DATA, DATA EVERYWHERE: PROGRESS, CHALLENGES, AND RECOMMENDATIONS FOR STATE DATA SYSTEMS

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Data, Data Everywhere:
Progress, Challenges, and Recommendations for State Data Systems

Sunny Becker

Presented to:
CCSSO NCSA Conference
June 20, 2011
Demands on State Data Systems
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CEP Investigation of Achievement Trends

- Center on Education Policy (CEP) conducted a multi-year study of the impact of NCLB.

- The study used up-to-date state assessment data for all 50 states and DC.

- All data were verified by states prior to inclusion.
Products of this Research

1. A rich repository of verified data
   – Available on CEP’s website for free use by secondary researchers

2. 50-51 individual state reports (“profiles”) each year

3. Series of reports on national trends
   – Took care to tally trends rather than merge dissimilar data
CEP Reports---A Sample

• Answering the Question That Matters Most: Has Student Achievement Increased Since No Child Left Behind?
• State Test Score Trends Through 2007-08, Part 1: Is the Emphasis on Proficiency Shortchanging Higher- and Lower-Achieving Students
• STSTT 2007-08, Part 2: Is There a Plateau Effect in Test Scores?
• STSTT 2007-08, Part 3: Are Achievement Gaps Closing and Is Achievement Rising for All?
• STSTT 2007-08, Part 4: Has Progress Been Made in Raising Achievement for Students with Disabilities?
• STSTT 2007-08, Part 5: Are There Differences in Achievement Between Boys and Girls?
• STSTT 2007-08, Part 6: Has Progress Been Made in Raising Achievement for English Language Learners?
• STSTT 2008-09, Part 1: Rising Scores on State Tests and NAEP
• STSTT 2008-09, Part 2: Slow and Uneven Progress in Narrowing Gaps
• STSTT 2008-09, Part 3: Student Achievement at 8th Grade
Data Collected

• Test data
  – Percentage of students at each achievement level
    • Overall and disaggregated by sex, race/ethnicity, income, Title I, students with disabilities, ELL
    • Grades 3-8 and high school
  – Mean scale scores, standard deviations, and number of students tested
    • Overall and disaggregated by sex, race/ethnicity, income, Title I, students with disabilities, ELL
    • Grades 3-8 and high school
  – Years 1998-99 through 2008-09

• Test characteristics
  – What test is used at each grade level?
  – What years are comparable?
    • Not always a straightforward question
Tight Timeline to Report Current Results

Annual state assessment results [summer-fall]

Report trends [spring]

Collect, verify & analyze data [winter]

Next annual state assessment results [summer-fall]
Data Collection Approach

HumRRO pulled information from state web sites

Materials were standardized by HumRRO

Materials sent to state

State revised as necessary

State returned verified materials
Considerations

• Overwhelmed and understaffed departments
• State staff changes

• Individual state staff members with:
  – Data expertise
  – Policy expertise
  – “On the ground” expertise

• Uncommon analyses are “out of the blue” for state staff
  – We analyzed trends at basic-and-above as well as proficient-and-above.
“Out of the Blue” Questions

1. Relative scores on Reading for males and females reversed in 2009 from previous years.

2. The number of tested 11th grade students varied quite a bit from year to year.

3. NAEP Mapping Study reported trend lines for each state. Some year spans disagreed with ours.
So What Did We Learn?

Let’s look at a couple of indicators

- State capacity
- Data availability
Trends in State Capacity to Provide Data

First, some background…

• Our techniques improved over time.
  – Clarity regarding missing data and questions about trends
  – Sample graphs to show basic trend lines and intended comparisons
  – State familiarity with the requests --- in some cases

• We logged all communications with each state.
  – To keep track of where we stood
  – To trigger a reminder to silent states
  – To improve the process over time
Trends in State Capacity to Provide Data

After Year 1, the total # of communications leveled out.

Outliers persisted.

Total Communications Logged

Per-State Communications Trends

Average per State
Maximum per State
Trends in Data Availability Over Time

• Greater availability of disaggregated demographic groups
  – Students without disabilities
  – Non-ELL students
  – Title I and non-Title I

• Greater availability of metrics not required by NCLB
  – mean scale scores and standard deviations
Recommended Data Collection Strategies

• Take time to research each state’s testing programs and policies
• Plan for back-and-forth with state experts to resolve anomalies
• Carefully construct “out of the blue” questions
Recommendations for State Data Repositories

• Documentation, documentation, documentation
• Clear, easy-to-locate instructions for data users
• List of caveats and policy changes
• Contact person/department for data questions

And we hope:

• PARCC and SBAC may yield more similar data approaches (fingers crossed!)
For Further Information

- Reports and data repository:
  www.cep-dc.org

- Questions about the data collection and standardization process:
  Sunny Becker at sbecker@humrro.org
Data, Data Everywhere: Progress, Challenges, and Recommendations for State Data Systems

2011 National Conference on Student Assessment
June 19, 2011

Shelby Dietz, Research Associate
Center on Education Policy
Washington, D.C.
CEP Research

• 10 years of data collection and reporting on high school exit exams and other high school assessments
• Data collected through state contacts, state websites, and media reports
• Data verified through surveys, emails, and phone calls
Why State Data Systems are Important

- State benefits for planning future assessment policies or changes in current policies (i.e. “What are other states doing?”)
- Availability of data lessons the burden on state contacts
Progress

- In 2005, 8 of the 26 states with HSEE could provide cumulative pass rates when applicable.
- In 2010, 12 of the same 26 states could provide cumulative pass rates with 3 additional states able to provide them at a later date.
Progress (cont.)

