EXECUTIVE SUMMARY

THE NAEP BACKGROUND QUESTIONS: AN UNDERUSED NATIONAL RESOURCE

A REPORT TO THE NATIONAL ASSESSMENT GOVERNING BOARD by the EXPERT PANEL ON STRENGTHENING NAEP BACKGROUND QUESTIONS

For more than four decades the National Assessment of Educational Progress (NAEP) has tracked the achievement of U.S. students in major academic subjects. This national resource is the only assessment that states and now many urban districts can look to as an objective yardstick of their performance over time, relative to national benchmarks, and compared with other jurisdictions. Less known, but complementing the NAEP assessments, is a rich collection of student, teacher and school responses to background questions that can help in understanding the context for NAEP achievement results and give insights into how to improve them.

Currently, the NAEP background questions are a potentially important but largely underused national resource. The background questionnaires have been cut back over the past decade. They now cover only a small fraction of important student, teacher, and school issues and have been little used in recent NAEP reports, in contrast to the first state-level NAEP Report Cards in the early 1990s.

NAEP should restore and improve upon its earlier practice of making much greater use of background data, but do so in a more sound and research-supported way. With proper attention, these data could provide rich insights into a wide range of important issues about the nature and quality of American primary and secondary education including:

- Describing the resources available to support learning (opportunity-to-learn) for students with differing home backgrounds and over time.

- Tracking progress in implementing key instructional, curricular, and technological changes and educational policy initiatives, such as the Common Core standards.

- Monitoring student motivation and out-of-school learning as research-based factors affecting student achievement.

- Benchmarking high-performing states and urban districts and those with high achievement growth to identify factors that differentiate high-performers from lower-performers on NAEP. This domestic effort would parallel the extensive reporting of background variables in PISA (Program for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study) that have become starting points for U.S. international benchmarking analyses to describe the characteristics of high-performing and low-performing education systems.

The panel proposes building a strategy to make the NAEP background questions an important national resource for educators, policymakers, and the public. The panel sees the need to expand the scope and quality of the existing questions, move into important new areas directed by research and policy, make better use of the questions though regular publications, and improve the capacity for analysis by users around the world. We offer recommendations in four areas (see Exhibit A):

(1) Ask Important Questions.
(2) Improve the Accuracy of Measures.
(3) Strengthen Sampling Efficiency.
(4) Reinstitute Meaningful Analysis and Reporting.

Exhibit A. Expert Panel Recommendations to Strengthen NAEP Background Questions in Four Areas

1. Ask Important Questions	2.Improve the Accuracy of Measures	3. Strengthen Sampling Efficiency	4.Reinstitute Meaningful Analyses & Reporting
•Core questions •Rotated questions •Policy questions •Theoretical frameworks •Consistent questions overtime •Delete duplicative or low-priority questions	•Valid •Reliable •Coordinated (with domestic and international surveys) •Cognitive labs	•Spiral sampling •Extended questionnaire time •Alternate surveys •Pooling item responses across surveys	•Special background question reports •Online compendium of responses •Report descriptive not causal findings •Externally conducted research •Improve online tools
• Establish a single NAGB committee overseeing background questions • Review budget including need for staff to implement recommendations			

Recommendation Area 1. Identify Core, Rotated and Theoretically Coherent Groups of Important *Background Questions* around High-Priority Areas.

To the extent that you don't ask and analyze important questions, you can't expect to get back important answers. The panel recommends identifying topics falling into three question groups.

- A *common core* set of background questions to include three question clusters: (1) the congressionally required student background characteristics; (2) instructional practices and school learning opportunities and resources; and (3) student motivation and control over the environment.

- A *second tier* of priority background question clusters would be rotated across assessment cycles. Important topics that might be explored include school-parent

cooperation, school climate and discipline, school administration including support for learning, and out-of-school learning time.

- A *third tier* would be a set of *policy issues* that would be examined for six years and then rotated out with new ones added. For example, the initial set might start with questions on implementation of the Common Core standards. Two years later, a set of questions or module on teacher evaluations could be added, and two years after that a module on project-based or online learning.

