Assessment Development Committee

May 13, 2022
8:30 – 11:00 am ET
Crystal III and by Zoom

AGENDA

8:30 – 8:50 am	**ACTION: Charge to Science Framework Panels** *Mark Miller* *Nardi Routten*	See Plenary Tab
8:50 – 9:15 am	**Strategic Communications for NAEP Science Assessment Framework** *Jacqui Lipson, Widmeyer/FINN Partners* *Marina Stenos, Widmeyer/FINN Partners*	Attachment A
9:15 – 10:00 am	**Initial Considerations for Smaller, More Frequent Updates to Assessment Frameworks** *Sharyn Rosenberg*	Attachment B
10:00 – 10:45 am	**Discussion of NAEP Innovations Plan** *Mark Miller* *Sharyn Rosenberg*	Attachment C
10:45 – 11:00 am	**Item Review: Additional Reading Concept Sketch Materials (CLOSED)** *Mark Miller*	Materials Provided Separately

Overview of Contract for Strategic Communications on NAEP Science Framework

On March 28, the Governing Board awarded contract number 9199595922Q0002 to Widmeyer/FINN Partners to plan and execute a strategic communications and engagement plan for the update of the 2028 NAEP Science Assessment Framework. This contract was developed in response to Board member suggestions to seek broader feedback from stakeholders and help ensure inclusive outreach at all stages of the framework development process. (NOTE: This effort is separate from the procurement seeking a contractor to empanel experts to develop recommendations for what should be updated in the NAEP Science Framework, for which the proposal evaluation process is currently underway).

Led by project director Jacqui Lipson and senior counsel Marina Stenos, the team will advise Board staff on outreach and engagement, including the following specific tasks:

- Conducting a landscape analysis to better understand important issues and potential challenges for the framework update
- Developing a strategy for seeking panelist nominations to collect and evaluate relevant information that will result in a broadly representative panel on the most important issues
- Collecting input from and sharing information with stakeholders throughout the entire process, including during the formal public comment period
- Creating materials to communicate the content of the updated framework

During the ADC meeting on May 13, Jacqui Lipson and Marina Stenos will provide a brief overview of the planned work with a focus on the upcoming task of seeking panelist nominations.

Considerations For Smaller, More Frequent Changes to NAEP Assessment Frameworks
Sharyn Rosenberg, Assistant Director for Assessment Development
April 2022

Background

One of the Governing Board's legislatively mandated responsibilities is to develop assessment objectives for NAEP, which is operationalized through assessment frameworks and test specifications. The National Center for Education Statistics (NCES) uses the frameworks and specifications to develop items and test forms for administering the assessments. The Board exercises its authority to develop and update the NAEP frameworks through its policy on Assessment Framework Development. Historically, the philosophy undergirding NAEP framework development was to keep the content of the main NAEP assessments stable for at least 10 years, unless there was an extenuating circumstance; the rationale behind this approach was an assumption that in many cases, changes to the construct would necessitate beginning new trend lines. This tension between the importance of maintaining trend versus remaining relevant is articulated in the Board's General Policy on Conducting and Reporting the National Assessment of Educational Progress that was adopted in 2013:

> "For NAEP to measure trends in achievement accurately, the frameworks (and hence the assessments) must remain sufficiently stable. However, as new knowledge is gained in subject areas, the information and communication technology for testing advances, and curricula and teaching practices evolve, it is appropriate for NAGB to consider changing the assessment frameworks and items to ensure that they support valid inferences about student achievement. But if frameworks, specifications, and items change too abruptly or frequently, the ability to continue trend lines may be lost prematurely, costs go up, and reporting time may increase. For these reasons, NAGB generally maintains the stability of NAEP assessment frameworks and specifications for at least ten years. NCES assures that the pool of items developed for each subject provides a stable measure of achievement for at least the same ten year period. In deciding to develop new assessment frameworks and specifications, or to make major alterations to approved frameworks and specifications, NAGB considers the impact on reporting trends" (pages 6-7).

When the Board policy on Framework Development was updated in March 2018, one of the revisions made was to change the frequency of framework updates from no more than 10 years to at least once every 10 years; in addition, the 2018 policy stated that major changes in the states' or nation's educational system could warrant making changes to the NAEP frameworks more quickly than the 10-year interval. The emphasis on relevance of the frameworks leading up to the 2018 revision of the policy came about for two primary reasons: 1) in many cases, the Board had waited much longer than 10 years to consider changes to the NAEP frameworks, and 2) concerns were raised about the validity of interpretations for NAEP results due to a perceived lack of alignment between content in some of the NAEP frameworks and state content standards (See, for example, the NAEP Validity Studies Panel Responses to the Re-analysis of TUDA Mathematics Scores).

