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Linking School and Student Achievement Data from a Large-Scale Database with the CCD: Applications for Research

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Presentation overview

- Brief Introduction of the Center on Teaching and Learning (CTL) and the DIBELS Data System (DDS)
- Education Research using the DDS & the Sentinel Schools Project
  - NCES – DDS Matching process
  - Survey Results
  - Descriptive Statistics for 10-year, longitudinal data
- Discussion & Questions

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Center on Teaching and Learning (CTL)

- The largest of 25 research and outreach units in the College of Education at the University of Oregon
- Primary activities relate to educational research, professional development, and data management service (DIBELS Data System - DDS)
- Current staff of approximately 80
  - 10 dedicated full-time to the Data System group and growing

Source: Warman, M., Kennedy, P., & Munir-McHill, S. (2011). *DIBELS Data System: Past, Present, and Future*. DIBELS Summit. Santa Ana Pueblo, NM.

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Center on Teaching and Learning (CTL)

- Mission: To *conduct*, *translate*, and *disseminate research* focused on solutions and resolutions to serious but practical problems in school systems, including classrooms, schools, special education settings, and school districts
- Focus on the *interaction* of curriculum, instruction, and assessment within school systems
- Conduct *IES-funded research* in beginning reading, mathematics, reading comprehension, instructional practices for English Learners, …

Source: Warman, M., Kennedy, P., & Munir-McHill, S. (2011). *DIBELS Data System: Past, Present, and Future*. DIBELS Summit. Santa Ana Pueblo, NM.

DIBELS Data System, *one of the only university-based, not-for-profit, data systems that is a protected research project and available to all educators*

DIBELS Data System (DDS) Background

- A web-based database used by schools and districts to enter student performance results, create reports and track progress of students, classes, schools, districts, and projects *for timely decisionmaking.*
- Began as a research project to evaluate technical adequacy of newly developed DIBELS measures.
- The structure of the DDS provides multiple levels of account access, to allow flexibility and ensure confidentiality of student data.
- As a protected research project, account holders provide consent to participate, and data stored in the DDS are guarded at the highest levels.

Source: Warman, M., Kennedy, P., & Munir-McHill, S. (2011). *DIBELS Data System: Past, Present, and Future*. DIBELS Summit. Santa Ana Pueblo, NM.

Scale of the DDS, Usage by Districts, Schools, and Classes Across All Grades (1998-99 to 2010-11)

	N Districts	*N* Schools	*N* Classes
1998	4	17	54
1999	70	151	903
2000	170	418	2,885
2001	311	782	6,176
2002	761	2,164	21,196
2003	1,616	5,041	55,399
2004	2,585	8,412	105,094
2005	3,624	12,072	159,464
2006	4,344	14,220	192,279
2007	4,774	15,179	210,076
2008	4,658	14,013	210,600
2009	4,648	13,610	190,325
2010	4,481	12,960*	183,099

Cumulative years of involvement	Number of schools						
	K	1	2	3	4	5	6
1	3417	3545	3415	3365	3066	2832	1668
2	3068	2987	3050	2790	2271	1861	983
3	2809	3103	2753	2434	1728	1507	718
4	2633	2587	2510	2194	1475	1250	510
5	2603	2555	2515	2198	1246	1066	488
6	1944	1973	1901	1636	1113	949	251
7	1784	1715	1479	1179	162	115	17
8	835	829	637	413			
9	216	195	125	103			
10	138	132	40	15			
11	66	63	8	2			
TOTAL	**19513**	**19684**	**18433**	**16329**	**11061**	**9580**	**4635**

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DDS… Available Measures

- Assessments supported by DDS:
  - **DIBELS® 6th edition**
  - **IDEL** (Indicadores Dinámicos del Éxito en la Lectura) for native Spanish speakers, and/or for students receiving Spanish-language reading instruction
  - **Local/State outcome assessments** (up to one, currently)
  - **DIBELS® Next**
  - **easyCBM** Math (with updated reporting)

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The Role of DDS in Education Research

Community Partnerships

Role of the DIBELS Data System in Research

- Benefits to school-based research partners:
  - DDS schools and districts often have the first opportunities to participate in research projects.
  - DDS research partners have access to direct lines of communication with UO researchers—for any questions they may have.
  - DDS research partners receive additional training opportunities.
- Benefits to researchers in education:
  - The sample size of the DDS allows researchers to target specific populations of interest.
  - The DDS sample size lends itself to complex statistical models, which are being published in leading education journals.
  - The DDS can ease burdens of data collection—for schools and researchers.

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Current Research Efforts Involving the DDS

- Richly describe DDS users and dataset(s)
  - Link to NCES school IDs
  - Initiate a "Sentinel Schools Project"
  - Observe and study a longitudinal sample of schools
- Provide detailed analyses using DDS data
  - Improved interpretive information
    - National percentile ranks
    - Updated benchmark goals, and cut-points for risk
  - Multilevel analyses of achievement data with school-level predictors
  - Form and examiner effects on assessment outcomes

Sentinel Schools Project

- Based on the Public Health Model of Sentinel Institution Research employed by organizations such as the Centers for Disease Control (CDC, 1999, p. 1)
  - Involves strategic sampling of institutions within a large population
  - Opportunity to document trends in procedures and characteristics
  - Data offers advanced analysis options that enhance opportunities to examine national trends
  - Opportunity to implement specialized procedures and equipment in a real-world setting

NCES Matching

Who is here?

