy felt that NAEP data can and should be used to stimulate a sense of urgency and scale among parents and teachers for taking action and engaging in advocacy activities. With more simplified, user-friendly access to data, advocacy-oriented students, parents and teachers could be significant users of NAEP.

NOTEWORTHY INDIVIDUAL OBSERVATIONS ABOUT USEFULNESS

- **Not quite causality:** One research-oriented policy-focused stakeholder wrestled with the natural instinct of policymakers to use NAEP to make causal claims. The individual suggested that it is legitimate for policymakers to "reach some broad inferences about how we are doing and why and look at trends with confidence in the data to understand variation…" but expressed deep concern about those policymakers who inappropriately draw causal inferences about their favorite or least favorite policies.

- **Common Core issues:** Several stakeholders raised concerns about the perceptions of policymakers and the general public about the recently released 2015 NAEP results in reading and mathematics for grades four and eight, and how these results

might be related to or affected by the move to the Common Core State Standards. These concerns were rooted in questions about alignment and whether or not this is the appropriate time for NAEP to be adjusted to reflect changes in state standards. One of the stakeholders mentioned that the controversies surrounding the Common Core have actually elevated NAEP's use as a credible way to compare the rigor of state standards and state proficiency levels.

- **Evidence-free zones:** A stakeholder who is involved in policy and research observed that policymaking at the federal and state levels is equivalent to an evidence-free zone where empirical evidence is minimally used to formulate policy. But this person was hopeful that NAEP could be used to trigger higher levels of interest among policymakers in the use of evidence and evidence-informed policymaking.

- **Access to test items:** One stakeholder strongly advocated for providing teachers and students (and perhaps parents) with access to a sample of test items. This stakeholder did not know that released NAEP test items are on the NAEP website, and suggested that test item access would promote greater use of NAEP by not only contributing to improvements in instructional practice as a formative assessment tool but also stimulating greater public interest in and support of NAEP.

Key Components

We asked the stakeholders to comment freely about seven key aspects of the NAEP program (national, state, TUDA, subjects, grade levels, context, achievement gaps) and what should be preserved, changed or discarded. Here is what they had to say:

COMMON THEMES ABOUT KEY COMPONENTS

- **National data:** There was unanimous agreement among stakeholders that the concept of the Nation's Report Card is at the core of NAEP's value and utility both for its snapshot of achievement levels and its measurement of progress over time. But many stakeholders expressed some concerns about this national picture including: confusion in the field between "old and new" NAEP; NAEP's relative value and meaning compared to TIMSS and PISA**;** its relevance to local and state policymaking; and, media's tendency to oversimplify findings in creating a narrative about the overall quality of US education. Most stakeholders suggested that many of these concerns could be mitigated by improved communications and public engagement strategies rather than through substantive changes to the assessments themselves.

- **State data:** Most stakeholders rated the importance of the state data equal to or slightly less than the national data**.** There were some clear concerns about how state data prompted a "race horse" interpretation of the data without taking into account critical contextual factors. But, stakeholders were generally pleased by the multiple purposes of these data including: the value of having comparisons across states for descriptive analysis; a means to compare state-administered assessment scores; a benchmark for state standards; a means of promoting transparency about the relative rigor of state standards and proficiency levels; a basis for understanding variance among states; and, a national reminder of the de-centralization, fragmentation and diversity within the American education system.

- **TUDA:** The stakeholders universally viewed TUDA as an exemplar for using NAEP data to drive improvement in instructional programs, to provide meaningful and transparent information to the public, and to advance the use of powerful empirical evidence for improvement. Many expressed appreciation for the leadership (and courage) of local administrators and the Council of the Great City Schools for subjecting themselves voluntarily to this type of results-oriented scrutiny.

  Several stakeholders speculated that TUDA will become even more valuable as state participation in Partnership for Assessment of Readiness for College and Career (PARCC) and Smarter Balanced (SBAC) assessments wanes. But one somewhat skeptical stakeholder questioned whether TUDA has led to any significant insights or major changes in these large systems over the past 15 years. Most every stakeholder recommended expansion of TUDA to more locations. Two stakeholders suggested that the Governing Board consider piloting an adaptation of TUDA for rural districts around the country.

- **Grade levels assessed:** There was general agreement that the 4th and 8th grade assessments were appropriate and useful and should be maintained. Several stakeholders offered some "light" considerations for several alternatives including moving to age-defined groupings, similar to PISA, and switching from fourth grade to third grade assessments.

  Many stakeholders also shared the belief that 12th grade data were problematic --- less useful, reliable or credible. Much of the concern suggested a lack of awareness among stakeholders of the NAEP research concluding that 12th grade NAEP results are not adversely affected by student motivation issues, as some posited, and can serve as an indicator for college readiness. The stakeholders floated a wide range of suggestions for how best to improve the usefulness of NAEP at the secondary level including: eliminate the assessment altogether; substitute NAEP with ACT and SAT to address what was perceived as a misalignment issue with Common Core State Standards; shift to 11th grade assessments to deal with perceived motivational problems in the 12th grade; or move to post-12th grade measures to better measure college/career readiness. We note the disconnect between the research and perceptions regarding the utility of grade 12 NAEP for the Governing Board's examination.

- **Breadth of subjects assessed:** Most stakeholders perceive NAEP as a standard bearer for what is important in American education. Thus, the subjects to be assessed, as well as the frequency of the assessments, send a message to policymakers about priorities. Stakeholders all agreed that the core subjects of math and reading are an essential part of NAEP and should be maintained at least at their current level of frequency. This is directly linked to the stakeholders' overall agreement that longitudinal trend data holds NAEP's greatest value. It also is connected to the perceived predictive power of math and reading for achievement in other subjects. A number of the stakeholders resonated with this point.

  There was less agreement among stakeholders about the frequency of the assessments of other subjects. Science was most frequently mentioned as a viable candidate for expansion in line with the rollout of the Next Generation Science Standards and the growing acceptance of the role of Science Technology

Engineering and Mathematics (STEM) education in workforce development. Two stakeholders also mentioned the social studies assessments, especially civics, as possibilities for more frequency but with somewhat less enthusiasm for the potential political fights. In general, most stakeholders did not favor expanding science or other subjects at the expense of the core subjects of reading and mathematics.

- **Contextual and achievement gap data:** Most stakeholders agreed that contextual data and data about achievement gaps were extremely important for cross tabulations, correlations and providing baseline insights into variations in performance. But many stakeholders expressed concerns that the data are underutilized and not well understood. A number of serious challenges were identified by stakeholders including: the complexity and nuance of correlations between scores and contextual data, the frequent misuse in drawing causal inferences, the lack of reliability in self-reporting about demographic information, inconsistent definitions across states about certain subgroups (e.g., English language learner (ELL) and special education), the need for what one advocacy-oriented stakeholder called the "oversampling" of some subgroups, and lack of longitudinal information. There was general agreement that developing more user-friendly tools for collecting, mining and analyzing these data should be a priority for the Governing Board moving forward.

NOTEWORTHY INDIVIDUAL OBSERVATIONS ABOUT KEY COMPONENTS

- **Measuring hard-to-measure competencies:** Several stakeholders advised that because NAEP is organized around subjects and grade levels, it does not adequately capture the use of interdisciplinary knowledge or deeper learning/21st Century competencies. These stakeholders did not have specific recommendations for changing NAEP but did express the general concern that NAEP needs to adjust to the changes in what students need to know and be able to do in order to succeed in the 21st Century marketplace. Taking a cue from the Gordon Commission on the Future of Assessment in Education, one of the stakeholders surmised that NAEP's future relevance will depend upon how well it adapts to changing conditions, learning needs and new technologies.

- **Getting ready for college and career readiness**: Related to the hard-to-measure competencies, several stakeholders commented that NAEP is not an adequate barometer for assessing college and career readiness due to misalignment with Common Core State Standards. Given the perceived problems with the 12th grade assessments, these stakeholders suggested that a special effort should be undertaken to overhaul this whole domain.

- **Understanding variation:** One stakeholder who was particularly outspoken against the misuse of NAEP data for making causal claims was nonetheless sanguine about how NAEP data can be used for better understanding variations in state performance over time. This person noted that most of the changes in state scores are frequently misinterpreted by the media by focusing on the incremental changes from the previous results rather than the trend over time. It is sustained change of performance over many years that is most important for making general assertions about possible systemic strengths and weaknesses that contribute to performance.

- **Promoting NAEP-based research:** One stakeholder suggested an idea for promoting research that uses and applies NAEP data. The individual suggested that the Governing Board create panels of scholars to identify and review research that uses NAEP data. This would not only provide case studies for professional development on how researchers can and should use NAEP but also provide an honest assessment of how NAEP is actually used. The stakeholder suggested that the Governing Board needs to take greater advantage of the expertise in the research community to help promote utilization. Another stakeholder suggested reestablishing a NAEP secondary analysis grants program for researchers to do deep-dive analyses of different data sets and create a rich set of recommendations for future action.

- **Speed:** A number of advocacy-oriented stakeholders stressed the importance of accelerating the speed by which NAEP data are released. Given the fast-paced changes in the education landscape, the two-year lag time on NAEP restricted use data is too slow for taking meaningful action.

- **Linking available administrative data:** One stakeholder made a strong case for expanding the richness of NAEP by linking NAEP data to existing administrative databases. This person surmised that, if technical and privacy issues could be adequately addressed, administrative data would provide deeper insights into the many contextual variables that are currently done by what the stakeholder perceived to be unreliable self-reporting surveys.

- **Definitions of proficiency:** In line with the comments about the Common Core, college and career readiness, and 21st Century competencies, one stakeholder urged that the Governing Board help redefine what proficiency means as it relates to what was termed “workforce development”. The stakeholder was specifically concerned about linking the education pipeline to economic opportunity and saw a role for the Governing Board in building that link through more research on what proficiency means in terms of performance.

Priorities

We asked the stakeholders to provide feedback about each of the four preliminary priorities that the Governing Board has recently developed for the next five years. The stakeholders commented on the relative importance and value of each priority and provided additional feedback.

COMMON THEMES ABOUT PRIORITIES

- **A range of opinions about messaging:** There was widespread agreement among stakeholders that building a deeper understanding of and appreciation for NAEP and its various components is essential not only for expanding its use with more audiences but also for preserving the reputation and credibility of its brand. But stakeholders were split into two groups about the specific focus on messaging strategies. Some believed that messaging as a public relations tool deserves much attention in this dynamic political environment and could clear up the confusion over the differences in various assessments, like old and new NAEP, TIMSS, PISA and state assessments. Others felt the most serious needs run far deeper than messaging strategies and should be focused

on useable tools for facilitating utilization, interpreting results, and understanding scale scores. A number of stakeholders also raised questions about the need for communications strategies to parents, students and teachers when NAEP does not provide them with useable individualized information. Building targeted communications strategies for specific high priority audience groups, such as federal and state policymakers and the trade media, was advocated by several stakeholders.

- **Efficiency and cost effectiveness as a special focus?:** Most stakeholders questioned why a seemingly inward-facing management issue would be a priority for the Governing Board's special attention. They acknowledged that the Governing Board, like any other governmental agency, constantly needs to explore new and better ways to efficiently and effectively use limited resources, particularly in this current political environment. It is important to send Congress a strong message that this effort is indeed a high priority concern. But, on the other hand, many stakeholders suggested that this should be an on-going effort to be embedded into the management structure and performance systems of the NAEP program. Several stakeholders suggested that the Governing Board could convert this priority into a cross-cutting theme in the strategic plan and identify one or more other problem areas for high priority attention over the next five years.

- **Split opinions about innovation:** Most stakeholders agreed that innovation and research and development are the lifeblood of most any high performance government agency and should be a high priority focus for the Governing Board in the next five years. Some indicated that one of the reasons for the Governing Board's stellar reputation has been its on-going quest to improve and anticipate the changing dynamics in teaching and learning in the education marketplace. Several stakeholders echoed the Gordon Commission on the Future of Assessment in Education's suggestion to adjust assessments to changing times. At the same time, most stakeholders voiced serious cautions about tinkering with one of NAEP's greatest values in tracking national and state trends over time. Some stakeholders suggested that NAEP's first priority is to "stick to its knitting" (an adage used independently by several stakeholders) and innovate very judiciously. The stakeholders held strong differences of opinion about the role and scope of innovation in the NAEP program.

- **Multiple benefits of external partnerships:** Citing TUDA as an exemplar, most stakeholders agreed with the high priority attention that the Governing Board should give to building external partnerships. Several stakeholders surmised that external partnerships could help address some of the communications challenges that the Governing Board has in messaging and reaching certain audiences. Thus, many felt that building external partnerships should be merged with the messaging priority and create some synergy for improving public awareness, generating additional public support for NAEP and encouraging more widespread use among its primary audiences. A blended approach to messaging and partnerships was strongly favored by stakeholders from advocacy organizations who represent underserved populations. These stakeholders were particularly concerned about the need for special accommodations and more consistent definitions of subgroups relating to ELL and special education students. A number of stakeholders who gave high praise to the TUDA initiative similarly suggested that the design of external partnerships should run deeper than just a communications outlet a few days a year and should focus on ongoing substantive analyses and application for advocacy, policy development and improvement purposes.

NOTEWORTHY INDIVIDUAL SUGGESTIONS ABOUT PRIORITIES

- **Addressing anti-testing sentiments:** Several stakeholders were deeply concerned about the potential for NAEP to be swept into the campaigns against standardized testing, the Common Core or even the Administration's own efforts to reduce over-testing. The anti-testing sentiment is palpable in the field and could negatively affect the participation of student test takers, diminish NAEP's public reputation and erode Congressional support. The messaging and partnership priorities will need to focus considerable attention on this serious public relations challenge.

- **Fixing college/career readiness/12 grade:** Several stakeholders advocated for high priority strategic attention by the Governing Board on fixing the aforementioned perceived problems with the 12th grade assessment and the need for better ways to measure college and career readiness. One stakeholder suggested that civic readiness be included. Another stakeholder suggested that the Governing Board might consider using its innovation priority to address this issue before taking on loftier innovative ideas and consider new frameworks for measuring these constructs.

- **Elevating utilization:** While all four of the proposed priorities could contribute to the expanded use of NAEP among different audiences, a number of stakeholders suggested that utilization be explicitly elevated to the top tier of priorities. Recognizing there is a limit to the Governing Board's role in facilitating use, third parties, such as think tanks, research centers and advocacy organizations which are closer to the field than the Governing Board could be deployed and/or commissioned to provide the kind of analysis that is useful to their constituencies. In this regard, providing more user friendly analytics is essential to expanded and effective use.

- **Keeping up with changing times:** Several stakeholders were worried about NAEP's continuing relevance and the perception that assessments in general are not keeping up with higher levels of learning now demanded in the workplace. The stakeholders warned not to let NAEP become the lowest common denominator for learning. By making measurement innovation a high priority, the Governing Board could provide more assertive leadership in sustaining NAEP as an essential benchmark, which will be needed all the more by states during the implementation of Every Student Succeeds Act (ESSA). As the Common Core brand continues to face serious opposition, ESSA will stimulate greater demand for NAEP and the Governing Board should be prepared to address it.

Conclusion:
Considerations for the Governing Board

During the course of the interviews, we heard many implicit and explicit pieces of advice for the Governing Board's role and the NAEP program moving forward. After reviewing the conversations in total, we offer the following curated ideas for the Governing Board's consideration. Please note that this list of considerations was not reviewed or approved by the participating stakeholders.

Developing a new potential role for the Governing Board: We heard a wide spectrum of opinions from stakeholders about the Governing Board's future role in presenting findings and promoting use. Some urged the Governing Board to play more than a referee's role and become a more active participant in the analysis and application of findings. Others advocated just as urgently that the Governing Board maintain a transcendent position as a provider of data only. But, rather than pick sides, we suggest that the Governing Board could find a middle ground. By focusing significant attention on the external partnership priority, the Governing Board could build strong collaborative relationships with a large number of responsible intermediaries who subscribe to a set of guiding principles about appropriate uses and effective analysis. The Governing Board could thus put into place an expanded network of external partners who could serve as the translators and interpreters for target audiences. As the hub of this network of partners, the Governing Board could assume a brokering role for sharing NAEP-informed knowledge and facilitate collaborations among the partners and their respective constituencies.

Bridging the gap between supply and demand: NAEP provides data that require nuanced and complex analyses in order to be appropriately and effectively used for a variety of purposes among a diversity of audiences. Most of those audiences, particularly policymakers, seek what NAEP cannot give them on first blush: simple, understandable and useable answers to big complex questions. As the Governing Board has learned over many years, matching supply with demand in this case is immensely challenging. As suggested above, external partners that are equipped with effective tools of analysis and communication could provide the needed link between supply and demand in an emerging evidence-based marketplace in education.

Striking a balance for innovation: The above-mentioned feedback about the Governing Board's innovation priority reveals the inherent tension that many forward-thinking organizations encounter between sustaining and scaling current successes and developing and testing future-oriented innovations. This tension does not suggest an either/or solution. Our sense is that, in the case of the Governing Board, this tension between innovations and "sticking to the knitting" should be considered an on-going management issue that is regularly revisited by the Board to ensure proper situational balance and operational adjustments as needed.

Focusing on "low hanging fruit": As the Board ponders its strategic directions and priorities for the next five years, it will be critical to also address what might be construed as smaller tactical and technical issues related to NAEP collections and dissemination. During our conversations with stakeholders, we picked up an array of specific problems that may need to be addressed, such as recruitment challenges for private schools, inconsistent guidelines and definitions for ELL and special education populations, the slow pace of releases of restricted use data, difficult-to-navigate features of some websites, and the lack of awareness regarding released NAEP questions. A new priority NAEP may want to consider is how best to rapidly and systematically fix "low hanging fruit" problems that, if left unattended, could cause disruptions later.