One potential solution that has been put forth to resolve the tension between maintaining trends and remaining relevant is to make smaller, more frequent (or "incremental") updates to NAEP frameworks. This idea was first proposed in the 2012 Future of NAEP report which proposed that standing subject-matter panels have a role in ongoing incremental updates to frameworks:

> "With standing subject-matter panels, assessment frameworks for each subject-grade combination might be adjusted more frequently, defining a gradually changing mix of knowledge and skills, analogous to the Consumer Price Index…. Incremental changes in assessment frameworks and the corresponding set of items on which NAEP reporting scales were based would afford local (i.e. near-term) continuity in the meaning of those scales, but over a period of decades, constructs might change substantially. This was seen by the panel as a potential strength, but also a potential risk. Policymakers and the public should be aware of how and when the construct NAEP defines as "reading," for example, is changed" (pages 16-17).

In late 2016/early 2017, the Assessment Development Committee (ADC) and the Committee on Standards, Design and Methodology (COSDAM) held some initial conversations to explore the feasibility of implementing the Future of NAEP recommendation for more frequent, gradual changes to frameworks. Those discussions resulted in the realization that the then-current Board policy on framework development (adopted in 2002) focused exclusively on developing frameworks for new subject areas rather than on updating existing subject area frameworks. Subsequent Board discussions on NAEP frameworks led to a revised policy that was adopted in March 2018. The revised policy was used to implement the framework updates for mathematics and reading that the Board undertook over the past few years; an incremental framework approach was not considered for those updates because it had been so many years since the frameworks had last been changed.

Now that the Board has adopted updates to the mathematics and reading frameworks, there has recently been renewed interest in returning to the idea of whether and how NAEP frameworks can be updated on a more frequent, incremental basis. In addition to Board discussions on this topic, the recent Pragmatic Future for NAEP report by the National Academies of Sciences, Engineering, and Medicine (2022) includes the following recommendation:

> **Recommendation 3-2:** The National Assessment Governing Board (NAGB) and the National Center for Education Statistics (NCES) should work both independently and collaboratively to implement smaller and more frequent framework updates. This work should include consideration of the possibility of broadening the remit of the standing subject-matter committees that already exist to include responsibility for gradual framework updates, participation in item model development, and working directly with both NAGB and NCES. (page 3-4).

This is an appropriate time to consider whether and how to change the Board's approach to updating NAEP frameworks.

Defining the Problem

It is important to be clear about what problem(s) an incremental framework process is intended to solve. Recent discussions on this topic have surfaced the following potential rationales for more frequent, gradual changes to the NAEP assessment frameworks:

1. Minimizing the possibility of breaking trend by incorporating necessary changes on an ongoing basis rather than waiting for small changes to accumulate into the need for a larger update
2. Increasing relevance by reflecting necessary changes in the field more quickly
3. Providing an opportunity to make revisions based on lessons learned during the first administration of a new framework (i.e., changing aspects of a framework that cannot be operationalized as intended)
4. Reducing costs associated with framework development, item development, and large bridge studies for maintaining trends

Assumptions and potential implications of each rationale are discussed below.

1. *Minimizing the possibility of breaking trend by incorporating necessary changes on an ongoing basis rather than waiting for small changes to accumulate into the need for a larger update*

The most common rationale for pursuing more frequent, gradual changes is an argument that such an approach would minimize the possibility of breaking trends. This position assumes that changes in a particular field build up over time; therefore the longer that the Governing Board waits to update a framework, the more change will be required to reflect such changes. Compared to waiting 10 years between framework updates for math for example, approximately 20 percent of the necessary framework changes could be made each time the assessment is administered (every 2 years).

The first part of this rationale that is important for the Board to deliberate on is whether it is always a goal to maintain trend when empirically possible. On rare occasions in the past, the Board has made a policy decision to intentionally begin a new trend line in conjunction with reporting a new construct even if it might have been possible to conduct bridge studies and continue the existing trend lines. For example, the 2011 NAEP Writing Framework was intended to measure "writing on computer," replacing the previous framework which focused on writing by hand. In the new framework, the mode of administration (i.e., computer) was not incidental but was conceptualized as being part of the construct, representing a distinct skill from the process of writing on paper. To communicate the intended change in the construct, the Board deliberately decided that results based on the 2011 NAEP Writing Framework should be reported as the beginning of new trend lines. No bridge studies were conducted to attempt to put the results from the new framework on the existing trend lines. The Board also made intentional decisions to break trend for the 2009 NAEP Science Framework and the 2005 NAEP Mathematics Framework for grade 12. It would be helpful for the Board to explicitly articulate what conditions (if any) would lead to a policy decision to intentionally break trend.

