

What's in a Name? Linking Achievement Data from a Large-Scale Database with the CCD

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Presentation overview

- ▣ History of the Center on Teaching and Learning & the DIBELS Data System [DDS]
- ▣ Education Research using the DDS
- ▣ NCES – DDS Matching process
- ▣ Findings from the Match, and Next Steps
- ▣ Discussion & Questions

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Center on Teaching and Learning

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Center on Teaching and Learning (CTL)

- ▣ One of 25 research and outreach units in the College of Education at the University of Oregon
- ▣ Comprised of 5 major working groups:
  - ▣ Data System, Research, Professional Development, Administrative Support, and the CTL Reading Clinic
- ▣ Current staff of approximately 70
  - ▣ 10 dedicated full-time to the Data System group and growing

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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, reading comprehension, instructional practices for English Learners, and mathematics

DIBELS Data System, *one of the only university-based, not-for-profit, data systems available to educators*

### Features

### DIBELS Data System (DDS) Background

- A web-based database used by schools and districts to enter student performance results and create reports
- Started as a research project to evaluate technical adequacy of newly developed DIBELS measures
- Began in 1998 with (3) districts and grades K-3
- Now used for grades K-6 in all 50 states and more than a dozen countries by approximately 10,000 schools in 4,000 districts

### DDS Usage by First Grade Districts, Schools, and Classrooms, 1998-2009

Year	Districts	Schools	Classes
1998	3	16	36
1999	67	136	410
2000	164	389	1233
2001	300	719	2233
2002	726	1919	6089
2003	1535	4213	14781
2004	2392	6683	24352
2005	3413	9242	35168
2006	4091	11034	42018
2007	4507	11657	44374
2008	4368	10815	38616
2009	4263	10423	36167

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			
<b>TOTAL</b>	<b>19513</b>	<b>19684</b>	<b>18433</b>	<b>16329</b>	<b>11061</b>	<b>9580</b>	<b>4635</b>

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## DDS Description

- The DDS offers an interface for educators to enter data on student achievement and track student progress at the individual, class, school, district, and project-level.
- The DDS generates reports immediately once scores are entered, allowing for timely decision making.
- The structure of the DDS provides multiple levels of account access, to allow flexibility and ensure confidentiality of student data.

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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## 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 limited reporting)



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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## Additional Reports

- Student-level
  - Individual Student Performance Profiles
- Class-level
  - Class Progress Monitoring Report, Class Progress Summary, Class Progress Graph
- District-, School-, and Project-level
  - Box-plot, Cross-Year Box Plot, Demographics Breakdown, District-Wide Norms, Grade List Report, Participation Summary, Scatter Plot
- Data Sets
  - DIBELS Next and Math Data Export, 6th Edition Data Farming, 6th Edition Progress Monitoring Data Export

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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## Resource Pages

HOME | ADMINISTRATION | DATA ENTRY | REPORTS | RESOURCES | HELP

### Resources

- [DIBELS Data System](#)
- [Video Demonstrations](#)
- [DIBELS Measures - 6th Edition](#)
- [easyCBM Math Measures](#)
- [Schoolwide Model](#)
- [Clearinghouse](#)
- [Contact Information](#)
- [Quick Start Guides](#)
- [IDEL Measures](#)
- [DIBELS Next](#)
- [Big Ideas in Beginning Reading](#)
- [Links](#)

- Available to everyone, you do not have to have a Data System account to access and utilize this information

## 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

## Data Safeguards in the DDS

- Because CTL and the Data System are a part of the University of Oregon, the DDS itself is covered by Human Subjects protections.
  - Adherence to FERPA
  - Federal-wide assurance regarding the protection of human subjects
  - Additional assurance in that research goals must be peer-reviewed, and judged as valid and meaningful
- Any changes to the DDS, or any specific Data System projects, must also be vetted by the UO's IRB.

## Context of Research with the DDS

- Evaluation efforts for Oregon Reading First and WRRFTAC (*Western Regional Reading First Technical Assistance Center*)
- DIBELS Data System (DDS) Summit in 2006 with Dr. Larry Hedges
- Planned Program of Research on DDS and with DDS users
  - Richly describe DDS users and dataset(s)
    - Link DDS schools to the Nat'l Center for Education Statistics (NCES) demographic data (95-97% match depending on year)
    - Recruit a sample of *Sentinel Schools* to provide information on real-world use of educational data and to participate in evaluations of new procedures
  - Provide detailed analyses using DDS data
    - National normative information
    - Multilevel analyses of achievement data with school-level predictors

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## The Public Health Model of Sentinel Institution Research

- The concept and practice of strategically sampling institutions within a large population is taken from public health research, where it is used widely.
- Organizations such as the Centers for Disease Control (CDC) conduct "sentinel surveillance" of hospitals to document trends in procedures and outbreaks of infectious disease (CDC, 1999, p. 1).
  - Data collected from sentinel hospitals offer advanced analysis options that enhance opportunities to *examine national trends*.
  - The sentinel approach offers the chance to *implement specialized procedures and equipment in a real-world setting*, and has placed sentinel hospitals in the vanguard on critical public health issues.