Combining messaging with partnerships to facilitate engagement: Numerous stakeholders suggested blending the Governing Board's priorities for messaging and external partnerships. Rather than pushing out information through a traditional one-way dissemination process, knowledge transfer (and eventually utilization) demands two-way interactions between intended users and knowledge producers. The Governing Board itself would be hard pressed to directly manage such two-way engagement activities. However, through the blend of effective messaging strategies and strong partnership arrangements the Governing Board could be positioned to help facilitate a dynamic engagement process. This process could not only better inform intended audiences of relevant findings but also inform the Governing Board of user needs, interests and capabilities.

Sustaining an evidence-based culture for improvement: During our many conversations, we frequently heard high praise for the dedication and wisdom of the Board members and the staff. This may be partly due to the unique structure and governance system established by Congress for the Governing Board. But we also believe it is a credit to the culture of evidence and improvement that pervades the agency. These values inspired the Governing Board to seek feedback from stakeholders to inform its development and implementation of the Strategic Plan over the next half decade. In this regard, it is also important not to underestimate the vital role that skilled and knowledgeable leaders and managers play in managing this highly valued and challenging national treasure.

Documented Uses of NAEP (with examples in italics)

Over the past couple of years, COSDAM has had several discussions about the need to explicitly state how NAEP results are intended to be used, and then to focus dissemination efforts on increasing the most appropriate and impactful uses of NAEP. To support those discussions, Governing Board staff compiled a list of documented ways in which NAEP has been used. This list includes uses uncovered by research performed by HumRRO, the recent evaluation of NAEP achievement levels performed by the National Academies of Sciences, Engineering, and Medicine, and staff's own knowledge and experiences. **Please note that this is a list of common uses, and that it encompasses both appropriate and inappropriate uses.**

- Compare NAEP scale scores and/or achievement levels at a single point in time across states, districts (TUDA), and/or student groups *(e.g., scores and/or percentage of students at or above Proficient are higher in X state than Y state)*
- Compare NAEP scale scores and/or achievement levels over time (trends) for the nation, states, districts (TUDA), and/or student groups *(e.g., scores and/or percentage of students at or above Proficient have steadily increased over time)*.
- Rank order states or districts in terms of NAEP scale scores and/or achievement levels overall and/or for a specific student group *(e.g., X state is number one in the nation in terms of scale scores and/or percentage of students at or above Proficient)*
- Analyze performance gaps in NAEP scale scores and/or achievement levels between two student groups at a single point in time *(e.g., there is a gap of 36 points between scale scores of students in majority group A and minority group B on the 2017 NAEP mathematics assessment)*.
- Analyze changes in performance gaps in NAEP scale scores and/or achievement levels between two student groups over time (gap trends) *(e.g., the Black-White achievement gap has widened over time)*.
- Validate performance or changes in performance on state tests *(e.g., state A had an increase of 3 points on their state math test from 2015 to 2017; NAEP scores for state A also increased significantly during this time period)*.
- Analyze the relationship between contextual variables and NAEP scale scores and/or achievement levels *(e.g., students who were absent fewer than 3 days in the past month scored significantly higher than students who were absent 10 or more days)*.
- Describe the context in which students learn from information gathered by student, teacher, and school questionnaires *(e.g., X percent of students use a specific type of technology in their math classes)*.
- Compare NAEP scale scores and/or achievement levels across subject areas *(e.g., there are fewer student at or above Proficient in U.S. History than in Mathematics)*.
- Compare NAEP scale scores and/or achievement levels across grades *(e.g., there are more students at or above Proficient at grade 4 than grade 12)*.

- Compare NAEP scale scores and/or achievement levels before and after a program or policy is implemented *(e.g., Reading scores have been flat since Race to the Top was implemented).*
- Estimate the percentage of students who are academically prepared for college by the end of high school *(e.g., About 37% of 12th grade students in 2015 were academically prepared to be placed in entry-level college courses without remediation).*
- Show examples of what students know and can do through sample items and item maps
- Establish a common scale for linking state tests and comparing results across all school districts *(e.g., Stanford Education Data Archive)*
- Link other assessments to NAEP to provide state-level results on other assessments that were not administered at the state level *(e.g., the 2011 NAEP-TIMSS linking studies provides estimates of the scale scores for each state on TIMSS, even though most states did not have enough students participate to get a state-level estimate on the TIMSS assessment through the typical procedures).*
- Establish a common scale for comparing the rigor of state standards to each other and to NAEP Proficient *(e.g., the state mapping report – state A's standard is close to NAEP Basic, while state B's standard is close to NAEP Proficient).*
- Compare the percentage of students at or above each achievement level on NAEP and on other assessments, including state and international assessments *(e.g., there are fewer students at or above Proficient on NAEP Reading than on the state A assessment).*
- Serve as a benchmark of performance at NAEP Proficient to inform standard settings on other assessments *(e.g., SBAC embedded released NAEP items in their assessment to provide NAEP achievement level results as one source of impact data from external assessments).*

- To evaluate whether current programs and policies are effective *(e.g., a U.S. senator used NAEP scale scores from AZ compared to the nation as evidence for support of progress made in the state based on statewide educational initiatives. This was offered as evidence to support the localization of education programs away from the federal government as suggested by ESSA).*
- To support the need for new programs and policies *(e.g., a recent article in the 74 noted that NAEP scores have stagnated over the past 10 years, making it a "lost decade" for education reform).*
- To influence decisions about funding for educational policies and programs *(e.g., in arguments to support R&D and STEM efforts, House of Representative members used NAEP 2009 Science results to show that there is a lot of room for progress overall, and for female and black students).*
- To influence legislation *(state-level education personnel who participated in the NAS forums reported that they fold NAEP data into arguments for new or amended legislation and for requesting funding related to education).*

- To determine whether the nation, states, and/or TUDAs are making progress for students overall and/or selected student groups *(e.g., Boston Public Schools develops summaries with comparative information from other districts over time, and this information is shared with district leadership, the Board of Education, and the public.*
- To evaluate the quality of education at a single point in time and/or over time *(e.g., a Senate resolution for designating April 30th as a "Day of the Children" used NAEP scale scores as one indicator of the condition of student achievement).*
- To claim that some states and/or districts are doing a better job educating students based on their rankings on NAEP *(In the NAS forums, one panelist from an education and advocacy group noted that they use NAEP to ask questions such as, why is a state like Massachusetts seeing different results for African American 4th graders in mathematics as compared to other states?).*
- To identify where there are large performance gaps and/or interventions are needed *(e.g., an Education Week article compared TUDA scale scores and gaps over time and raised questions about instructional practices and the need for improvement).*
- To identify states and/or TUDAs who are doing something extraordinary so that best practices can be shared *(e.g. claim during the 2017 reading and math release that Florida must be doing something right, and the TED talks by 4 TUDA district leaders showing gains on NAEP)*
- To criticize states for lying about the percentage of students at or above Proficient if it varies substantially from NAEP *(e.g., the Honesty Gap report based on Achieve's work claimed that states were lying if they reported percentages of students at or above Proficient that were significantly different from the performance of that state's students on NAEP).*
- To generate and test hypotheses about factors related to student achievement *(e.g., any research study that uses NAEP data as a predictor or outcome variable).*
- To claim that students should do more of X because X is correlated with higher performance *(e.g., the Change the Equation infographics that Linda is referencing which highlight factors associated with high student performance in STEM areas).*
- To determine whether U.S. students will be internationally competitive *(e.g., an April 2018 article by the Fordham Institute claims that more students are reaching NAEP Advanced but that our students are still not internationally competitive).*
- To call for higher standards *(Georgia policy advocates referred to the percent of grade 4 and 8 students who performed at or above NAEP Proficient in reading in Georgia versus other states and the nation to promote the change to more rigorous requirements in curriculum for the state).*
- To call for more accountability systems *(e.g., Dee and Jacob (2009) attributed school accountability systems as a result of NCLB to increases in NAEP math performance).*
- To claim that the majority of students lack basic skills (or are faring well) *(e.g., a Tom Loveless article in 2003 for Brookings used LTT data to claim that about 50 percent of 9, 13, and 17 years lacked basic skills in mathematics).*

- To make claims about the percentage of students who are performing "on grade level" *(e.g., Campbell Brown of the 74 released a video on Slate in 2016 claiming that two out of three eighth graders in the U.S. cannot do reading or math on grade level).*
- To inform the development of state content standards *(e.g., when Virginia revises their content standards, they use NAEP as one of the resources to inform their efforts).*

Mississippi

NAEP Gains Follow State's Efforts To Improve Student Achievement

Over the past dozen years, Mississippi students have posted consistent gains in reading on the National Assessment of Educational Progress (NAEP), also known as The Nation's Report Card. Mississippi is one of the top leaders in score improvement in fourth-grade reading between 2005 and 2017.[1]

While Mississippi students still score below the national average on NAEP, student achievement in the state has been improving on NAEP across grades and subject areas for years.

"The progress we've made on NAEP has made a significant difference in how education is viewed in Mississippi," said Carey Wright, the state superintendent of education. "It has given a lot of people hope."

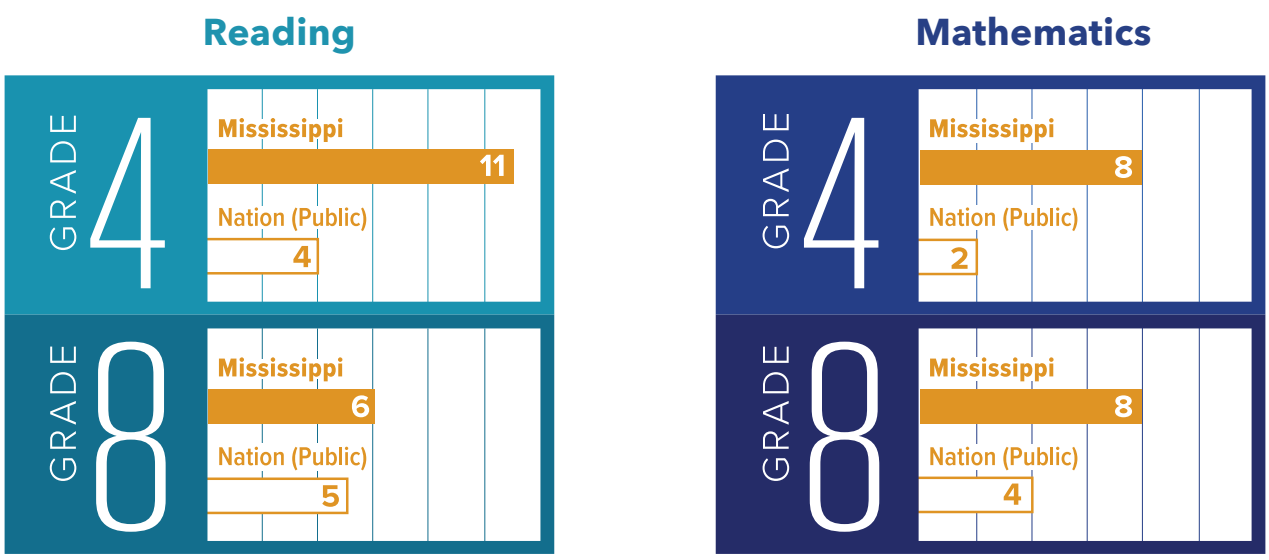
Education, policy, and business leaders in Mississippi attribute the student achievement gains to higher academic standards; a coordinated, statewide focus on improving literacy; and greater professional support for teachers. And state leaders have been using NAEP to measure progress and identify areas for growth along the way.

"When you have an external measure like NAEP that further validates that reforms are taking root, that's really important," said Kim Benton, the former chief academic officer of Mississippi Department of Education.

THE WAKE-UP CALL

In 2007, the U.S. Chamber of Commerce released *Leaders & Laggards: A State-by-State Report Card on Educational Effectiveness*, which ranked states' education standards on indicators including a measure of how well

Score-Point Increases on NAEP 2005-2017



U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress

> **It wasn't doing a service to the children if by the national standard they were not determined to be proficient.**
>
> —Sen. Gray Tollison, chair of the Mississippi State Senate Education Committee

their state assessments' proficiency measures aligned with NAEP's. The report gave Mississippi a "D" in "Truth in Advertising" for the substantial gap between the proportion of students the state judged to be proficient and the state's NAEP results.

The report showed a 71-point gap between the percentage of fourth graders identified as proficient or above on the state's 2005 reading assessment and the percentage who scored *Proficient* or above on the 2005 NAEP Reading Assessment.

The report was a catalyst for change, said Benton.

"Sometimes, you have to confront the brutal reality of where you are and then start working towards making things better for students in our state," she said.

"This told me that we had very low bars to show proficiency, for whatever reasons," Sen. Gray Tollison, chair of the Mississippi State Senate Education Committee, said. "It wasn't doing a service to the children if by the national standard they were not determined to be proficient."

NAEP uses three achievement levels to characterize student performance: *Basic*, *Proficient*, and *Advanced*. Students whose performance is determined to be *Proficient* on NAEP have demonstrated competency over challenging subject matter, including application of such knowledge to real-world situations and analytical skills.

In contrast, each state sets its own definition of proficiency for its state assessments.

Mississippi's governor and state leaders gathered to figure out how to address the issues the U.S. Chamber of Commerce report highlighted, expressing concern that the gap between state proficiency rates and NAEP's findings was putting Mississippi students at a disadvantage. One of the outcomes of the discussions was a consensus on the need for a new state assessment.

"We knew if we were designing a new assessment, we could not have that gap," Benton said. "It wasn't being honest and transparent with our consumers and stakeholders."

RAISING THE BAR

The Mississippi Department of Education revised the state assessment in 2015, after changing the standards for what students are expected to know in various subjects at each grade level. While the revision process was lengthy, Benton said, it allowed the department to develop a more rigorous assessment.

When writing the new assessment, the Mississippi Department of Education looked at NAEP frameworks—the blueprints for the content and design of each assessment—to ensure that the new state assessment mirrored expectations on The Nation's Report Card.

"There were some things addressed in NAEP's fourth-grade assessments that we weren't teaching until the fifth or sixth grade," said Nathan Oakley, Mississippi's chief academic officer.

By 2017, the gap between the percentage of fourth-graders identified as proficient or above on Mississippi's reading assessment and the percentage who scored *Proficient* or

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>
> —Kim Benton, former chief academic officer of Mississippi Department of Education

above on the NAEP reading assessment had shrunk to four percentage points—a 67-point decrease from the 2005 gap.

"It was very important to me that when our test results come out and when NAEP results come out that they show very close percentages of proficiency," said Wright, the state superintendent of education. "NAEP is the only measure that we can [use] to compare [Mississippi achievement] to other states. Knowing that it's the gold standard, you have to pay attention to where you are on NAEP."

FOCUSING ON LITERACY

While raising standards and creating a new assessment was a start to providing a more honest perspective on student achievement, the state's education leaders knew they had to do more.

"You can set the standards, you can [revise] the assessment, but it's the strategies that support teachers, students, and families that make the difference," Benton noted.

While Mississippi has tackled multiple education reforms since 2007, state education leaders credit one policy in particular for improving student achievement: The Literacy-Based Promotion Act, which was passed in 2013. The act focuses on ensuring that every student reads at or above grade level by the end of third grade, as determined by performance on the state's reading assessment. Children who do not meet a certain standard cannot be promoted to fourth grade unless they qualify for an exemption.

"There was a lot of gnashing of teeth over the third-grade test being a measure of whether a child is ready to be promoted [to fourth grade]," said Scott Waller, the president and CEO of the Mississippi Economic Council, an association of business leaders that has helped advance many of the state's education reforms. "[But now,] when students get to the fourth grade, they're reading at a fourth-grade level."

The act employs many strategies to improve literacy, including increasing resources to the Mississippi Department of Education so all teachers in grades K-3 and all principals go through literacy trainings.

Implementing the act has been a focused, statewide, bipartisan effort "from the state department of education to schools to students and parents," state Sen. Tollison noted.

The act provided resources for the Mississippi Department of Education to build a statewide network of nearly 80 literacy coaches who assist teachers with reading instruction, lesson planning, and understanding and measuring student progress.

The Literacy-Based Promotion Act also promotes reading comprehension skills through literacy lessons across subject areas. As part of these efforts, the state department of education worked with the Southern Regional Education Board to bring its interdisciplinary literacy curriculum trainings to select schools.

Robert Sanders, who is now an assistant superintendent in the Simpson County School

> **It was really exciting to watch teachers transform their general practice into something that would support students improving their reading level.**
>
> —Robert Sanders, an assistant superintendent in Simpson County School District

District, was principal of Mendenhall High School when the school's staff participated in the trainings.

"Teachers began to create literacy units across grade levels and curricula," Sanders said of the changes at his former high school. "It was really exciting to watch teachers transform their general practice into something that would support students improving their reading level."

Under the act, the state education department also created family success guides and reading plans to help parents develop their children's reading skills through activities at home.

At the same time, Benton said, the department began to look at its role differently, expanding professional development services beyond literacy trainings and creating an on-demand resource that allows administrators to request on-site training around standards, content, and assessment results.

"We are more than a compliance and regulatory agency," Benton said, "we are also a service agency."

CELEBRATING RESULTS AND CONTINUING FORWARD

In 2013, 21 percent of fourth-graders in Mississippi were at or above *Proficient* on the NAEP reading assessment. In 2015, that percentage rose to 26—the largest growth in the state's fourth-grade NAEP reading performance at or above *Proficient* since 1992.[2] Wright said the state's growth on NAEP suggests that strategies like the Literacy-Based Promotion Act are working.

"When you have very rigorous standards and you have an assessment aligned to those standards, you can be proud that those results are real," she said.

Wright said the student achievement growth in Mississippi is what drives her work every day.

"It's exciting work, [and it took] the leadership team in this department and the hard work of everybody to make this happen," Wright said. "I can't say enough about the hard work of our teachers and principals around the state."

