

A Vision and Roadmap for Education Statistics: Overview

Federal Committee on Statistical Methodology
Session D-5

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Charge to the Panel

From Department of Education's Institute of Education Sciences (IES) to study the National Center for Education Statistics (NCES)

- Review trends and developments in using alternative data sources
- Consider current and future priorities
- **Vision and roadmap for next 7 years**
 - Recommend future portfolio of products and activities
 - Suggest changes to NCES's programs and operations
 - Ways to increase impact
- Focus on NCES's statistical programs

Education Data Landscape Changing Rapidly

Three trends provide context for the study

- Student populations more diverse
- Explosion of data sources
- Strong interest in evidence-based decision making
 - Foundations for Evidence-Based Policymaking Act of 2018

Reimagining NCEs

Panel's approach to the charge

What would an education statistics agency
be and do if it were established today?

Condition: assume same level of resources for immediate actionability

The Vision

NCES as a leader of the 21st-century education data ecosystem

- Act and make decisions strategically
- Nimble, adapting to changes in environment
- Relevant, timely, reliable products and services
- Creative partnerships
- Strong role in evidence building
- Grasp opportunities of new data sources for analytic insights
- Expand services in data governance and data facilitation
- Strategically responsive to stakeholders

Recommendations and Conclusions

Actions to realize the vision

- Need transformative rather than marginal change to make true progress
- 5 conclusions, 15 recommendations
- Operational details and illustrative examples to assist with **implementation**
- Fundamental recommendations in **Chapter 2** are the most transformative
- NCES is currently addressing some aspects of these recommendations – yet the **Center can push further to fully embody each recommendation**
- **Conditions are better than ever to take action**

Fundamental Recommendations



Act and Make Decisions Strategically

Incentivizing innovation and creative partnerships for greater impact, Rec. 2-1

- **Strategic planning to make tough tradeoff decisions** (Rec. 2-1)
 - IES and ED support and empower NCES to be independent, yet strategically aligned (Recs. 2-2, 2-1)
- **Prioritize data collections, products (especially consider diversity)** (Recs. 2-4, 3-1, 3-2; Con. 3-1)
- **Expand data sources** to gain new insights (Recs. 2-5, 2-6, 4-2)
- **Expand data access services** for evidence building and research (Recs. 2-3, 4-4, 4-5; Con. 4-1)
- **Expand stakeholder engagements** to ensure relevance (Recs. 4-1, 4-2, 4-3)
- **Improve dissemination and usefulness** for broader impact (Con. 4-2, Rec. 4-6)
- **Leverage external resources as a force multiplier** to extend impact (e.g., Recs. 4-4, 4-5, 5-1, 4-2; Con. 4-1)
- **Strategically organize, use resources** to build internal capabilities and culture of innovation (Cons. 5-1, 5-2; Recs. 5-1, 2-4)

Maximize NCES's Unique Value for Evidence Building

Increasing value of data products and services, Rec. 2-3

- Mission expanded by Evidence Act – new authority and mandate to **acquire data** from federal agencies and to **facilitate access to data**
- Collaborate **within ED –Statistical Official connects** Chief Data Officer, Evaluation Officer by turning data into high-quality information fit to inform policy, decision making
- Build stronger partnerships **with NCEE, NCER, NCSER – collaboratively decide**
 - the priority datasets NCES should acquire and link, and
 - providing access to external researchers as a **force multiplier** for answering Learning Agenda questions (also Rec. 4-5)
- Collaborate with data-holding agencies and organizations (Rec. 4-2)
- Support state and local education agencies in data access and linkage (Rec. 4-4)

Expand Data Sources to Gain New Insights

Acquiring data strategically to improve efficiency, timeliness, and relevance,
Recs. 2-5, 2-6

- Use and develop **new data sources**, data linkage, especially administrative data
- Study quality, fitness for use, bridging, and series continuity
- Expand responsible, secure access and linkage tools
- **Partner within IES, ED, and with other federal statistical agencies**
 - Data-science methods to harness and link data
 - Strengthen impact of techniques
 - Develop useful products and processes (Rec. 4-2)
- Modernize consent language, permit secondary uses, privacy-protected linkage

Embed Diversity, Equity, Inclusion, and Accessibility Awareness for Relevance & Accuracy

Enabling nimble adaptation to serve contemporary communities in the world of education, Rec. 2-4