NCES Matching

- Developed systematic matching procedures using a combination of automated matching via SPSS computing algorithm, and "hand-matching," followed by a verification procedure
- Used matched schools from 2009-10 to select two cohorts of Sentinel Schools in 2010-11 and 2011-12
- Have used NCES match as *an inclusion criteria in analyses* in order to describe the sample of schools

Challenges associated with matching schools to NCES ID numbers

- Differences in the way schools are named in the DDS and NCES makes automated matching difficult
- Quantity of schools makes "hand-matching" impractical
- Need to prevent mis-matches when multiple schools share the exact same name
- Availability of data varies across sources
- Variable names and coding differ between public and private school data sources
- Flexibility within the DDS to create and name schools
- NCES does not include enrollment numbers for some schools, or reports enrollment of 0

Summary of Matched Schools

Year	NCES schools with any grade K-6	NCES schools with K-6 enrollment > 0	DDS schools	Matched schools	% of DDS	% of NCES
2003 – 04*	98,587	97,065	4,397	4,296	97.7	4.43
2004 - 05	71,387	70,290	8,031	7,568	94.2	10.77
2005 – 06*	98,642	97,160	11,601	11,224	96.8	11.55
2006 - 07	72,855	70,764	13,814	12,620	91.4	17.83
2007 – 08*	98,317	96,415	14,916	14,539	97.5	15.08
2008 - 09	73,242	71,521	13,806	12,618	91.4	17.64
2009 – 10*	73,436	71,662	13,451	12,283	91.3	17.14

*Years for which private school data is or will be available.

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Verification of Random Sample

Year	Selected	Total Corrections		Matched to incorrect NCES ID		Previously unmatched	
	N	N	%	N	%	N	%
2003-04*	420	2	0.5	2	0.5	0	0.0
2004-05	471	3	0.6	2	0.4	1	0.2
2005-06*	489	14	2.9	4	0.8	10	2.0
2006-07	498	14	2.8	4	0.8	10	2.0
2007-08*	499	3	0.6	2	0.4	1	0.2
2008-09	487	9	1.8	5	1.0	4	0.8
2009-10*	494	6	1.2	3	0.6	3	0.6

*Years for which private school data is or will be available.

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Demographic Trends

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Use of Matched NCES Data in DDS Research

- Demographic characteristics of schools
  - From matched schools
  - Comparison of independent data collection
- Participation (based on enrollment rates) of DDS users

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School-level demographic data from NCES for public schools with at least 1 student in grades K - 6 in 2009-10, reported by DDS participation

Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
Total Enrollment K - 6	ALL	354.82	234.24	0.94	5.32	0	178	335	500	5003	2.42	0.00	73,436
	Enrollment > 0	363.61	230.29	0.99	5.83	1	192	343	505	5003	0.90	0.00	71,662
	Non-DDS	357.54	235.50	1.05	6.21	1	179	333	502	5003	1.09	0.00	59,267
	DDS	385.92	196.77	0.67	2.27	2	249	376	507	2569	0.03	0.01	11,307
Total Enrollment K - 6 Trimmed	ALL	353.07	226.82	0.48	-0.23	0	178	335	500	987	2.42	1.01	73,436
	Enrollment > 0	361.81	222.62	0.50	-0.19	1	192	343	505	987	0.90	1.03	71,662
	Non-DDS	355.56	227.14	0.53	-0.21	1	179	333	502	987	1.09	1.11	59,267
	DDS	385.19	193.33	0.42	0.04	2	249	376	507	987	0.03	0.52	11,307

Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
Proportion													
Male	Enrollment > 0	0.52	0.08	2.01	20.66	0.00	0.49	0.51	0.53	1.00	0.39	0.13	71,650
	Non-DDS	0.52	0.09	1.92	18.36	0.00	0.49	0.51	0.53	1.00	0.46	1.53	59,256
	DDS	0.51	0.05	0.57	20.02	0.00	0.49	0.51	0.53	1.00	0.03	0.04	11,306
Female	Enrollment > 0	0.47	0.08	-1.92	20.33	0.00	0.46	0.48	0.50	1.00	1.32	0.36	71,650
	Non-DDS	0.47	0.09	-1.83	18.02	0.00	0.46	0.48	0.50	1.00	1.58	0.44	59,256
	DDS	0.48	0.04	-1.14	20.90	0.00	0.46	0.48	0.50	1.00	0.07	0.01	11,306
Native American	Enrollment > 0	0.02	0.10	8.06	70.03	0.00	0.00	0.00	0.01	1.00	46.02	0.41	71,650
	Non-DDS	0.02	0.10	8.26	73.54	0.00	0.00	0.00	0.01	1.00	47.55	0.43	59,256
	DDS	0.03	0.11	7.05	53.55	0.00	0.00	0.00	0.01	1.00	38.62	0.34	11,306
Asian	Enrollment > 0	0.04	0.09	5.48	39.25	0.00	0.00	0.01	0.04	1.00	26.35	0.04	71,650
	Non-DDS	0.04	0.09	5.21	35.67	0.00	0.00	0.01	0.04	1.00	26.92	0.05	59,256
	DDS	0.03	0.08	7.49	68.84	0.00	0.00	0.01	0.03	0.98	24.28	0.01	11,306
Hispanic	Enrollment > 0	0.21	0.28	1.58	1.34	0.00	0.02	0.07	0.28	1.00	9.56	1.54	71,650
	Non-DDS	0.22	0.29	1.49	1.01	0.00	0.02	0.08	0.31	1.00	9.78	1.85	59,256
	DDS	0.14	0.21	2.16	4.12	0.00	0.01	0.04	0.16	1.00	8.92	0.03	11,306
Black	Enrollment > 0	0.16	0.25	2.00	3.07	0.00	0.01	0.04	0.19	1.00	13.83	0.74	71,650
	Non-DDS	0.17	0.26	1.95	2.88	0.00	0.01	0.05	0.20	1.00	14.17	0.78	59,256
	DDS	0.15	0.25	2.20	3.83	0.00	0.01	0.03	0.15	1.00	12.29	0.56	11,306
White	Enrollment > 0	0.55	0.35	-0.35	-1.36	0.00	0.21	0.63	0.88	1.00	4.83	2.13	71,650
	Non-DDS	0.53	0.35	-0.28	-1.42	0.00	0.18	0.60	0.87	1.00	5.45	2.28	59,256
	DDS	0.64	0.32	-0.75	-0.78	0.00	0.42	0.74	0.91	1.00	1.86	1.49	11,306
Hawaiian Native/Pacific Islander	Enrollment > 0	0.00	0.01	10.43	191.85	0.00	0.00	0.00	0.00	0.33	65.51	0.01	18,441
	Non-DDS	0.00	0.01	10.37	195.17	0.00	0.00	0.00	0.00	0.33	64.69	0.01	16,048
	DDS	0.00	0.01	11.12	163.04	0.00	0.00	0.00	0.00	0.19	72.37	0.05	2,009
Two or more races	Enrollment > 0	0.03	0.07	8.55	92.70	0.00	0.00	0.01	0.03	1.00	33.00	0.05	18,441
	Non-DDS	0.03	0.07	8.47	90.12	0.00	0.00	0.01	0.03	1.00	32.90	0.06	16,048
	DDS	0.03	0.05	9.29	131.85	0.00	0.00	0.01	0.04	0.98	33.35	0.05	2,009
Race/ethnicity unknown/not reported	Enrollment > 0	0.01	0.03	5.99	82.10	0.00	0.00	0.00	0.00	1.00	75.31	0.00	71,650
	Non-DDS	0.01	0.03	6.72	111.05	0.00	0.00	0.00	0.00	1.00	76.23	0.00	59,256
	DDS	0.02	0.04	3.99	22.03	0.00	0.00	0.00	0.01	0.47	70.62	0.01	11,306

Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
Free/Reduced lunch*	Enrollment > 0	0.52	0.28	-0.11	-1.04	0.00	0.30	0.53	0.75	1.00	1.97	0.00	69,353
	Non-DDS	0.52	0.28	-0.11	-1.07	0.00	0.30	0.53	0.76	1.00	2.22	0.01	57,070
	DDS	0.53	0.26	-0.04	-0.93	0.00	0.33	0.53	0.73	1.00	0.81	0.03	11,202
*Pupil to Teacher Ratio**	Enrollment > 0	16.15	39.19	232.66	58650.01	0.01	13.18	15.38	18.06	9960.00	0.00	0.00	70,722
	Non-DDS	15.99	12.60	61.65	5807.93	0.01	13.12	15.33	18.00	1500.00	0.00	0.00	58,467
	DDS	16.89	94.29	105.00	11072.90	1.59	13.37	15.52	18.17	9960.00	0.01	0.01	11,171
*Pupil to Teacher Ratio Trimmed**	Enrollment > 0	15.70	4.18	0.19	0.81	0.01	13.18	15.38	18.06	28.00	0.00	0.96	70,722
	Non-DDS	15.65	4.24	0.17	0.81	0.01	13.12	15.33	18.00	28.00	0.00	0.99	58,467
	DDS	15.87	3.84	0.38	0.71	1.59	13.37	15.52	18.17	28.00	0.01	0.81	11,171

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Race Reported for 1st Grade Students by Percent (2009-2010)

	White		Black/African American		American Indian/Alaskan Native		Asian/Native Hawaiian/Other Pacific Islander	
	DISTRICT	NCES	DISTRICT	NCES	DISTRICT	NCES	DISTRICT	NCES
School 1	72.9	64.6	1.7	3.8	5.1	0.0	17.0	15.2
School 2	73.6	58.6	7.5	6.9	0.0	0.0	11.3	12.1
School 3	52.9	42.3	5.9	3.8	26.5	0.0	5.9	5.8
School 4	70.4	66.7	0.0	0.0	14.8	0.0	7.4	7.4
School 5	66.2	63.0	2.7	2.5	9.5	1.2	17.6	16.0
School 6	48.9	47.0	4.3	3.5	20.2	3.5	13.8	11.3
School 7	93.2	77.3	1.7	2.3	1.7	1.1	1.7	1.1
School 8	86.9	77.8	3.3	2.8	1.6	1.4	4.9	4.2
School 9	100.0	92.4	0.0	0.0	0.0	0.0	0.0	0.0
School 10	92.5	72.5	2.5	2.0	2.5	2.0	0.0	0.0
School 11	100.0	92.7	0.0	0.0	0.0	0.0	0.0	0.0
School 12	91.3	78.1	0.0	0.0	0.0	0.0	4.4	3.1
School 13	92.3	92.3	0.0	0.0	0.0	0.0	0.0	0.0
School 14	83.9	60.4	1.6	1.0	6.5	4.2	3.2	3.1
School 15	41.7	16.9	14.6	6.8	2.1	0.8	16.7	8.5
School 16	50.0	41.7	8.0	5.0	16.0	0.0	6.0	5.0