Benton acknowledged that while student achievement is progressing in Mississippi, the state is not where it needs to be. The challenge now, she said, is taking the progress that has been made and moving forward—a challenge she believes Mississippi students and educators are ready for.

"We've made real progress," said Waller of the Mississippi Economic Council. "When you look at NAEP, everybody is judged on an equal playing field. That's the thing that's most encouraging."

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1. D.C. participating as a state had the largest overall score increase from 2005-2017 (23 points). Mississippi's 11-point score increase from 2005-2017 was not statistically larger than 11 other states with increases from 2005-2017.

2. Mississippi's 5-point significant increase for percentage at or above *Proficient* from 2013-2015 was numerically the largest compared to all other changes in percentage at or above *Proficient* from 1992-2017.

For more information, visit **nagb.gov** and **nationsreportcard.gov.**

Tennessee

NAEP Results Inspire Statewide Effort to Improve Schools

In 2009, the state of Tennessee quietly embarked on an education revolution.

Working in harmony with policymakers and business leaders, educators raised the state's academic standards and aligned classroom lesson plans to match, overhauled assessments, and improved teacher evaluations. Parents, students, and community members rallied around the raised expectations. Those involved in the changes also agree that partisan politics took a backseat to comprehensive reform.

The result: From 2011 to 2015, Tennessee became the fastest-improving state on the National Assessment of Educational Progress (NAEP) reading and mathematics assessments, with students showing more growth over that time than students in any other state in the nation.

Observers there say that one of the factors that helped galvanize Tennessee's efforts to change its approach to education was to compare results from NAEP, known as The Nation's Report Card, with Tennessee's own data on student performance.

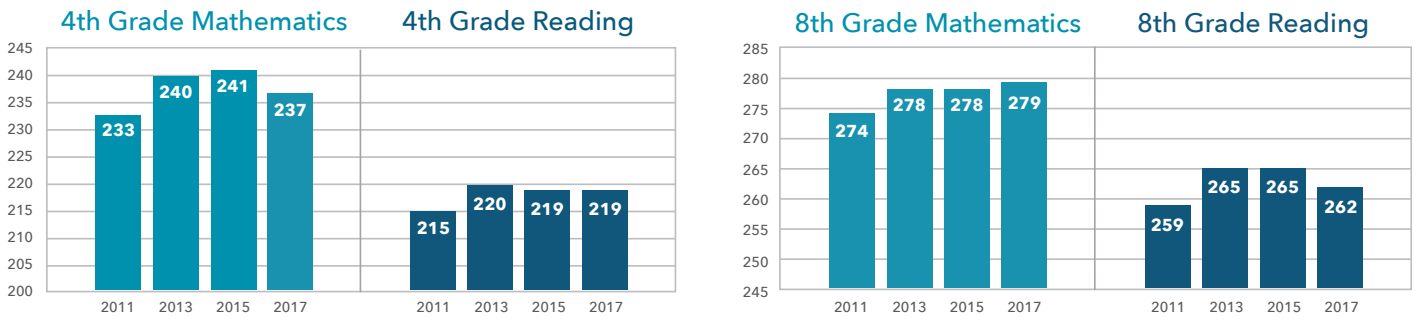
"The data that NAEP shares helps us be more honest," says Jamie Woodson, the executive chair and CEO of the State Collaborative on Reforming Education (SCORE). "It certainly helps us make changes in policy and practice to improve systems for students and student outcomes."

CONFRONTING HARD FACTS

In 2007, the U.S. Chamber of Commerce launched a national effort to use data to determine which states were leading in educational performance and which were falling behind. The resulting report, *Leaders & Laggards: A State-by-State Report Card on Educational Effectiveness*, ranked states on nine indicators, including "Truth in Advertising"—a check on how well state-level measures of student proficiency aligned with NAEP's expectations.

Tennessee's Truth in Advertising grade that year: F.

TENNESSEE NAEP SCORE IMPROVEMENT 2011–2017



Indeed, the differences between Tennessee's measures and national expectations were stark. At the time, Tennessee rated 87 percent of eighth-graders as proficient or advanced in math based on the state's standardized test results. On NAEP, however, only 23 percent of eighth-graders were Proficient or above.

Similar divergences were cited in other subjects, such as reading.

News of the NAEP results rippled through education, advocacy, business, and policy circles. Leaders were stunned at the large gap between its state-level results and the Volunteer State's results on NAEP.

"The difference was immense, and we didn't know why," says Fielding Rolston, the former chairman of the Tennessee Board of Education and a member of the National Assessment Governing Board, which oversees NAEP. "So, we started to ask a lot of questions. We wanted to know what the reason was for this. We had been lying to kids. We weren't telling them the truth."

Tennessee educators recognized the importance and credibility of NAEP – the largest nationally representative, continuing assessment of what America's students know and can do – and opted to heed the warning inherent in such a wide gulf between state and national measures of achievement.

"What this highlighted was the fact that we had very inflated proficiency rates and poor college and career readiness," says Woodson. "We were setting them up to fail."

Which is why that failing grade from the U.S. Chamber of Commerce "served as a rallying cry," says Margaret Horn, who was a senior education policy advisor to former Gov. Phil Bredesen.

"We had to face facts," she says. "Tennessee had set the academic bar too low and our state standardized tests were unambitious. So, we embraced the F, using it to bring attention to the issue and really start making change."

THE CHANGE PROCESS

State education leaders point to Gov. Bredesen as a driving force behind Tennessee's educational reforms in the wake of the Chamber's report—and a reason the state continued to make gains even after he left office in 2011.

In addition to consulting the state's best and brightest minds in education, the governor prodded the business community for support and buy-in, understanding that successful students today would become productive workers for Tennessee's businesses tomorrow. At the recommendation of advisors, Gov. Bredesen also linked Tennessee to the American Diploma Project, an initiative of Achieve, a Washington-based nonprofit that helps states make college and career readiness a priority for all students.

Participation in the Diploma Project led to a handful of key findings, says Achieve President Michael Cohen, including that Tennessee needed to:

- **Make learning standards more rigorous**
- **Align its standards with post-secondary demands**
- **Require students to take courses based on the state's more rigorous standards**
- **Ensure that assessments measure whether students have met the standards**

"Throughout the rest of [Bredesen's] term, that really was the foundation for education reform in Tennessee," Cohen says. "He set out to build support for those reforms at the policy level, in the business community, and in the education community."

State education leaders at both the policy and practice levels sought early to get input and buy-in from teachers, so that the process was unifying, instead of changes being demoralizing, top-down edicts.

"It began with educators as partners," says Woodson, who served as chair of the Senate Education Committee in the Tennessee General Assembly. "And, instead of pointing fingers, the approach was: 'We all have a responsibility here.' It has not been easy, but educators have leaned in and people have supported them."

State leaders also looped in the higher education and business communities, which supported the efforts not just with funding, but with time, talent, and brainpower.

State leaders held business/higher education roundtables in the state's five biggest media markets. They brought together marquee companies, university deans and faculty, the state's education commissioner and commissioner of economic and community development, and the governor, to get on the same page about the need for higher standards. Horn called the growing support in the early days of the effort "a drumbeat."

The business community embraced this work to help raise achievement levels in Tennessee's 136 school systems. It funded and launched a high-profile public awareness campaign for parents and other residents, using newspaper commentaries, radio and television ads, and billboards with the saying, "Tennessee is raising the bar."

"Higher ed said, 'We want young people to come to our campuses more prepared,'" Horn says. "Businesses said, 'We want students who are qualified to work for us, and we want them to stay here in Tennessee.' This was an economic development initiative as much as it was an educational initiative."

Local celebrities got in on the campaign. Patrick and Gina Neely, stars of the Food Network's "Down Home With the Neelys" cooking show, did a public service announcement promoting the campaign. So did Pat Summitt, the former head coach of the University of Tennessee Lady Volunteers basketball team.

The collaboration continued even after a 2010 gubernatorial election where Gov. Bredesen—who was term-limited—was replaced by Gov. Bill Haslam, a Republican.

Some were concerned that a new governor—and one from an opposing party—would attempt to roll back some of the new standards and policies that had sparked so many gains.

Instead, thanks to Gov. Bredesen's community outreach and the focused public relations campaign, "Governor Haslam really bought into the concept that we've been lying to kids and we've got to stop doing that," Rolston says. "This is a real success story for both men. Bredesen may have started this process, but the results have all occurred in Haslam's administration. Both governors have bragging rights."

THE RESULTS

After a multi-year process to develop more rigorous expectations in the classroom, eventually the state began seeing significant upward movement in scores and national rankings on NAEP.

Between 2011 and 2015, Tennessee students went from:

- **46th in the country to 23rd in fourth-grade math**
- **44th in eighth-grade math to 37th and**
- **41st in eighth-grade reading to 29th**

Eventually, the Tennessee Comprehensive Assessment Program (TCAP) proficiency rates, which declined the first year the more rigorous test was given, improved in every tested subject, showing that the wide-reaching improvement effort hadn't just improved NAEP scores.

"We've had dramatic shifts in results since 2011 across diverse populations and multiple student groups," says Woodson of SCORE.

This also proved true for Tennessee's black and low-income students.

"What you find when states make improvements, what tends to happen is that the white kids and non-[poor] kids increase more than other students," says Cory Curl, the former policy director for the Tennessee Department of Education. "Everybody's getting better, but the gaps are getting worse."

Not so in Tennessee.

From 2009 to 2015, the proportion of African-American students scoring at or above Proficient on NAEP in fourth-grade math increased by 13 percent, compared with 12 percent for white students, Curl noted.

While the state's overall Proficient rates on NAEP are still below the national average, Tennessee is poised to see improved outcomes for students as implementation of reform efforts continue, a write-up on the U.S. Chamber of Commerce's Leaders and Laggards website says.

While Tennessee was among 10 states to see a slight drop in fourth-grade math scores in 2017 NAEP results, the state sustained its historic growth in fourth-grade reading and eighth-grade math.

"We always want to see improvement," Candice McQueen, the state education commissioner said of the 2017 results, "but we are encouraged to see Tennessee student growth so far [since 2013] has been sustained."

And it all started with NAEP.

"To have that kind of apples-to-apples comparison is invaluable" Woodson says. "We still have our own rigorous assessment, and we still strive to improve based on that, but NAEP has served as an important backstop in our efforts. NAEP helps us identify where we need to do more work to help students achieve success."

For more information, visit **nagb.gov** and **nationsreportcard.gov**

Fourth-Grade Students in Wyoming Make Gains on NAEP

Between 2009 and 2017, fourth-graders in Wyoming made improvements on the National Assessment of Educational Progress (NAEP)—also known as The Nation's Report Card—that significantly outpaced national average gains. Their results in reading and mathematics landed Wyoming among the top jurisdictions with one of the largest numeric score increases over that time period.

Wyoming's impressive progress on NAEP has come despite the rural state's challenges. Wyoming is the nation's least-populous state, and some of its school districts include one- and two-room schoolhouses. Three-quarters of the students in Wyoming are educated in rural or town settings, so school districts must be collaborative and creative when addressing critical issues, such as transportation and special education.

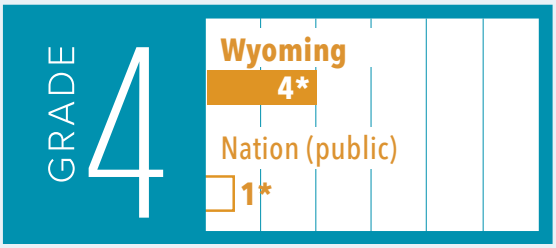
State leaders and educators point to several policies and practices they believe have helped support students' gains on NAEP. They include:

- **New, more demanding academic standards**
- **Professional learning communities for educators' professional development**
- **A focus on early elementary literacy and numeracy**
- **An equitable funding model**

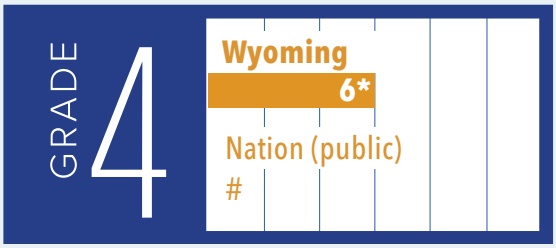
NAEP has served as an important foundation for much of the work the state Department of Education does, said Jillian Balow, the state superintendent of public instruction. "We don't make policy decisions without thinking about NAEP," she explained.

Score Point Increases on NAEP, 2009-2017

Reading



Mathematics



* The score changes are statistically significant ($p < .05$) | # Rounds to zero.

Wyoming's score increases for both reading and mathematics are significantly larger than the nation (public).

Source: National Assessment of Educational Progress, 2017 Mathematics and Reading Assessments.

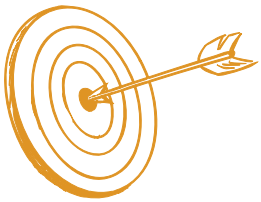
> **We don't make policy decisions without thinking about NAEP.**
>
> — Jillian Balow, state superintendent of public instruction

MORE DEMANDING ACADEMIC STANDARDS

One important role NAEP has played is in the development of Wyoming's state assessments. Wyoming's state education leaders revised the state standards three times in the past 12 years: 2008, 2012, and 2018. To align with these evolving state standards, Wyoming launched a new state assessment in 2018 that used NAEP data and assessment frameworks in the development process.

Wyoming's leaders appreciate that NAEP remains steady as changes in their own state assessments proceed.

"When you go from one state test to another state test, it's like hitting a moving target," said R.J. Kost, a state senator and the former curriculum director for the mid-sized Park County School District #1, which educates more than 1,700 students. "But NAEP is still NAEP."



With these more rigorous standards established, the state has worked to ensure teachers are instructing lessons aligned with them, said Jay Harnack, superintendent of the Sublette County School District #1, comprising approximately 1,000 students and five schools.

BUILDING PROFESSIONAL LEARNING COMMUNITIES

Another key contributor to the improved NAEP scores, according to Kost and Harnack, is the growth and use of professional learning communities (PLCs). At many Wyoming schools, PLCs convene teachers in the same grade to engage in data-driven decision-making by analyzing student data, sharing best practices, and discussing which students are meeting expectations and which need help. Harnack and other Wyoming educators say the PLCs have led to improved learning outcomes, including on NAEP.

But educators also say the rural nature of many Wyoming schools means teachers in middle and high school may be the only teacher in their subject and grade level, making impossible the kind of collaboration that elementary teachers enjoy. Many small districts don't have a dedicated curriculum director, so that work is spread out among busy principals.

NAEP presents an opportunity for educators to connect with districts facing similar challenges in other states. Harnack uses NAEP data to identify districts that have similarly rural populations but have found success. NAEP serves as a starting place for him to learn more about initiatives that are working elsewhere and may work for his own district, he said.

BRINGING EARLY ELEMENTARY SUCCESS TO MIDDLE SCHOOL

As in many other states, Wyoming educators and decisionmakers used research pointing to the significance of strong reading comprehension and numeracy by the end of third grade to galvanize a statewide effort to help students master the critical and fundamental skills in reading and mathematics earlier in elementary school, rather than later when it becomes harder to make gains toward reading proficiency.

This effort focused on the primary grades and included keeping class sizes at around 16 students for grades K-3 and deploying staff more efficiently. For example, paraprofessionals joined classrooms to assist teachers in working with students in small reading and math groups at different levels.

Kost believes this effort contributed to the strong performance of fourth grade students on NAEP reading and math from 2009-2017.

Still, Balow notes, there is more hard work to be done in grades 6-8 to help eighth grade students improve at similar rates on NAEP to those achieved at fourth grade, including focusing the accountability system on grades 6-8 and ensuring that reading and math interventions for students persist through middle school.

EQUITABLE FUNDING FOR ALL

Underlying all of this work on the ground is an education funding model that distributes excess funding from counties and districts with more wealth to less wealthy areas. This helps all public schools reach a set funding base.

In Balow's opinion, this equitable funding better allows for resources that meet the needs of students who historically have not performed as well as their peers—making a real impact on what those students can achieve. For example, she noted, Hispanic fourth-graders and those with Individualized Education Programs, scored on par with the national average on the 2017 NAEP reading and mathematics assessments, while fourth-graders eligible for free- and reduced-price lunches scored significantly higher than the national average. The improvements these groups are making are "a driving force" in keeping Wyoming "ahead of the pack when it comes to NAEP," Balow said.

POST-SECONDARY PREPAREDNESS AND STAYING THE COURSE

Wyoming high schools have also seen improved education outcomes over the last several years. Since 2013, the high school graduation rate has increased by 4.1 percentage points. Balow believes this can be traced back to improved and increased connections between adults and students in middle school, where the number of staff, such as counselors, increased in many districts over that time period.

> **When you go from one state test to another state test, it's like hitting a moving target. But NAEP is still NAEP.**
>
> — R.J. Kost, state senator and former curriculum director for Park County School District #1

Education leaders and influencers in the state also want to help more students prepare for life after high school graduation, whether that involves moving into the workforce, joining the military, enrolling in career and technical education, or going to college.

The state Department of Education has identified computer science and computational thinking as skills all students need to succeed after high school. By the 2022-23 school year, all Wyoming students will be required to take computer science under the Boot Up Wyoming initiative.

K-12 education leaders continue to join industry and workforce leaders in conversations about economic diversity and bolstering the technology, alternative energy, and natural resources industries that they hope will diversify and anchor the state's economy.

"When we're talking about education, we're not just talking about K-12 or higher ed," Balow said. "We're talking about the economic vitality of the state."

Amy Surdam, the co-owner of Stitches Acute Care Center, an urgent care center in Cheyenne, and an active member of the Wyoming business community, said that because Wyoming spends a lot of tax dollars on education, many business leaders pay close attention to whether the outcomes match that investment. And education is a priority for this community both economically and personally.

"One of the reasons [the business community] is drawn to the state is because of the great public school education experience our kids could have," Surdam said.