Once question topics are identified, the panel urges the *selection of clusters of questions that collectively best portray different important aspects of research-based theoretical frameworks for the major educational topics***.** *Such frameworks should be published, as they are for TIMSS and PISA, to explain the theoretical rationale and research evidence* that underlie the selection of the background questions and their connection to student learning and achievement.

The Panel recommends two additional considerations to maximize the information worth of the questions chosen. The first is to pay greater attention to the *consistency of question selection and wording* to produce reliable time-series that measure change over time. A review of 400 questions asked about teachers found that about 300 are no longer used, with many replaced by just slightly different wording. A second recommendation is to balance the number of questions asked about a topic with the information value gained**.** Eight questions are asked about technology use in mathematics but there are no questions about student expectations despite the strong research connection with achievement.

Recommendation Area 2. Strengthen the Validity, Reliability and Coordination of the *Measures and Clusters of Measures* for the Background Questions.

The panel urges attention to strengthening the validity, reliability and coordination of NAEP background questions. An important first step in this overall effort would be to improve the *validity, reliability and coordination of the current measures NAEP uses for its mandated student reporting categories*. The panel strongly supports the current review of the SES variables as it is critical to respond to the known limitations of the school-lunch proxy. These problems will worsen with expansion of the Department of Agriculture state pilots, which allow whole-school eligibility for schools serving concentrations of low-income students. The panel also believes that an expanded *cognitive interview capability*, such as a small standing panel of respondents to test out questions, would improve question validity and reliability. We recognize that this may increase costs but it would help make NAEP a better source of information.

The panel recommends improving question wording by replacing imprecise terms such as "infrequent" or "a lot" with more precise terms such as "once a month" or "twice or more a week." Furthermore, major information benefits would accrue from coordinating the NAEP background questions with those asked on other international and domestic surveys. To illustrate, the PISA international survey covers number of hours of math instruction in-school and out- of-school; NAEP only asks about days taught math in-

school and only about participation in math instruction outside of school and nothing about frequency.

Recommendation Area 3. Reform NAEP *Sampling* to Enhance the Scope of the Background Questions While Maintaining Sampling Accuracy.

The panel recommends that NAEP should consider expanding the depth of its background questions through a variety of strategies including spiral sampling (already under study), expanded questionnaire time and rotating background questions across samples. The panel notes that the depth of student information in particular is limited by the ten-minute questionnaire time limit compared with 30 minutes used for TIMSS and PISA. A combination of these strategies would allow NAEP to obtain far richer information while maintaining sampling accuracy and still keeping respondent burden to acceptable levels.

Recommendation Area 4. Reinstitute the *Analysis and Regular Reporting* of the NAEP Background Questions.

This set of recommendations would bolster the analysis and reporting of the background questions by means of separate publications, online tables, and improvements to the Data Explorer. The recommendations also include a reiteration of current policy to not use causal interpretations of point-in-time data.

The panel strongly recommends NAEP consider two initial special reports, one organized around learning opportunities in school and a second around learning opportunities and conditions out of school. Exhibit B displays an illustrative overview table for in-school learning opportunities for math that suggests the rich potential information payoffs from background question analyses. A third benchmarking report should also be considered that explores the correlates of high-performing states and districts or those with high achievement growth. These synthesis reports would also provide a way to assess the information value of current and past questionnaire items.

Implementation of Recommendations

The panel urges the National Assessment Governing Board (NAGB) and the National Center for Education Statistics (NCES) to move quickly to begin implementing its recommendations to make the background questions a more useful resource, while also recognizing that implementation will take time.

Initial implementation should be undertaken through a three-part plan:

- Immediately produce *special reports on the background data* that analyze the considerable quantity of data already collected, but is largely unreported and unanalyzed.

