National Assessment Governing Board
Reporting and Dissemination Committee

Friday, May 18, 2018
10:30 am – 1:00 pm

AGENDA

10:30 – 10:35 am	Welcome *Rebecca Gagnon, Chair*	Attachment A
10:35 – 11:00 am	Review of 2017 NAEP Reading and Math Release (SV #4) *Stephaan Harris, Assistant Director for Communications*	Attachment B
11:00 – 11:30 am	Review of 2019 Core Contextual Variables (SV #6) *James Deaton, National Center for Education Statistics*	Attachment C
11:30 – 11:50 am	Considerations for Long-Term Trend *Rebecca Gagnon*	
11:50 am – 12:00 pm	Break and Transition to Joint Committee Meeting	
12:00 – 1:00 pm	Joint Meeting with COSDAM Communication and Interpretation of Achievement Levels (SV #3) *Rebecca Gagnon* *Andrew Ho, Chair, COSDAM*	Attachment D

Strategic Vision – Activities for Reporting and Dissemination Committee						
		Responsibility	Action	Measurable Outcomes	Start Date	Current Status
Inform #1: Strengthen and expand partnerships by broadening stakeholders' awareness of NAEP and facilitating their use of NAEP resources						
1.	Develop and Sustain Partnerships // Identify What Partners Need to Expand Use and Utility of NAEP	Board staff	Meet with ongoing and new partners	Increased number of partners and meetings	Summer 2015	Ongoing
		Board staff; Communications contractor	Send newsletters to partners	Newsletters opened by recipients; Increased website traffic	October 2016	Higher open rates, fewer bounces
		Communications contractor – Client Relationship Management tool (CRM)	Audit and maintain database of contacts	Contact lists of partners current and error free; Increased partnerships	October 2017	Governing Board met with contractors to learn about CRM use in November 2017
2.	Work with Partners to Increase Awareness and Use of NAEP	Board members; Board staff; NCES staff; Communications contractor	Submit proposals to annual meetings	Increased representation at events/meetings; Increased number of conference presentations	August 2016	Increases in partners retweeting our work through social media; Presented to NAESP in March
3.	Focused Reporting of NAEP Results	Board staff; CRP contractor; Communications contractor	Four tasks that will produce content to disseminate through partners	Increased traffic to website and social media; Views of artifacts; Numbers of posts and re-posts	October 2016	Rural videos and graphics released in Winter 2018; TUDA task ongoing

Strategic Vision – Activities for Reporting and Dissemination Committee						
		Responsibility	**Action**	**Measurable Outcomes**	**Start Date**	**Current Status**
		Board staff; Communications contractor	Produce quick graphics, videos, artifacts for dissemination	Traffic to web page; Views of artifacts; Number of posts and re-posts	January 2018	Graphics and products based on 2017 data underway
4.	Highlight Contextual Data in Reporting	Board members; Board staff; NCES staff; Communications contractor	Review contextual data for messaging / dissemination, including new indicators; Use contextual data in graphics, videos, toolkits	Increased number of artifacts with contextual data; Increased number of partners posting and re-posting artifacts; Traffic to social media posts with NAEP contextual data	Ongoing	*Nation's Report Card* release in April 2018 included new contextual indices; Follow-up artifacts will focus on new indices
Inform #2: Increase opportunities to connect NAEP to administrative data and state, national, and international student assessments						
5.	Identify Opportunities to Promote Use of NAEP Data with Federal Datasets	Board members; Board staff; NCES staff	Determine what data would be feasible, useful, and of similar quality to NAEP to promote	Launch site with NAEP results and connections to other data; Traffic to website	September 2017	Learned about NAEP High School Transcript Study at March 2018 meeting
		Board members; Board staff; NCES staff	Collaborate with COSDAM about connecting NAEP with other data	Joint meeting of COSDAM and R&D to develop decisions to present to Board	2018	TBD

Strategic Vision – Activities for Reporting and Dissemination Committee						
		Responsibility	**Action**	**Measurable Outcomes**	**Start Date**	**Current Status**
6.	Learn from Reporting of International Assessments (***Also, SV #8***)	Board members; Board staff; NCES staff; Communications contractor	Learn about international assessments			November 2017 Board meeting
		Board members; Board staff; NCES staff	Invite OECD staff to present on reporting approaches	Discussions about what practices to apply to NAEP	March 2018 (?)	Future R&D meeting focused on international reporting
			Meet with NCES staff to consider crossover of reporting approaches	Board meeting plenary session re: feasible options; Possible incorporation of elements of international work in 2019 Nation's Report Card	Spring 2018	

Inform #3: Expand the availability, utility, and use of NAEP resources, in part by creating new resources to inform education policy and practice						
7.	Add Meaning to NAEP Achievement Levels	Technical support contract with HumRRO (COSDAM lead)	Use findings from HumRRO study to develop guides	Graphic and/or video instructing how to use and interpret achievement levels	October 2017	Released one-pager to explain achievement levels released with 2017 data; Joint meeting with COSDAM in May 2018 to discuss how to improve understanding and usefulness of achievement levels
8.	Research Effective Uses of NAEP	Technical contract with HumRRO;	Learn where and how NAEP is used effectively	Report on best practices—where, what, under what conditions	October 2017	
		Communications contractor	Develop graphics and/or videos to support correct interpretation of NAEP results	Review NAEP mentions in sampling of reports and in media; Fewer reports of mis-NAEPery compared to TBD baseline		
9.	Develop New Tools for Audiences	Board members; Board staff; NCES staff; Communications contractor	Ideas for tailored reports shared with NCES	Uses of new tool on website post-release; User feedback	August 2016	Highlights on 2017 Nation's Report Card addressed media interests specifically, facilitated media reporting

		Board members; Board staff; NCES staff; Communications contractor	Construct custom portals for different subjects and/or types of users	Uses of portals; User feedback	January 2019	
10.	Identify More User-Friendly Approaches to Presenting NAEP Results	Board staff	Invite partners / stakeholders to Board meetings to share needs, interests for using NAEP data	Number of plenary and R&D sessions; Posts of panel summaries; Traffic to social media posts of summaries	November 2016	Alabama stakeholders in NAEP invited to outreach events at May 2018 quarterly Board meeting
		Board members; Board staff; Communications contractor	Create "menu of engagement" list of speakers, graphics, videos, artifacts that Board staff can offer partners	Artifacts developed for and posted by partners; Number of requests by partners; Number of activities	January 2018	
11.	Create "Brief Case" Studies	Board staff; Communications contractor	Learn how NAEP used effectively by states and districts to serve as guide via compelling narratives in graphics, videos, two-pagers	Increased social media traffic; Number of "brief case studies" posted and re-posted	January 2018	Tennessee case study underway by Hatcher Group

12.	**Facilitate Teacher Preparation Program Toolkit to Increase Access and Use of NAEP by Teachers**	**Board staff; Communications contractor**	**Meet with teacher educators to learn needs and interests**	**Develop tools and resources; Use of toolkits; User feedback**	**September 2018**	**Met with AACTE Executive Director to initiate this idea**
		Communications contractor	Support development of toolkit by partners	Webpage on Governing Board website for teacher educators and preservice teachers	January 2019	
Inform #4: Promote sustained dissemination and use of NAEP information beyond Report Card releases with consideration for multiple audiences and ever-changing multi-media technologies…. ***Note: SV #4 permeates throughout the entire list of planned tasks and activities, so is not presented in separate rows.***						
Innovate #6: Continue improving the content, analysis, and reporting of NAEP contextual data by considering the questions' relevance, sensitivity, and potential to provide meaningful context and insights for policy and practice						
13.	Review Contextual Variables	Board members; Board staff	Review contextual variables to ensure relevance and importance	Greater use of contextual data; Updated variables	Ongoing	Participated in April 2018 Questionnaire Standing Committee re: contextual data; Reviewing core contextual items at May 2018 R&D meeting

Focused Reporting of Data from the
National Assessment of Educational Progress (NAEP):
Project Update

The two-year Focused Reporting project addresses topics on which NAEP collects data, but which do not receive much exposure in report cards or secondary reports. Three topics constitute the scope of the project:

- Rural education
- Large urban districts that participate in the NAEP Trial Urban District Assessment (TUDA)
- Inclusion of English language learners and students with disabilities in NAEP

The end products will incorporate engaging video and graphical elements that will appear on the Governing Board website and on various social media with the intent to inspire others to use these data. Equally important, the end products will provide insights on these topics as well as show the tremendous range of information about students, teachers, and schools that is collected with each NAEP assessment.