Other leaders, such as Sublette County Superintendent Harnack and State Sen. Kost, are eager to see schools and districts continue to stay the course and build on what they've already achieved. Harnack wants to see the current standards stay in place for 7 to 10 years so educators can refine the work underway.

Harnack sees the NAEP progress as one way to provide evidence to the legislature and other stakeholders that their investment is paying off—and will pay dividends well into the future.

"I've got 25 years' experience," he said of his career as an educator, "and I'm not sure I've been anywhere where people are as committed to improving student outcomes as they are here in Wyoming."

For more information, visit **nagb.gov** and **nationsreportcard.gov.**

Notes of the Expert Panel Meeting Representing Industry
February 22, 2018

National Assessment Governing Board
Ad Hoc Committee on Measures of Postsecondary Preparedness

As part of meeting the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, HumRRO organized and facilitated a meeting with industry experts. The purpose of this meeting was to get input from leaders and experts in industry about (a) the jobs that will exist in 2030, (b) the skills that these jobs will require, and (c) the measures/indicators that would be needed to provide a status of elementary and secondary students with respect to these skills.

We were fortunate to assemble an exceptional panel of experts and leaders. The panel members included **Ms. Paula Collins**, Texas Instruments, **Mr. Marcelino Ford-Livene**, Intel Corporation, **Dr. Scott Heimlich**, Amgen Foundation, **Dr. Chauncy Lennon**, JPMorgan Chase, and **Mr. Reginald McGregor**, Rolls-Royce Corporation.

The meeting was held on February 22, 2018 in Alexandria, Virginia. An overview of the National Assessment Governing Board and the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, along with the agenda and logistical information for the meeting were sent to the panelists in advance.

Thanos Patelis (HumRRO) opened the meeting and after quickly informing the group of some logistics, Terry Mazany provided an overview and led the attendees through introductions. Then, Thanos Patelis facilitated the meeting around the three areas of inquiry involving (a) the jobs of 2030, (b) the skills that they will require, and (c) the measures/indicators that will be important to provide. Finally, Terry Mazany offered some concluding comments. The agenda and the list of all attendees is in Appendix A.

The purpose of this document is to provide information on the themes and comments made by the panelists. The information in this report is meant to provide insight into the rich conversation and comments provided by the expert panelists.

The Future of the Workplace and Work

- The titles of the jobs in 2030 cannot be predicted. However, the jobs of the future will require many skills and will be driven by globalization, artificial intelligence, and “big data”.
    - Globalization will change the workplace, from the types of jobs available (i.e., global competition for jobs) to working on cross-cultural teams.
    - Workplace integration will increase (e.g., working across disciplines instead of in silos by discipline).
    - The pace of automation and existence of the internet enable rapid access to information which will affect what employees do on the job and their job descriptions. The use of the internet and automation will only increase

  - Employers should embrace new methods of communication, driven by the next generation. For example, hiring managers may not be familiar or may be uncomfortable with the latest communication modes of those applying for jobs. Rather than allowing that to impact negatively on job applicants, employers should acknowledge the differences as innovation or trends to monitor. Job applicants may also need to be attuned to this dynamic.
  - Technology will be at the forefront. For example, JP Morgan Chase is a "tech company that also loans money"; they do not consider themselves primarily a financial institution.
  - Complicated tasks can be handled by automation (which will replace some jobs). Employees of the future will need to work with automated equipment and employees will be needed to design and service the automation.
  - Complex tasks will take human thought (and these types of jobs will remain and additional ones will be added in the future).
- There is and likely there will continue to be a duality in the job descriptions of the future: academic skills and college degree required versus high school diploma and training and apprenticeship experience required. Panelists noted they come from the academic skills track and although they acknowledge the diploma-training track, they suggested consulting with experts in that area for a more detailed picture of what the future holds for those not following the 4-year college track.
  - Need to hire the person with the right skill set, not the person with the most qualifications (who may be overqualified and a poor fit for the work). This is sometimes a tendency when college-graduate hiring managers put more emphasis on college degree, the background they come from and perspective they bring to their job, than is warranted by the demands of the job being filled.
  - Most jobs that do not require a 4-year college degree, will require additional training, such as a 2-year college degree, technical training, or post-secondary education and/or training leading to certification.
  - Employer provides job skills (e.g., specific knowledge and procedures), while employee brings workplace competencies to the job (see competencies in the skills needed in the future). More job-related training will be provided by the employer, such as in-house mini-MBA programs provided by large corporations.
  - Continuous learning will be required to keep up with change. The employer will support or provide the training or education; the employee must participate to keep pace.
- Panelists indicated the need for initiatives to empower students, especially those who are "at-risk" and do not have role models, with an understanding of the labor market and expose them to employment options. Suggestions for empowering students so they are ready for post-secondary steps to meet their goals:
  - Help them define pathways to jobs.
  - Assist in setting goals; define an individual's "*north star*".
- Employer/employee relationships will change.
  - More contract work will emerge, which allows workers to dictate own schedule and/or workplace.
- Office space will be different.

- For example, if employees come to the office, they will use a laptop and choose a work space area plugging into the network. The exact location may vary and will be more fluid than today.

Skills Needed in the Future

- Panelists described the need for employees to be able to apply skills, which defines competencies. Having a skill is not sufficient. Must know how to apply the skill to real world problems.
- The skills that were highlighted were as follows:
  - Ability to collaborate with people and machines, as the workplace incorporates more technology and automation as well as more collaboration.
  - Ability to interact with technology in jobs at all levels. Career Technical Education (CTE) can provide skills and certification for certain jobs.
  - Data skills are in demand - *data is the new oil*.
  - Less focus on job-specific content skills and more on workplace competencies:
    - Critical thinking, effective communication, collaboration, adaptability, problem solving, creativity, integrity, community/workplace citizenship, agility, learning disposition, persistence, attitude, interest.
  - Able to handle failure – *know what to do when the button fails*.
- Need power skills and experience, especially for at-risk students, to navigate the job market and succeed in entry-level positions – resume writing, oral communication, working on teams, basic reading/writing and mathematics ability.

Measures of Skills in the Future

- Consider measuring post-secondary readiness skills in grade 8.
- Maintain traditional knowledge measures (i.e., reading, mathematics).
  - Some went as far as to say that these measures of academic skills should not be removed and any other measures should be added.
- Design-build skills can be measured by persistence. Do you persist until object is built?
- Measure *application* of skills at grade 12. Can students demonstrate their skills (versus showing their knowledge of skills)?
- Add new measures tapping workplace requirements. Be creative in measuring skills (e.g., use certificates or credentials). Leverage CTE curriculum and measures.
  - In the interview process for candidates, hiring managers will give a problem to solve. Therefore, such metrics that demonstrate process and results of solving problems would be helpful.
- Need measures on collaboration, empowerment, and creativity.
- Tie relevancy of measures to industry and align with education. Do this regionally so that measures of preparedness are informative to:
  - students (do they have the skills needed for jobs in their community?),
  - industry (do local job applicants have the skills needed for jobs being offered in their community?),
  - educators (are they preparing students for post-secondary opportunities in their community?), and

    - policy makers (does the local workforce have the skills that industry in their community require?).
- While this may not be the Governing Board's responsibility, students should be given the ability to develop digital portfolios, including coursework and experiential activities, in school to demonstrate their skills and achievements. This would be helpful to employers.
- The measures must keep evolving as the type of work and required skills change over time.
- One interesting observation was that the panelists described job training interventions for at-risk youth with measures of program success embedded as artifacts of the experience. Did the participant build something? While the final product might not have been their initial design, the focus was on the creative process and the ability to troubleshoot problems as well as to persist in developing the final product.

Appendix A: Meeting Agenda and Attendees

Expert Panel Meeting
National Assessment Governing Board
Ad Hoc Committee on Measures of Postsecondary Preparedness

February 22, 2018 | Agenda

11:00 to 11:05 AM **Start Meeting**
Thanos Patelis, Facilitator, HumRRO

11:05 to 11:15 AM **Welcome and Introductions**
Terry Mazany, National Assessment Governing Board Member
Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness

11:15 AM to 12:00 PM **Work of the Future**
Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What do you see as the type of jobs graduating high school seniors will have in 2030?*
- *Compared to jobs now, what kind of trends do you see emerging for jobs in 2030?*
- *Do you foresee any differences of jobs by industry or do you expect similar trends to occur for all jobs?*
- *What do you see as expectations of employers for these students?*
- *How do you envision the hiring process to be?*
- *What role will postsecondary institutions play in training and preparing students for these jobs?*

12:00 to 12:15 PM **Break to get lunch**

12:15 to 1:00 PM **Skills for the Work of the Future**
Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What types of skills will graduating high school seniors need to have in 2030 in order to get the jobs in 2030?*
- *What would you consider pre-requisite skills vs. skills that can be acquired on the job?*
- *What role will postsecondary institutions play in training these skills?*
- *What would a hiring manager in 2030 look for in prospective hires?*

1:00 to 1:45 PM **Measures of these Skills Associated with Work of the Future**
Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- *What measures do you see being used to represent these skills?*
- *What metrics would provide helpful information in the aggregate about the skills of graduating high school seniors?*

1:45 to 2:00 PM **Final thoughts and concluding remarks**

Terry Mazany, National Assessment Governing Board Member
Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness

Attendees

Expert Panelists:

- Paula Collins, Texas Instruments
- Marcelino Ford-Livene, Intel Corporation
- Scott Heimlich, Amgen Foundation
- Chauncy Lennon, JPMorgan Chase
- Reginald McGregor, Rolls-Royce Corporation

Governing Board Members:

- Terry Mazany, Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness
- Honorable James E. Geringer, Former Governor of Wyoming, Cheyenne, Wyoming
- Carol Jago, Associate Director, California Reading & Literature Project at UCLA, Oak Park, Illinois
- Dale Nowlin, Teacher and Mathematics Department Chair, Bartholomew Consolidated School Corporation, Columbus, Indiana
- Honorable Beverly Perdue, Former Governor of North Carolina, New Bern, North Carolina
- Linda P. Rosen, Chief Executive Officer, Change the Equation, Washington, DC
- Chasidy White, Director of Strategic Initiatives, Office of the Superintendent, Montgomery, Alabama

Governing Board Staff Members:

- Bill Bushaw, Executive Director
- Lisa Stooksberry, Deputy Executive Director
- Lily Clark, Assistant Director for Policy & Research
- Laura LoGerfo, Assistant Director for Reporting & Analysis
- Munira Mwalimu, Executive Officer & Contracting Officer
- Sharyn Rosenberg, Assistant Director for Psychometrics
- Angela Scott, Management & Program Analyst

HumRRO Staff Members:

- Monica Gribben, Senior Staff Scientist
- Deirdre Knapp, Vice President, Assessment and Evaluation in Education and the Workplace
- Jackson Millard, Research Associate
- Thanos Patelis, Principal Scientist

Expert Panelists

Paula Collins
Vice President, Worldwide Government Relations
Texas Instruments

Paula J. Collins is vice president of Worldwide Government Relations for Texas Instruments where she leads the Company's advocacy activities in the United States and abroad. She joined Texas Instruments in 1999 as Director of Government Relations and managed the Company's legislative and public policy activities on a wide range of issues, including immigration, funding for basic research and education.

Ms. Collins came to Texas Instruments with extensive government, corporate and business association experience. After serving as a legislative assistant on Capitol Hill, she joined American Express Company, where for ten years she directed the Company's legislative activities on a wide range of public policy issues including a number of trade initiatives. In 1993, she joined the Business Roundtable where she worked closely with corporate leaders to develop and implement public policy campaigns on international trade, budget and workforce initiatives. From 1995-1997, she directed international trade relations at Eastman Kodak Company and from 1997-1999 was a principal with The Fratelli Group, a strategic communications firm where she played an active role in the development and implementation of comprehensive public affairs strategies for several coalitions on trade and telecommunications issues.

Ms. Collins is a graduate of Yale University and attended the Program for Management Development at Harvard Business School. She is an active participant in her church and local civic organizations, and is a member of several professional organizations. She is a member of the Board of Directors and Executive Committee of the Information Technology Industry Council, and chairman of the Board of the Task Force on American Innovation.

Marcelino Ford-Livene
General Manager, Global Programs and Alliances
Intel Corporation

Marcelino Ford-Livene is the General Manager of Global Programs and Alliances for Intel's Worldwide Corporate Affairs Group. In this capacity, he leads the organization charged with designing the framework and strategic plan for identifying and prioritizing win-win strategic alliances, relationships and partnerships with various global industry, government and special interest groups that advance the strategic direction of Intel's Diversity and Inclusion Initiative. Prior to this role, Ford-Livene was the General Manger of New Channels and Advanced Advertising for Intel Media, where he led the organization charged with programming, licensing and distributing new format television channels and advertising-supported video-on-demand programming. He was also responsible for advertising sales, advertising operations, audience research and data analytics for Intel Media's OTT services. He also co-authored patents on TV viewership analytics and advanced advertising behavioral targeting. Prior to Intel, he was a senior member of TV Guide's corporate development and planning team. He has also held senior positions with the U.S. Federal Communications Commission in Washington, DC. He served as Special Counsel for New Media Policy for Chairman William E. Kennard and as Senior Counsel and Director of Media Strategic Analysis for the FCC's Office of Strategic Planning under Chairman Michael Powell. Ford-Livene was the Division Chairman of the Interactive Media Division for the American Bar Association's Forum on the Entertainment and Sports Industries from 2006 to 2013. He also served for eight years on the board of the TV Academy, the organization that awards the prestigious Primetime Emmy for creative excellence in the television industry. He was also the TV Academy's Board Secretary and a member of its Executive Committee from 2010 to 2013. He is currently the Co-Chairman of the TV Academy's Diversity Committee and a founding board member of the Digital Diversity Network. Corporate boards that Ford-Livene has served on include Delivery Agent in San Francisco, CA and TRA Global, which was acquired by TiVo. Ford-Livene earned a B.A. in economics from UC San Diego, a J.D./M.B.A. from the University of Illinois and has completed an Executive Leadership Program at Harvard Business School.

Scott Heimlich
Vice President, Amgen Foundation

Scott M. Heimlich is vice president of the Amgen Foundation. He is responsible for the strategic management and direction of the Foundation's science education portfolio, including the development and oversight of key initiatives at the K-12 and higher education levels. He was the principal architect and continues to lead the Amgen Scholars Program, the Foundation's largest initiative providing undergraduates with access to research opportunities at premier educational and research institutions across the world. Under his leadership, the Amgen Biotech Experience transformed from a local program into a multi-site, international initiative bringing biotechnology lab experiences to over 80,000 secondary students a year. With these and many other initiatives, the Foundation's commitment to science education recently surpassed the $125 million milestone.

Prior to joining Amgen in 2005, he served in positions at the University of California, Los Angeles, Los Angeles Pierce College, University of Southern California, and a junior high school in Japan. He holds a bachelor's degree, master's degree, and doctorate in education from the University of California, Los Angeles.

Chauncy Lennon
Managing Director and Head of Workforce Initiatives
Global Philanthropy
JPMorgan Chase & Co.

Chauncy Lennon leads JPMorgan Chase & Co.'s initiatives to promote economic opportunity through investments in workforce practice, innovation, and policy. These include New Skills at Work, a $250 million global initiative to support demand-driven workforce systems that promote prosperity for workers and industries; New Skills for Youth, a $75 million initiative to increase the number of young people who complete career pathways that begin in high school and end with postsecondary degrees or credentials aligned with good-paying, high-demand jobs; The Fellowship Initiative, a program providing young men of color with learning experiences that help them achieve their education and career potential; and a $17 million investment in Summer Youth Employment Programs in US cities to help underserved youth obtain the skills necessary to build lasting careers.

He serves on the New York City Workforce Development Board, the College Promise Campaign Advisory Board, and the Neighborhood Trust Financial Partners Board.

He joined JPMorgan Chase from the Ford Foundation, where his grant-making focused on promoting economic advancement for low-income workers by improving access to workforce development and work support programs. Prior to the Ford Foundation, he was senior vice president for Asset Building at Seedco, a national workforce development intermediary. He also has extensive experience researching the mobility patterns of the working poor. He earned his Ph.D. in anthropology from Columbia University, master's degree from the University of Chicago and bachelor's degree from Williams College. He has taught urban studies at Columbia's School of International and Public Affairs and Barnard College.

Reginald McGregor
Manager, Research & Technology Strategy Group
Rolls-Royce Corporation

Reginald McGregor, Manager of Engineering Employee Development and STEM Outreach at Rolls-Royce Corporation. He is a Mechanical Engineer with over 15 years' experience in various engineering roles. He spent over 8 years in early career development managing the engineering co-op; high school internship and graduate development programs. Reginald holds BS in Mechanical Engineering, MBA and currently completing a MS in Technology Leadership and Innovation. He is very active in workforce development and STEM education and serving the community. Reginald enjoys reading, outdoor activities and spending time with family.

Reginald serves on several boards and committees including the Governor-appointed Region 5 Works Council, President of the Lawrence Township School Board, Indiana STEM Advisory Council, STEMx National Advisory Board, Purdue Engineering Education Industrial Advisory Council, Marion County Superintendents STEM Coalition, Indiana Chamber of Commerce K-12 and Workforce Committees, Million Women Mentor Steering Committee, Indiana Afterschool Network Board, and EmployIndy Youth Committee.

Notes of the Expert Panel Meeting Representing Higher Education April 19, 2018

National Assessment Governing Board *Ad Hoc* Committee on Measures of Postsecondary Preparedness

As one step in addressing the charge of the *Ad Hoc* Committee on Measures of Postsecondary Preparedness, HumRRO organized and facilitated a meeting with a select group of higher education innovators. The purpose of this meeting was to elicit input from leaders and experts in higher education about (a) the jobs that will exist in 2030, (b) the skills that these jobs will require, and (c) the measures/indicators that would be needed to determine the status of elementary and secondary students with respect to these skills.

