

NATIONAL
ACADEMY
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EDUCATION

Workshop to Examine Current and Potential Uses of
NCES Longitudinal Surveys
by the Education Research Community

Introduction

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The National Academy of Education (NAEd) Steering Committee for the *Workshop to Examine Current and Potential Uses of NCES Longitudinal Surveys by the Education Research Community* is pleased to have collaborated with the National Center for Education Statistics (NCES) to explore ideas about how NCES surveys could better align with the changing needs of education researchers, as well as ways that NCES datasets might be shaped to better align with evolving and innovative research methodologies.

With funding from the Institute of Education Sciences, the workshop was held on November 5-6, 2013, in Washington, DC, and participants included leading researchers from universities and education research organizations, as well as most of the major program leaders from NCES. More specifically, the workshop focused on several areas of change affecting education research: (1) changing technological opportunities, (2) changing data availability, and (3) a changing U.S. population. This workshop also continued the tradition of dialogue between NCES leaders and the research community.

The NAEd formed an eight-person steering committee to guide the project,¹ and the committee organized the workshop and commissioned the following collection of papers that explore opportunities to improve NCES longitudinal surveys from a variety of perspectives:

Enhancing the Value of NCES Surveys through Data Linkages

Building Better Longitudinal Surveys (on the Cheap) Through Links to Administrative Data

Susan Dynarski, *University of Michigan*

Linking NCES Surveys to Administrative Data

Susanna Loeb, *Stanford University*

Innovations in Survey Designs

Testing Causal Hypotheses Using Longitudinal Survey Data: A Modest Proposal for Modest Improvement

Thomas D. Cook, *Northwestern University & Mathematica Policy Research, Inc.*

New Tools for Measuring Context

Chandra Muller, *University of Texas at Austin*

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Adam Gamoran (Chair), William T. Grant Foundation
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Pascal (Pat) Forgione, ETS
Pat Rubio Goldsmith, Texas A&M University
Jennifer Lee, Indiana University
Sean Reardon, Stanford University
Barbara Schneider, Michigan State University

Survey Responses to Societal Change

Using NCES Surveys to Understand School Violence and Bullying
Dorothy L. Espelage, *University of Illinois, Urbana-Champaign*

Using NCES Surveys to Understand the Experiences of Immigrant-Origin Students
Rubén G. Rumbaut, *University of California, Irvine*

A Focus on the Classroom and Student Outcomes

Collecting Evidence of Instruction with Video and Observation Data in NCES Surveys
Pam Grossman, *Stanford University*

Improving Outcome Measures Other Than Achievement
Kristin Anderson Moore, Laura Lippman, and Renee Ryberg, *Child Trends*

Implications of Evolving Notions in STEM Education for Longitudinal Data Gathering
Walter Secada, *University of Miami*

Workshop Reflections

The Future of NCES's Longitudinal Student Surveys: Balancing Bold Vision and Realism
John Robert Warren, *University of Minnesota*

The first two authors, Susan Dynarski and Susanna Loeb, advocate linking NCES surveys to other administrative data. (NCES has already done some of this—for example, by supplementing its survey data with high school transcript data.) Susan Dynarski suggests that linking NCES surveys to state longitudinal data systems would create “the opportunity for NCES to track a subset of outcomes for their survey respondents longer, more cheaply, and more reliably.” Longitudinal administrative data could be used to partially convert the National Assessment of Educational Progress (NAEP), a cross-sectional dataset, into a longitudinal one, by attaching state data to the records of NAEP test takers. Thus, relationships between NAEP achievement scores and a variety of other student outcomes could be examined. It is even possible to link NAEP with other databases from the Internal Revenue Service or Social Security Administration that track wages. That way, NAEP scores could be connected to success, or lack of success, in the labor market. Dynarski examines some of the administrative hurdles that have to be cleared in order to have such linkages occur, as well as some of the highly sensitive issues around data security and privacy that arise when such comprehensive datasets are made available to researchers.

Susanna Loeb's paper expands on the benefits of linking. She emphasizes the benefits to the holders of the administrative data (usually states). If NCES is to expect cooperation in data-linking efforts, officials at the state level need to see some payoff in

terms of access to data and information that informs their own decision making. NCES collects a rich array of data that goes far beyond what is included in most administrative datasets, including information about student social-emotional development, extra-curricular activities, motivation, and parent and teacher expectations. States are often unable to collect this information on their own. Loeb concludes that the best incentive for them to participate is the promise of useful state-level results, which would require NCES to expand its survey samples so that they are representative by state.

The next two papers discuss innovations in survey designs that may have implications for NCES survey efforts. Chandra Muller is interested in better measures of school context, the web of social relationships and interactions between individual students and school personnel and peers. Although NCES already collects data related to context, such as through the School Climate Studies, Muller is interested in richer examinations of school context that recognize that “any particular context may affect different people differently,” and that a single school may have multiple contexts; Muller refers to this as “heterogeneity of school contexts.” These within-school differences matter because of their explanatory power in addressing phenomena such as differences and inequalities in opportunities to learn, formation of identities, school violence, and bullying. Muller then suggests richer ways to measure school contexts, by focusing on specific networks or clusters of students who, for example, take a group of courses together. This way, we can get closer to the everyday lives and experiences of students at school. This would mean a certain increase in data collected at the school level, as well as from nontraditional sources, an issue that can be addressed at least in part through innovative approaches and wise use of technology.