Race Reported by SSP Schools in 2010-11 & NCES in 2009-10

	American Indian/ Alaskan Native		Asian/Pacific Islander		Hispanic		Black		White		Unknown/not reported	
	District (2010-11)	NCES (2009-10)	District (2010-11)	NCES (2009-10)	District (2010-11)	NCES (2009-10)	District (2010-11)	NCES (2009-10)	District (2010-11)	NCES (2009-10)	District (2010-11)	NCES (2009-10)
School 1	22.1	27.7	0.8	0.4	21.0	22.7	3.0	1.5	45.0	46.1	9.4	0.0
School 2	1.3	1.3	2.2	2.3	15.6	17.5	0.8	0.0	69.7	78.1	10.6	0.0
School 3	0.0	0.0	1.1	0.0	83.8	86.0	0.0	0.0	8.6	14.0	6.5	0.0
School 4	0.0	1.1	0.3	0.7	38.8	38.7	0.4	0.6	47.6	59.1	4.9	0.0
School 5	0.4	0.0	1.2	2.2	16.1	20.7	0.4	0.0	76.0	76.7	1.6	0.0
School 6	0.0	0.3	0.0	0.3	0.5	2.1	34.7	33.0	56.5	56.6	6.0	6.1
School 7	0.0	0.0	1.7	0.6	1.7	1.2	33.7	35.8	53.1	57.1	2.8	7.4
School 8	0.0	0.4	0.0	0.0	0.0	0.4	0.4	0.4	99.2	98.8	0.4	0.0
School 9	0.0	0.0	3.0	2.3	3.0	4.0	0.6	0.0	84.9	92.5	2.4	0.0
School 10	0.6	0.6	0.0	0.0	45.8	46.2	37.9	30.4	12.9	14.1	10.3	1.2
School 11	0.0	0.0	0.4	0.0	2.2	1.5	1.0	0.9	91.0	97.5	5.4	0.0
School 12	0.0	0.0	1.6	1.6	0.5	0.6	4.4	3.3	88.0	91.5	4.9	0.0
School 13	0.0	0.0	0.0	0.0	3.9	6.4	44.0	47.6	30.1	32.1	4.8	17.4
School 14	0.0	0.0	0.2	0.2	1.4	2.2	24.7	22.4	51.9	53.5	5.0	19.3
School 15	74.4	77.3	1.0	1.1	2.0	3.8	0.0	0.0	11.1	17.8	8.5	0.0

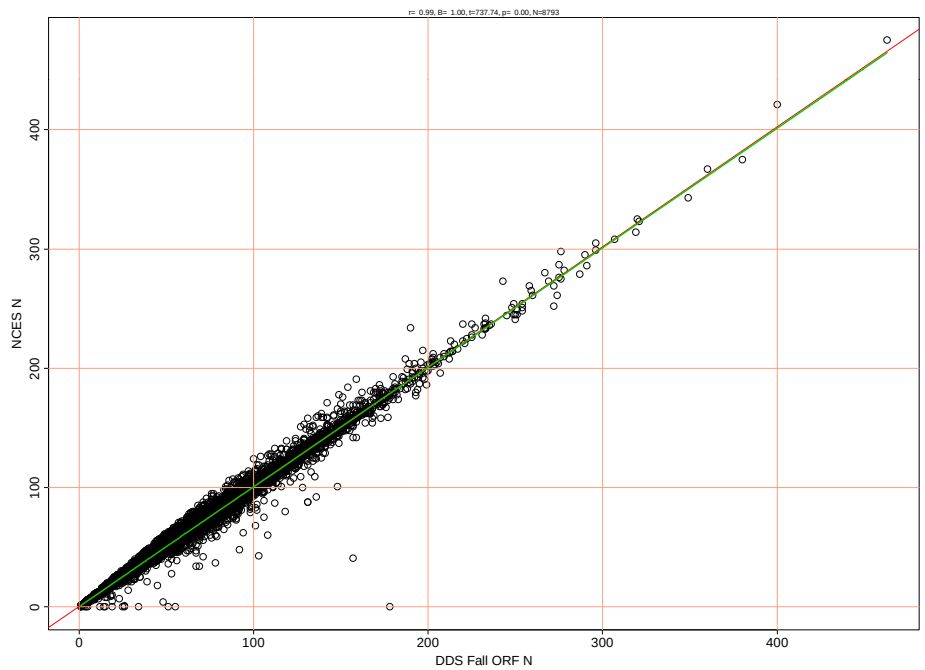
Potential reasons for discrepancies between NCES and district reported demographics

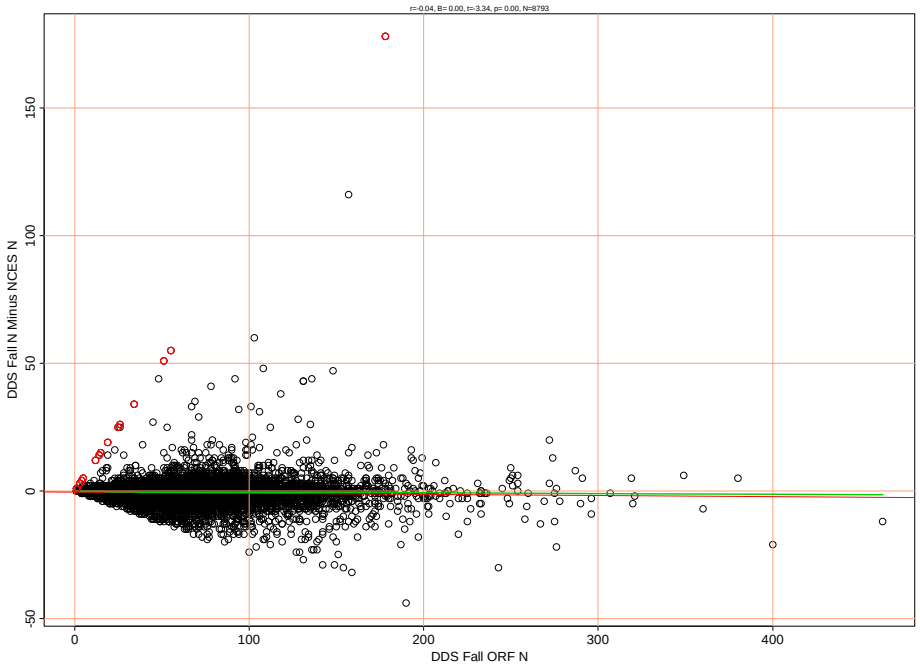
- Fluctuation across years
- Fluctuation within a year
- Differences in collecting

  The way the information was requested from parents (e.g., five categories or seven categories; single vs. multiple responses allowed; race & ethnicity collected separately)
- Differences in reporting (e.g., making the data fit into the requested format)
- Data entry errors

