

## **Inside NAEP: Training on Contextual Variables**

### **Brief overview of contextual variables history (including Board policies), key milestones, current status, and plans for 2017 and beyond**

Contextual questionnaires have been included in NAEP assessments for years although their prominence in reporting as well as in media coverage has increased recently. The primary objective of these questionnaires is to provide context to NAEP student achievement data and assess changes over time.

In October 2011, the National Assessment Governing Board convened an expert panel to recommend how to make better use of existing contextual variables and to propose an agenda for additional topics and questions to include in NAEP that would be useful in developing education policy and valuable to the public. The six-member panel was chaired by Marshall Smith, former U.S. Under Secretary of Education, and the panel delivered a report to the Board in March 2012. One of the results of this report was the Board’s “Policy Statement on NAEP Background Questions and the Use of Contextual Data in NAEP Reporting.” This policy statement was unanimously adopted by the Board on August 4, 2012 (and accompanies this background document below).

During this session, NCES will provide an overview of the current research-based development process for the NAEP contextual questionnaires as well as progress to date with implementing the policy principles and implementation guidelines listed within the Board’s policy statement. This will include spotlighting some of the recent changes and innovations made to contextual questionnaire development, and how these innovations help the NAEP program transition from paper and pencil assessments to a digital-based platform in 2017 and beyond. These include:

- Conducting cognitive interviews for all new and revised questions.
- Creating questionnaire modules around emerging topics of policy interest that are rooted in decades of published research, directly related to understanding academic achievement (e.g., non-cognitive student factors, school climate), and useful in the transition of NAEP to digital-based assessment (e.g., technology use).
- Developing questionnaire indices and a psychometric process for more robust reporting on constructs.
- Using pilot studies to test multiple versions of a question or construct to help inform the best version for the operational assessments.
- Spiraling questions in pilot studies to test a larger number of questions without increasing respondent burden.

- Balancing the qualitative art of writing contextual questions with the quantitative science of evaluating contextual questions (e.g., timing data, factor analysis, correlation with achievement, response rate distribution, high percentage missing).
- Establishing better response options for survey questions that replace the widely criticized agree-disagree format through systematic study of different response scales in cognitive labs and pilot administrations.
- Implementing improvements to the teacher and school online contextual questionnaires to reduce respondent burden.

### **Issues related to sensitivity and privacy concerns among states**

Over the past several NAEP administrations, NCES has received an increase in notifications from states that are electing not to participate in at least some portion of the contextual questionnaires. The vast majority of these concerns relate to the “Core” (i.e., non-subject specific) section of the student questionnaires. At the state level, there have been virtually no concerns communicated to NAEP regarding the subject-specific questionnaires.

During this presentation, NCES will provide an update on state participation with contextual questionnaires, including in recent NAEP administrations as well as in the plans for 2017. NCES will differentiate the nuances between sensitivity concerns and privacy concerns, detailing how these two related issues might be best messaged to various NAEP constituencies.

The presentation will also feature recent activities NCES has done to help assuage these concerns along with considerations for the future.



## **Policy Statement on NAEP Background Questions and the Use of Contextual Data in NAEP Reporting**

### **INTRODUCTION**

By statute, the purpose of the National Assessment of Educational Progress is to provide a “fair and accurate” measure of student achievement and achievement trends. Academic or cognitive questions are its primary focus; the American public is its primary audience. However, in addition to reporting on what American students know and can do, NAEP has collected data for more than 40 years that provide a context for reporting and interpreting achievement results. According to the statute, such factors, both in and out of school, must be “directly related to the appraisal of academic achievement.”

In each assessment NAEP administers background questionnaires for students, their teachers, and schools. The questionnaires deal with educational experiences and other factors, such as teacher training or out-of-school learning activities, that are related to academic achievement. Data on several hundred background or noncognitive variables are available on the Internet through the NAEP Data Explorer. However, for more than a decade, little use has been made of this information in NAEP reports. The data have received minimal attention and had little impact despite the considerable efforts expended in developing and approving questionnaires and collecting and tabulating responses.

In October 2011 the National Assessment Governing Board convened an expert panel to recommend how to make better use of existing NAEP background questions and to propose an analytic agenda for additional topics and questions that would be useful in developing education policy and of value to the public. The panel report, entitled, *NAEP Background Questions: An Underused National Resource*, was presented to the Board in March 2012 by Marshall Smith, former U.S. Under Secretary of Education, who chaired the six-member panel.