We were fortunate to assemble an exceptional panel of experts and leaders. The panel members included **Dr. Sarah DeMark**, Vice President of Academic Programs, Western Governors University; **Dr. Pradeep Kotamraju**, Bureau Chief, Career and Technical Education, Division of Community Colleges and Workforce Preparation, Iowa Department of Education; **Mr. Michael Morsches**, Dean of Learning Enrichment and College Readiness, Moraine Valley Community College; **Dr. Yvette Mozie-Ross**, Vice Provost for Enrollment Management and Planning, University of Maryland, Baltimore County; and **Dr. Holly Zanville**, Senior Advisor for Credentialing and Workforce Development, Lumina Foundation. Also, in attendance were some Governing Board members, Governing Board staff members, and HumRRO staff, listed in Appendix A.

The meeting was held on April 19, 2018 in Chicago, Illinois. An overview of the National Assessment Governing Board and the charge of the *Ad Hoc* Committee on Measures of Postsecondary Preparedness, along with the agenda and logistical information for the meeting were sent to the panelists in advance of the meeting.

Thanos Patelis (HumRRO) opened the meeting and after quickly informing the group of some logistics, Terry Mazany, *Ad Hoc* Committee Chair, set the stage for the role of NAEP in the future, given the impact of technology on work as well as the economic and global context in which students enter the post-secondary world. He led the attendees through introductions. Thanos Patelis facilitated the meeting around the three areas of inquiry involving (a) the jobs of 2030, (b) the skills these jobs will require, and (c) the measures/indicators needed to measure these skills. Finally, Terry Mazany offered some concluding comments. The agenda and the list of all attendees is in Appendix A.

The purpose of this document is to summarize the themes and comments made by the panelists. The information in this report is meant to provide insight into the rich conversation and comments provided by the expert panelists.

The Future of the Workplace and Work

With experts representing higher education, the discussion of the future of the workplace and work focused on pathways to work, primarily through postsecondary education and training.

- Postsecondary institutions need to create pathways to develop agile employees who are open to lifelong learning.
- Lifetime or continuous learning will become the norm. Employees will need to continue to learn from different providers, from colleges/universities to specific training courses to experiential opportunities, throughout their lives. Information technology (IT) workers already face this with a variety of certifications for specific technology tools and applications. Highly-regulated occupations will likely be the last ones to make changes.
- Postsecondary institutions need to partner with employers to identify education and training needs so that graduates possess the knowledge and skills needed for jobs.
    - Look to IT which is leading the way in defining job requirements and credentials for employees.
    - One of the panelists described a keynote presentation by the CEO from Chegg, Dan Rosensweig, describing the current disconnect between expectations and responsibilities of employers, higher education, and students. He illustrated this by placing each of the stakeholders at the vertices of a triangle with arrows facing outward indicating a lack of working together rather than arrows pointing inward, toward each other, signaling collaborative planning and working together toward similar goals.
    - Educators can be resistant to business models.
- There are still barriers to postsecondary education. Although community colleges have an open policy (in some states students do not need a high school diploma to enroll in community college), students may find it difficult to pursue their desired major or to matriculate. Prerequisites and competitive admission in selected programs (e.g., healthcare) are barriers to entry.
    - Similarly, some 4-year colleges guarantee admission to those with associate's degrees, but cannot guarantee admission into specific programs due to enrollment capacity and accreditation requirements such as completion of specific coursework.
    - Some community college graduates are not prepared for 4-year colleges and universities because their 2-year institutions have limited qualification requirements for instructors and low standards for their graduates. Both of these factors could be a barrier to continued education.
- More individualization in postsecondary education requires "policy by anomaly."
    - In developmental education, need to identify what students need and how to get it to them. Placing students on paths matching their goals raises retention rates.
- Strong partnerships are needed between 2- and 4-year institutions of higher education to facilitate students' transfer between schools.
    - High school graduation projections show Hispanics are the fastest growing group[1] and many of this group begin their postsecondary studies in community college.
    - Many students are graduating from high school with associate's degrees obtained through early middle college programs and dual enrollment.

[1] See Bransberger, P., & Michelau, D. R. (2016). *Knocking at the college door: Executive summary*. Boulder, CO: Western Interstate Commission for Higher Education.

- Colleges and universities must provide different, perhaps individualized, services to students who enter at different points on the pathway to a 4-year degree. Historically, 18-year-old high school graduates enter as freshmen with new-student services and support structure for the first year or two. Institutions are now called on to help a select group of high school graduates entering college with associate's degrees, yet perhaps still needing wraparound services due to their youth (compared to the services offered to 20-year-old or older students transferring to a 4-year program with an associate's degree). Other students may start and stop their education multiple times and attend several institutions before graduating.
- To prepare students for future jobs, we need vertical and horizontal articulation. For horizontal articulation, students need technical, academic, and employability skills (e.g., grit, self-understanding). For vertical articulation, the key is determining at what age/grade to start. High school staff say it needs to start in middle school; middle school staff say it needs to start in elementary school.
- Need a mechanism to validate training and experience as part of the pathway to a degree. More and more high school graduates are already working through the gig economy. Other students have jobs and families while attending college.
    - Look to the military; they validate training as credits.
    - Western Governors University (WGU) provides micro-credentials or badges as students achieve milestones to show them the skills and knowledge attained as they work toward their bachelor's degree.
    - Give students the ability to curate their work and educational experiences.
- There is tension between an integrated approach providing a broad range of skills (academic, technical, and employment-oriented) and the business need for a narrow, specific set of skills to meet a skill shortage. One is too esoteric, the other too pragmatic.
- Post-secondary institutions will not be the destination, but a vehicle for certifying student competencies.
- Expect the acquisition and use for knowledge and skills to flip. Currently, knowledge is the base foundation provided by formal education and we obtain skills as needed. In the future, skills will be the base and we will obtain knowledge as needed.

Skills Needed in the Future

- Don't teach students to do what a robot can do better.
    - Robots are better than humans at pattern recognition, repetitive tasks, etc. but they are not able to understand nuance of language, social relationships, or creativity.
    - It will be important for humans to connect domains.
    - McKinsey has developed a list of human skills such as empathy, planning, creativity, common sense, sense making, novel thinking, nuance of language, social relationships, etc.[2]
- In addition to content or professional knowledge, students need:
    - practical transition skills
    - key learning skills and cognitive strategies
    - strong foundation of self-understanding and engagement strategies

[2] See Chui, M., Manyika, J., & Miremadi, M. (2016). *Where machines could replace humans—and where they can't (yet)*. McKinsey Global Institute. https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/where-machines-could-replace-humans-and-where-they-cant-yet

  - critical thinking
  - affective mindset and skills
  - meta learning
  - financial literacy
  - information technology literacy
  - health and wellness literacy.
- Schools can provide learning and workplace skills.
  - College experience courses for high school students.
  - WGU offers eight synchronous online sessions with a small, facilitated cohort on skills such as self-efficacy, communication, and learning styles. In a pilot test with at-risk students, there were significant positive outcomes: performance in courses as well as retention increased. Some of the skills, including leadership and communication, were identified by the medical profession as ones missing in graduates. These skills not only make graduates better job candidates but also more resilient students.
- Consider where or why skills are needed to build awareness of how skills fit into work.
- Four-year institutions look for grit or persistence as a necessary skill for student success. Students with a solid academic foundation and grit should be able to succeed, whereas students with a strong foundation of academic knowledge and no grit may not be able to handle the rigor of college.
- Class attendance is the best predictor of success, as evidenced both by anecdote and research. Some colleges require attendance and initiate interventions if students do not attend class.
  - There is a question of how to measure attendance for online courses. One approach is to look at student engagement using interaction data from Learning Management Systems (LMS).
- Students need to learn how to get "unstuck" when in a challenging situation.
- Employers are looking for people who can work across left and right brains and are able to work with technology.

Measures of Skills in the Future

- Employers offer performance-based pay for high-value, high-priority credentials supporting ability to use skills.
  - Students may demonstrate their skills through portfolios.
  - Use blockchain[3] to document achievements and portfolio.
- Need new types of student assessment.
  - Current assessments focus too much on knowledge and not enough on skills, character, and meta learning.
  - Students take most current assessments working alone rather than in teams. Need authentic assessments of team work with hands-on performance components.
- Leading-edge assessments use simulation and are more applied, with problem solving scenarios that assess whether you can use knowledge.
- Create dashboards for parents and students to see skill attainment, including credentials.
- Use micro credentials and then stack those credentials to meet employer-relevant needs.
- There is a tension between broad versus specific measurement of skills.

[3] For information about blockchain: https://hbr.org/2017/01/the-truth-about-blockchain

- Include all stakeholders in identifying what and how to measure skills.
- Measuring college or postsecondary readiness is different than college or postsecondary success.
- Some postsecondary institutions use transcripts, others don't.
    - Transcripts could provide an opportunity to leverage high school data for postsecondary instructors to know what students have done prior to college and to personalize postsecondary instruction.
    - Expect seat time to be a less helpful measure from an industry perspective. They will be interested in a "transcript" with learning opportunities, perhaps using blockchain technology.
    - For transcripts to be useful to instructors, need a way to standardize them.
    - Need to include attendance on transcript.
- Metrics of academic rigor exist with validity evidence provided to support their value in predicting college outcomes.
- Concern with the shelf life of measures such as SAT or ACT, course grades, etc. Are high school results as valid for older, returning students?
- Metrics should include student employment.
- Measures of service learning are needed.

Reflections

Terry Mazany offered four reflections on the discussion:

1. We need to project all of the allied trends in society to 2030. Work is shifting to a gig economy. This will be the reality for 16- to 18-year-olds in 2030. We need to factor the expected changes in the economy of 2030 into the skills required to work in the future. Data is the new oil. Micro-credentialing and digital badges will more and more populate transcripts and portfolios.
2. There will be several paradigm shifts: (a) knowledge/skill flip, (b) everything has a developmental progression except technology, (c) the nontraditional student of today will be the traditional student of tomorrow, (d) students will be agents for themselves, and (e) a world where trust is collapsing in every venture except nonprofit ventures – blockchain as a key to build this trust.
3. We are in-between systems. We need to maintain an ecological perspective of each part of the system and look at the reciprocal changing role of employers.
4. The role of NAEP: We need to align NAEP with the requirements of Every Student Succeeds Act (ESSA), such as conditions of learning. This might be done by back-mapping the requirements of ESSA with what NAEP provides.

Appendix A: Meeting Agenda and Attendees

Expert Panel Meeting
National Assessment Governing Board
Ad Hoc Committee on Measures of Postsecondary Preparedness

April 19, 2018 | Agenda

11:00 to 11:05 AM **Start Meeting**
Thanos Patelis, Facilitator, HumRRO

11:05 to 11:15 AM **Welcome and Introductions**
Terry Mazany, National Assessment Governing Board Member
Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness

11:15 AM to 12:00 PM **Work of the Future**
Thanos Patelis

Guiding Questions:

- *What do you see as the postsecondary pathways that high school seniors graduating in 2030 will be choosing among?* (11:15-11:40)
- *Compared to now, what kind of trends do you see shaping postsecondary education in 2030?* (11:40-12:00)

12:00 to 12:15 PM **Break to get lunch**

12:15 to 1:00 PM **Skills for the Work of the Future**
Thanos Patelis

Guiding Questions:

- *How have postsecondary entrance expectations changed in recent years?* (12:15-12:40)
- *What types of competencies and content knowledge will graduating high school seniors need to be prepared for postsecondary pathways in 2030?* (12:40-1:00)

1:00 to 1:45 PM **Measures of these Skills**
Thanos Patelis

Guiding Questions:

- *What measures do you see being used for these competencies?; What will require new or updated measurement tools?* (1:00-1:20)
- *What metrics would provide helpful information in the aggregate about the competencies of graduating high school seniors?* (1:20-1:45)

1:45 to 2:00 PM **Final thoughts and concluding remarks**
Terry Mazany

Attendees

Expert Panelists:

- Sarah DeMark, Vice President of Academic Programs, Western Governors University
- Pradeep Kotamraju, Bureau Chief, Career and Technical Education, Iowa Department of Education
- Michael Morsches, Dean of Learning Enrichment and College Readiness, Moraine Valley Community College
- Yvette Mozie-Ross, Vice Provost for Enrollment Management and Planning, University of Maryland, Baltimore County
- Holly Zanville, Senior Advisor for Credentialing and Workforce Development, Lumina Foundation

Governing Board Members:

- Terry Mazany, Chair, Ad Hoc Committee on Measures of Postsecondary Preparedness
- Dale Nowlin, Teacher and Mathematics Department Chair, Bartholomew Consolidated School Corporation, Columbus, Indiana
- Alice Peisch, Legislator, Massachusetts House of Representatives, Wellesley, Massachusetts
- Chasidy White, Director of Strategic Initiatives, Office of the Superintendent, Montgomery, Alabama

Governing Board Staff Members:

- Bill Bushaw, Executive Director
- Lisa Stooksberry, Deputy Executive Director
- Lily Clark, Assistant Director for Policy & Research

HumRRO Staff Members:

- Monica Gribben, Senior Staff Scientist
- Sunny Becker, Principal Staff Scientist
- Thanos Patelis, Principal Scientist

Expert Panelists

Sarah DeMark, Ph.D.
Vice President of Academic Programs
Western Governors University

Sarah DeMark joined nonprofit Western Governors University (WGU) in September 2014, and serves as the Vice President of Academic Programs, responsible for leading WGU's portfolio strategy as well as the design and development of the university's competency-based degrees, curriculum and assessments. This portfolio includes more than 50 programs, 600 courses, and nearly 1000 assessments.

Prior to joining WGU, DeMark spent more than 15 years at leading IT companies, serving in various leadership roles where she oversaw the strategy and execution of the design, development, and deployment of certification and curriculum-based assessment portfolios. Previously, she was an independent consultant working with state and local school districts, as well as working with The College Board on SAT and AP program evaluation.

DeMark is published in numerous journals and books and is a sought-after speaker. DeMark currently sits on ANSI's Personnel Certification Accreditation Committee, which serves to validate whether certification programs adhere to standards.

DeMark earned a Ph.D. in Educational Psychology (Measurement, Statistics, & Methodological Studies) from Arizona State University. DeMark earned B.S. degrees in both Elementary Education and Psychology from Vanderbilt University.

Pradeep Kotamraju, Ph.D.
Bureau Chief, Career and Technical Education
Division of Community Colleges and Workforce Preparation
Iowa Department of Education

Dr. Pradeep Kotamraju is currently the Bureau Chief, Career and Technical Education, Division of Community Colleges, Iowa Department of Education. As Iowa's State Director for Career and Technical Education (CTE), he has leadership responsibility in managing those secondary and community college CTE programs that are funded through the Carl D. Perkins federal program. Previous to his current position as the Iowa CTE State Director, Dr. Pradeep Kotamraju has served the Deputy Director, National Research Center for Career and Technical Education (NRCCTE), University of Louisville, Louisville, Kentucky. Prior to that, he served as the System Director, Perkins, at the Minnesota State Colleges and Universities, Office of the Chancellor. Dr. Kotamraju has worked in several senior administrative positions in higher education and workforce development agencies in Minnesota.

Dr. Kotamraju has written several publications and monographs, and made numerous presentations, in the area of student success in career and technical education, workforce development in the United States, and, in the area of economic progress in the developing world. His research has included the examination of a variety of labor market information and workforce development issues that connect occupations, skills and careers, as individuals transitioned back and forth between employment and education. Dr. Kotamraju has been invited to participate on several statewide, regional and national committees that have focused on CTE programs, budget and finance, and accountability. Some of these committees have had even broader focus that places CTE right front and center when it comes to connecting education, workforce development, and economic development.

Before working in the public sector, Dr. Kotamraju taught college- and university-level Economics and Statistics at several higher education institutions in Minnesota and Kentucky. Dr. Kotamraju holds a Ph.D. in Economics from the University of Illinois. He received his Masters Degree in Economics from George Washington University, and his Bachelors in Economics from the University of Delhi, India

Michael Morsches
Dean of Learning Enrichment and College Readiness
Moraine Valley Community College

Michael Morsches has worked in higher education for more than thirty years. His primary focus has been on developmental education and the transition from high school to college.

Michael currently serves as the Dean of Learning Enrichment and College Readiness at Moraine Valley Community College. He oversees the ABE/GED, ESL, developmental education, literacy volunteers, and tutoring programs. Michael has published numerous articles and handbooks on retention, student engagement, and teacher training in post-secondary institutions.

Yvette Mozie-Ross, Ph.D.
Vice Provost for Enrollment Management and Planning
University of Maryland, Baltimore County

Yvette Mozie-Ross, PhD, is Vice Provost for Enrollment Management and Planning at the University of Maryland, Baltimore County (UMBC). As Vice Provost, Dr. Mozie-Ross provides oversight and strategic planning for the areas of undergraduate admissions and orientation, financial aid and scholarships, academic and pre-professional advising, records and registration, and the student administration project (student information system). With a higher education career spanning over 25 years, she has served in numerous professional capacities including residence community director, coordinator of multicultural recruitment, assistant director for transfer recruitment and admissions, director of undergraduate admissions, and director of academic services (advising and registration). Dr. Mozie-Ross has served on various national and statewide committees and workgroups including the College Boards' Commission for Transfer Policy and Practice, and the Maryland Higher Education Commission's State Plan Writing Group on Access, Affordability and Completion. She has served on the university's Strategic Planning Steering Committee and is currently serving as a member of the governing board for the Baltimore Collegetown Network, a consortium of 13 colleges in Baltimore, Maryland. Dr. Mozie-Ross frequently lends her expertise, both nationally and internationally, in the area of data analytics and leveraging analytics for institutional transformation. Dr. Mozie-Ross earned her bachelor's degree from UMBC in 1988, her master's degree from University of Maryland University College in 1994, and her doctorate in Education Policy and Leadership at the University of Maryland, College Park in 2011. Her dissertation research examined the academic and background characteristics of high school graduates who identified teachers as influential in their choice of college. Dr. Mozie-Ross enjoys spending time with her husband of 22 years and their 20-year old son. Her pass-time interests include family genealogical research and running.