The first product was a video on aspects of education in rural areas. Posted on the Governing Board's website in November 2017, the video and short excerpts suitable for social media received wide circulation. For example:

- 203 views of the full rural video on NAGB's YouTube channel, plus 90 views of the three excerpts;
- Posting of the full video by Change the Equation and MIND Research;
- Posting of the parent-teacher conference excerpt by the National PTA, stimulating 198 views, six retweets, and four likes; and
- Tweets of the excerpt about the most improved rural states to several states, resulting in 431 views, nine retweets, and six likes.

Currently, the project is focusing on education in large urban school districts. This report, due in June 2018, will concentrate on less well-known information about the TUDA districts that NAEP collects in its survey questionnaires. The contractor, CRP, Inc., and their subcontractor, Mind & Media, are designing a web page that summarizes 2017 data on achievement and actionable factors in large cities and in the various TUDA districts. Several "memes," short engaging visuals highlighting specific characteristics amenable to posting on social media sites, will also be produced. These products should attract the interest of the 27 urban school districts in the TUDA program as well as stakeholders who focus on urban education.

Work on the final topic—implementation of the Governing Board's policy on inclusion of students with disabilities and English language learners—is also underway. The report, which will be presented in a graphic, will briefly review the history of inclusion in the NAEP program and the progress the program has made in the nation and the states, especially since the adoption of the inclusion policy in 2010, as updated in 2014. The report will highlight the role of this policy in encouraging states to meet inclusion guidelines. Completion of this phase is scheduled for late summer 2018.

Upcoming NAEP Reports as of May 2018

Initial NAEP Releases

Mapping State Proficiency Standards onto the NAEP Scales: Results from the 2015 NAEP Reading and Mathematics Assessments	May 2018

Other NAEP Reports

2015 Student Questionnaires: Student Views	May 2018
2015 Student Questionnaires: Computer Access and Usage in Mathematics and Reading	June 2018
2015 National Indian Education Study: A Closer Look	June 2018
Paths Through Mathematics and Science: Patterns and Relationships in High School Course Taking	June 2018
2015 Student Questionnaires: Classroom Instruction for Mathematics Reading and Science	July 2018

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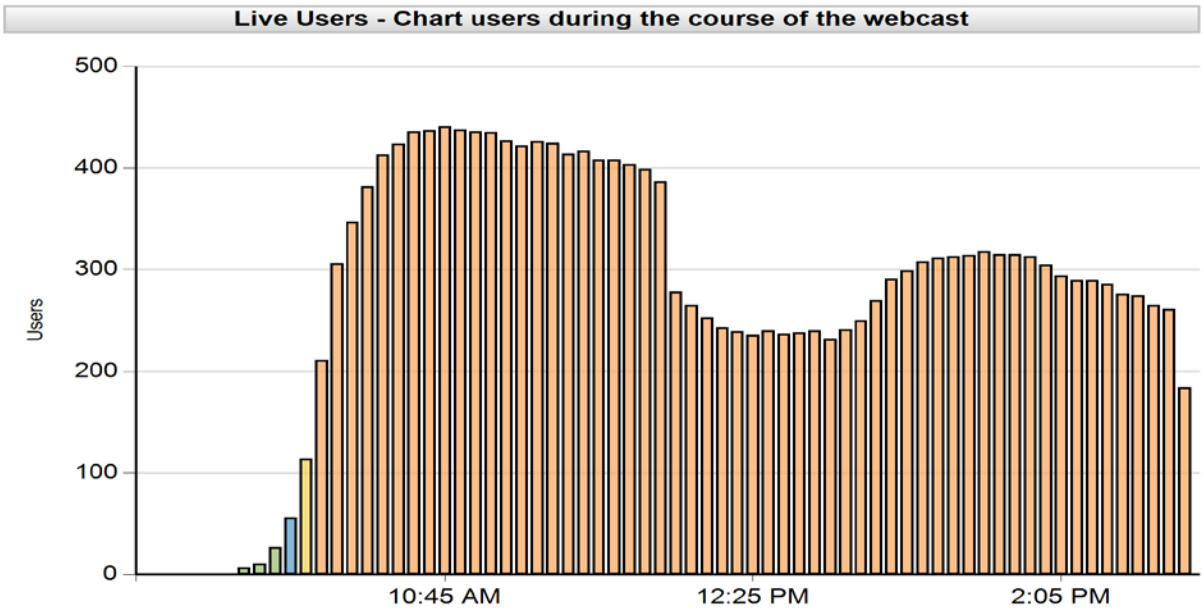
DEBRIEF REPORT SUMMARY: 2017 NAEP READING AND MATHEMATICS RELEASES

Held April 10 at the National Press Club in Washington, D.C., NAEP Day featured the release of the national and state 2017 mathematics and reading results in the morning and the Trial Urban District Assessment results in the afternoon.

OUTREACH AND ATTENDANCE

We are pleased with the RSVP and attendance of both the live and online audiences, which reached or surpassed live and online audiences for previous NAEP releases. More than 240 people registered for the morning and afternoon NAEP Day events; the 175 attendees at the morning event and nearly 100 at the afternoon event reflected a relatively low attrition rate compared with RSVPs.

There was a large online audience: 710 people registered through the webcast service, yielding 653 unique viewers with between 200-440 streams active at any given time (this could include more than one viewer). This chart shows livestream traffic during the events. During the live streams, we received 33 questions from online viewers.



The combined outreach strategies included four weekly invitations and individual outreach to executive-level leaders of education organizations. The short videos by Board members and additional social media push also helped increase participation; 72 registrations came directly from social media.

SOCIAL CONVERSATION

In the two months before NAEP Day, the conversation around NAEP and the impending release reached 25 million impressions from more than 2,500 tweets from 1,558 contributors. Much of this was driven by the Fordham Institute, which released five blog posts and tweeted almost 150 times between Michael Petrilli's and Education Gadfly's accounts.

The Governing Board sent 115 tweets and 22 Facebook posts, and created toolkits for partners and Governing Board members. We created several short videos that were viewed almost 3,000 times, greatly aiding these efforts.

NAEP Day saw a huge surge in interest, driven by live-tweeting and the far-reaching media coverage. Nearly 3,000 people tweeted more than 5,000 times, causing #NAEPDay to trend in Washington and #NAEP to trend nationally. As of Tues., April 24, each day since NAEP Day has seen more than 100 people tweet about NAEP. More impressions (76 million) have been driven since NAEP Day than on the day of the actual event (60 million). The conversation has continued.

The Atlantic article on the reading panel, "Why American Students Haven't Gotten Better at Reading in 20 Years," has been shared in 2,500 tweets and received more than 50,000 Facebook engagements.

LOGISTICAL COORDINATION

The National Press Club proved to be an excellent venue for these events. It provided gravitas and excellent space and execution by the Press Club staff. Having the two additional wings for a green room and space for participants to gather during the presentations also worked well. The additional support of Rock Creek to serve as our team's on-site producer was also invaluable. The stage set-up, NAGB banners, podium sign, etc., looked great and provided a polished, professional tone for the event.

PROGRAM

The caliber of speakers was excellent, and Tonya Matthews did a masterful job as emcee. The following reflects Hatcher's observations and feedback we heard or received directly during or after the event.