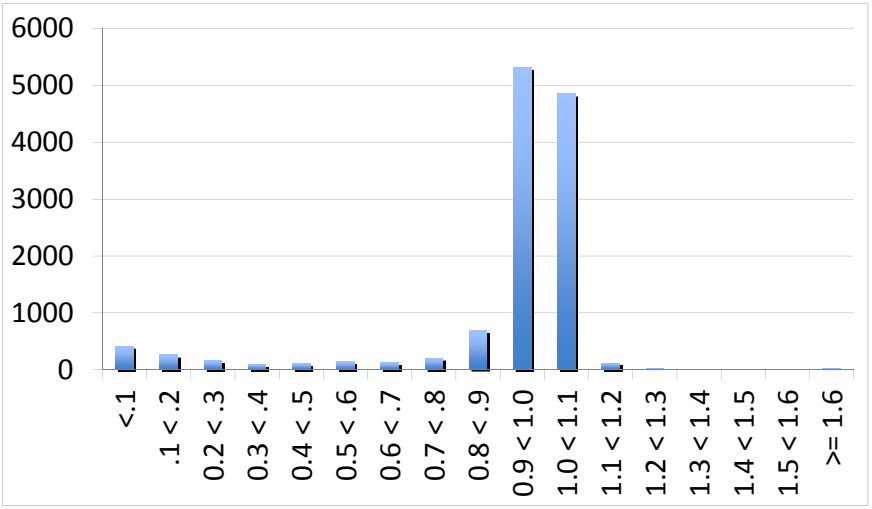
What level of completeness (with regard to data entry) is considered "acceptable?"

- An ongoing concern for any school-level analyses, including reporting of data system norms, is the extent to which schools may be including/excluding students from their universal screening practices.
- Given the availability of NCES data, our first question is: what are the typical testing rates for schools in the DDS?





What level of completeness (with regard to data entry) is considered "acceptable?"



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Potential reasons for discrepancies between the number of students tested and the number enrolled

- Fluctuating enrollment between one year and the next
- Fluctuating enrollment within a school year
- Some students are not tested or their data are not entered
- Schools are matched incorrectly
- Inaccuracies in NCES enrollment data

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SSP Survey Results

An additional check of our accuracy

Results of fidelity survey from 82 of 87 (94%) Sentinel Schools

- In the grade levels where DIBELS assessments are used, *do you administer benchmark assessments to students of all skill levels*, including English learners & students with IEPs?
  - 96.3% yes; 2.4% no; 1.2% no response
- Were any students with IEPs *excluded* from DIBELS benchmark testing?
  - 1.2% yes; 1.2% no; 97.6% NA
- Are any of your students *assessed during benchmark testing with materials that are out of their grade level* (e.g., testing a 3rd grader with 1st grade materials)?
  - 12.2% yes; 84.1% no; 3.7% NA or no response

2010-11 DDS participation relative to 2009-10 NCES enrollment data: *n* = 82 SSP schools

Grade	Mean	SD	Min	Q1	Q2	Q3	Max	% Min	% Max	N	N ≤.8	N ≥1.2
K	0.97	0.12	0.54	0.95	1	1.02	1.33	1.56	1.56	64	15	5
1	0.99	0.14	0.33	0.97	1	1.03	1.56	1.56	1.56	64	9	13
2	0.96	0.12	0.24	0.95	0.98	1.02	1.11	1.56	1.56	64	13	8
3	0.94	0.21	0.01	0.96	1	1.02	1.1	1.69	1.69	59	15	11
4	0.94	0.17	0.17	0.94	0.99	1.02	1.14	1.79	1.79	56	13	7
5	0.93	0.22	0.07	0.94	0.99	1.01	1.4	2.63	2.63	38	9	9
6	1.06	0.52	0.15	0.89	0.97	1.01	2.6	6.25	6.25	16	5	3

Optional enrollment survey with subsample of SSP schools

- Purpose:
  - Confirm NCES school ID numbers
  - Collect enrollment data by grade for the 2010-11 school year
- Administered in March of 2012

Initial results of enrollment survey

- 47 schools (52%) responded to the survey.
- Of the respondents, 37 schools reported an NCES ID number.
  - 35 (95%) matched the NCES ID we had identified for them.
  - Two NCES ID numbers provided by respondents were incorrect as evidenced by the number of digits and format of the number.

2010-11 DDS participation relative to survey response enrollment data

Grade	Mean	SD	Min	Q1	Q2	Q3	Max	% Min	% Max	N	N ≤.8	N ≥1.2
K	1	0.16	0.51	0.93	1.02	1.11	1.26	2.7	2.7	37	4 (15)	5 (5)
1	1.01	0.16	0.6	0.95	1	1.09	1.57	2.7	2.7	37	4 (9)	1 (13)
2	1	0.17	0.63	0.92	1	1.11	1.44	2.7	2.7	37	5 (13)	3 (8)
3	0.99	0.1	0.74	0.94	1	1.02	1.25	2.7	2.7	37	1 (15)	2 (11)
4	0.96	0.15	0.53	0.88	0.99	1.04	1.36	2.78	2.78	36	5 (13)	1 (7)
5	1.04	0.21	0.29	0.98	1.04	1.11	1.6	3.23	3.23	31	1 (9)	5 (9)
6	0.96	0.25	0.13	0.89	1	1.1	1.25	5.88	5.88	17	1 (5)	3 (3)

Follow-up: Reasons for out-of-range participation:

- Provided enrollment data for the *incorrect year*, either copying from the NCES website data for the 2009-10 school year (seven schools), or reporting enrollment for the current (2011-12) school year (four schools).
- A single teacher abstained from testing (one school)
- Students were tested with different assessment materials (two schools)
- Did not test high-achieving students in grades 3 – 5 (one school)
- Data entry error (one school)
- Confirmed enrollment numbers for 2010-11; *no explanation other than fluctuating enrollment* (three schools)
- *Transitory population* (four schools)

Next steps:

- Repeat analysis once 2010-11 NCES data becomes available.
- When 2011-12 NCES data becomes available, conduct a new analysis using *required* survey reported enrollment (from SSP schools), collected during 2011-12.
- Allow (Require?) schools to enter/match their NCES ID number in the DDS to facilitate accurate matches.
- Allow (Require?) schools to enter current year enrollment into the DDS. The DDS could then report % data entry completion.