Many of the panel recommendations build on the *Background Information Framework for the National Assessment of Educational Progress*, adopted by the Governing Board after it received final authority from Congress over non-cognitive items on the assessment. The framework was adopted in 2003, but has not been fully implemented.

The following policies are based on recommendations by the expert panel. The Board has also taken into consideration a wide range of public comment and the analysis provided by the National Center for Education Statistics.

It is important to understand that the National Assessment is not designed to show cause-and-effect relationships. Its data should not be used to “prove” what schools should do. But, as the *Background Information Framework* declares, NAEP’s “descriptions of the educational circumstances of students..., considered in light of research from other sources, may provide important information for public discussion and policy action.” The Board believes the National Assessment should improve upon its efforts to collect contextual information and present it clearly to the public, which will add to NAEP’s value to the nation.

## **POLICY PRINCIPLES**

1. NAEP reporting should be enriched by greater use of contextual data derived from background or non-cognitive questions asked of students, teachers, and schools. Such data will be used both in regular Report Cards and in special focused reports. **[New Foreword, pp. 7 and 9]**
2. Reporting of background data will describe patterns and trends, including the educational experiences of different groups of students. Care should be taken not to suggest causation. **[Chapter 5, pp. 37-39; also pp. 7 and 9]**
3. Detailed frameworks will be published with the theoretical rationale and research evidence that support the selection of topics and questions in background questionnaires and their connection to student achievement. Such frameworks should be updated for each assessment cycle and provide the basis for new topics and questions. **[p. 13]**
4. An ad hoc committee of the Board will be established for one year to monitor implementation of this resolution, review the *NAEP Background Information Framework*, and recommend a permanent arrangement for Board consideration of background questions and the reporting of contextual data in NAEP.

## **IMPLEMENTATION GUIDELINES**

### ***For Questions and Questionnaires***

1. Clusters of questions will be developed on important topics of continuing interest, such as student motivation and control over the environment, use of technology, and out-of-school learning, which could be used regularly or rotated across assessment cycles. **[pp. 13 and 30]**
2. Modules will be prepared for special one-time studies to provide descriptive information on issues of current policy interest. **[p.29]**

3. A thorough review will be conducted to eliminate duplicative or low-priority questions. Unproductive topics and questions will be dropped. **[p. 13]**
4. NAEP will include background questions from international assessments, such as PISA and TIMSS, to obtain direct comparisons of states and TUDA districts to educational practices in other countries. **[pp. 12 and 23]**
5. Because of the value of preserving trends, consistent wording of questions should be maintained on topics of continuing interest. Changes in wording must be justified. However, as practices and circumstances change, new questions will be introduced in a timely manner to gather data on topics of current interest. **[pp. 11 and 23]**
6. The development and use of improved measures of socio-economic status (SES) will be accelerated, including further exploration of an SES index for NAEP reporting. **[pp. 12 and 27]**

#### ***For Data Collection***

7. The maximum time for students to answer the background questionnaire will be increased from 10 to 15 minutes on new computer-based assessments. Consideration should be given to a similar increase in paper-and-pencil assessments. **[pp. 13 and 35]**
8. Whenever feasible, assessment samples should be divided (spiral sampling) and background questions rotated in different years in order to cover more topics without increasing respondent burden. These practices will be initiated in the assessments of reading and mathematics, which are conducted frequently, and considered for other subject areas if the frequency of testing permits. **[pp. 13 and 30]**

#### ***For Reporting***

9. Special focused reports with data through the 2013 assessment will be issued on the following topics: private schools, charter schools, gender gaps, and black male students. Reports shall include significant contextual information as well as cognitive results. Advisory committees, composed of a range of knowledgeable persons, may be appointed to provide input on reporting issues. **[p. 37]**
10. Exploratory analyses will be carried out to determine if existing background questions may form the basis for additional focused reports. Such reports may be issued by the Governing Board as well as by the National Center for Education Statistics.
11. The NAEP Data Explorer should be further improved to make data more accessible to general, non-specialist users. Tables and very simple-to-construct charts will be prepared to present data on important topics of wide public interest. Additional means of disseminating information, using new technology such as simple apps that would allow parents, teachers, and others to access background and achievement data, will be explored. **[p. 39]**