- The NCES morning presentation was concise and well received, especially the "bee hive" graphic, but it could have included more state data. The afternoon presentations by NCES and Michael Casserly had some overlap.
- Terry Holliday was a good moderator; posed questions and stepped back to allow sharing by state superintendents. Some asked why those specific states were selected; could clarify in future events.
- Reading panel's focus was a smart choice that worked incredibly well. The panelists covered potential reasons behind flat reading scores, offered solutions, and provided varying perspectives.
- The TUDA superintendents were "rock stars," communicating in an engaging, precise way about their districts. Alberto Carvalho moderated a thoughtful Q&A session. The intro videos set a lively tone for the session.

Looking ahead, we recommend giving moderators even more guidance, particularly with 30-minute panels. This timeframe keeps the audience engaged, but requires moderators to keep introductions short, speakers on point, and ask clarifying questions. The moderator must keep the conversation flowing so that it balanced and does not feel rushed.

PARTNERSHIP PARTICIPATION

One of the Governing Board's strategic priorities is to deepen partnerships. From a communications perspective, a great way to do that is to supply social media "toolkits," with easily sharable content. We tried this strategy by providing an outreach toolkit for partners to promote the event and a "watch party" toolkit for the TUDA districts.

We saw uptake from several Governing Board members to help publicize NAEP Day. And a couple of school districts—Austin and Miami-Dade—had watch parties and posted photos on Twitter that we could show during the event.

Going forward, we think this strategy has much more potential and look forward to conversations about how to better leverage partner interest.

On Friday, May 18 the Reporting & Dissemination (R&D) Committee will review proposed changes to the core contextual questions. In support of this activity, NCES will prepare an electronic review package for R&D members. This review package will be structured the same as in recent years and will be sent electronically to the Committee by COB Wednesday, May 2. Similar to last year, this review will encompass approximately 20 questions or fewer.

The May 2018 electronic review package will include 2019 operational and 2021 pilot questions, specifically:

- Revised "Perseverance" and "Enjoyment of Complex Thinking" questions. These items were revised to say "describe you" instead of "describe a person like you" to increase clarity and ensure consistency with similar subject-specific noncognitive questions.
- Revised post-secondary question for grade 12 students. This item was slightly revised to a yes/no matrix format instead of a "Select all that apply" multiple choice question to improve data interpretation (i.e., distinguish non-response from 'not applicable').
- Added art-related question for grades 8 and 12, based on a previously administered NAEP Arts assessment item. We include this question based on R&D feedback about the importance of capturing this information in years when the NAEP Arts assessment is not administered.
- Revised student technology questions to improve clarity.
- Added school climate questions to create more thorough coverage of this multidimensional construct.
- Added new postsecondary preparation on grade 12 student survey and new exposure to arts/music/language to grades 8 and 12 student surveys.
- Revised teacher education and professional experience teacher questions. The teacher education question was slightly revised to be more inclusive, and the professional experience question was revised with more "up-to-date" technology language.
- Added new school questions pertaining to enrollment criteria for school admission and charter school characteristics given increased stakeholder interest.

After this review occurs, please send comments to Laura by COB Wednesday, May 23.

Figure 1 (see figure below) provides a high-level overview of the 2019 operational and 2021 pilot development timeline. Please note the majority of 2019 operational items are trend questions, and most of the revised and new questions are intended for pilot testing.

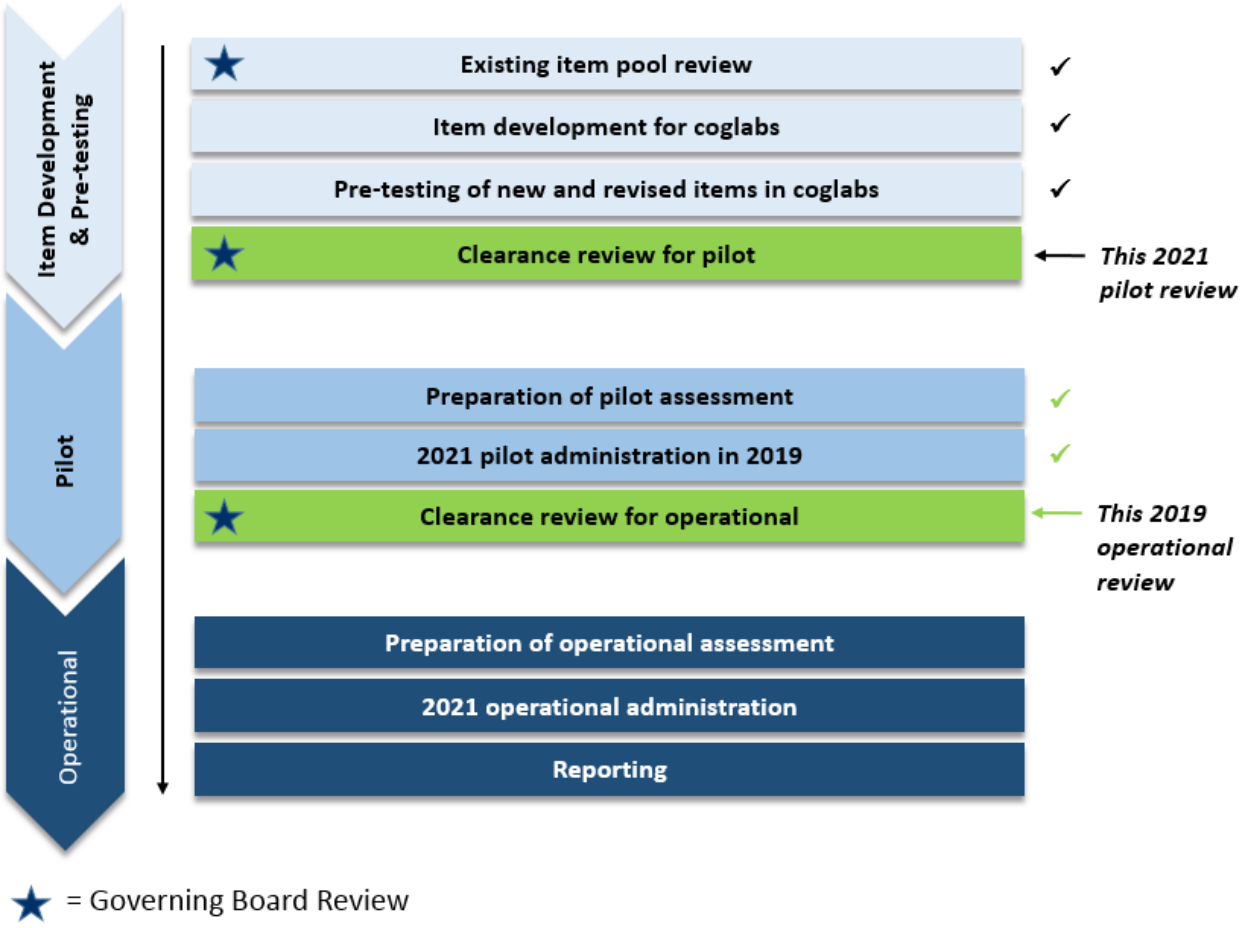


Figure 1. High-Level Overview of 2019 and 2021 Core Survey Questionnaires Development Timeline.

Joint Meeting with Committee on Standards, Design and Methodology on Achievement Levels

At the May 2018 Governing Board meeting in Montgomery, Alabama, the Reporting and Dissemination Committee will hold a joint meeting with the Committee on Standards, Design and Methodology (COSDAM). The purpose of this joint meeting is to discuss the intersection of the two committees' work on achievement levels for the National Assessment of Educational Progress (NAEP).

Background

From 2014 to 2016, the National Academies of Sciences, Engineering, and Medicine evaluated the NAEP achievement levels in mathematics and reading, which are the responsibility of the Governing Board. In their evaluation, the National Academies noted eight common uses of NAEP achievement levels, specifically:

- Trends or comparisons of successive cohorts, e.g., the percentage of students at or above Proficient in reading has increased over time;
- Comparison to a state assessment;
- Point-in-time comparisons across states, districts, or population groups, e.g., more students in state A who are at or above Proficient in reading compared to state B;
- Rank ordering states or districts;
- Comparison across population groups to examine performance gaps;
- Comparison across subject areas, e.g., more students perform at or above Proficient on mathematics than in reading;
- Comparison of before and after an action or policy implementation; and
- Relationships among achievement results and contextual data.