Longitudinal sample: Results

DDS Schools with 10+ Years of Consecutive Participation

"Ten Years Schools" Analysis

- Purpose: To examine the characteristics and student performance of schools that have made a long-term commitment to assess the reading performance of their students.
- Sample selection criteria:
  - Longitudinal sample:
    - At least one data point in each grade K – 3, in each of 10 years (ending in 2010-11)
    - Matched to NCES ID in 2009-10
  - DDS sample:
    - At least one data point in each grade K – 3 in 2009-10
    - Matched to NCES ID in 2009-10
  - NCES sample:
    - At least one student in each grade K – 3 in 2009-10

School characteristics: Region reported as percent (source: NCES 2009-10 data)

	NCES (*N* = 48,096)	DDS (*N* = 8,050)	10+ years (*N* = 92)
Northeast	15.4	13.0	3.3
Midwest	24.6	25.6	27.2
South	34.1	26.1	13.0
West	25.8	35.3	56.5

Location relative to population centers reported as percent (source: NCES 2009-10 data)

	NCES (N = 48,096)	DDS (N = 8,050)	10+ years (N = 92)
City, Large	15.7	8.8	4.3
City, Midsize	6.7	5.2	0
City, Small	7.7	7.2	1.1
Suburb, Large	24.5	21.3	7.6
Suburb, Midsize	2.8	2.7	5.4
Suburb, Small	1.9	1.8	1.1
Town, Fringe	1.4	1.8	1.1
Town, Distant	5.1	6.6	18.5
Town, Remote	3.3	5.7	13
Rural, Fringe	12	12.5	13
Rural, Distant	11.9	15.9	22.8
Rural, Remote	6.7	10.3	12
Not applicable	0.3	0.2	0

Other characteristics reported as percent (source: NCES 2009-10 data)

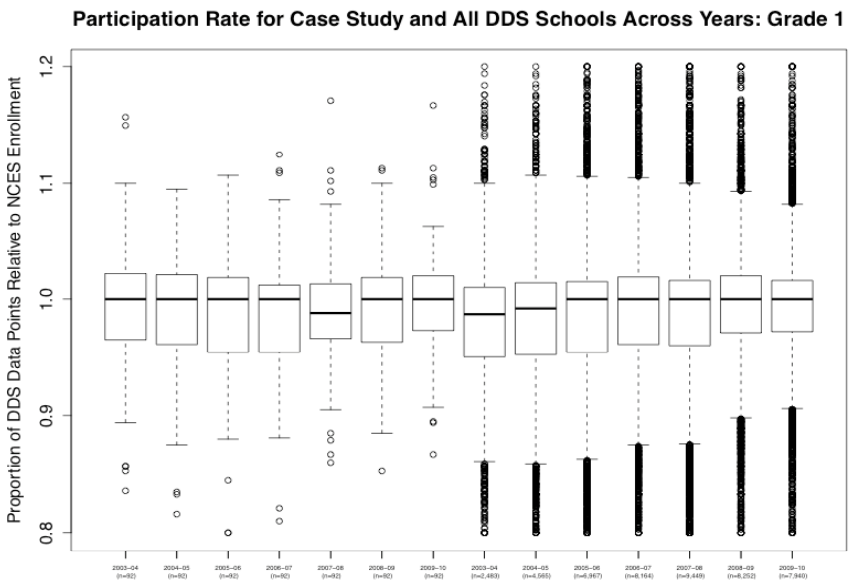
	NCES (N = 48,096)	DDS (N = 8,050)	10+ years (N = 92)
Schoolwide Title 1 Eligible	55.7	56.8	69.6
Charter School	5.1	3.5	1.1
Type			
Regular school	98.5	99.2	100
Special Education school	0.8	0.2	0
Vocational education school	0	0	0
Alternative/other school	0.7	0.6	0

Demographics reported as proportion (source: NCES 2009-10 data)

Variable	Sample	Mean	SD	Min	25th	50th	75th	Max	% Min	% Max	N
American Indian/ Alaskan Native	NCES	0.02	0.1	0	0	0	0.01	1	48.45	0.49	48,094
	DDS	0.03	0.11	0	0	0	0.01	1	44.26	0.4	8,035
	10+ years	0.01	0.03	0	0	0.01	0.01	0.17	34.78	1.09	92
Asian/ Pacific Islander**	NCES	0.04	0.09	0	0	0.01	0.04	1	25.64	0	48,094
	DDS	0.03	0.08	0	0	0.01	0.03	0.99	28.9	0.01	8,035
	10+ years	0.25	0.36	0	0	0.01	0.69	0.97	27.17	1.09	92
Hispanic*	NCES	0.21	0.27	0	0.02	0.08	0.29	1	9.49	0.16	48,094
	DDS	0.15	0.22	0	0.02	0.05	0.18	1	11.64	0.04	8,035
	10+ years	0.08	0.08	0	0.02	0.05	0.11	0.48	5.43	1.09	92
Black*	NCES	0.16	0.25	0	0.01	0.04	0.19	1	13.54	0.57	48,094
	DDS	0.14	0.25	0	0.01	0.03	0.13	1	16.35	0.73	8,035
	10+ years	0.06	0.13	0	0	0.01	0.02	0.78	27.17	1.09	92
White	NCES	0.54	0.34	0	0.2	0.62	0.86	1	3.29	1.78	48,094
	DDS	0.62	0.32	0	0.39	0.72	0.9	1	2.1	2.14	8,035
	10+ years	0.59	0.34	0.03	0.16	0.69	0.89	0.99	1.09	1.09	92
Hawaiian Native/ Pacific Islander	NCES	0	0.01	0	0	0	0	0.26	66.23	0.01	12,838
	DDS	0	0.01	0	0	0	0	0.21	74.1	0.08	1,228
	10+ years	0	0.01	0	0	0	0	0.07	82.61	4.35	23
Two or more races	NCES	0.03	0.07	0	0	0.01	0.04	1	30.52	0.01	12,838
	DDS	0.03	0.06	0	0	0.01	0.04	0.95	33.96	0.08	1,228
	10+ years	0.02	0.03	0	0	0.01	0.03	0.14	26.09	4.35	23
Race/ Ethnicity unknown	NCES	0.01	0.04	0	0	0	0	0.54	74.59	0	48,094
	DDS	0.02	0.05	0	0	0	0.01	0.49	72.45	0.01	8,035
	10+ years	0.01	0.03	0	0	0	0	0.13	72.83	1.09	92