- Throughout the data lifecycle
 - Data content and questionnaire design –
 - Not only measurement of groups, but ...
 - **Measurement of any social construct** that may have different interpretations for different groups
 - **Outcomes and the educational process:** Equity, access to education, opportunity to learn (Ch. 3)
 - Collection – ethics and benefits/reciprocation to respondents
 - Processing, imputation, machine learning, algorithms – avoid reinforcing historical assumptions
 - Products & dissemination – thoughtful questions, inclusive language, accessible formats (Con. 4-2)
- Throughout the organization and work
 - Staff, stakeholders, contractors and contracts, external researchers, fellows

Engagement and Partnerships



Engage Researchers– Evidence Building

Partnering with External Researchers and Analysts for Evidence Building, Rec. 4-5

- Establish a **joint statistical research program (JSRP)**
 - expand access to restricted data, can leverage existing data license program
 - **match internal staff with highly qualified external researchers**, statisticians, data scientists
- Collaborate within IES – **promote/signal** important areas (strategic analytic agenda) to **build up research, analysis, and evidence to advance knowledge** on those topics
- Expand reach and impact
 - Develop **community of users** (also Rec. 4-1)
 - Partner with other federal agencies with **extramural research** or other data-access programs (also Rec. 4-2)
 - **Support state & local researchers and analysts** build capacity to link and analyze data (Rec. 4-4)
 - Expand role in **data governance**, facilitation of data linkage, access, and use (Con. 4-1)

Engage Researchers– Consulting

Receiving and using the help of an external review body, Rec. 4-3

- Explore and establish **creative models for a nimble, ongoing consulting body**
 - Help **innovation, continual improvement**
 - (Moral) **accountability** for progress on strategic goals
 - May **provide backing** when NCEC faces difficult decisions
 - Regular members, continuing **relationship**
 - NOT subject Federal Advisory Committee Act
- Supplemented by a pool of **ad hoc consultants**
 - Depends on particular expertise as the need arises
 - Varying experts, periodic, time-limited

Support State and Local Education Agencies

Scaling NCES's impact by strengthening state and local capacity for evidence building, Rec. 4-4, Con. 4-1

- Set priority activities, goals, outcomes for Statewide Longitudinal Data Systems (SLDS) awards
 - Award proposals that are high value and meet these criteria, e.g., for –
 - **Infrastructure** investments for **high-value data linkages** (e.g., across social domains) to build new insights
 - **States** to share data, facilitate data access, provide technical assistance, analytic assistance **to local education agencies** (LEAs)
 - **States** to facilitate collaborations among regions or groups of LEAs
 - Generating products and tools useful to LEAs and SEAs
 - Creating **shareable data** to benefit all states
- Establish **state liaisons for data and statistics**, modeled on existing assessment program coordinators
 - Execute standards and data access security, build data linkages, support LEAs, support NCES collections
- Create relevant, actionable, timely products
 - Especially **for local and state education agencies**, who often lack data analysis resources (Rec. 4-6)

Engage Researchers– Internal Capacity Building

Leveraging external resources strategically to build internal capabilities and culture of innovation, Recs. 4-3, 4-5, 5-1

- Current organizational structure limits innovation (Con. 5-1)
- Overreliance on contractors, high turnover endanger NCES’s ability to retain **institutional knowledge** and build **internal capabilities** needed to meet its strategic goals (Con. 5-2)
- **Leverage contractors and creative staffing** (e.g., research fellows, IPAs) to work collaboratively with staff to build internal capacity (Rec. 5-1)
- Joint statistical research program (Rec. 4-5) and nimble, ongoing consulting body (Rec. 4-3)– **benefits to NCES**
 - External analysts, consultants contribute **innovative ideas**, support a learning-centered environment at NCES
 - Increase **diversity** of researchers, innovative ideas (also Rec. 2-4)
 - Improve methods, data quality, fitness for purpose, understand questions and emerging issues

QUESTIONS?

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Appendix Slides – Recommendation Details



A

Prioritize Topics, Data Content, and Statistical Products to Maintain Relevance

Prioritizing content to be effective with limited resources, Rec. 3-1

- NCES cannot be all things to all stakeholders
- Limited resources necessitate **hard choices**
- Recommend NCES use a systematic method to review data acquisition activities and
 - **Prioritize** topics most relevant to understanding contemporary education
 - **Discontinue** activities disproportionately costly and burdensome, relative to their value
- Choices best made **by NCES during strategic planning** (now is premature)
- Numerous Congressionally-mandated topics in law
 - May no longer reflect what is important for understanding contemporary education (Con. 3-1)
 - **Revisit priorities mandated by Congress** and, where appropriate, make recommendations for changes (Rec. 3-2)

Prioritize Topics, Data Content, and Statistical Products to Maintain Relevance – Specific Thoughts