The evaluation recognized the usefulness and value of the achievement levels but made several important recommendations, most of which focus on the work of COSDAM as well as two that also address the work of the Reporting and Dissemination (R&D) Committee:

> RECOMMENDATION 5: Research is needed to articulate the *intended* interpretations and uses of the achievement levels and collect validity evidence to support these interpretations and uses. In addition, research to identify the *actual* interpretations and uses commonly made by NAEP's various audiences and evaluate the validity of each of them. This information should be communicated to users with clear guidance on substantiated and unsubstantiated interpretations.

> RECOMMENDATION 6: Guidance is needed to help users determine inferences that are best made with achievement levels and those best made with scale score statistics. Such guidance should be incorporated in every report that includes achievement levels.

Since the release of these recommendations in November 2016, COSDAM members and Governing Board staff have worked to fulfill these recommendations. The draft revision of the Board policy on developing student achievement levels (scheduled for full Board discussion in August 2018 and action in November 2018) establishes an

> "interpretative guide [which] shall accompany NAEP reports, including specific examples of appropriate and inappropriate interpretations and uses of the results" (Principle 3i).

COSDAM will develop the content of this interpretative guide, but the responsibility to include and disseminate such a guide in reporting will fall to the R&D Committee and NCES. This joint meeting between R&D and COSDAM will focus, in part, on the development and use of an interpretative guide to facilitate the understanding of achievement levels.

As part of the Governing Board's contract on Technical Support in Psychometrics, Assessment Development, and Preparedness for Postsecondary Endeavors, the Human Resources Research Organization (HumRRO) is conducting research to understand the various actual uses of NAEP data, including achievement levels. Information taken from published documents and interviews will guide development of a Board policy statement on appropriate uses of NAEP and development of an interpretative guide.

Within this task, HumRRO started work by providing advice on building a validity argument for the NAEP achievement levels. An excerpt of that memo, which focuses on how various audiences use NAEP achievement levels, is included with this cover material.

Finally, with the April release of the 2017 *Nation's Report Card* in Mathematics and Reading, issues in understanding achievement levels re-emerged. During pre-release briefings with media, a reporter asked how the *Proficient* level on NAEP differs from what proficient means on a given state assessment. Material presented at the same time as the data release explicated what achievement levels mean in hopes of avoiding confusion, but misuses still appeared. During this joint meeting, R&D will seek a more concise and more comprehensible way of explaining the achievement levels and of distinguishing them from other uses of the term proficient.

Guiding Questions

With this background, the members of both committees will address the following questions in the course of the hour-long discussion:

- Does the revised achievement levels policy (Principle 3 in particular) capture the components critical to communicating the achievement levels effectively?

- How and to whom should an interpretative guide to the inappropriate and appropriate uses of NAEP achievement levels be presented and disseminated? Knowing the intended outcome and audience will inform the content development.

- How should the Governing Board highlight exemplary uses of NAEP achievement levels and address misuses of NAEP achievement levels?

- How can the Governing Board clearly and concisely explain achievement levels accurately? How can these explanations most effectively avoid misinterpretation? How can these explanations cleanly distinguish what NAEP means from what states mean by terms such as *Basic* and *Proficient* and *Advanced*?

Materials

To inform and to facilitate the discussion, several documents are appended to this introduction:

(1) The draft revision of the Achievement Levels policy
    a. R&D members, please pay special attention to Principle 3.

(2) Not attached, but click the link: The one-pager on what achievement levels mean

(3) An excerpt of a technical memo which focuses on the use of NAEP achievement levels by various audiences

Developing Student Achievement Levels for the National Assessment of Educational Progress

Policy Statement

It is the policy of the National Assessment Governing Board to conduct a comprehensive, inclusive, and deliberative process to develop and review student achievement levels for the National Assessment of Educational Progress (NAEP). Achievement levels consist of general policy definitions for the *Basic*, *Proficient*, and *Advanced* levels, specific achievement level descriptions (ALDs) for each subject and grade, cut scores that demarcate adjacent levels, and exemplar items or tasks that illustrate performance at each level. This process shall be conducted according to widely accepted professional standards, to produce results that are reasonable, appropriate, and informative to the public.

The Governing Board, through its Committee on Standards, Design and Methodology (COSDAM), shall monitor the development and review of student achievement levels to ensure that the final Governing Board-adopted achievement level descriptions, cut scores, and exemplars comply with all principles and guidelines of the Governing Board Student Achievement Levels policy.

The achievement level setting process shall be carried out by contractors selected through a competitive bidding process. The process shall be managed in a technically sound, efficient, cost-effective manner, and shall be completed in a timely fashion.

Introduction

Since its creation by Congress in 1988, the Governing Board has been responsible for developing appropriate student achievement levels for NAEP assessments. The Governing Board has carried out this important statutory responsibility by engaging with a broad spectrum of stakeholders to develop student achievement levels.

Under provisions of the National Assessment of Educational Progress Authorization Act of 2002 (P.L. 107-279), Congress authorized the Governing Board to continue its mandate for developing appropriate student achievement levels for NAEP, consistent with relevant widely accepted professional assessment standards, based on the appropriate level of subject matter knowledge for grade levels assessed, and using a national consensus approach.

Given this mandate, the Governing Board must ensure that all achievement level setting processes align with current best practices in standard setting, and that appropriate validity evidence is collected and documented to support the intended uses and interpretations of NAEP achievement levels.

To develop student achievement levels for Board adoption, the Governing Board engages multiple stakeholders throughout the process, including:

Teachers
Curriculum Experts
Content Experts
Assessment Specialists
State Administrators
Local School Administrators
Policymakers
Business Representatives
Parents
Users of Assessment Data
Researchers and Technical Experts
Members of the Public

This policy complies with the National Assessment of Educational Progress Authorization Act of 2002 (P.L. 107-279) and the documents listed below which express widely accepted technical and professional standards for achievement level setting. These standards reflect the agreement of recognized experts in the field, as well as the policy positions of major professional and technical associations concerned with educational testing. A procedures manual shall provide additional details about how this policy is implemented. As professional standards evolve and new consensus documents are released, this policy and the procedures manual shall be updated to the extent that new professional standards require.

The Standards for Educational and Psychological Testing. (2014). Washington, DC: American Educational Research Association, American Psychological Association, and National Council on Measurement in Education.

Code of Fair Testing Practices in Education. (2004). Washington, DC: Joint Committee on Testing Practices.

Educational Measurement (4th ed.). (2006). R.L. Brennan (Ed.). Westport, CT: Praeger.

National Center for Education Statistics (NCES) Statistical Standards. (2012).

Principle 1: Elements of Achievement Levels

The Governing Board is responsible for developing student achievement levels for each NAEP assessment. Achievement levels consist of general policy definitions for the Basic, Proficient, and Advanced levels, specific achievement level descriptions (ALDs) for each subject and grade, cut scores that demarcate adjacent levels, and exemplar items or tasks that illustrate performance at each level.

a) The following policy definitions will be applied to all subject areas and grades in which achievement levels are set. It is the Board's view that the level of performance referred to in the policy definitions is what students *should know and be able to do,* not simply the current academic achievement of students or that which today's U.S. schools expect.

Proficient.	*This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real world situations, and analytical skills appropriate to the subject matter.*
Basic.	*This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for Proficient work at each grade.*
Advanced.	*This level signifies superior performance beyond Proficient.*

b) Content achievement level descriptions (ALDs) translate the general policy definitions into

specific expectations about student knowledge and skills in a particular content area, at each achievement level, for each subject and grade. Content ALDs provide descriptions of the expected knowledge, skills, or abilities of students performing at a particular achievement level. Content ALDs reflect the range of performance that items and tasks should measure. During the achievement level setting process, the purpose of content ALDs is to provide consistency and specificity for panelist interpretations of policy definitions for a given subject and grade. During reporting, content ALDs communicate the specific knowledge and skills represented by *Basic*, *Proficient*, and *Advanced* for a given subject and grade.

c) Cut scores mark the minimum threshold score, the lower bound, for each achievement level. Performance within a given achievement level begins at the cut score for that level and ends just below the cut score for the successive achievement level.

d) Exemplar items and student responses illustrate student performance within each of the achievement levels. They provide specific examples to help the public better understand what students in each achievement level can do.