Assuming that maintaining trend is a goal in most if not all cases, it does seem reasonable that addressing the need for specific changes as they arise would reduce the likelihood of needing to break trend if such changes accumulate over time. One example that would have lent itself particularly well to an incremental framework approach was the change from paper-based assessment to digital-based assessment across NAEP subjects in 2017. Unlike the 2011 NAEP Writing Framework, the mode of administration was not intended to be part of the construct. Framework updates that focused exclusively on changes due to the mode of administration likely would have posed a smaller threat to maintaining trends than having to incorporate such changes at the same time as substantive changes to what is being measured. In addition, if there had been a process in place to make smaller updates to the frameworks, the Board could have avoided the unfortunate situation of the assessments getting ahead of the current frameworks.

It is less clear whether the incremental framework approach can entirely prevent the need to break trend even if it is a policy goal, and whether such an approach can fully replace the current model of convening large panels when substantial change to the field has occurred. It may not be reasonable to assume that most changes to a field are gradual; in some cases, there are disruptors that result in substantial change in a short period of time. The Future of NAEP (2012) report acknowledges a situation in which it may not always be possible to make gradual changes to frameworks to maintain the existing trend lines:

> "When more profound changes occur in the conceptualization of an achievement domain, then a new framework is essential, and correspondingly the beginning of a new trend line. The adoption by nearly all states of the CCSS in English language arts and literacy and mathematics and the new Science Education Framework developed by the National Research Council (NRC) could be the occasion for a substantial enough change in conceptualization of these domains that new NAEP frameworks and new trend comparisons are warranted. Still, the future of NAEP—as a statistical indicator and as an exemplar of leading-edge assessment technology—requires great care and attention to the implications of new trend comparisons rather than merely acceding to the hoopla surrounding the new standards" (page 14).

It may be the case that a process of more incremental, gradual updates to frameworks can reduce, but not necessarily eliminate, the need for occasionally undertaking a more substantial framework revision process that may be incompatible with existing trend lines.

2. *Increasing relevance by reflecting necessary changes in the field more quickly*

A second rationale for a gradual approach to updating frameworks is that it would help prevent NAEP frameworks from being out of step with changes in the field; under the current process, changes in a field that take place shortly after the Board updates a framework may not be reflected in NAEP for more than a decade. It is reasonable to assume that updating the frameworks more frequently would lead to more timely changes in the assessment, but there are at least two additional factors worth considering.

The first consideration is that it currently takes NCES approximately 4-5 years to implement any changes to the framework in the assessment, due to the need for item development, reviews, cognitive labs, pilot testing, etc. Updating frameworks more frequently may reduce, but not eliminate, the lag between identifying changes to NAEP content and seeing those changes reflected in the assessment, unless the changes to the Board processes for updating frameworks were accompanied by other changes in the ways that NCES implements the frameworks.

The second consideration is that deciding how to respond to large shifts in a given field may be more challenging if the Board attempts to grapple with the implications of such changes shortly after they occur. As the Future of NAEP (2012) warns, it is important for the Board not to "merely acced[e] to the hoopla surrounding… new standards" (page 14); it is only after some time has passed that it becomes more clear how disruptive a change in a particular field might be to standards, curricula, instruction and assessment. This concern does not necessarily call for waiting 10 years to reflect changes in a NAEP framework, but it does suggest consideration of some lag following a major disruption in a field. Additional guidance can help inform the ideal balance between the need to reflect important changes in a timely manner and a caution not to make large changes unnecessarily if the impact from external changes is not as strong as it initially seems is possible.

3. *Providing an opportunity to make revisions based on lessons learned during the first administration of a new framework (i.e., changing aspects of a framework that cannot be operationalized as intended)*

This rationale is perhaps the most straightforward. The development of assessment frameworks and specifications have the best intentions, but sometimes there are limitations that only become clear after items are developed and/or administered through a pilot test. For example, NCES may find that it is not possible to optimize all requirements of a framework simultaneously, or that certain objectives cannot be measured in the way intended by the framework. A process of considering small changes to frameworks on a frequent basis would lend itself to using feedback from item development and data analysis to incorporate lessons learned from operationalizing the framework.