High-value topics and data needs where NCES can advance the topic, Ch. 3, App. C

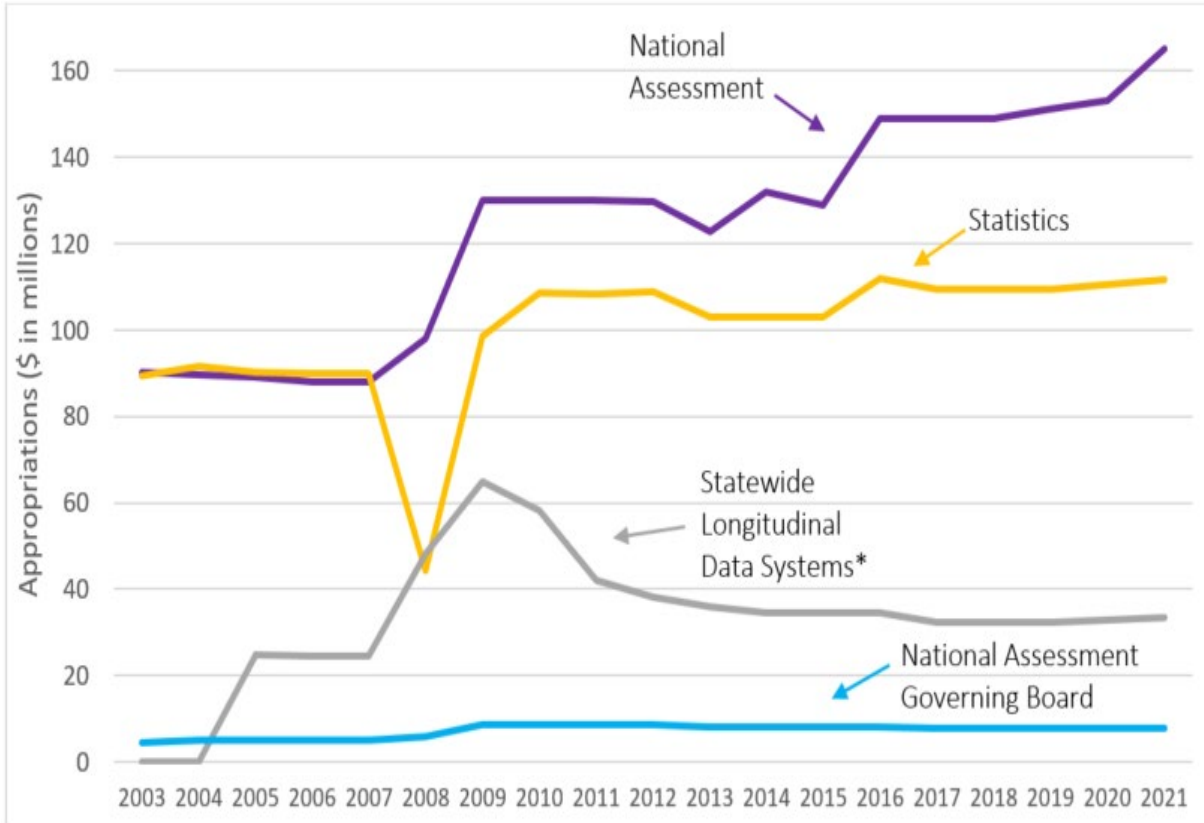
- Panel conducted a process with **limited** information (App. C); the resulting priorities—
- **Equity and access issues**: outcomes, educational processes and implementation, access to education, opportunity to learn
- **Early childhood education**
- **Career and technical education, adult education** including literacy
- Educational environment
 - **Administrative infrastructure**— teaching workforce, training, recruiting, placement, turnover
 - **Technology and tools**— access to and use of technology, online education
 - **Cross-state and international comparisons**— differences in curricula, policies, practices

Expand Stakeholder Engagements to Ensure Relevance

Improving dissemination and usefulness for broader impact, Rec. 4-6, Con. 4-2

- Create relevant, actionable, timely products
 - Especially **for local and state education agencies**
- Improve accessibility and usability to benefit a broader audience (Con. 4-2)
- Review and revise internal and external quality assurance processes to **match use and timeliness needs**
- Create and incorporate **feedback loops**
 - Deepen and broaden engagement to gather continual feedback about user needs (Rec. 4-1)
 - Establish a nimble, ongoing consulting body (Rec. 4-3)
 - Collaborate with data-holding federal agencies and organizations for relevant products (Rec. 4-2)