• Response timelines have improved
• Evidence of more advanced data systems such as course-taking rates disaggregated by student grade levels
Challenges

- Reasons cited for not reporting cumulative pass rates
  - Data not collected
  - No unique ID system in place
  - Data not available
  - Data not tracked on an annual basis
- Transparency of data
- Time constraints on department personnel and turnover
Recommendations

• Updated website/online data
• Include “last revision” date on website
• Enable department personnel to link to additional online information
• Tell us what method of data collection works best for your department
• When personnel are overloaded, connect us with assistants who can verify data
Shelby Dietz, Research Associate

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...Everywhere Data

Jennifer Stegman, Assistant State Superintendent
Oklahoma State Department of Education

June 2011
Oklahoma Data Initiatives
Oklahoma Data Initiatives

- The Wave
  - Created in 2004
  - SIF compliant student information system

- P20 Data Coordinating Council
  - Created in 2009
  - Oversight for the coordination of the creation of a unified, longitudinal student data system

- Information Technology Consolidation and Coordination Act
  - Created in 2011
Recommendations from the P–20 Data Coordinating Council

- Maintain proper audit procedures to assure high standards of data quality and reliability.
- Ensure effective mechanisms to maintain confidentiality of student records and adherence to the Family Education Rights and Privacy Act (FERPA) requirements.
- Implement a student identifier number that can be used from pre–school through adults, connecting all three education agencies and the Oklahoma Employment Security Commission (OESC).
- Create linkages between and among data systems so data can be transferred across systems and among interested parties to address questions that cut across levels of the educational system and agencies.
Recommendations from the P–20 Data Coordinating Council

Further recommendations:

- Connect essential data elements relating to student-level course work and course grades.
- Incorporate college-readiness measures into the data system.
- Provide help to and enable appropriate access to the unified longitudinal database by a wide range of stakeholders to serve a variety of purposes, including improving teaching and learning, informing public policy, fostering a culture of evidence-based decision making, conducting research, evaluation system and program effectiveness, and providing reports to various stakeholder groups.
Recommendations from the P–20 Data Coordinating Council

Further recommendations for the P–20 Data System:

◦ Incorporate teacher preparation attributes (e.g., certification type, school of origin) into the data system.
◦ Incorporate analysis and business management tools into the system
◦ Implement greater interactive reporting capabilities to respond to a range of stakeholders.
◦ Include student groups not now included (e.g., home–schooled) in the data system
◦ Complete basic policies such as data use/access protocols, data quality standards and governance
Data Evolution
Data Evolution

- **Past**
  - Special Populations reported as Pass or Fail
  - Reports may have lagged one to two years

- **Present**
  - Variety of disaggregations and performance categories
  - Beginning to standardize terms

- **Future**
  - On-demand reports
  - Longitudinal and student connected data
I asked a statistician for his phone number... and he gave me an estimate.
Data Consumers

The requests for data comes from a variety of stakeholders each with their own need for a different slice of data.

- Legislature
- Research Institutions and Research Companies
- Graduate Students
- Schools and Districts
- Parents
- USDE
Managing Data and Data Requests
Building Capacity

- Moving towards a highly developed technology and information system
  - Oklahoma has been moving towards on-demand reporting but is still only providing “canned” reports.
- Identifying and developing clearly defined variables and quality control procedures
- Centralizing data systems to increase security and manage accessibility
For Further Information

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Oklahoma State Department of Education

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405–522–6250
Data, Data, …

In Florida

In PARCC

Kris Ellington, Deputy Commissioner
Florida Department of Education

June 2011
The Data Focus

- Florida
  - Data Systems
  - Statewide Longitudinal Data Systems Modernization Project

- Partnership for Assessment of College and Career Readiness (PARCC) Plans
  - Interactive Data Tool
  - Common Data Standards
Florida’s Educational Data Systems

- Data Quality Campaign: Meet all 10 Essential Elements; Meet 7 of 10 State Actions

- Public pre-kindergarten through graduate school student level data for public schools, community colleges, career and technical education, adult education, and the state university system

- Staff, facilities, finance, and financial aid

- Post-school employment and non-education system program data
Necessary Ingredients

- State level imperatives, funding
- System of common course numbers and directories
- Statewide articulation agreements and oversight committee
- A state level culture of data management and interagency sharing
- A means to follow the records of individual students across geographic areas, education sectors, and related programmatic areas.
- 67 School Districts, 28 community colleges, 11 state universities
- Very open public records laws
A Brief History...

1975
- State Universities data system deployed
- Statewide K-12 student assessment data collected/reported
- Course numbering system for postsecondary

1983-84
- K-12 Course Code Directory/common course numbers
- FETPIP began – links education data to employment, public assistance, military, etc.