Other characteristics (source: NCES 2009-10 data)

Variable	Sample	Mean	SD	Min	25th	50th	75th	Max	% Min	% Max	N
Male (proportion)	NCES	0.51	0.05	0	0.48	0.51	0.53	1	0.02	0.03	48,094
	DDS	0.51	0.05	0	0.48	0.51	0.54	1	0.01	0.01	8,035
	10+ years	0.51	0.04	0.42	0.49	0.51	0.54	0.64	1.09	1.09	92
Female (proportion)	NCES	0.48	0.05	0	0.45	0.48	0.5	1	0.05	0.01	48,094
	DDS	0.47	0.05	0	0.45	0.48	0.5	0.91	0.04	0.01	8,035
	10+ years	0.48	0.04	0.36	0.45	0.48	0.5	0.58	2.17	1.09	92
Free/ Reduced Lunch (proportion)	NCES	0.53	0.28	0	0.31	0.54	0.76	1	1.5	0	46,688
	DDS	0.54	0.26	0	0.34	0.54	0.75	1	0.67	0.03	7,953
	10+ years	0.53	0.22	0.05	0.4	0.56	0.68	0.95	1.09	1.09	92
Pupil to Teacher Ratio	NCES	16.51	46.81	0.26	13.49	15.61	18.3	9960	0	0	47,663
	DDS	17.33	111.89	0	13.36	15.66	18.39	9960	0.03	0.01	7,916
	10+ years	16.17	3.98	9.32	13.63	15.61	17.99	28.22	1.09	1.09	92
Pupil to Teacher Ratio, trimmed	NCES	16.01	3.93	0.26	13.49	15.61	18.3	27.27	0	1	47,663
	DDS	15.97	3.91	0	13.36	15.66	18.39	27.27	0.03	0.83	7,916
	10+ years	16.15	3.94	9.32	13.63	15.61	17.99	27.27	1.09	2.17	92



Descriptives: Letter Naming Fluency

	K - Fall			K - Winter			K - Spring			G1 - Fall		
Year	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
2001-02	13.70	14.23	5,076	29.10	17.45	5,316	45.04	18.85	5,303	41.35	18.97	5,330
2002-03	13.37	14.11	5,352	30.36	17.72	5,384	43.90	18.84	5,337	41.32	18.64	5,660
2003-04	13.32	14.04	5,381	31.61	17.97	5,385	44.99	18.85	5,425	41.51	17.91	5,662
2004-05	13.43	13.76	5,422	33.19	17.63	5,471	45.85	18.44	5,496	41.46	18.12	5,707
2005-06	13.74	13.95	5,454	33.14	17.97	5,513	45.72	18.5	5,507	42.63	17.72	5,730
2006-07	14.06	14.01	5,462	34.43	17.96	5,487	46.13	18	5,488	43.43	17.59	5,758
2007-08	13.99	14.19	5,454	34.30	17.83	5,558	46.73	18.5	5,604	42.77	17.17	5,649
2008-09	14.99	14.47	5,650	35.21	17.48	5,661	47.69	17.62	5,615	43.42	17.19	5,690
2009-10	15.87	14.91	5,653	34.70	17.87	5,607	47.40	17.86	5,665	43.98	16.92	5,681
2010-11 6th	14.54	14.5	4,589	33.67	17.89	4,534	46.75	17.85	4,539	43.11	17.07	4,570
2010-11 Nxt	23.53	17.11	1,167	42.16	16.99	1,207	54.44	16.18	1,217	49.24	16.54	1,056

