

Data-Driven Decisionmaking and the Department of Education

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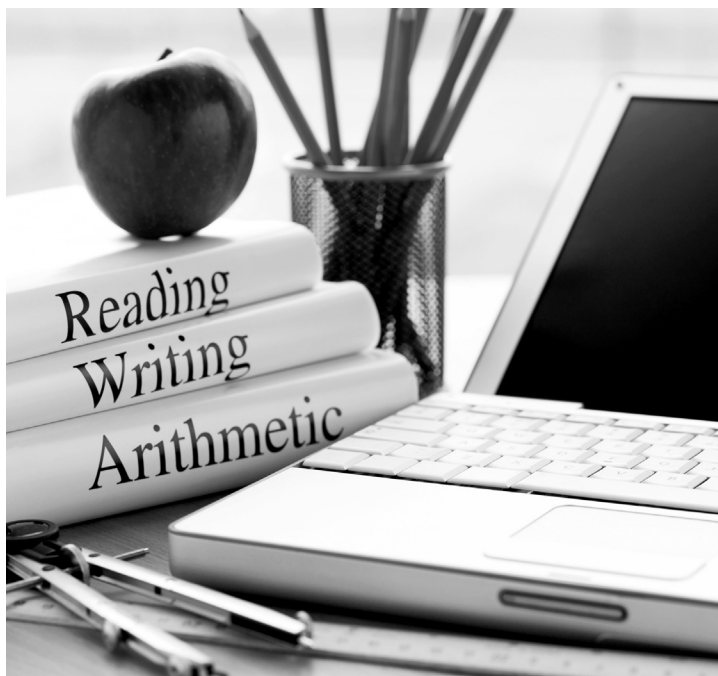
In my July column, I highlighted Office of Management and Budget (OMB) Director Peter Orszag's call for data on what works and what doesn't as an example of the Obama Administration's emphasis on data-driven decision-making. Orszag focused on health care and education as two areas where more data is needed. While all eyes are on health care this summer, I thought it would be helpful to look forward to one of the next debates: education. Therefore, I'm spotlighting the administration's education secretary, Arne Duncan, this month.

As the new administration examines and sets its education policies, there are ample opportunities for statisticians to influence those policies. One vehicle will be the reauthorization of No Child Left Behind (NCLB), which Congress is expected to undertake in the next year—most likely under its previous name, the Elementary and Secondary Education Act (ESEA). Our opportunities are to provide or highlight the data on which the administration will base its new policies, help the public (and policymakers) understand the data, and encourage the inclusion of statistical literacy in any new legislation. As you may know, 60 ASA members will take advantage of one of these opportunities by promoting statistical literacy during the ASA congressional visits during JSM.

Secretary Duncan's 'Data Challenges'

In a recent address during the annual Institute of Education Sciences (IES) Research Conference, Duncan made it clear that he shares President Barack Obama's emphasis on data-driven decisionmaking when he said, "I am a deep believer in the power of data to drive our decisions. Data gives us the road map to reform. It tells us where we are, where we need to go, and who is most at risk." Duncan's speech, which can be found at www.ed.gov/news/speeches/2009/06/06082009.html, provides insight into his vision for heading the Education Department as it relates to data.

Duncan identified three general data needs or challenges, the first being an area in which I think statisticians can be of great service: helping the public understand data. Referring to his experience as chief executive officer of the Chicago Public



Schools, he noted how sad it was that parents didn't know how far behind their children's schools were because they couldn't understand the data. Making sure the public can understand the data driving the policies, Duncan says, "is the only way that good ideas can lead to action and not just remain on a shelf somewhere."

In noting the need for higher education standards, Duncan identified a second data challenge: determining a better means to compare the performance of students. He used the "staggering[ly] large" disparities between most state tests and NAEP results as an example. Calling it a "huge step in the right direction," he noted the work led by the National Governors Association and the Council of Chief State School Officers, which have agreed to devise a set of voluntary national standards in math and language arts (see http://www.ccsso.org/federal_programs/13286.cfm).

Here, too, is an opportunity for statisticians to make sure statistics is part of the voluntary standards. ASA President Sally C. Morton recently took

advantage of this opportunity when she wrote a letter to Representative Ehlers and Senator Dodd in support of their bill (H.R. 2790) to create, adopt, and implement voluntary core American education content standards in math and science. For

more on the bill, visit www.house.gov/apps/list/press/mi03_ehlers/SPEAK_Act_2009.html.

Duncan's third data challenge is, in my opinion, a clear call to statisticians: make sure we "drive a national conversation that is above partisan policy disputes, beyond wars on math and reading, and instead focuses on the facts." Referring to President Harry Truman's famous lament that every economist would always say, "on the one hand, things might get better, and on the other hand, things might not" (and suggestion that he'd only consult one-handed economists in the future), Duncan expressed the opinion that, "to some extent, the education community suffers from that same dynamic" and cited the debate about charter schools as an example.

IES and NCES

Congress is expected to revisit the legislation for the Institute of Education Sciences (IES)—the research arm of the Department of Education—in the next year, providing an opportunity for the ASA to help solidify the autonomy of the Department of Education's statistical agency—the National Center for Education Statistics (NCES).

Because this administration will put so much emphasis on data in forming and promoting its policies, it is important that the data be seen as accurate, objective, and independent. This is especially true of the data from NCES and the reason *Principles and Practices for a Federal Statistical Agency* makes independence one of the four key principles. Any perception that NCES data has been influenced by the Obama Administration will undermine Obama's proposals based on that data.