Principle 2: Development of Achievement Level Recommendations

The Governing Board shall develop appropriate student achievement levels for NAEP, consistent with relevant widely accepted professional assessment standards, based on the appropriate level of subject matter knowledge for grade levels assessed, and using a national consensus approach.

a) A Design Document shall be developed at the beginning of the achievement level setting process, to describe in detail all planned materials, procedures, and analyses for the project. The Design Document shall be posted for public review with sufficient time to allow for a response from those who wish to provide one.

b) The development of content achievement level descriptions (ALDs) will be completed initially through the process that develops the assessment frameworks. (See the Governing Board Policy on Framework Development for additional details). The Board may then review and possibly revise content ALDs to advance the purposes they serve, whether that is guiding an achievement level setting or informing the public about the meaning of achievement levels. Whether revised or not, the ALDs that guide achievement level setting will be articulated in terms of what students *should know and be able to do.* There will be no content ALDs developed for performance below the *Basic* level.

c) An achievement-level setting panel of subject matter experts shall be convened to recommend achievement level cut scores and exemplars.

   i. To ensure that they are qualified to make the judgments required by the achievement level setting process, individual panel members shall have expertise and experience in the specific content area in which the levels are being developed, expertise and experience in the education of students at the grade under consideration, and a general knowledge of assessment, curriculum, and student performance. Each panel shall reflect diversity in terms of gender, race/ethnicity, region of the country, urbanicity, and experience with students with disabilities and English language learners.

ii. This panel shall include both educators and non-educators who are considered outstanding in their field. The educator group shall include both teachers and other educators (e.g., curriculum directors, academic coaches, principals). Teachers shall comprise the majority of the panel, with non-teacher educators accounting for no more than half the number of teachers. The remaining panelists shall be non-educators who represent the perspectives of additional stakeholders, including parents, researchers, employers, and other members of the general public.

iii. The size of the panels should be responsive to what current research demonstrates is best practice and operationally feasible, but should be large enough to allow for split panels. Most NAEP achievement level settings have included approximately 20-30 panelists per grade, divided into two comparable groups with a subset of shared items.

iv. The size and specific composition of the panels may be adjusted within these general guidelines if professional standards in the field evolve.

d) Panelists shall receive training on all aspects of the achievement levels setting process to ensure that panelists are well-prepared to perform the achievement level setting tasks required of them. Training must include: the purpose and significance of setting achievement levels for NAEP; the NAEP assessment framework for the given subject area; and administration of a sample assessment under NAEP-like conditions that students experience. It is important for panelists to arrive at a common conceptualization of *Basic*, *Proficient*, and *Advanced* based on the content ALDs. Panelists shall be trained on each element of the judgmental task they perform, including the selection of exemplar items. They should be led by capable *content facilitators* (who are content experts and have previous experience with achievement level setting) and *process facilitators* (who have background in standard setting and experience leading panelists through the achievement level setting process). Facilitators shall take a neutral stance and not attempt to influence panelist judgments.

e) The achievement level setting method that generates cut score recommendations may differ depending upon the specific assessment. The method must have a solid research base and be appropriate for the content area, item types, number of items, scoring rubrics, and mode, as applicable.

f) Evaluations shall be administered to panelists throughout the achievement level setting process, in accordance with current best practices. Evaluations shall be part of every major component of the process, and panelists shall be asked to confirm their readiness for performing their tasks. Evaluation data may be used for formative purposes (to improve training and procedures in future meetings); summative purposes (to evaluate how well the process was conducted and provide procedural validity evidence); and to inform the Governing Board of any relevant information that could be useful when considering cut score recommendations. The panelists shall have an opportunity to indicate to the Board whether they believe the recommended cut scores are appropriate and reasonable.

g) In accordance with current best practices, feedback shall be provided to panelists, including "impact data" (i.e., the implications of their selected cut scores on the reported percentages of students at or above each achievement level).

h) The process shall consist of at least two achievement level setting meetings with distinct groups of panelists, a pilot study, and an operational meeting. The purpose of the pilot study is to conduct a full "dress rehearsal" of the operational meeting, including an opportunity to test out materials, training procedures, collection of panelist judgments, feedback given to panelists through the process, software used to conduct analyses, meeting logistics, and other essential elements of the process. The pilot study may result in minor changes to the procedures, as well as major changes that would need additional study before being implemented in an operational meeting. The pilot study provides an opportunity for procedural validity evidence and to improve the operational meeting. At the discretion of the Governing Board, other smaller-scale studies may be conducted prior to the pilot study or in response to issues raised by the pilot study. The criteria in Guideline apply to panelists of both meetings.

i) The Governing Board or its contractor shall convene a Technical Advisory Committee on Standard Setting (TACSS) to provide technical advice on all achievement level setting activities. Technical advice provided by standard setting experts throughout the project is intended to ensure that all procedures, materials, and reports are carried out in accordance with current best practices, providing additional validity evidence for the process and results. The Board or its contractor may also seek technical advice from other groups as appropriate, including NCES and the larger measurement community (e.g., the National Council on Measurement in Education).

j) All aspects of the procedures shall have documentation as evidence of the appropriateness of the procedures and results. This evidence will be made available to the Board at the time of deliberations about the achievement levels. A summary of the evidence shall be available to the public when the achievement level results are reported.

k) The exemplars chosen from the pool of released items for the current NAEP assessment shall reflect performance in the *Basic*, *Proficient*, and *Advanced* regions of the scale. The use of exemplars is intended to help the public better understand what students who are in each achievement levels actually know and are able to do for each subject and grade. When possible, exemplars may also be chosen that reflect performance at threshold scores. The collection of exemplars shall reflect the content found in the achievement level descriptions and the range of item formats on the assessment.

l) The outcomes from the achievement level setting panel meetings (cut scores, exemplars, and ALDs for use in reporting) shall be forwarded to the Board for their consideration.

Principle 3: Validation and Reporting of Achievement Level Results

The achievement level setting process shall produce results that have appropriate validity evidence for the intended uses and interpretations, are reasonable, and are informative to the public.

a) Professional testing standards define validity as the degree to which evidence supports intended interpretations and uses of test scores. The validity of achievement level results is a property of their intended interpretations and uses. Standard setting is necessarily judgmental. There are no "true" or "correct" cut scores. Instead, there is a legitimizing process that results in an authoritative consensus. In making a policy judgment to set achievement levels, the Board will examine and consider available evidence about due process and the reasonableness of results, in order to support intended uses and interpretations.

b) NAEP achievement levels are intended to estimate the percentage of students (overall and for selected student groups) in each achievement level category, for the nation, and for states and trial urban districts (TUDAs) for some subjects and grades. NAEP is prohibited by law from reporting any results for individual students or schools, so achievement levels do not apply to individual students or schools.

c) To facilitate valid uses of ALDs for reporting, the Board shall ensure that the descriptions of performance for the achievement levels reflect what the empirical data reveal about the knowledge and skills of students in that score range. The Board shall revisit and may revise content ALDs following the achievement level setting to ensure that they are consistent with empirical evidence of student performance. These revised content ALDs shall be written in terms of what students *do* know and empirically *can* do rather than what they *should* know and *should* be able to do.

d) The Board will examine and consider all evidence related to reliability and validity of the achievement level setting activities. These data shall include but need not be limited to: procedural evidence such as training, materials and panelist evaluation data; reliability evidence such as consistency across panelist type, subpanels, rounds, and meetings, if appropriate; and external comparisons to other similar assessments, if appropriate, with necessary caveats. The results from validation efforts shall be made available to the Board in a timely manner so that the Board has access to as much validation data as possible as it considers the recommendations regarding the final levels.