Exhibit B . Illustrative Table of Background Question Indicators With a Grade 8 Math Focus: School Districts Particpating in the 2011 Trial Urban Development Assessment

Jurisdictions	Grade 8 All Students	Eligible for National School Lunch	Grade 8 Students Absent 5 or more days last month	Grade 8 Students in Algebra	Grade 8 Students 5 or more Hours of Math Per Week	Grade 8 Students 1 Hour or More Math Homework	Grade 8 Does Math At An Afterschool or Tutoring Program	Grade 8 Entered Math Through Alternative Certification	Grade 8 Teacher Has Math Major/ Minor/ Special Emphasis	Grade 8 Full-time Math Specialist At School	Grade 8 Assigned To Math By Ability	Grade 8 26+ Students in Math Class	Grade 8 Computers Avaialble to Teachers and Stundents
	Scale Score	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages	Percentages
National	284	44	7	42	37	17	21	17	38	17	76	45	84
Albuquerque	275	60	8	37	65	13	20	27	33	32	66	59	77
Atlanta	266	82	5	27	75	38	57	57	95	61	59	37	90
Austin	287	59	8	23	61	27	30	42	57	58	53	52	89
Baltimore City	261	85	9	46	93	41	38	38	79	53	85	37	71
Boston	282	76	9	66	76	39	30	13	69	12	61	47	56
Charlotte	285	52	8	35	87	18	29	44	47	33	86	76	70
Chicago	270	84	4	32	67	47	37	23	84	20	45	65	88
Cleveland	256	100	11	29	69	33	25	6	58	14	51	44	90
Dallas	274	85	7	32	46	27	39	61	66	13	45	24	57
Detroit	246	79	17	24	81	46	37	11	83	39	18	85	61
District of Columbia (DCPS)	255	70	12	53	65	29	39	57	68	40	53	20	86
Fresno	256	88	10	51	32	11	26	6	37	23	91	75	59
Hillsborough County (FL)	282	54	9	87	20	13	22	40	35	29	95	3	86
Houston	279	76	6	29	63	26	37	56	63	25	84	58	68
Jefferson County (KY)	274	60	7	40	68	14	20	21	34	36	77	80	80
Los Angeles	261	82	6	67	44	40	27	39	67	37	75	52	74
Miami-Dade	272	72	5	36	43	47	25	38	72	25	90	13	88
Milwaukee	254	81	13	30	78	43	31	37	74	82	28	86	78
New York City	272	87	10	28	83	26	39	35	65	36	60	83	79
Philadelphia	265	88	10	34	89	27	27	24	54	32	30	75	89
San Diego	278	60	8	69	48	13	27	11	40	17	78	72	80

Source: NAEP Data Explorer

- Move quickly to initiate a long-term effort to improve the relevance, quality, coherence, and usefulness of a *core and rotated set of background variables while implementing recommended improvements to improve measurement accuracy and sampling efficiency.*

- Further improve the *usability of the Data Explorer and other NCES online tools*, which are already valuable analytic supports.

The panel suggests that NAGB establish a separate standing committee to review all background questions and plans to improve their use. Currently, the Board's responsibilities for background questions are divided between two of its standing committees. These subgroups do not coordinate their work and the background questionnaires are of secondary interest to both of them. A unified standing committee should regularly monitor and report on implementation of the panel's recommendations by NCES and Governing Board staff.

In addition, the panel believes that the background questions and how they used in NAEP reporting warrant a periodic, rigorous, and independent evaluation similar to that conducted in the past on NAEP cognitive assessment items.

The panel recognizes that implementing its recommendations will involve resource considerations in terms of time, money, and personnel. One approach to this problem may be to reduce costs in certain areas. For example, efforts should be made to eliminate lower-priority activities, such as the duplicative collection of racial data and the

disproportionate number of questions asked in areas such as technology. Another approach should be to make a clear and powerful case for the usefulness of having a coherent set of relevant and valid background variables to help explain NAEP results and to take this case to the Department of Education, the Office of Management and Budget (OMB), and Congress.

In conclusion, the NAEP background questions are a unique national information resource. The Governing Board and NCES have a responsibility to develop this resource to better understand academic achievement and the contexts in which it occurs and, hopefully, to help spur educational improvement.

NATIONAL ASSESSMENT GOVERNING BOARD

Expert Panel on Strengthening NAEP Background Questions

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