Holly Zanville, Ph.D.
Senior Advisor for Credentialing and Workforce Development
at Lumina Foundation

Holly Zanville is Senior Advisor for Credentialing and Workforce Development at Lumina Foundation. She leads a new portfolio on Worker and Employer Engagement that focuses on building the capacity of educators and employers to scale and spread the best ideas in training, credentialing, and other workforce development strategies linked to postsecondary learning opportunities; and examining issues around the future of work and learning. Her work includes cultivation of networks and partnerships essential to the emerging new postsecondary learning system including Credential Engine, quality assurance efforts to ensure that credentials stand for high-quality learning, and networks for research and industry sector engagement. She previously led Lumina's development of the national Connecting Credentials initiative, credential completion for returning adults with prior college/no credential, and statewide approaches to reverse-transfer degrees through the Credit When It's Due initiative. Zanville received her Ph.D. in Educational Administration from the University of Minnesota; MA in English from the University of Wisconsin-Madison, and BA in English and Biology from Lindenwood University.

Notes of the Expert Panel Meeting Representing Futurists
June 21, 2018
National Assessment Governing Board
Ad Hoc Committee on Measures of Postsecondary Preparedness

Contents

Notes of the Expert Panel Meeting Representing Futurists

June 21, 2018
National Assessment Governing Board
Ad Hoc Committee on Measures of Postsecondary Preparedness

As one step in addressing the charge of the *Ad Hoc* Committee on Measures of Postsecondary Preparedness, HumRRO organized and facilitated a meeting with a select group of futurists.[1] The purpose of this meeting was to elicit input from thought leaders regarding the future of postsecondary education and work.

We were fortunate to assemble an exceptional panel of visionaries with a variety of perspectives. The panel members included **Randy Bennett**, Educational Testing Service; **Karen Cator**, Digital Promise; **David Conley**, EdImagine; **Alana Dunagan**, Clayton Christensen Institute; **Devin Fidler**, Rethinkery Labs, and **Nancy Lue**, Advanced Education Research and Development Fund on behalf of the Chan Zuckerberg Initiative and the Bill & Melinda Gates Foundation. Also, in attendance were several Governing Board members, Governing Board staff members, and HumRRO staff.

The meeting was held on June 21, 2018 in San Francisco, California. An overview of the National Assessment Governing Board and the charge of the *Ad Hoc* Committee on Measures of Postsecondary Preparedness, a "facebook" of attendees with brief biographic summaries, along with the agenda and logistical information for the meeting were sent to the panelists in advance of the meeting. Appendix A contains the agenda, list of attendees, and panelist biographies.

Terry Mazany, *Ad Hoc* Committee Chair, welcomed the futurists and set the stage for the role of NAEP in the future, given the impact of technology on work as well as the economic and global context in which students enter the postsecondary world. He led the attendees through introductions. Thanos Patelis (HumRRO) reviewed the agenda and stated the goals for the meeting.

To establish the perspectives of these varied experts, each panelist provided a 10-minute presentation of their initial thoughts regarding five discussion questions: (a) what are the trends you see that will define the future of learning and schools? (b) what are the trends you see that will define the future of work and the skills that will be most valued by employers of the future? (c) what are the most promising technologies that will redefine education? (d) what things are most likely to disrupt how we think about teaching and learning? and (e) what are the trends that most concern you, and why? Copies of the presentation slides are in Appendix B.

Following the presentations, Thanos Patelis facilitated deeper discussion about common themes and the five questions. Finally, Terry Mazany offered some concluding comments.

[1] Although some panelists would not describe themselves as "futurists," per se, their careers all include the identification and evaluation of trends, as well as forecasting future conditions or developments.

The purpose of this document is to summarize the themes and comments made by the panelists. The information in this report is meant to provide insight into the rich conversation and comments provided by the expert panelists.

Presentations

Randy Bennett described seven trends in the future of learning.

- Learning is increasingly technology-based with complex tasks (e.g., simulation and games).
- Materials and methods used in learning are only now catching up with cognitive science.
- Learning is more person-based, adaptive, and customized on different dimensions, to (a) allow accessibility to make learning more available to students with diverse learning types, (b) personalize in terms of competency level, (c) engage students effectively, and (d) give students greater agency over their learning goals.
- New constructs and competencies, such as socioemotional learning, citizenship and citizen engagement, and cross-cultural competency, are becoming more prevalent.
- Prior knowledge is critical when learning new information or developing new skills.
- There is a focus on cross-disciplinary skills such as communication and problem solving. However, contextual differences within disciplines are important considerations (e.g., problem solving in art differs from problem solving in science).
- Assessment embedded in instruction with automated analysis and feedback, allows for adjustment of instruction.

In addition to trends in the future of learning, Dr. Bennett described two trends of most concern.

- Personalization – There is concern that personalization could be used to exacerbate as much as ameliorate differences in opportunities and learning. For example, students from underrepresented groups could be routed toward basic skills classes.
- Embedding assessment in instruction – There is potential for embedded assessment in instruction for student learning, however conflating assessment for learning with assessment for accountability could be problematic, especially if used to make policy judgements.

Karen Cator provided the following perspectives reagarding the five questions:

- Trends in the future of learning include: (a) personalization to accommodate variability in students through learning science, (b) more flexible learning to obtain and demonstrate competency, and (c) performance-based assessments leading to credentials for the changing global workforce.
- Trends in the future of work and skills include artificial intelligence (AI) which has the potential to disrupt many jobs. Employees will need deeper learning skills such as collaboration and social emotional skills. We should focus on what is uniquely human.[2]

[2] Ms. Cator recommended Jack Ma's presentation at the World Economic Forum on The Way We Teach; https://www.youtube.com/watch?v=pQCF3PtAaSg.

- Technology can be used to augment human performance. For example, data from embedded assessment and improved diagnostics can provide more precise and accurate analyses of student knowledge and performance, helping teachers perform more effectively in the classroom.
- Learning science could be disruptive. People will have jagged profiles—different levels of competence across skills—based on individual differences and the contexts in which they apply the skills.
- Most concerning is disenfranchisement of teachers. As an example, one-third of current teaching jobs in St. Louis are vacant. Other areas of concern include limited resources in schools, increasing cost of higher education, limitations of current assessments, equity of access to quality learning activities, and the digital learning gap.

David Conley shared the following insights regarding the five questions:

- The future of learning includes the following trends: (a) taking the teacher out of the bottleneck role, thereby allowing students to work at their own pace and receive just-in-time learning; (b) providing more social learning; (c) using technology to identify learning patterns to personalize learning; and (d) focusing on adapting skills to accommodate changes in work rather than learning fixed skill sets.
- Trends in the future of work and skills include changes such as (a) gig work versus long-term careers, (b) continued adaptability, (c) hiring at low- and high-skill end with less at the middle-skill level, (d) global work teams while living locally, (e) increasing service work, and (f) standardization versus bespoke work (see jagged profiles as mentioned by Ms. Cator).
- Promising technologies in education are adaptability, including a wider variety of students, specialized job/task-specific reading, and web-based learning.
- The following may contribute to disruptions in teaching and learning: (a) students having more agency over their learning, (b) basic skills taught in context using simulations or serious games such as used in the military and medical training, (c) self-directed learning will require resources for teachers to help students who have trouble directing their own work, and (d) emphasis on career preparation with certifications and badges over liberal arts education.
- The three most concerning trends are (a) equity in education, (b) equity in defining preparedness, and (c) increasing the pace of disruptive economic change.

Alana Dunagan discussed three trends in the future of learning and work: (a) increased online learning in higher education and K-12, (b) certified learning not requiring a terminal degree (e.g., a certification), and (c) workforce alignment of education.

Regarding disruptions to teaching and learning, Ms. Dunagan explained that corporate bankruptcy following implementation of disruptive technology occurs when companies do not adapt by using technology to expand the reach of their services (i.e., they continue serving the same set of customers rather than expanding their customer base); Blockbuster is an example of this situation. Disruptive innovations in education are similar. Higher education institutions are seeing falling enrollment, while training in specific skills matter more. Jobs requiring higher education are growing twice as fast as jobs that do not, because of disruption by the education technology market. Innovators in the education technology space are developing partnerships

with employers and creating new ways of offering higher education providing the needed training.

Ms. Dunagan stated the biggest concern in education and work is the prestige-based model of signaling competence (i.e., a degree from an elite university is highly valued over a degree from a lower tier school without regard to a student's actual knowledge and skill). This model ignores the skills a student has and does not include employers in identifying the skills that students should learn. A better model would engage businesses in identifying skill needs, offer education aligned to workforce needs, and provide students with evidence of skill attainment and a means for submitting that information to employers.

Devin Fidler described a history of change in organization strategies from guilds to industrialization to manufacturing/assembly to digital. The advent of the World Wide Web facilitated communication and has expanded to commerce and coordination. He provided examples of using technology to speed up work; for example, peer to peer applications such as TaskRabbit, Gigwalk, and Upwork have millions of people enrolled to offer their services with qualifications based on past performance. Employers can use these applications to identify well-qualified candidates with the appropriate skills mix and a history of positive reviews; employees can use these applications to find jobs and to see what skills are in demand.

Mr. Fidler noted the most promising technologies are using organizational technologies in education technology with artificial intelligence. Disruption will come from small innovative organizations who are more nimble than large businesses. The biggest concern is the stereotype that organization is dehumanizing; however, organization can expand human capability.

Nancy Lue identified the following education trends:

- Return on education (i.e., value of education)
- Continuous improvement (e.g., Kaizen education)
- Rock star teachers available through technology
- Knowledge as currency (e.g., microcredentials, badges)
- Bid data as smart data (i.e., using data to personalize learning with Dreambox, Knewton, etc.)
- Mobile technology learning applications
- Mind, body, and soul incorporated into learning (e.g., Goldie Hawn's MindUp curriculum)

Ms. Lue stated equity issues pervade all the trends. For example, education technology has costs which limits access. Ten percent of students do not have smartphones.

Discussion

Thanos Patelis (HumRRO) facilitated a deeper discussion among panelists about common themes and the discussion questions.

Personalized learning. Content can be tailored to student preparation, interest, and ability. Learning will feel more purposeful, connected, and relevant. Fewer students will be seated in rows in classrooms on a rigid schedule. In high school, students may enroll in work training programs or participate in micro-internships. Teachers will serve as mentors. There is a need to

change the traditional school organization/culture and provide teachers with the knowledge and skills to educate students in a new environment.

Contextual data. Is a student goal-focused or not? Using data about students' goals can improve instruction. Contextual data (e.g., goals, interests, self-confidence) may provide clues as to why a student might be struggling and may also provide insights to inform how to individualize instruction.

Equity. Opportunity to learn pervades multiple areas. Cost and availability can be barriers to access educational technology and higher education.

Big data. Educational technology generates a lot of data. Educators need to learn how to analyze and use the data, taking a data systems point of view. Also, there is a need to teach teachers how to capture and document performance data on what students are doing in the classroom and how to use those data to improve classroom instruction and activities.

Data dashboards. Data dashboards can connect data from different sources, interpret multiple data points, and provide evidence of what students can do (versus cannot do).

Micro-credentials. Micro-credentials can be used by students and teachers. Students could earn a micro-credential when mastering a concept. Teachers can use their students' micro-credentials to identify the skills acquired and those that need to be taught or re-taught.

Competency assessments. Students would benefit from measures of job-related skills to show their potential and demonstrate performance capabilities, particularly if the measures do not correlate to student background. Employers benefit because they have evidence of a job candidate's skills. Educators can use competency data to mentor students on achieving goals.

Panelist Recommendations

As a wrap-up exercise, Thanos Patelis asked each panelist to make one recommendation for the Governing Board to consider.

Randy Bennett – Use NAEP's national probability sample to describe what instruction is like at different levels for different types of students (e.g., students with disabilities, socioeconomic status) across time.

Karen Cator – Work toward a more coherent assessment system across NAEP and states.

David Conley – Endorse the work of the *Ad Hoc* Committee with a longer-term vision for NAEP to be bold in creating better items and measuring traditional content with greater precision.

Alana Dunagan – Develop innovative methods to measure flexibility, problem solving, and non-traditional skills that people will need in the future.

Devin Fidler – Look at partnering with prestigious organizations within the learning space that function outside of formal assessment, such as skunk works and incubators.

Nancy Lue – Use NAEP to assess the technology gap and equity issue in technology use outside of the classroom.

Reflections

Terry Mazany expressed his appreciation for the panelists' insights. He noted that each expert presented similar ideas through a different lens; while this might have seemed repetitive, it actually reinforced the conclusions. The panelists convinced him that traditional education enterprise is collapsing in slow motion. Innovation outside of education is occurring at an accelerating pace. Learning might occur in smaller units such as micro-credentials.

Mr. Mazany discussed the high cost of traditional higher education and the trillion-dollar impact of student debt on the economy. He acknowledged the existence of prestige-based signaling that maintains inequity in the system. These are complex and challenging social issues. NAEP may be able to be a market signal by Governing Board priorities regarding what to measure and report on. He opined that perhaps NAEP can reinforce that prestige alone is not the gold standard.

Appendix A: Meeting Agenda, Attendees, and Panelist Biographies

Futurist Expert Panel

Thursday, June 21, 2018 1:00 pm – 4:00 pm PT

Room: Cypress A * Hyatt Regency San Francisco Airport
1333 Bayshore Highway * Burlingame, California, USA, 94010

Agenda

1:00 – 1:15 pm	Welcome, Introductions, and Overview of the Ad Hoc Committee *Terry Mazany, Chair of the Ad Hoc Committee on Measures of Postsecondary Preparedness* Overview of the Agenda and Goals for the Meeting *Thanos Patelis, HumRRO*
1:15 – 2:45 pm	Panelist Perspectives and Initial Thoughts Regarding the Discussion Questions *A series of ten-minute presentations, each followed by a five-minute Q&A.* 1:15 – 1:30 Randy Bennett *(Educational Testing Service)* 1:30 – 1:45 Karen Cator *(Digital Promise)* 1:45 – 2:00 David Conley *(EdImagine)* 2:00 – 2:15 Alana Dunagan *(Clayton Christensen Institute)* 2:15 – 2:30 Devin Fidler *(Rethinkery Labs)* 2:30 – 2:45 Nancy Lue *(Advanced Education Research & Development Fund)* *Questions for Discussion:* 1. What are the trends you see that will define the future of learning and schooling? 2. What are the trends you see that will define the future of work and the skills that will be most valued by employers of the future? 3. What are the most promising technologies that will redefine education? 4. What things are most likely to disrupt how we think about teaching and learning? 5. What are the trends that most concern you, and why?
2:45 – 3:45 pm	Panel Discussion *Facilitated by Thanos Patelis*
3:45 – 4:00 pm	Final Reflections *Terry Mazany*

Conducted in Support of the National Assessment Governing Board's Ad Hoc Committee on Measures of Postsecondary Preparedness

Attendees

Expert Panelists:

- Randy Bennett, Norman G. Frederickson Chair in Assessment Innovation in the Research & Development Divisions, Educational Testing Service
- Karen Cator, President and CEO of Digital Promise
- David Conley, President, EdImagine
- Alana Dunagan, Researcher for Higher Education, Clayton Christensen Institute
- Devin Fidler, Founder, Rethinkery Labs
- Nancy Lue, Co-Lead, Advanced Education Research & Development Fund

Governing Board Members:

- James Geringer, former Governor of Wyoming
- Carol Jago, Associate Director, California Reading and Literature Project at UCLA
- Terry Mazany, Chair, *Ad Hoc* Committee on Measures of Postsecondary Preparedness
- Dale Nowlin, Teacher and Mathematics Department Chair, Bartholomew Consolidated School Corporation, Columbus, Indiana
- Alice Peisch, Legislator, Massachusetts House of Representatives, Wellesley, Massachusetts
- Linda Rosen, former Chief Executive Officer, Change the Equation, Washington, DC
- Chasidy White, Director of Strategic Initiatives, Office of the Superintendent, Montgomery, Alabama

Governing Board Staff Members:

- Michelle Blair, Assistant Director for Assessment Development
- Bill Bushaw, Executive Director
- Lisa Stooksberry, Deputy Executive Director
- Lily Clark, Assistant Director for Policy & Research

HumRRO Staff Members:

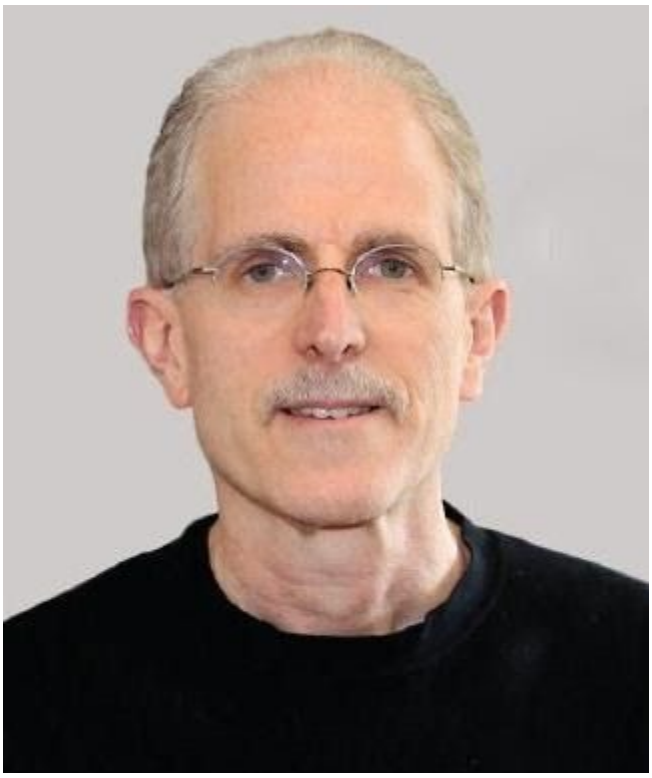
- Monica Gribben, Senior Staff Scientist
- Sunny Becker, Principal Staff Scientist
- Thanos Patelis, Principal Scientist

Ad Hoc Committee Meeting on Postsecondary Preparedness

Panelist Biographies

Randy E. Bennett Ph.D.