4. *Reducing costs associated with framework development, item development, and large bridge studies for maintaining trends*

A more thorough cost analysis is necessary before determining whether the process of making more frequent, gradual changes to NAEP frameworks would result in lower costs, or whether it actually could result in higher costs. The question of cost depends largely on the process used to determine what changes are necessary, and what assumptions are made to implement those changes. For example, the costs to the Governing Board will be impacted by the process used to develop frameworks and implications of frequent updates for changing achievement level descriptions. For NCES, costs for item development likely would be more spread out with more frequent but gradual updates to frameworks, but it is not clear whether they will be substantially reduced. The cost of bridge studies will depend on whether it is technically defensible to assume that framework changes are small enough to not impact the trend lines; if it is necessary to conduct bridge studies for every small change to a framework, it could actually end up being

more expensive than the current approach to updating frameworks less frequently. At the current time, NCES likely does not have enough information about how the Board is considering operationalizing the concept of incremental frameworks to provide detailed cost projections.

Understanding Possible Solutions

There are several important considerations that should be explored to understand how to address the most important problem(s) identified above, including:

1. Defining what is meant by making smaller, more frequent updates to frameworks
    a. Every administration of each assessment?
    b. More often for reading and math than for other subjects?
    c. Every 4-6 years instead of every 10 years?
2. Clarifying whether a new approach is intended to augment versus replace the existing policy and processes for updating frameworks
3. Exploring a process for updating frameworks more often with smaller changes each time
4. Analyzing the potential impact of new processes on important factors such as costs and the ability to maintain trend
5. Estimating what resources and/or structural changes may be needed to implement new processes
6. Anticipating potential unintended consequences, such as reopening settled debates
7. Understanding what other potential solutions to the identified problems might exist

Assumptions and potential implications of each consideration are discussed below.

1. *Defining what is meant by making smaller, more frequent updates to frameworks*
    a. *Every administration of each assessment?*
    b. *More often for reading and math than for other subjects?*
    c. *Every 4-6 years instead of every 10 years?*
2. *Clarifying whether a new approach is intended to augment versus replace the existing policy and processes for updating frameworks*
3. *Exploring a process for updating frameworks more often with smaller changes each time*

The first three considerations are closely intertwined. The current process for updating frameworks takes at least two years from initial Board discussion prior to issuing a Board charge until adoption of a revised assessment framework; it can be considerably longer if there are studies commissioned in advance of launching a framework update, such as the research the Board performed on understanding how state standards in math and science align to the NAEP frameworks. The changes that the Board just made to the [Assessment Framework Development policy](#) adopted in March 2022 increase the role of the Board and engagement with stakeholders throughout the process and may be in conflict with a goal to decrease the amount of time needed to update frameworks.

If the proposal is to update the frameworks for every administration of NAEP, then a substantially abbreviated process is certainly needed. Some of the processes that have been proposed to implement a more nimble process for framework updates (for example, refashioning the existing Standing Committees that provide content expertise to the NCES item development

contractor) would likely reduce the Board's oversight of the framework panel composition and roles. In addition, the current process of seeking extensive stakeholder outreach on framework changes would likely need to be reduced to fit into an abbreviated timeline. As the Board deliberates on whether these tradeoffs are acceptable, it will be important to understand whether such changes apply to all framework updates, or only for certain circumstances under which a more gradual approach is implemented.

An unspoken assumption is that everyone can easily agree on what small changes are needed to a framework after a short period of time. Much of the time involved in the current framework development process is devoted to unearthing relevant resources in a subject area (changes in research, state standards, curricula, instruction, etc.) and building consensus on the implications of each of these factors for a given NAEP assessment framework. It is reasonable to assume that the amount of time since the previous framework update is one important factor affecting the determination of what changes are needed, but other factors may include how unified the field is, and whether any important changes have occurred since the NAEP framework was last updated.

4. *Analyzing the potential impact of new processes on important factors such as costs and the ability to maintain trend*

Identification of specific processes for implementing smaller, more frequent updates to NAEP frameworks should be accompanied by an analysis of the downstream implications on other aspects of the NAEP program, including costs and the ability to maintain trend. For example, how much of a framework can be changed without the need for a bridge study? What are the costs to other aspects of the NAEP program for NCES and the Governing Board? For example, the Board policy on Student Achievement Levels for NAEP indicates that when there are changes to the NAEP frameworks, COSDAM should determine how to revise the ALDs and review the cut scores; in addition, studies should be undertaken following an assessment administration under the updated framework to use empirical data to create reporting ALDs based on what students can demonstrate on the assessment. There is considerable time and cost in undertaking this work, and additional guidance would be needed to specify the types of changes to frameworks that would necessitate these additional steps.