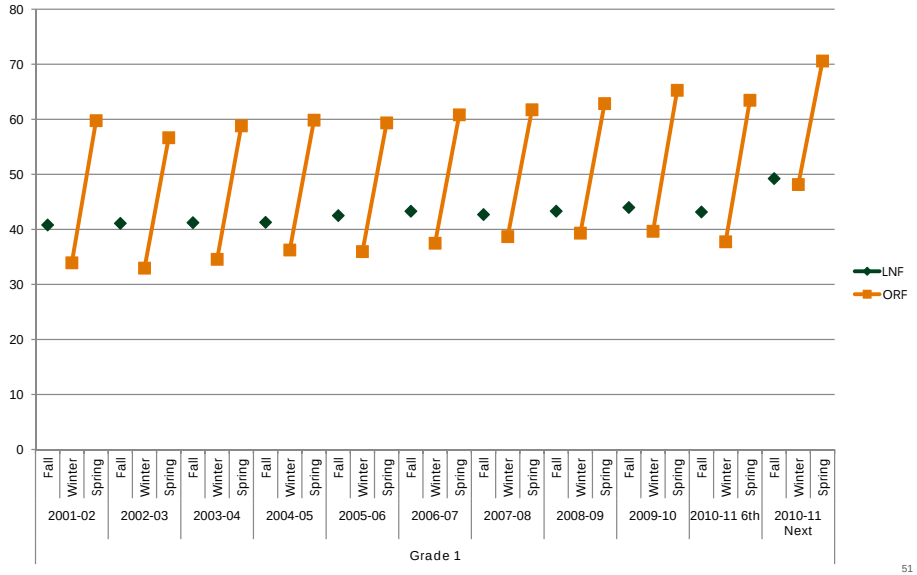
Descriptives: Oral Reading Fluency

	G1 - Winter			G1 - Spring			G2 - Fall			G2 - Winter		
Year	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
2001-02	34.4	29.9	5538	60.2	35.9	5541	61.5	36.8	5189	79.3	40.2	5434
2002-03	33.2	29.9	5574	57	34.3	5615	55.6	34.1	5673	80.9	38.5	5634
2003-04	34.9	31.4	5489	59.6	35	5630	53.8	32.9	5732	81.9	38	5641
2004-05	36.7	31.3	5690	60.6	34.7	5630	55	33	5708	84.9	38.9	5716
2005-06	36.2	30.5	5728	59.8	34	5696	57.5	33.3	5673	85.5	38	5674
2006-07	37.9	31.6	5754	61.4	34.7	5707	55.8	32	5696	84.1	37.2	5715
2007-08	38.9	31.3	5644	62.1	34.6	5647	55.7	33	5751	85.2	37.5	5766
2008-09	39.1	32.1	5649	62.8	35.3	5629	56.1	32.5	5629	86.2	36.8	5605
2009-10	39.4	32.8	5570	65.3	36.1	5630	57.8	33.3	5599	85.3	37.3	5467
2010-11 6th	37.7	31	4524	63.5	34.9	4480	56.5	33.1	4453	86.5	38	4455

Descriptives: Oral Reading Fluency

	G2 - Spring			G3 - Fall			G3 - Winter			G3 - Spring		
Year	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*
2001-02	102	39.9	5557	89.6	39.3	4904	101	39.2	5382	117	39.4	5443
2002-03	95.7	38.6	5651	82.8	37.4	5769	95.9	39.5	5763	111	39.5	5730
2003-04	96.3	38.3	5691	82.9	36.6	5729	97.3	38.6	5578	112	37.3	5685
2004-05	98.3	38.6	5664	81.7	35.5	5752	98.9	37.9	5746	111	36.1	5708
2005-06	99.2	38.1	5679	85.1	35.7	5762	100	38.3	5745	113	37.3	5740
2006-07	96.6	37.8	5702	85.2	36.2	5779	101	38.1	5709	114	37.8	5754
2007-08	97.8	37.6	5756	83.4	35.6	5717	99.3	37.5	5757	113	37	5744
2008-09	99.1	37.7	5606	84.4	35.8	5854	99.3	37.1	5795	113	36.5	5802
2009-10	99.3	37.1	5545	86.2	35.5	5608	100	37	5547	114	35.6	5570
2010-11 6th	100	37.5	4433	83.4	34.7	4495	99.5	37.7	4496	111	35.8	4521
2010-11 Next	108	40.4	1211	88.1	39.7	1080	106	39.1	1174	117	40.9	1151

Descriptives across years: Grade 1



DDS descriptives 2009-10: Grade 1

Measure	Sample	*Mean*	*SD*	*Min*	*Q1*	*Q2*	*Q3*	*Max*	*Min %*	*Max %*	*N*
					Fall						
LNF	10+ years	43.98	16.92	0	32	43	55	110	0.42	0.02	5681
	DDS	43.05	17	0	31	43	54	115	0.47	0	493954
PSF*	10+ years	46.39	15.97	0	39	48	57	87	1.78	0.02	5677
	DDS	41.97	17.06	0	33	44	53	128	2.23	0	494734
CLS	10+ years	38.69	25.14	0	23	34	48	203	1.67	0.02	5676
	DDS	34.84	23.65	0	19	31	44	255	2.63	0	495144
WRC	10+ years	8.39	9.71	0	1	6	12	73	22.83	0.03	3140
	DDS	6.92	9.42	0	0	3	10	100	33.32	0	325166
WUF*	10+ years	25.23	17.43	0	11	26	37	87	13.35	0.16	644
	DDS	29.66	18.79	0	17	30	42	780	9.76	0	180548
					Spring						
PSF	10+ years	55.73	12.39	0	49	56	64	122	0.29	0.02	5482
	DDS	53.56	13.14	0	46	54	63	128	0.28	0	467637
CLS	10+ years	80.24	35.87	0	52	73	105	248	0.2	0.02	5601
	DDS	74.35	34.23	0	49	67	96	255	0.25	0	473904
WRC*	10+ years	23.66	15.38	0	12	21	35	90	4.19	0.08	3701
	DDS	19.88	15.45	0	7	17	30	100	9.45	0.02	357338
ORF	10+ years	65.32	36.1	0	38	60	88	240	0.41	0.02	5630
	DDS	61.31	36.53	0	32	56	85	257	0.85	0	479468
RTF	10+ years	23.13	15.15	0	12	21	31	110	3.5	0.06	1602
	DDS	24.36	15.15	0	14	22	33	257	3.98	0	261194
WUF*	10+ years	44.01	15.32	0	36	45	54	91	2.47	0.21	486
	DDS	50.56	18.86	0	40	50	60	967	1.05	0	166238

Future directions

- DDS System Updates (July/August/January)
- Publications
- IES Applications to study relationships among manipulable instructional/school environmental variables.

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