e) In describing student performance using the achievement levels, terms such as students performing at the *Basic* level or students performing at the *Proficient* level are preferred over *Basic* students or *Proficient* students. The former implies that students have mastery of particular content represented by the achievement levels, while the latter implies an inherent characteristic of individual students.

f) In reporting the results of NAEP, the three achievement levels of *Basic*, *Proficient*, and *Advanced* refer to the three regions of the NAEP scale at and above each respective cut score. The remaining region that falls below the *Basic* cut score will be identified as "below *Basic*" when a descriptor is necessary.

g) In describing the NAEP *Proficient* level, reports shall emphasize that the policy definition is not intended to reflect "grade level" performance expectations, which are typically defined normatively and can vary widely by state and over time. *Proficient* on NAEP may convey a different meaning from other uses of the term "proficient" in common terminology or in reference to other assessments.

h) When interpreting student performance using achievement levels, it is important to discourage incorrect comparisons and interpretations. For example, a *Proficient* cut score of 235 in reading should not be interpreted to have the same meaning as a *Proficient* cut score of 235 in U.S. history.

i) An interpretative guide shall accompany NAEP reports, including specific examples of appropriate and inappropriate interpretations and uses of the results.

Principle 4: Periodic Review of Achievement Levels

Periodic reviews of existing achievement levels shall determine whether new achievement level descriptions and/or cut scores are needed to continue valid and reliable measurement of student performance.

a) At least once every 10 years or 3 administrations of an assessment, whichever comes later, the Governing Board, through its Committee on Standards, Design and Methodology (COSDAM), shall review the alignment between the content ALDs and items, based on empirical data from past and recent administrations of the assessment. In its review, COSDAM (in consultation with ADC) shall solicit input from technical and subject matter experts to determine whether changes to the content ALDs and/or cut scores are warranted, making clear the potential risk of changing cut scores to trends and assessment of educational progress. Relevant factors may include but not be limited to: substantive changes in the item types; changes in the mode of administering assessments; advances in standard setting methodologies; and changes in the policy environment for using NAEP results.

b) Within the period for a review of achievement level descriptions and cut scores, changes may occur to a NAEP framework. If a framework is replaced or revised for a major update, a new achievement level setting process may be implemented automatically, except in circumstances where scale score trends are maintained. In this latter instance, COSDAM will determine how to revise the ALDs and review the cut scores to ensure that they remain appropriate and meaningful.

c) If there are major updates to a NAEP framework, the ALDs will be updated by the Framework Visioning and Development Panel. (See the Governing Board Policy on Framework Development for additional details). Following an assessment administration under the revised framework, COSDAM may decide to use empirical data to revise content ALDs to align with the revised framework.

d) As additional validation evidence becomes available, the Board shall review it and make a determination about whether the achievement levels should be reviewed and potentially redone.

Principle 5: Stakeholder Input

The process of developing student achievement levels is a widely inclusive activity. There are many opportunities to engage multiple stakeholders throughout the achievement level setting process.

a) The content achievement level descriptions are developed through the framework development process, using a panel that represents all major constituents in the various NAEP audiences, as listed in the introduction above. If it is necessary to revise the ALDs for use in achievement level setting and/or reporting, a similar group of content experts will be convened, and public comment will be sought on the resulting achievement level descriptions.

b) The process of seeking nominations for the achievement level setting panels shall include extensive outreach to multiple constituencies, such as: state and local educators; curriculum

specialists; business representatives; and professional associations in a given content area.

c) As noted in Principle 2, Guideline a, the Design Document (describing in detail all planned procedures for the project) shall be distributed for review by a broad constituency and shall be disseminated in sufficient time to allow for a thoughtful response from those who wish to provide one. All interested stakeholders shall have an opportunity to provide public comment.

d) As noted in Principle 2, Guideline c, achievement level setting panelists shall include teachers, non-teacher educators, and other interested members of the general public with relevant educational background and experience, including parents, researchers, and employers. Each panel shall reflect diversity in terms of gender, race/ethnicity, region of the country, urbanicity, and experience with students with disabilities and English language learners.

e) As noted in Principle 2, Guideline i, all achievement level setting activities shall be informed by technical advice throughout the process. The Technical Advisory Committee on Standard Setting shall provide ongoing technical input from standard setting and assessment experts, and other groups with relevant technical expertise may be consulted periodically as needed.

f) Ongoing input and coordination with staff and contractors from the National Center for Education Statistics (NCES) will ensure that all achievement level setting activities are carried out in a manner that is consistent with the design, analysis, and reporting of NAEP assessments.

g) The Governing Board may ask its standing groups representing various constituencies to provide input on the achievement level setting process.

Principle 6: Role of the Governing Board

The Governing Board, through its Committee on Standards, Design and Methodology (COSDAM), shall monitor the development and review of student achievement levels to ensure that the final Governing Board-adopted achievement level descriptions, cut scores, and exemplars comply with all principles and guidelines of the Governing Board Student Achievement Levels policy.

a) The Committee on Standards, Design and Methodology (COSDAM) shall be responsible for monitoring the development and review of achievement levels that result in recommendations to the Governing Board for any NAEP assessment under consideration. COSDAM will provide direction to the achievement level setting contractor, via Governing Board staff. This guidance shall ensure compliance with the NAEP legislation, Governing Board policies, Department of Education and government-wide regulations, and requirements of the contract(s) used to implement the achievement level setting project.

b) If there is a need to revise the initial achievement level descriptions (ALDs) created at the time of framework development for use in achievement level setting and/or reporting, the Governing Board shall take final action on revised ALDs.

c) COSDAM shall receive regular reports on the progress of achievement level setting projects.

d) COSDAM shall review and formally approve the Design Document that describes all planned

procedures for an achievement level setting project.

e) A COSDAM member may elect to attend any achievement level setting panel meeting(s) as an observer at the discretion of the COSDAM Chair.

f) At the conclusion of the achievement level setting project, the Governing Board shall take final action on the recommended cut scores, exemplars, and ALDs for use in reporting. The Governing Board shall make the final determination on the NAEP achievement levels. In addition to the panel recommendations, the Board may consider other pertinent information to assess reasonableness of the results, such as comparisons to other similar assessments.

g) Following adoption by the Governing Board, the final ALDs, cut scores, and exemplars shall be provided to the National Center for Education Statistics (NCES) for reporting the results of the NAEP assessment(s) under consideration.

h) Consistent with Principle 4 above, COSDAM shall periodically review existing achievement levels to determine whether new achievement level descriptions and/or cut scores are needed to continue valid and reliable measurement of student performance, while recognizing the value of stability and the value that is accrued by using achievement levels over time.

Excerpt of Technical Memo: Uses of NAEP Achievement Levels[1]

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The National Assessment Governing Board's (Governing Board) recent Strategic Vision[2] identifies policymakers, educators, researchers and business leaders, the media, and the general public as stakeholders who are expected to use National Assessment of Educational Progress (NAEP) results. The Strategic Vision is not so specific as to describe how each group is expected to use NAEP results, but it does indicate that they should be informed "about what America's students know and can do in various subject areas and compare achievement data over time and among student demographic groups." The Strategic Vision also states that NAEP should "inform education policy and practice."

The Governing Board is working towards developing a statement of intended and appropriate uses for both scale scores and achievement levels. HumRRO is currently conducting a research study to determine how various audiences have used and interpreted NAEP results. However, the current lack of specificity in the inferences each group might make represents a substantial challenge for validation. We will seek out inferences the identified groups have actually made from NAEP results.

Note that this memorandum is not comprehensive. Our goal is to provide guidance on how NAEP achievement levels might be validated for making specific inferences. The number of potential inferences that might be made and the amount of documentation available to potentially support those inferences is well beyond the scope of this memorandum. The examples we include in this memorandum, while important, do not necessarily represent the most important validation issues or interpretations of NAEP achievement levels rather, they were chosen to be illustrative of the range of inferences. Where possible, we summarize the literature related to common claims, but these summaries do not represent an exhaustive literature review.