Flatlined Program Funds = Loss of Purchasing Power



- **Statistics Program**

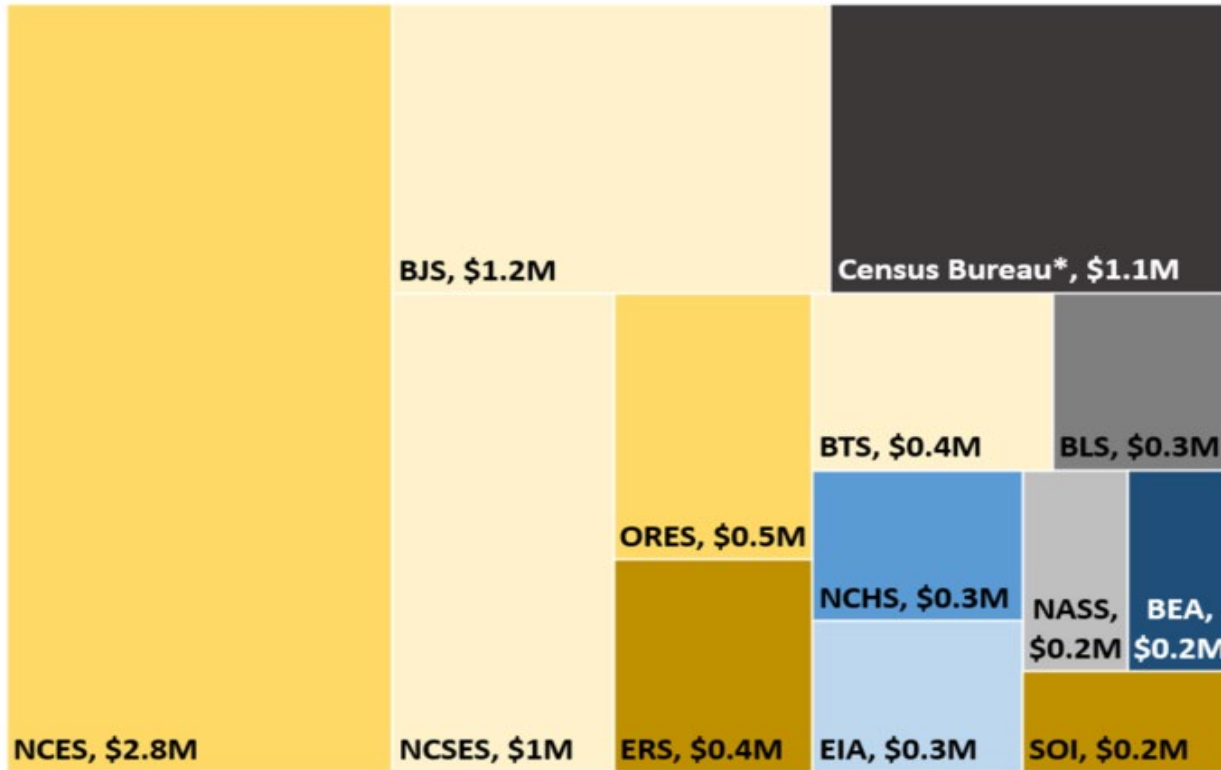
- FY 2010: \$109M
- FY 2021 buying power: ~\$131M
17% less buying power
- FY 2021 Actual: \$112M
- **Difference: >\$19M less**

- **SLDS Program**

- FY 2005: \$25M
- FY 2009: \$65M
- FY 2013: \$36M
- FY 2021: \$34M

Note: Figure does not show the allocations from ED's Salaries and Expenses (S&E) appropriation, which pay NCES's employees

NCES Employees Manage More Dollars Than Other Principal Statistical Agencies(Ch. 5)