Thomas Cook focuses on survey methods and the extent to which they can be used for testing causal relationships in education. Surveys were designed to describe populations, whereas experiments were designed to test causal hypotheses. “Given this fundamental difference,” says Cook, “surveys can at best probe causal hypotheses; they will rarely test them as well as an RCT [randomized clinical trial].” Still, he describes *within-study comparisons* (a type of quasi-experimental design) that can use survey data to begin to estimate causal relationships.

Two papers in this collection are concerned with researching areas of increasing societal importance. Dorothy Espelage asserts that NCES should expand its current assessment of school violence and bullying, given its prevalence and the growing body of research on the negative effects of such violence and victimization. The current longitudinal surveys have very few items related to this topic. NCES should include questions to get at the power relationship between victims and perpetrators, impacts in terms of academic achievement, and violence outside the school. This would allow us to examine how bullying behavior changes across grade spans and how it manifests itself in different student subgroups.

Rubén Rumbaut provides an overview of changes in the U.S. population over the last several decades, with rapid growth in the percentages of individuals who are foreign born or children of immigrants. Rumbaut is concerned with upward mobility of immigrants, and the degree to which it has stalled. What happens to immigrants and their descendants? What are their patterns of educational and economic achievement and mobility, health and well-being, especially across generations? NCES surveys could fill an important gap in our understanding of the relationship between nativity

(i.e. foreign born, U.S.-born to immigrant parents, second generation U.S.-born, etc.) and educational attainment, as well as between educational attainment and a number of other factors such as ethnicity, language ability, socioeconomic status, and family structure. He proposes a set of key survey questions that should be asked consistently in NCES longitudinal surveys.

The next three papers focus on how NCES surveys could better assess classroom and student outcomes. Pam Grossman explores how classroom observation data can be linked with NCES longitudinal surveys. Classroom observations have already been used in the Early Childhood Longitudinal Study–Birth Cohort survey, as well as the State-Wide Early Education Programs study, in order to make judgments about overall quality of pre-K child care. Grossman is most interested in recorded video from K-12 classrooms. Videotaped observations of teachers were used in the Trends in International Mathematics and Science Study (TIMSS); these provided valuable cross-national comparisons of the way that eighth grade mathematics is taught. Some of these videos were made publicly available and have been used for further research as well as for teacher education and professional development. While there are still methodological and practical issues to be worked out, data storage capabilities have increased exponentially in recent years, and it is easier than ever to store and retrieve videotaped classroom observations. Further video linkages along the lines of what was done for TIMSS or the Measures of Effective Teaching Project could be pursued for NCES, better linking what happens in the classroom with student achievement and other outcomes. Researchers could explore the relationship between specific teacher attributes and student learning gains, or between professional development and actual changes in teacher practices. The effect of interventions or policy changes (such as Common Core) on the classroom could be investigated, as could the introduction of more personal computing devices. Video observations could also be used to confirm data from questionnaires where teachers are asked to self-report.

In terms of student outcomes, Kristin Anderson Moore, Laura Lippman, and Renee Ryberg argue that NCES should broaden its measures to include nonacademic outcomes such as self-regulation, motivation, persistence, social skills, physical health, and healthy relationships with family and peers. These in turn contribute to academic success. Assessment of these personal characteristics could lead to a richer understanding of student growth and development, as well as educational progress. Indicators of well-being, for example, could be added to multivariate analyses of factors increasing the risk of dropout, creating a richer understanding of these factors. They could also be used to assess workforce readiness, as certain character strengths and soft skills are key to success in the modern workplace.

Walter Secada's focus is on science, technology, engineering, and mathematics (STEM) education. He points out that current NCES assessments (NAEP, High School and Beyond, the National Education Longitudinal Study of 1988, and the Education Longitudinal Study of 2002) assess STEM knowledge and skills too narrowly, given current thinking about what it means to "know" in these subjects. Secada distinguishes basic skills and knowledge, which is the focus of most current assessments, from "cross-cutting concepts of science and engineering" that "drive and organize questions that scientists and engineers ask in their work." This distinction draws on previous work, particularly by the National Research Council and efforts around the Common Core

and the Next Generation Science Standards, which aim to refocus science education toward emphasis on concepts which transcend the boundaries of specific scientific disciplines. Secada believes that NCES should assess higher-order thinking in the STEM fields through carefully developed performance tasks, where students are assessed on their ability to conduct some sort of authentic activity or experiment.

Finally, John Robert “Rob” Warren undertakes a big-picture comparison between NCES surveys and other highly useful data sources maintained by other government agencies. He sees the infrequency of NCES surveys as a major shortcoming, because they cannot be used to finely gauge short-term trends or effects of policies. To address this problem, Warren points to Census “long form,” which evolved from a once-a-decade administration to one out of six households, to the current American Community Survey, which is administered annually to one out of a hundred households. This idea of a smaller sample combined with more frequent administration could be adopted by NCES for some of the longitudinal studies. Warren also points to the General Social Survey (GSS) conducted by the National Opinion Research Center as an example of innovation and response to researchers’ needs. The GSS has a body of questions that are asked annually, but it also allows “supplemental modules” of questions that research teams can add. The modules are decided upon through a competitive process, and researchers must reimburse GSS. Like several of the other authors at the workshop, Warren also advocates for linkages with state and federal administrative data, while recognizing the legal and political hurdles.

In light of vast changes affecting education research—such as changing technological opportunities, changing data availability, and a changing U.S. population—we encourage NCES to consider the insights and ideas presented by our selected authors as the agency plans into the future. The NAEed, comprising nearly 200 of the nation’s foremost education researchers, works to advance high-quality education research and its use in policy formation and practice. We would be pleased to provide further input from the research community and hope that NCES will call on the NAEed for future collaborations.