Norman O. Frederiksen Chair in Assessment Innovation in the Research & Development Division
Educational Testing Service



Randy E. Bennett is Norman O. Frederiksen Chair in Assessment Innovation in the Research & Development Division at Educational Testing Service in Princeton, New Jersey. Bennett's work has focused on integrating advances in cognitive science, technology, and educational measurement to create approaches to assessment that have positive impact on teaching and learning. From 1999 through 2005, he directed the NAEP Technology Based Assessment project, which included the first administration of computer-based performance assessments with nationally representative samples of school students, and the first use of "clickstream," or logfile, data in such samples to measure the processes used in problem solving. From 2007 to 2016, he directed an integrated research initiative titled, *Cognitively-Based Assessment of, for, and as Learning* (CBAL), which focused on creating theory-based summative and formative assessment intended to model good teaching and learning practice. Randy Bennett is president of the International Association for Educational Assessment (IAEA) (2016-), an organization primarily constituted of governmental and non-governmental nonprofit measurement organizations throughout the world, and immediate past president of the National Council on Measurement in Education (NCME) (2017-2018), whose members are individuals employed primarily in universities, testing organizations, state education departments, and school districts. He is a Fellow of the American Educational Research Association.

Karen Cator
President and CEO of Digital Promise

Karen Cator is President and CEO of Digital Promise and a leading voice for transforming American education through technology, innovation and research. From 2009-2013, Karen was Director of the Office of Educational Technology at the U.S. Department of Education, where she led the development of the 2010 National Education Technology Plan and focused the Office's efforts on teacher and leader support. Prior to joining the department, Cator directed Apple's leadership and advocacy efforts in education. In this role, she focused on the intersection of education policy and research, emerging technologies, and the reality faced by teachers, students and administrators. She began her education career in Alaska as a teacher, ultimately leading technology planning and implementation. She also served as Special Assistant for Telecommunications for the Governor of Alaska. Cator holds a master's in school administration from the University of Oregon and received the 2014 College of Education Distinguished Alumni award. The American Association of Publishers has awarded Cator with the 2014 Visionary Award. She received her bachelor's in early childhood education from Springfield College and received the 2015 Distinguished Alumna award. She is an Aspen Pahara Fellow, the past chair for the Partnership for 21st Century Skills and has served on boards including the Software & Information Industry Association-Education.

David Conley, Ph.D.

President, EdImagine
Professor of Educational Policy and Leadership in the College of Education at the University of Oregon
Director, Center for Educational Policy Research

David Conley is Professor of Educational Policy and Leadership in the College of Education at the University of Oregon where he directs the Center for Educational Policy Research. He is the founder and president of EdImagine, an educational strategy consulting company. Additionally, he founded and served for 12 years as CEO of the Educational Policy Improvement Center, EPIC (now Inflexion). He recently completed an appointment as Senior Fellow for Deeper Learning under the sponsorship of the Hewlett Foundation.

Dr. Conley is a national thought leader in the areas of college and career readiness, student ownership of learning, systems of assessment, educational accountability, and the future of education and the economy. He has published multiple articles and policy briefs as well as three books in these areas. His most current book, published by Harvard Education Press, is entitled *The Promise and Practice of Next Generation Assessment.*

He serves on numerous boards and advisory committees including as a member of the technical advisory committee of the Smarter Balanced Assessment Consortium (SBAC) and the Illinois State Board of Education Accountability Technical Advisory Committee, and as a founding board member of New Meridian, which now manages the PARCC assessments. Additionally, he chairs the New Meridian Steering Committee. Previously, he co-chaired the Validation Committee for the Common Core State Standards.

He has conducted multiple major research studies for the Association of American Universities, the College Board and its Advanced Placement program, the International Baccalaureate, and the National Assessment of Governing Board. He has most recently studied next generation systems of assessment, new indicators of college readiness, and new methods to determine career readiness.

Before entering higher education at the University of Oregon in 1989, Dr. Conley spent 20 years in the public-school system in a variety of roles including teacher and co-director of two alternative schools, a site and central-office administrator, and an executive in a state education agency. He is a first-generation college attendee who received his AA from Cabrillo College, his BA from the University of California, Berkeley, and his MA and PhD from the University of Colorado, Boulder. He grew up on the central coast of California, where he spent a great deal of time at the beach.

Alana Dunagan

Researcher, Higher Education, Clayton Christensen Institute

Alana leads the Institute's higher education research and works to find solutions for a more affordable system that better serves both students and employers. In this role, Alana analyzes disruptive forces changing the higher education landscape. Her research includes studying business model innovations, public policies, and investment strategies that can give rise to new and sustainable postsecondary models.

Prior to joining the Christensen Institute, Alana spent ten years in institutional investment management working on behalf of nonprofits, particularly colleges and universities. She worked as an investment consultant for Slocum, and spent five years with Macalester College managing their $700 million endowment. She holds a BA in Economics and Political Science from Macalester College and an MBA from the Harvard Business School.

Devin Fidler
Founder, Rethinkery Labs

Devin has worked with senior leaders at dozens of Fortune 1000 companies to systematically explore emerging issues and technologies, and to analyze their potential impacts. His ongoing work at Rethinkery Labs, including developing tools for “self-driving” management, has been covered by HBR, the New York Times, Wired and a number of other publications. He argues that today, companies themselves are a technology on the verge of disruption. Prior to founding Rethinkery, Devin founded and led the Future of Work and Future of Learning programs at the Palo Alto-based Institute for the Future.

Devin is a frequent speaker at gatherings of business leaders and others interested in the transformation of work and organizations. He approaches projects from a strongly international perspective, having lived and worked in several countries throughout his career.

Nancy Lue
Co-Lead, Advanced Education Research & Development Fund

Nancy Poon Lue is currently co-leading the exploration of a national Advanced Education Research & Development Fund on behalf of the Chan Zuckerberg Initiative and the Bill & Melinda Gates Foundation. She is also a Partner and Secretary of the Board of Directors of the venture philanthropy organization Silicon Valley Social Venture Fund (SV2). Previously, she served as Executive Director at the venture capital firm Global Silicon Valley (GSV) and was the inaugural General Manager of the EdTech Lab at GSVlabs. During the Obama Administration, Nancy was a Senior Advisor at the U.S. Department of Education where she led the development of the agency's five-year strategic plan. Nancy is a Senior Fellow with the American Leadership Forum-Silicon Valley and sits on the Advisory Board of the AT&T Aspire Accelerator and the GreenLight Fund-Bay Area. She earned her B.A. and Ed.M. from Harvard College and Harvard Graduate School of Education

Appendix B: Panelist Presentations

Note: These slides are the intellectual property of the presenters and should not be used or distributed for purposes beyond this Committee without permission.

Bennett Presentation

Trends in the Future of Learning

- Be technology based, making greater use of complex tasks, games, simulations
- Based on more modern underlying models of cognition and learning
- Be personalized in terms of:
  - Accessibility
  - Competency level
  - Background and interest
  - Learning goal
- Include (or give greater emphasis to) "new" competencies, e.g.:
  - Socio-emotional learning
  - Citizenship, civic engagement
  - Cross-cultural competence
  - Using technology tools for problem solving
- Include traditional competencies
  - Knowledge acquisition and construction
  - Made more (not less) important by technology
- Include focus on cross-cutting skills within the disciplines
  - Communication, critical thinking
- Embed assessment within instruction, including automated analysis and feedback

3

Thoughts on the Future
of Education and Work

Randy Bennett
Educational Testing Service
Princeton, NJ 08541
rbennett@ets.org

Presentation as a member of the Futurist Expert Panel at the meeting of the National Assessment Governing Board's Ad Hoc Committee on Measures of Postsecondary Preparedness, San Francisco, CA, June 2018.

Trends in the Future of Work

- Continued automation of many types of manual, cognitive, and social-interactional work
- Pervasiveness of technological tools for problem solving as:
  - Aids requiring constant proximal human interaction (Excel)
  - Extensions allowing for remote reach (drones)
  - Assistants: Carry out this subtask (Siri)
  - "Intelligent" implementers: Work independently with human QC

4

Overview

1. What are the trends you see that will define the future of learning and schooling?
2. What are the trends you see that will define the future of work and the skills that will be most valued by employers of the future?
3. What are the most promising technologies that will redefine education?
4. What things are most likely to disrupt how we think about teaching and learning?
5. What are the trends that most concern you, and why?

2

Most Likely Challenges to Disruptions for Teaching and Learning

- In K-12, the challenges are still greater than the disrupters
  - Level of, and extent of variation in, quality of teaching
  - Level of, and extent of variation in, school technology
  - Variation in funding for education by locale
  - Grade-based organization of schooling
  - Local control
    - Little coherence, massive inefficiency due to no chance for economy of scale
  - Size (3rd largest country in the world)
  - Concerns for privacy of student data
  - Concerns over the corporatization of education
  - Public indifference, even antipathy, toward rigorous expectations and toward addressing inequality

7 |

Skills Most Valued by Employers

- Using technology tools for problem solving—i.e., to create value by being able to use:
  - Aids requiring constant proximal human interaction (Excel)
  - Extensions allowing for remote reach (drones)
  - Assistants: Carry out this subtask (Siri)
  - "Intelligent" implementers: Work independently with human QC
- Being able to, individually and in collaboration with others, locate, evaluate, integrate, synthesize, apply, and construct knowledge (i.e., to learn)
- Being able to communicate, educate, and help others make effective decisions

5 |

Most Likely Disruptors

- People
  - What factors will make educators, policy makers, parents, students, and public advocate for, and accept, change?

8 |

Most Promising Technologies for Education

- Technologies that increase opportunities for remote social interaction
  - Learning is a social activity
- Adaptive learning (intelligent tutoring) combined with human instruction
- Simulations, games, virtual reality that pose tasks and situations similar to the ones students must learn to negotiate as proficient practitioners in a domain
- Analytics to help adapt instruction, guide students in managing their learning, help teachers improve instruction and its management

6 |

Cator Presentation

Expert Panel Meeting Representing Futurists

What are the trends you see that will define the future of work and the skills that will be most valued by employers of the future?

Artificial Intelligence

- Ability to learn
- Work with others
- Flexibility and comfort with complexity
- Creativity and solution development
- Computational Thinking

What is uniquely human?

What are the most promising technologies that will redefine education?

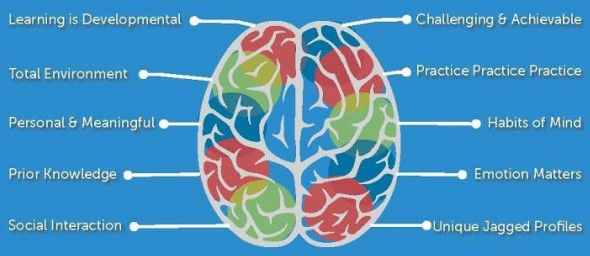
Augment Human Performance

- Data and instrumentation (like location & weather) - Adaptive
- Improved diagnostics and embedded assessment
- Moving from (average and comparison) to precision and accuracy
- Virtual and augmented reality
- Open Education Resources - organized, findable and contextualized

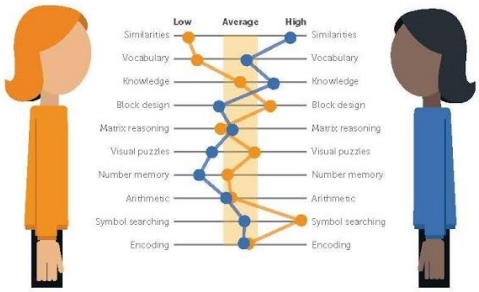
What things are most likely to disrupt how we think about teaching and learning?

- Learning Sciences
- Improvement Science
- Research and Evidence
- Advanced R&D - Pasteur's Quadrant

What we know - Learning Sciences



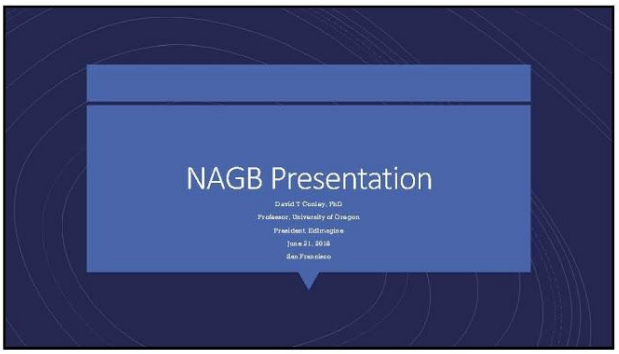
Learner Variability

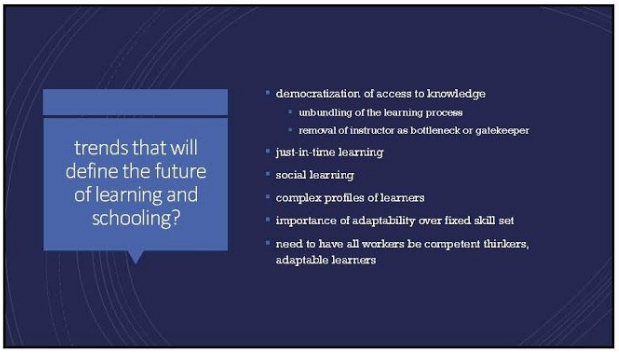


What are the trends that most concern you, and why?

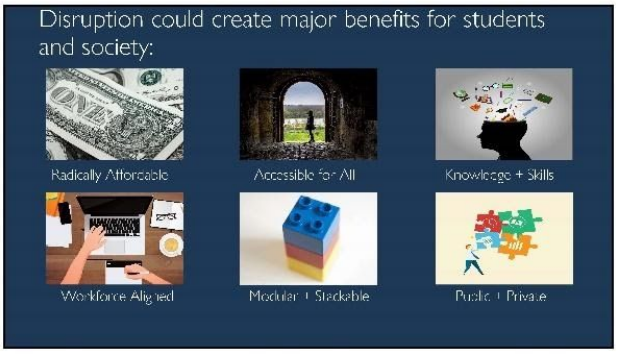
- Lack of respect for and disenfranchised teachers
- Under-resourced schools
- Cost of higher education
- Assessments that fall far short of the full picture
- Issues of inequity
- Digital Learning Gap (Access - Participation - Powerful Use)

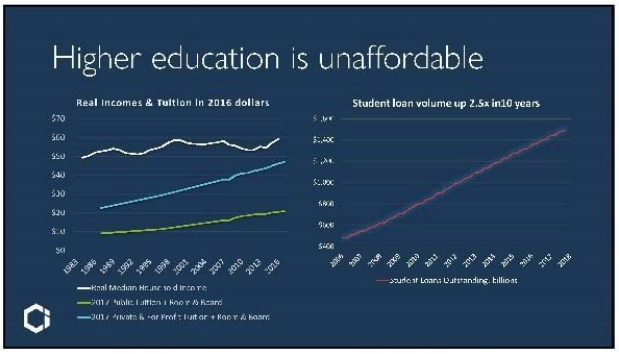
Conley Presentation

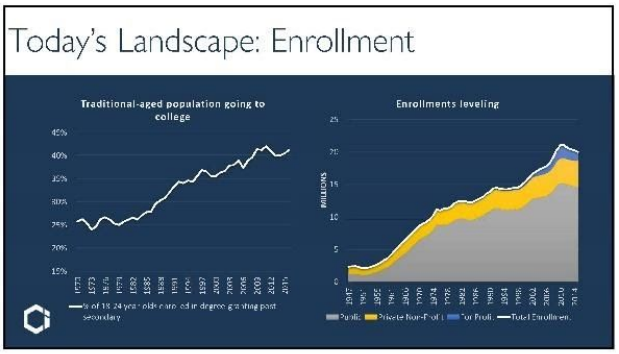


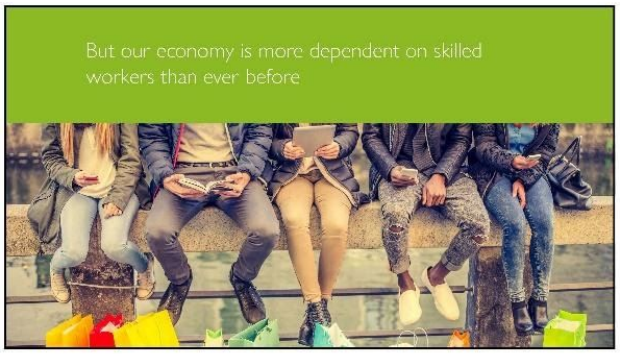


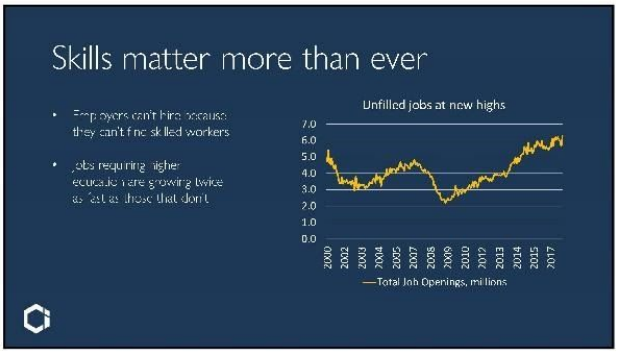
Dunagan Presentation



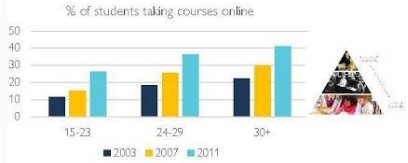








1) Online learning is quickly becoming ubiquitous in higher education



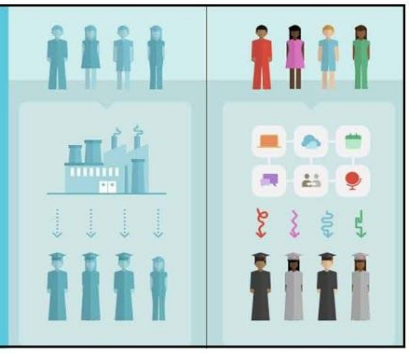
Fall 2016: 30.8% of undergrads and 36.8% of graduate students are learning online

Online learning is especially prevalent among those who otherwise wouldn't be able to access higher education

About half of ***parents*** *enrolled in school were learning online*

Access and equity, affordability

Personalization, competency based education, student supports & mentoring, experiential learning



College is still the currency of the labor market…

…But, as Ryan Craig says, it's a currency system with $10,000 bills *and no smaller denominations.*

Automation and technology are changing the nature of work—and that change will be continuous.