Inferences from Various Stakeholders

Policymakers

For purposes of this memorandum, we define policymakers as national and state legislators, board and committee members at the federal, state, and district level who make policy and/or recommendations for policy in education, and other individuals who make or influence educational policy (e.g., congressional staffers, lobbyists). These individuals are responsible for policy across educational institutions and have considerable power to influence curriculum, instruction, assessment, teacher

[1] This is an excerpt of Technical Memorandum #1 (HumRRO Report 2017 NO. 089), developed under contract #ED-NAG-17-C-0002, Technical Support in Psychometrics, Assessment Development, and Preparedness for Postsecondary Endeavors.

[2] See https://www.nagb.gov/content/nagb/assets/documents/newsroom/press-releases/2016/nagb-strategic-vision.pdf.

professional development, and other factors. They must address information regarding what students know and can do, and whether students are prepared for their next experiences, as policymakers strive to improve the state of American education.

Policymakers use NAEP scores and performance level descriptors for the following purposes:

- making comparisons to other districts, states, and the nation;
- making within-state subgroup comparisons;
- analyzing state achievement trends;
- suggesting changes to state assessments and to aid in defining levels of student performance;
- validating state standards and building the case for educational reform and change in their states (Zenisky, Hambleton, & Sireci, 2009); and
- building arguments for new or amended legislation and for requesting funding related to education (Edley & Koenig, 2017).

NAEP is well-structured in many ways for policymakers, who tend to be most interested in aggregate reports of student performance rather than individual student scores. NAEP is designed to generate comparable results across states and demographic groups. NAEP maintains a scale across years and allows for tracking of trends. However, when policymakers use NAEP to justify changes to state assessments or state performance definitions, build a case for educational reforms, or for requesting funding, they must support those uses based on their own understanding of NAEP and their judgements about NAEP's suitability for those purposes.

Educators

For purposes of this memorandum, we define educators as those persons who work most directly with students. They are responsible for instruction and for implementing curriculum and assessments. Educators include teachers, teachers' support personnel, content area specialists, academic coaches, etc. We also include school principals in this category, although there is some overlap with policymakers, since principals greatly influence policy within their particular schools.

Because NAEP does not produce results for individual students or at the school level, score interpretations are of limited use for educators. The achievement level descriptions (ALDs) and the frameworks, however, may provide considerable useful information. The frameworks indicate the content that students are expected to know in specific subjects at specific grades. The ALDs indicate how students will be categorized based on the level of their knowledge and skill related to that content. The ALDs help educators better understand how student performance is differentiated.

Educators receive their information about NAEP from various sources, including three main NAEP websites. They receive much of their information from their state education agency's website and the media. NCES also supports a NAEP state coordinator in each state who serves as a liaison between the state department of education and the NAEP programs. They are available to assist in the interpretation of NAEP results. We reviewed a sample of state websites as part of preparing this memorandum. We

selected websites to reflect either high or low performance on NAEP to highlight any qualitative differences in the information presented to educators.

The three lowest performing states on NAEP 4th and 8th grade reading and mathematics and the three highest performing states based on 2015 results[3] are shown in Table 1. The state Department of Education (DOE) websites and state education agency websites were searched to determine whether and how the states use NAEP data. We specifically searched for information on using NAEP for standard setting purposes.

Table 1. Highest & Lowest Performing States on 2015 NAEP Reading and Mathematics, Grades 4 and 8

Subject/Grade	High Performing	Low Performing
Mathematics		
Grade 4	MA MN NH	AL NM MS
Grade 8	MA MN NH	AL CA MS
Reading		
Grade 4	MA NH VT	NM CA AK MS
Grade 8	NH MA VT	MS NM LA

There were both differences and similarities in how the low and high performing states referred to the available NAEP data. The low performing states provided much less information about participating in NAEP and the purposes of NAEP, in general, compared to the high performing states. High performing states, on the other hand, were more likely to provide details about student performance and participation on NAEP. Many state DOE websites include links to the state NAEP results on the Nation's Report Card website. Some state websites made a statement that comparisons can be made of how students from different states performed on NAEP, or reference studies that linked state standards to the NAEP standards. However, both low and high performing states provided little information about the explicit uses of the NAEP data for the purposes of creating state level ALDs and informing the determination of cut scores at the state level.

The websites did not include any explicit reference to whether or how NAEP standards may inform state performance standards, or how NAEP data may serve as impact data in state standard settings. The most explicit statement of the connection between state assessment and NAEP was found on the MA DOE website: "…NAEP has taken on a greater prominence under the No Child Left Behind Act and serves to externally confirm results of state assessments, such as the Massachusetts Comprehensive Assessment System (MCAS)" (National Assessment of Educational Progress Frequently Asked Questions, 2017)." The state of Vermont makes another explicit comparison between the structure of its own state science test and the NAEP science assessment standards: "The tests were designed to measure different

[3]For more information see the website https://www.nationsreportcard.gov/profiles/stateprofile?chort=2&sub=RED&sj=AL&sfj=NP&st=MN&year=2015R3.

standards, or frameworks, on separate scoring scales, but both assessments address similar skills and content areas. These assessments provide a way to reference national, state and local science achievement" (*Vermont Students Score among Best in the Nation on the National Assessment of Educational Progress*, 2016). The state also points out some similarities in the pattern of scores on both the state assessment and NAEP.

Among the state websites studied, most high performing statues reported:

- trends or comparisons of successive cohorts;
- comparison of the percentage of students at or above Proficient on NAEP to the percentage of students at or above Proficient on a state test;
- point-in-time comparisons across states, districts, or population groups (e.g., Vermont included information showing an increase in the performance of students of low SES);
- performance on subscales (e.g. algebra, vocabulary, etc.)
- rank ordering of states or districts;
- comparisons across population groups to examine performance gaps; and
- comparisons across subject areas.

Lower performing states tended to mention NAEP reports less often. However, we did find some information in the comments of school administrators to the media that NAEP results were used as an indication that the current state education system was in need of reform. For example, in 2013, the superintendent of Louisiana, John White, "used the [NAEP state achievement] report to reiterate his push for the Common Core national education standards. 'The growth this year was moderate. If we want to see something beyond incremental growth, we've got to raise our standards, and the Common Core standards is the best way to do that,' he said" (Bacon-Blood, 2013).

Researchers and Business Leaders

For purposes of this memorandum, researchers and business leaders include persons conducting educational research and individuals from private industry with an interest in elementary and secondary student performance. Currently, NAEP data use and interpretation research by these stakeholders may take the following directions (Edley & Koenig, 2017):

- track trends in and compare the performance of successive cohorts,
- make point-in-time comparisons across states and school districts,
- compare the performance of population groups within and across states (performance gaps),
- rank order the performance of states and compare state to national performance;
- compare performance across tested subject areas,
- examine relationships among student performance and selected student/school/family variables, and
- compare states' standards for proficient performance in reading and mathematics by placing them on a common scale defined by NAEP scores ("mapping studies").

Beginning with NAEP results from 2003, NCES conducted a series of studies that mapped each state's grade 4 and 8 reading and mathematics proficiency levels to the NAEP scale. This mapping was designed as a mechanism to evaluate the extent to which state standards reflected the same rigor as NAEP standards, and it was used as a policy lever to encourage states to set challenging standards for their students (Edley et al., 2017). In the mapping study report by Bandeira de Mello, Bohrnstedt, Blankenship, & Sherman (2015), the NAEP score that corresponds to a state's standard (i.e., the NAEP scale equivalent score) is determined by a direct application of equipercentile mapping. For a given subject and grade, the percentage of students reported in the state assessment to be meeting the standard in each NAEP school is matched to the point on the NAEP achievement scale corresponding to that percentage. The percentage of students passing the state standard was mapped onto the NAEP scores. The results are then aggregated over all of the NAEP schools in a state to provide an estimate of the NAEP scale equivalent of the state's threshold for its standard (Bandeira de Mello et al., 2015).