1991
- PK-12 data system added student-level enrollment, demographic, transfers, transcripts, teacher identifier to match teachers to students

2003
- Education Data Warehouse is deployed
Florida’s SLDS Project

3 Grants; Total $38.5 Million
- Statewide Longitudinal Data System, Round 3
  - July 2009 – June 2014
- Statewide Longitudinal Data System, ARRA
  - July 2010 – June 2013
- Race to the Top, Section C
  - October 2010 – June 2014

2 Foci
- Accessing Data
- Using Data
A Coherent System of Improvements

User-Friendly Portal
The gateway to publicly accessible actionable reports and to secure, confidential applications

Publicly Accessible

Limited Accessibility through Single Sign-on

Actionable Reports
- Dashboards
- Customizable Reports
- Pre-Defined Reports

Applications
- Assessment Tools incl. PMRN
- CPALMS
- eLPEP
- Florida SchoolLeaders.org
- FACTS.org
- PEER
- Confidential student- and staff-level data
- Data for LEA Local Systems Feed
# Access to Florida’s Data

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Level of Access</th>
<th>Access Type</th>
<th>Sample of Accessible Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Aggregate – information available at the school, LEA, or state level; information will comply with FERPA regulations</td>
<td>Dashboards</td>
<td>Teacher data (certification, highly qualified)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-defined Reports</td>
<td>Assessment data (interim and summative)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customizable Reports</td>
<td>Demographic data (English Language Learners, Exceptional Education)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>School Indicators data (graduation rate, dropout rate)</td>
</tr>
</tbody>
</table>
| Students/Parents | Confidential – Individual student information accessible to students and their parents only  
*Plus access to aggregates identified for “Public”* | Single sign-on access to applications | FACTS.org (college and career plans)                                        |
| Teachers    | Confidential – All students in teacher’s assigned classroom  
*Plus access to aggregates identified for “Public”* | Single sign-on access to applications | Assessment Tools (PMRN and others created by RTTT)  
Confidential student- and staff-level data via LIIS  
Standards Instructional Tool (CPALMS)  
Exceptional Education Resource (PEER)  
| Principals  | Confidential – All students in school  
*Plus access to aggregates identified for “Public”* | Single sign-on access to applications | Assessment Tools (PMRN and others created by RTTT)  
Confidential student- and staff-level data via LIIS  
Standards Instructional Tool (CPALMS)  
Exceptional Education Resource (PEER) |
PARCC States

Governing Board States

Participating States
PARCC Goals

- A pathway to college and career readiness
- Assessments that enable cross-state comparisons
- Better assessments
- Better use of technology in assessments
- Match investments in testing with investments in teaching
## PARCC Management

<table>
<thead>
<tr>
<th>Governing Board States</th>
<th>AZ, AR, DC, FL, GA, IL, IN, LA, MD, MA, NJ, NY, OK, RI, TN</th>
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</thead>
<tbody>
<tr>
<td>Governing Board Chair</td>
<td>Massachusetts Commissioner Mitchell Chester</td>
</tr>
<tr>
<td>Fiscal Agent State</td>
<td>Florida</td>
</tr>
<tr>
<td></td>
<td>US Education Department award is to Florida on behalf of 25 states to oversee budget, procurement, and reporting functions</td>
</tr>
<tr>
<td>Project Management Partner</td>
<td>Achieve</td>
</tr>
<tr>
<td></td>
<td>Achieve is a bipartisan, non-profit organization that helps states raise academic standards, improve assessments, and strengthen accountability to prepare all young people for postsecondary education, work, and citizenship</td>
</tr>
</tbody>
</table>
PARCC Data System Standards

- Establish a set of common identity management and data technology standards for member states.
- Consult national experts to provide guidance on platform design, the pros and cons of development versus acquisition, and how to capture and compare data across states.
PARCC Administration and Reporting Process

- States provide vendor with student demographic information
- Vendor creates individualized student access and assessment forms
- After assessment administration, data processed by vendor and made available through the Interactive Data Tool
PARCC Interactive Data Tool

- Immediate and flexible access to performance data for teachers, parents, students, administrators, policymakers and the public
- An interactive data warehouse and a dynamic, user-friendly web portal
- Data displays that lead to appropriate instructional and evaluative action
- Allow users to browse assessment data for different indicators across different groups and create customizable reports
PARCC Interactive Data Tool

- An open-source system
- Professional development modules available for training on the tool’s functioning, capabilities, and appropriate uses of data accessed via the tool.
- Will be compliant with platform-aligned data standards for easy accessibility and use by current state systems
PARCC Administration & Reporting Process

- The vendor will use the *Interactive Data Tool* to send student-level and summary data for each assessment component to each PARCC state’s longitudinal data system.

- Data available for state uses (additional state reports, accountability, longitudinal research and analysis, links to postsecondary/employment data.)
More Information Available

- PARCC
  - http://www.parcconline.org/

- Florida Department of Education Data Systems (ARM@fldoe.org)
  - http://www.fldoe.org/arm/datasystems.asp