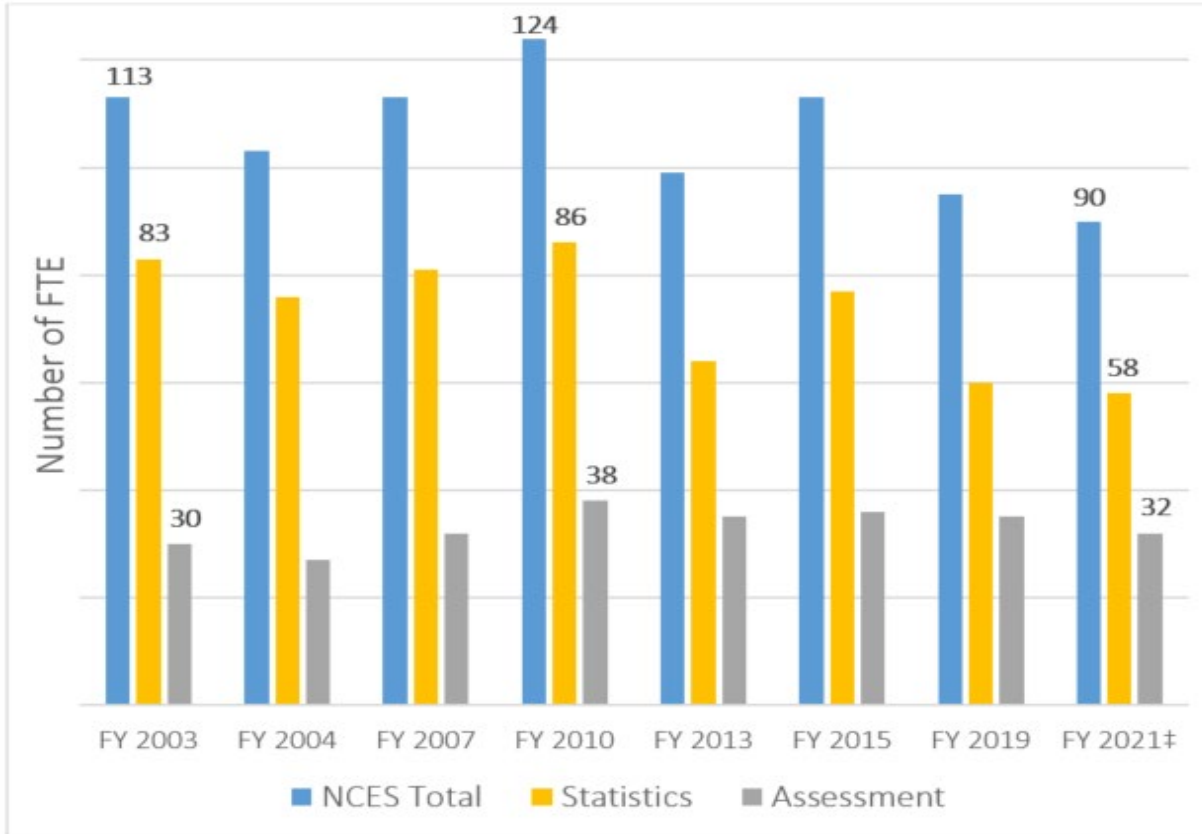
- The average number of dollars managed per employee was **nearly three times larger for NCES (\$2.8M)** than each of the next three largest agencies

- Heavy reliance on contractors
- Can result in knowledge loss over time

Colors denote agency size in FTEs

- Yellows = small
- Blues = medium
- Greys = large

Staffing Declined as Scope Increased (Ch. 1, App. D)



- **Net loss since FY 2003**
 - NCES: 23 FTEs (20%)
 - Statistics units: 25 FTEs (30%)
- **Net loss since FY 2010 peak is starker**
 - NCES: 34 FTEs (27%)
 - Statistics units: 28 FTEs (33%)

Note: NCES's employees are paid via an allocation from ED's Salaries and Expenses (S&E) appropriation

Roadmap



3

Immediately

The secretary of education, director of IES & NCES commissioner should:

- ☑ Collaborate to ensure that NCES is independent in developing, producing, and disseminating statistics (Recommendation 2-2)
- ☑ Take actions to enable the NCES commissioner to most effectively fulfill the responsibilities of the statistical official (Recommendation 2-3)

NOW

1

Within 1 year of the developed strategic plan:

NCES will have action plans that allow the agency to:

- ☑ Increase diversity and awareness of equity issues (Recommendation 2-4)
- ☑ Expand data acquisition strategies to gain new insights (Recommendations 2-5 and 2-6)

2

And NCES should begin:

- ☑ Transforming its internal structure and operations (Recommendation 5-1)
- ☑ Creating engagement feedback loops to ensure relevance (Recommendations 4-1 and 4-2)
- ☑ Expanding its role enabling data access to serve and engage stakeholders (Recommendation 4-4)
- ☑ Partnering with external researchers and analysts for evidence building (Recommendation 4-5)

3

4

5

Within 2 years of the developed strategic plan, NCES should:

- ☑ Be creating new actionable products and tools for local and state agencies (Recommendation 4-6)

Within 1 year of this report:

- ☑ NCES will have developed a strategic plan (Recommendation 2-1)
- And NCES should begin:
- ☑ Reviewing and prioritizing its data acquisition activities (Recommendation 3-1)
 - ☑ Collaborating with other data-holding federal agencies and organizations (Recommendation 4-2)
 - ☑ Planning for Year 2-4 activities (below)

Within 6 months of a developed strategic plan:

- ☑ NCES will have an implementation plan [for the strategic plan] (Recommendation 2-1)
- ☑ NCES should establish and begin using an external consulting body (Recommendation 4-3)

Next Gen
NCES