In his address, Secretary of Education Arne Duncan provided signs for how he views IES and NCES, but let me further introduce IES. IES was established in 2002 and houses NCES, an evaluation and regional assistance center, and two research centers. IES' mission is to provide rigorous evidence on which to ground education practice and policy. By identifying what works, what doesn't, and why, IES intends to improve the outcomes of education for all students, particularly those at risk of failure.

Following presidential nomination and Senate confirmation, John Q. Easton became IES' director on June 1. Previously, Easton was executive director of the Consortium on Chicago School Research at the University of Chicago. For more about IES, visit <http://ies.ed.gov>.

While not mentioning NCES' independence, it is encouraging that Duncan made two references to IES' independence:

"The Chicago Consortium on School Research enjoys a similar independent relationship to the Chicago Public Schools, as IES does to the Department of Education."

"I'm absolutely committed to relying on high-quality, independent research, funded by IES to inform our thinking."

The ASA is working to ensure the NCES' autonomy, which is under question because a former IES director interpreted the law to say that IES has final say over NCES' publications and products. Representatives from the ASA met with Easton recently to express our autonomy concerns, and he was receptive to our points. The ASA will continue to push the NCES' autonomy and other issues as the IES legislation is developed.

Duncan's Support for Data-Driven Instruction and Research

After identifying the data challenges, Duncan delineated steps the Department of Education is taking to support data-driven instruction and research. Here, I will discuss those that I think are of most interest to statisticians or present the most opportunity.

Citing the need for robust data systems to track student achievement and teacher effectiveness, Duncan mentioned \$250 million in the American Reinvestment and Recovery Act (ARRA, or the Stimulus Bill) for statewide data systems. He also discussed the \$70 million increase the administration requested for IES projects such as a longitudinal study of teachers, an international assessment of adult competencies, and a national survey to examine the participation of preschoolers and levels of parent and family involvement in education.

Noting that "many teachers are hungering for data to inform what they do" and that the best teachers are already using real-time data, Duncan said some of the ARRA money will be used to examine how teachers are using data to drive instruction. He also wants to study how student achievement is linked to teacher effectiveness and address rationale of resistance with the analogy of "suggesting we judge a sports team without looking at the box score."

Duncan went on to outline his longer-term vision, which I provide here because many of these items involve challenges for the statistical community, not least of which are the privacy concerns. Among his desires are the following:

- Push states to make data available to researchers
- Track children from preschool to high school, from high school to college, and from college to career

ASA Science Policy Actions

ASA president urges congressional leaders to expedite confirmation of Robert M. Groves as U.S. Census Bureau director

ASA president sends letter to Education Secretary Arne Duncan regarding the National Center for Education Statistics commissioner

The ASA signs a letter opposing further diversion of NIH and NSF funding for small business innovation research grants

ASA president sends letter in support of the Ehlert-Dodd Standards to Provide Educational Achievement for All Kids (SPEAK) Act

- Connect high-growth children in classrooms to their great teachers and great teachers to their schools of education
- Understand better what makes great teachers tick, why they succeed, why they stay in the classroom, and how others can be like them
- Link good programs to higher test scores and graduation rates
- Look a child in the eye at the age of eight, nine, or 10 and say, “You are on track to be accepted and to succeed in a competitive university, and if you keep working hard, you will absolutely get there.”
- See more states build comprehensive systems that track students from pre-K through college, then link school data to work force data

Statisticians’ Opportunity

I’ve pointed out many opportunities statisticians have for affecting education policy, and I’ll now discuss how we can do that. First, however, let me emphasize that I’m not asking our membership to endorse any particular policy, whether it be from the Obama Administration, Congress, or an outside entity. Indeed, scientists are sometimes accused of providing advice beyond their disciplinary expertise. With that in mind, statisticians are well-suited to inform policy debates. Harkening back to Duncan’s call to keep the conversation “above partisan policy disputes,” statisticians can help keep the

debate constructive and well-founded. We can also help the public and policymakers understand the data.

I should also stress that I’m not asking you to be one-handed statisticians. There will always be studies saying something works and others saying it does not. Statisticians are extremely well-situated to explain the differences and discuss the merits or scopes of various studies. But, we must—in simple and concise terms—explain why studies are inclusive or reach contradicting conclusions and give a professional opinion about which conclusions have the most validity, if any, or where further study is needed. If we get into the details, we risk being perceived as unhelpful. The shorter and to-the-point our answers, the better.

To affect education policy, the first step is to inform ourselves of the policies and playing fields, which we do by monitoring the debates through press coverage, blogs, radio programs, and town hall or school board meetings. The opportunities to inform the discussions will then present themselves. We can also respond by calling in to radio shows, writing letters to the editor, commenting on a blog, writing an op-ed, or speaking up at a meeting. We can arrange meetings with our elected officials and offer our help and counsel. We should be explicit in describing what we offer, perhaps by presenting samples.

In the process of such outreach, the profession as a whole will benefit by our identifying ourselves as statisticians, and people will gain a better understanding of statisticians’ expertise in comparing analyses and understanding and presenting data. ■

See you in 2010 at the Joint Statistical Meetings in Vancouver, British Columbia

July 31–August 5, 2010
Vancouver Convention Center

For information, email jsm@amstat.org
or call toll-free (888) 231-3473.