Peterson and Ackerman (2015) took a different approach to the comparison of state achievement scores and NAEP scores. They calculated the difference between the percentage of students considered "proficient" by both the state and NAEP assessments. The magnitude of the difference was considered to indicate how rigorous the state standards are as compared with NAEP standards.

These examples indicate that some researchers and policymakers do consider NAEP achievement levels to be a standard that states should strive toward. At the same time, some researchers caution against using NAEP as an infallible measure of state educational achievement due to fundamental differences between the state and NAEP frameworks and standards (e.g., Ho & Haertel, 2007). It is important to remember that determining the score equivalency between NAEP scale and state scale does not say anything about the equivalency or lack thereof in knowledge and skills associated with the score. The NAEP and state assessments may or may not measure the same knowledge and skills. An alignment study would need to be conducted to assess the extent to which the two assessments measured the same construct.

Many studies focused on validity evidence based on relationships with external variables, that is, setting benchmarks on NAEP that are related to concurrent or future performance on measures external to NAEP. Examples are academic preparedness for college; international tests; state tests and their alignment with NAEP (Edley et al., 2017). The studies indicate that there is considerable correspondence between the percentages of students at NAEP achievement levels and the percentages on other assessments (Gattis et al., 2016; Jia et al., 2014; Lim & Sireci, 2017; Neidorf, Binkley, Gattis, & Nohara, 2006; Phillips, 2014a, 2014b; Poland & Plevyak, 2015; Provasnik, Lin, Darling, & Dodson, 2013). These studies show that the NAEP achievement-level results (the percentage of students at the advanced level) are generally consistent with the percentage of U.S. students scoring at the reading and mathematics benchmarks on the Programme for International Student Assessment (PISA), the mathematics benchmarks on Trends in International Mathematics and Science Study (TIMSS), and at the higher levels for College Board Advanced Placement (AP) exams. For example, a report by Fields (2014) states that the content of the 12th grade NAEP reading and mathematics assessments was found to be similar to widely recognized tests used for college admission and placement. A linking study by Moran, Freund, & Oranje (2012) determined that there is a higher correlation between NAEP and SAT mathematics scores than between NAEP and SAT reading scores. The SAT reading benchmark, however,

was closer to the NAEP Proficient score than the SAT math benchmark. Several studies investigated the relationship between NAEP Proficient and college and career readiness (Moran, Oranje, & Freund, n.d.; Schneider, Kitmitto, Muhusani, & Zhu, 2015), but the relationship was found to be fairly weak. Additional research in this area was proposed.

During the August 2016 Governing Board quarterly meeting, researchers provided the following recommendations regarding the use of NAEP data.

- Panelists urged the Governing Board to enable linkages from NAEP data to state-level or national-level to conduct research about the long-term effects of educational policies.
- All panelists agreed that while NAEP data describe trends in student achievement, the data do not support conclusions about the reasons for these trends. Additional research is needed to discover factors that can improve schools and student learning.
- It was suggested that the NAEP data be used to compare the performance of districts with similar demographic characteristics, such as poverty levels. NAEP data may be used to guide best practices on what works in the improvement of educational achievement.

The Media

While academic and research articles provide scientific, well-reasoned rationales for or against the specific interpretations of NAEP, articles by the media present a different side. They tell the story of those who are trying to use information under real-life conditions from the assessments that the academics are studying, and the real-world challenges and issues experienced by practitioners in the field.

Articles in publications like *Education Week* illustrate that there is a large degree of confusion accompanying the application and interpretation of NAEP standards. While many researchers and even state officials may assume the debate about the application of NAEP standards is resolved, magazine and newspaper articles question whether it is appropriate for states to incorporate NAEP standards into the standards of the state, and what the appropriate uses for NAEP scores are in general.

One point of argument is lack of clarity on the meaning of “proficient” and the application of that meaning to state standards. Not all media representatives consistently clarify for the public that NAEP Proficient is not grade-level proficiency and that NAEP Proficient is intended to be an aspirational standard. What makes this matter more complicated is that under the No Child Left Behind Act (NCLB), states had to create achievement levels that were grade-specific and most states chose to adopt the ALD title of “Proficient.” Reconciling these sets of standards causes additional conflict and confusion when states are trying to create their achievement levels and communicate them to the public. One suggestion to make the situation more understandable is for policymakers to explain to the stakeholders “what are good goals for educational purposes compared to what is appropriate for accountability when establishing cut scores on their state assessments” (Hull, 2008), why they may be different, and which performance levels are more appropriate for each specific purpose.

Many researchers are concerned that information from NAEP gets misinterpreted by the media and politicians, sometimes to serve the interests of specific groups. Various misinterpretations of NAEP results are frequently used by the politicians and media, giving rise to the term "misNAEPery" (Sawchuk, 2013). One prominent example of this inappropriate interpretation includes tying an increase in state NAEP scores to some specific policy or intervention implemented by the state, and a decrease – to a policy that was proposed by an organization, but then not implemented. In practice, it is very challenging to make these causal connections. Organizations that are using NAEP scores to bolster claims about the effects of a specific policy are likely not interpreting the NAEP scores correctly (Chingos & Blagg, 2015).

A number of misinterpretations come from the misunderstanding of NAEP's definition of "proficient", with some reporters claiming that being below proficient means being "below grade level." Yet another source of confusion comes from comparing state assessment scores with NAEP scores and arriving at opposing conclusions. Comparing the achievement of different student population groups is often fraught with misinterpretations as well (e.g., treating the NAEP achievement scale as continuous between grades and comparing achievement of one population at a higher grade to the achievement of another population at a lower grade).

At least in part, these misinterpretations arise from a lack of readily available or accessible information on how the NAEP scores should be interpreted, what the appropriate uses of these scores are, and what conclusions are appropriate to make. Educational researchers call for using caution in deciphering which claims are appropriate and for discouraging the propagation of false claims about NAEP data interpretation (Polikoff, 2015a, 2015b).

The General Public

The general public may not have sufficient knowledge and training to understand the intent and the meaning of state or national assessments and may have a difficult time critically evaluating information coming from various, often conflicting, sources. The media may make the situation in education appear more critical or negative than it really is. For example, if a state performs as one of the best on NAEP, but there is no growth in scores, the general public may see headlines like "Public education test results are dismal. Schools are failing NH children" (Levell, 2016). In addition, the information provided by the media may not be completely objective, and score interpretations may be promoting a specific political agenda.

There is some confusion among the general public regarding why their state may have high scores on the state assessments, but low scores on NAEP (Weiss, 2016; Dillon, 2005). This may occur if the state set standards lower than NAEP standards, or if the state simply has different content standards. There may also be conflicting information on exactly how the state standards compare to NAEP standards; this may cause one study to claim that a state has low standards, and another study – that the state is either lagging behind others, or low on scores from some other perspective. A study by Achieve[4], describes several NAEP objectives at grade 4 contrasted with the grade those same objectives are introduced in several states' standards documents. The objective "Use simple ratios to describe problem situations," is

[4] See https://www.achieve.org/files/16-149_Achieve_NAEP%20math%20report.pdf.

typically introduced in grade 6 in many states. Discrepancies like this add complexity to potential comparisons between NAEP results and state testing results.

One potential goal would be for the general public to be able to use state and national assessments to make decisions about whether children are getting the best education in their particular state. It is likely impossible to make such inferences at the school or even classroom level from state and national assessments. The media, however, may make it sound like those conclusions are appropriate and necessary. The same article by Levell (2016) that proclaimed the failure of New Hampshire public education, for example, suggests that, based on the fact that there was little to no growth in the student scores on state assessments or NAEP, the parents should "[e]ngage your local school board and question why they are using College and Career Readiness Standards and tests that are not providing a better education for our children;" consider a transfer to a charter or private school; or refuse to have their child take a state assessment. It may be helpful for the general public to have access to a source of clear, easy to understand, reliable information on the kinds of inferences that can legitimately be made from state and national assessments.

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