Learning won't end with college graduation.

…This creates big opportunities

Udemy

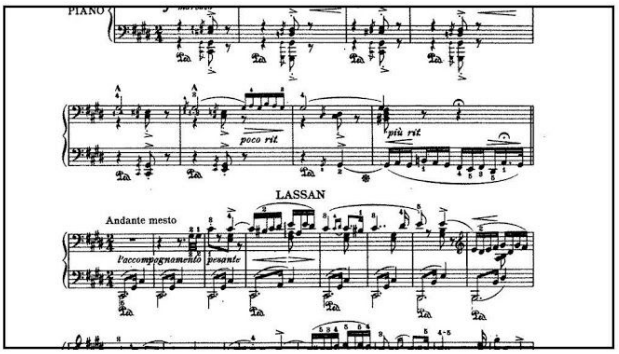
coursera
education for everyone

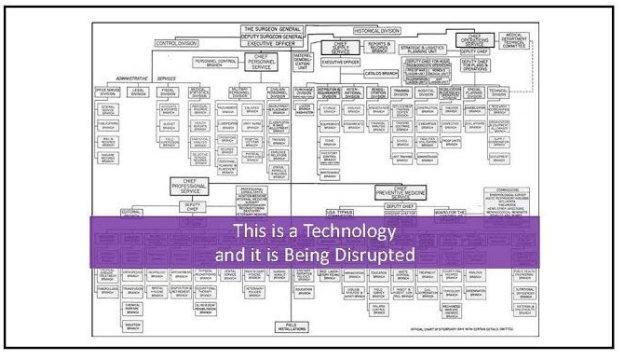
UDACITY

degreed.

2) Learning in smaller denominations than the degree

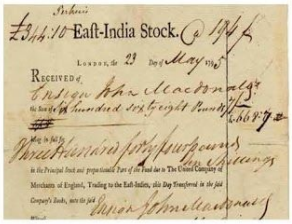
Fidler Presentation





There Are Many Ways to Organize

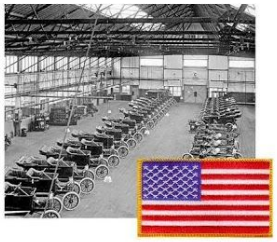
- 4000 years ago- First legal structures for companies
- 900 years ago- Trade guilds encode industry across Europe
- 250 years ago- Industrialization and modern companies emerge
- 130 years ago- Assembly lines, globalization etc.



RETHINKERY LABS

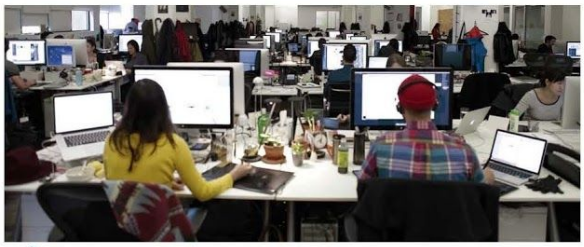
There Are Many Ways to Organize

- 4000 years ago- First legal structures for companies
- 900 years ago- Trade guilds encode industry across Europe
- 250 years ago- Industrialization and modern companies emerge
- 130 years ago- Assembly lines, globalization etc.



RETHINKERY LABS

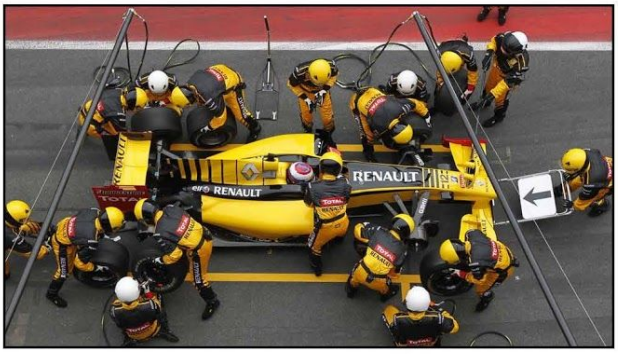
Digital Organization is Special



RETHINKERY LABS

Communi cation - Commer ce - Coordinat ion

RETHINKERY LABS

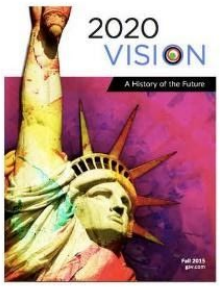


Lue Presentation

National Assessment Governing Board Futurist Panel

June 21, 2018

Nancy Poon Lue



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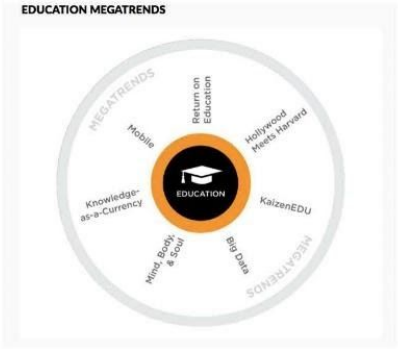
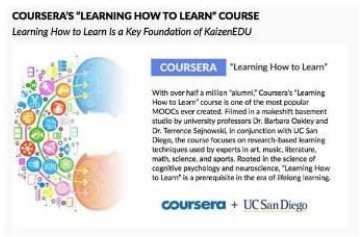


1. Return on Education (ROE)

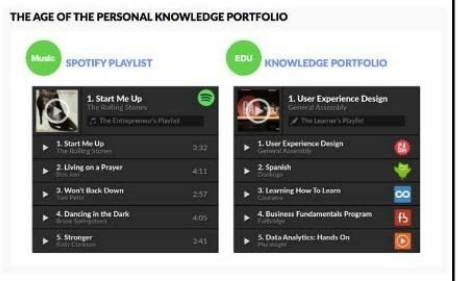
1

2. Kaizen Edu

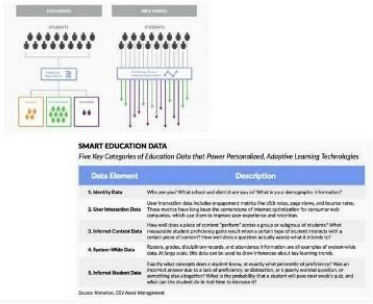


3. Hollywood Meets Harvard

4. Knowledge As a Currency



5. Big Data = Smart Data



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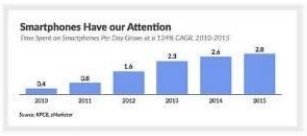
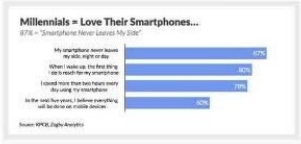
6. Mobile





7. Mind, Body, Soul

3

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Summary of the Focus Group Meeting with State Education Officials June 28, 2018

National Assessment Governing Board

Ad Hoc Committee on Measures of Postsecondary Preparedness

To support the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, the Human Resources Research Organization (HumRRO) convened a small volunteer panel of education officials responsible for their state's assessment and/or accountability. The meeting was conducted in partnership with the National Assessment Governing Board (Governing Board) and the Council of Chief State School Officers (CCSSO). The focus group was conducted on June 28, 2018, in San Diego, California during the CCSSO-sponsored National Conference on Student Assessment. The purpose of the focus group was to gather information about states' definitions of postsecondary preparedness/readiness and their efforts to develop and use indicators of postsecondary preparedness/readiness.

The focus group participants included **Chris Janzer,** Michigan; **Russell Keglovits,** Nevada; **Shelley Loving-Ryder,** Virginia; **Vaughn Rhudy,** West Virginia; **Michael Sibley,** Alabama; **Jenny Singh,** California; **Allison Timberlake,** Georgia; and **Vince Verges,** Florida. Ms. Loving-Ryder and Mr. Sibley participated in the panel as both state experts and members of the State Policy Task Force, which is jointly convened by the Governing Board and CCSSO.

In attendance were Governing Board members **Tyler Cramer** and **Joseph Willhoft**; Governing Board staff members **Michelle Blair**, **Lily Clark**, **Sharyn Rosenberg**, and **Lisa Stooksberry**; CCSSO staff members **Fen Chou** and **Scott Norton**; and HumRRO staff members **Sunny Becker**, **Monica Gribben**, **Thanos Patelis**, **Sheila Schultz**, and **Arthur Thacker**.

An overview of the Governing Board and the charge of the Ad Hoc Committee on Measures of Postsecondary Preparedness, along with the agenda and the logistical information for the meeting, were sent to the participants as read-ahead materials. The meeting agenda is at Appendix A.

Thanos Patelis, HumRRO Principal Scientist, started the meeting by reviewing the agenda and goals. Lily Clark, Governing Board Assistant Director for Policy and Research, welcomed everyone and provided an overview of the Governing Board's Strategic Vision initiative to "develop new approaches to measure the complex skills required for transition to postsecondary education and career," which led to the creation of the Ad Hoc Committee on Measures of Postsecondary Preparedness and the impetus for this focus group meeting.

Mr. Patelis facilitated a discussion among the participants that highlighted the following guiding questions:

- How does your state define college and career readiness?
- Did your state consult with industry groups to define career readiness?
- What measure(s) does your state use to assess career readiness?

- Is military service a component of postsecondary readiness in your state?
- How does your state use noncognitive measures?
- Are there innovative or nontraditional indicators that your state might use to measure or report on students' college and/or career readiness (e.g., student interest, micro-credentials earned, work-based learning)?
- What NAEP reporting on postsecondary readiness would be useful to states?

Following is a general summary of the information provided by this group of state assessment and accountability experts on definitions, activities, and indicators of postsecondary preparedness/readiness.

Definitions

The state officials offered examples of definitions of college and career preparedness/readiness used in their respective states. It was evident from the examples that states have a variety of definitions for college and career readiness. The definitions and indicators for college readiness were separate from those of career readiness. Most of the definitions for career readiness explicitly included "soft skills," such as communication, collaboration, problem solving, and business practices. The state officials acknowledged the importance of soft skills to college and career readiness while also noting the challenge they pose in developing and measuring indicators related to these skills.

The definitions of college and career preparedness/readiness represented by the participating state officials varied in certain aspects and included the following:

- Two states defined *college readiness* as students who enroll and succeed in college courses without remediation.
- The use of benchmarks on college entrance and placement tests serve as a default definition of *college readiness*.
- *Career readiness* can be defined as obtaining a job that pays a living wade, which varies by location.
- *Career readiness* in several states was defined by a set of credentials from a career and technical education (CTE) program that did not include inter- and intra-personal skills. However, some other states included soft skills, such as inter- and intra-personal skills and business skills, in their definitions.
    - In one state, the inclusion of service learning was part of the secondary school experience that contributed to a career ready diploma seal.
    - In another state, career readiness was defined as acquiring specific skills from CTE programs as well as successful performance on assessments that represented specific skills (e.g., National Occupational Competency Testing Institute) and experience in a simulated workplace program.
- One state described the development of *college and career readiness* standards that defined specifically what is meant by college attendance and students' understanding of the available career fields.
- *Military readiness* was offered as a postsecondary option that involves a set of cognitive and physical requirements, which is seen as an indicator of readiness in some state accountability plans.

A couple of state officials commented how they would welcome a definition of college and career readiness from the Governing Board.

Learning Opportunities and Interventions

Several state officials described the following efforts for students to acquire college and career readiness skills:

- States work with schools and industry to develop diplomas to certify technical career skills.
    - The diploma is earned through CTE programs, work-based learning, industry/credential exams, or portfolios.
    - One state developed career ready diploma seals that reflect cooperation between CTE programs and industry to introduce service learning and experiences for students to acquire industry-specific technical and broad inter- and intra-personal skills (e.g., leadership, collaboration, communication skills).
- Programs to prepare students for career readiness are designed to take advantage of local industry and involve the cooperation and input of businesses likely to hire postsecondary students.
- Schools encourage or adopt dual enrollment initiatives to increase student access to college-level courses and experiences.
- Soft skills, such as communication and leadership skills, are taught through service learning, student organizations, work-based learning, and simulated work environments.
- One state's goal is to prepare students for college or a career by ensuring they are agile in facing an environment where the requirements are not always known.
- One state official indicated that the state department of education is (and should be) flexible in facilitating local education agencies to develop pathways for students that are relevant for local conditions and situations.
    - As an example, one school district described a multi-national company that moved into the municipality with plans to add an international business pathway for students. Students who complete designated international business courses and activities earn a career ready seal on their diplomas.

Data and Indicators

The state officials identified sets of skills important for college and career readiness. Some commented on the difficulty in measuring certain skills from both practical/logistical and technical/measurement perspectives. One state official opined that it is easier to measure college readiness than career readiness. Many state officials noted the difficulty with career readiness data is twofold: (a) the skills to be assessed are multi-faceted in nature and (b) there are practical limitations in identifying measurable indicators for all facets.

The skills explicitly mentioned, especially for career readiness, include business practices, collaboration, leadership, communication, creative problem solving, argument and reasoning, designing solutions, time management, and intellectual curiosity.

Several state officials indicated the Governing Board could contribute to the measurement of the soft skills important for indicating career readiness, particularly if provided at the state level. One official, however, encouraged the measurement of both college and career skills, but also

cautioned that one consequence of reporting these skills by state is how industry may use them to target or avoid certain states for opening corporate and business locations.

State officials offered various comments and suggestions about data related to college and career readiness:

- Geographic differences reported in relevant career skills were based on the types of local industry and available jobs. States want data at a regional level.
- Some soft skills are not easily defined or measured (e.g., time management, intellectual curiosity).
- Student level data on absences, credits, and required course attainment can serve as proxies for some soft skills.
- A portfolio of artifacts (in the form of certificates, work-based learning, etc.) or experiences (advanced courses, dual credit) can be used as an indicator of college and career readiness.
- A concern about equity in terms of (a) opportunities to learn and (b) distribution of funds to offer college and career readiness opportunities (test fees) was expressed.
- Student service learning could be used as a relevant data point.
- One suggestion was for states to support and incorporate local accountability plans and metrics that involve school-specific indicators of important constructs such school culture, climate, and other environmental measures.
    - Examples of using school climate and school culture surveys were reported.
- Indicators used in state accountability plans included attendance, course participation, college entrance and placement test scores, and certification test results.

Various comments were offered about the measurement of college and career readiness:

- College readiness is easier to measure than career readiness.
- Soft skills typically are not included in state standards, so what to measure becomes a challenge.
- Measures should be general (versus specific) to remain relevant over time.
- Soft skills should be measured early (e.g., age appropriate elementary and middle school skills) to allow time for students to close gaps and attain common school and workplace skills. Early measurement would provide schools with data to monitor student learning and acquisition of these important life skills.
- States would like to see best practices in providing, documenting, and measuring college and career readiness skills.
    - For example, is there evidence that students who earn certificates are successful?
- A couple of state officials commented that the Governing Board is in a unique position to develop a measure(s) of soft skills at the state/national level.
- It would be a tremendous contribution if the Governing Board created a single definition inclusive of both college and career readiness as well as developed indicators to measure those skills.

Appendix A: Meeting Agenda and Attendees

Discussion of State Efforts on College and Career Readiness

Thursday, June 28, 2018, 7:30 – 8:50 AM PST
Room: Cobalt 520 (Level 5)
Hilton San Diego Bayfront
San Diego, California

Agenda

Purpose: Identify and discuss states' current and innovative practices regarding college and career readiness to inform the National Assessment Governing Board's effort to *"Develop new approaches to measure the complex skills required for transition to postsecondary education and career."*

7:30 – 7:45 AM **Breakfast & Introductions**

7:45 – 8:00 AM **Overview of the National Assessment Governing Board's Initiative on Postsecondary Preparedness**
Lily Clark, Assistant Director for Policy and Research
National Assessment Governing Board

8:00 – 8:50 AM **Discussion of State Efforts on College and Career Readiness**
Thanos Patelis, Facilitator, HumRRO

Guiding Questions:

- How does your state define college and career readiness?
- Did your state consult with industry groups to define career readiness?
- What measures does your state use to assess career readiness?
- Is military service a component of postsecondary readiness in your state?
- How does your state use non-cognitive measures?
- Are there innovative or non-traditional indicators that your state might use to measure or report on students' college and/or career readiness (e.g., student interest, micro-credentials earned, work-based learning)?
- What NAEP reporting on postsecondary readiness would be useful to states?

8:50 AM **Thank you and Adjourn**

Attendees

State Officials (Department of Education)
Chris Janzer, Michigan
Russell Keglovits, Nevada
Shelley Loving-Ryder, Virginia
Vaughn Rhudy, West Virginia
Michael Sibley, Alabama
Jenny Singh, California
Allison Timberlake, Georgia
Vince Verges, Florida

CCSSO Staff Members
Fen Chou
Scott Norton

National Assessment Governing Board Members
Tyler Cramer
Joe Willhoft

National Assessment Governing Board Staff Members
Michelle Blair
Lily Clark
Sharyn Rosenberg
Lisa Stooksberry

HumRRO Staff Members
Sunny Becker
Monica Gribben
Thanos Patelis
Sheila Schultz
Arthur Thacker