5. *Estimating what resources and/or structural changes may be needed to implement new processes*

There is a need to explore how the Governing Board and NCES can work together to reimagine current processes, such as the oversight and contract structure of the NAEP Standing Committees and Framework Steering and Development Committees, to determine whether and how it might be feasible for a single group of advisors to provide guidance to both organizations. Other practical considerations include examining the allocation of Board staff and committees for undertaking multiple framework updates simultaneously. Finally, it will be important for NCES to consider whether and how smaller framework changes might be able to be implemented more quickly; of course this likely depends on the nature of the small change.

6. *Anticipating potential unintended consequences, such as reducing opportunities for Board input and stakeholder outreach or reopening settled debates*

The changes to the current policy on NAEP assessment framework development that the Board adopted in March 2022 emphasize the role and importance of ongoing Board input and extensive stakeholder outreach, both of which generally add rather than reduce the time necessary to update frameworks. It will be a careful balance to maintain these important parts of the process while also attempting to speed up the process and revisit frameworks more frequently. This will require some difficult decisions about what types of changes require the more extensive procedures currently in place, and what other changes might be considered minor enough to warrant less extensive input from the Board and external stakeholders.

It is possible that revisiting frameworks too frequently (such as for every administration of the assessment) might actually encourage unnecessary changes if nothing substantial has happened in the field since the last update. In a worst case scenario, revisiting a framework after little new development in the field could lead to reopening settled debates with new advisors or Board members.

7. *Understanding what other potential solutions to the identified problems might exist*

A final consideration is what other potential solutions to the identified problem(s) might exist, either in addition to or instead of making large changes to the current steps of the framework update process. For example, one alternative to updating frameworks on an incremental basis is to <u>implement </u>framework changes incrementally; this approach is actually being carried out by NCES for the recent updates to the reading and math frameworks. For the 2026 NAEP Mathematics and Reading Frameworks, NCES is incrementally implementing the changes called for in the frameworks throughout the 2026, 2028, and 2030 assessments. There are two primary reasons for the incremental implementation approach: saving money by spreading costs of new item development across multiple administrations, and maximizing the possibility of maintaining trend by making smaller changes to the item pools. Unlike the process of incrementally updating frameworks, however, a larger update is adopted upfront but carried out gradually. Pros and cons for this approach (instead of or in conjunction with more frequent adoption of smaller framework changes) should be explored and better understood. There are other alternatives to updating frameworks that could also be explored instead of or in addition to incremental approaches.

During the May ADC meeting, members will discuss initial reactions to these and other considerations and the following potential next steps:

- Seek more information on how TIMSS and PISA use an incremental approach for updating their frameworks to determine implications for NAEP
- Commission white papers and expert panels to seek multiple perspectives on addressing the questions discussed above (and any additional considerations of importance to ADC)
- Talk with NCES to better understand operational considerations related to whether and how incremental framework updates can be implemented
- Clarify with the Board its priorities/goals for pursuing an incremental approach to framework updates and to identify "must haves" for NAEP framework development

- Evaluate the impact of an incremental approach on the program's costs and on ability to maintain trend more readily (i.e., test assumptions)
- Conduct outreach with stakeholders (including but not limited to states and districts) about changes to the framework process that the Board is considering

ADC Discussion of the NAEP Innovations Plan

During the March 2022 Board meeting, Governing Board Executive Director Lesley Muldoon and NCES Commissioner Peggy Carr presented innovations to reimagine NAEP for the future by increasing relevance, utility, and efficiency. As a follow-up, Muldoon and Carr will present a proposed NAEP Innovations Plan during a plenary session on May 12. At this time, they will describe a proposed plan for addressing NAEP Innovations in 2022, 2023 and beyond.

Some of the innovations addressed within the first 1-2 years of the plan fall within ADC's purview. For example, the Board has been talking about how the framework development process might be further revised to make smaller, more frequent updates to NAEP assessment frameworks; this topic is included separately on the agenda for this ADC meeting. Other potential innovations that fall within ADC's purview include developing a "framework" to describe the content included in the Long-Term Trend assessments and exploring possibilities for integrating assessments of multiple subject areas.

The NAEP Innovations Plan is not intended to incorporate all activities to be conducted by the Board and NCES; for example, ADC will continue its work reviewing items and overseeing the development of the NAEP Science Assessment Framework. Rather, the plan is intended to address specific innovations identified for re-imagining the future of NAEP.

The May ADC discussion of the NAEP Innovations Plan will be an opportunity for members to provide input on the priorities of the overall plan as a committee and to focus in on the activities falling within ADC's purview.