## The DDS Sentinel Schools Model

- Our objective is to build an analogous system in which Sentinel *Schools* would be in the vanguard for generating critical information related to comprehensive educational decision making practices.
- We believe the DDS provides the right context (and sampling frame), because of the nature of the fluency-based DIBELS measures and because of the scale of the DDS across the country.
  - According to NCES: During the 2009-2010 school year, 1 in 5 public schools (serving grades 1 – 4) are included in the DDS sample.

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## Steps to Building DDS Sentinel Schools

Link all schools to the NCES Common Core of Data

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## Goal:

Link participating schools in the DIBELS Data System (DDS) with their aggregate demographic information available from the National Center for Education Statistics (NCES) Common Core of Data (CCD) for school years 2003-04 to 2009-10 and beyond in order to determine the similarities/differences between schools using the DDS and schools throughout the nation.

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- Challenges associated with achieving this goal:
  - Differences in the way schools are named in the DDS and NCES *tax programming algorithms*.
    - Abe Lincoln Elementary School vs. Lincoln ES
  - Sheer quantity of schools *make "hand-matching" impractical*: In 2009-10 13,610 schools used the DIBELS data system
  - Both the DDS and NCES include *different schools, with very similar names*
    - Wallace Elementary School in district "Wallace Public Sch Dist 65R"
    - Wallace Public School in district "Wallace Public School"
  - *Data availability differs substantially* across the 3 sources (i.e., DDS, NCES public school, and NCES private school data).
    - Public school data is released approximately one year after the completion of the current AY.
    - Private school data has a similar delay, and is also released only every other year

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- Challenges (continued):
  - *Variable names and coding differ* between public and private schools in NCES sources.
  - Structure and permissions of the *DDS allow near limitless flexibility in the naming and organization of schools* over time. (e.g., school name is editable over time, one school can have two accounts, two schools can share the same account, students may be tested outside of grade level).
  - Some schools do not report to NCES, or report enrollments of 0.
  - Some schools report extreme proportions of students tested, relative to their NCES enrollment numbers. (i.e., 160% of students in NCES are rostered and assessed using the DDS).
  - Going back in time is always a challenge—irrespective of fidelity of coding practices.

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- Our NCES matching procedures include a combination of (a) automated matching via SPSS computing algorithm, (b) so-called "hand-matching" with schools unable to be linked automatically, and (c) verification of a random sample of all matches, and selected other groups.
  - Conduct automating matching
  - For remaining schools, conduct logical/hand matching
  - Complete verification process
  - Build final data file

# DIBELS Data System

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- Automated matching (via SPSS algorithm)
  - To both the DDS data file and the NCES data file do the following to increase the likelihood of a match:
    - Remove punctuation and standardize common abbreviations (e.g., M.S. when located at the end of a school name variable was recoded to "Middle School").
    - Remove the very common words "school" and "elementary".
  - Match based on state and school name only if the school name is unique within the state in both the NCES and DDS files.
  - For schools that are not uniquely named within a state, match based on state, district and school.
  - *Schools without an exact match are saved to a separate file for the logical/hand matching process.*
  - Carry matches forward and/or backward to subsequent years.

# DIBELS Data System

Using data to make decisions for students, **EACH** and **ALL**

- Logical/hand matching
  - Start with list of schools from the DDS remaining to be matched, including the number of of DDS data points for each grade.
  - Look in the NCES public school and private school data files and on the NCES web-based searchable databases for schools that may be a match.
  - In ambiguous cases, use (i) DDS testing numbers, (ii) NCES enrollment information, (iii) NCES build-a-table to show if the school's name has changed, (iv) school addresses, and (v) web searches to assess possible matches.
  - If the identity of the school is still ambiguous, do not make a match.
  - Our default position is that a school is unmatched.

# DIBELS Data System

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- After completing the automated and hand matching processes, verify the matches and correct when appropriate.
  - Examine all schools with DDS data in any grade where NCES indicates that there are no students in that grade.
  - Examine all schools in which the number of DDS data points in any grade is 1.25 or more times the number of students indicated in NCES.
  - Examine all schools that have been assigned the same NCES ID number.
  - Examine a random sample of 10 schools from every state for an estimate of overall match accuracy.

# DIBELS Data System

Using data to make decisions for students, **EACH** and **ALL**

## 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*						
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*						
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.

### Summary of Verification

Year	DDS > 1.25		No NCES enrollment	
	<u>N</u>	<u>N corrected</u>	<u>N</u>	<u>N corrected</u>
2003-04*				
2004-05	158	4	147	13
2005-06*	258	8	256	77
2006-07	na	na	300	64
2007-08*				
2008-09	273	23	235	61
2009-10*	254	27	276	81

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

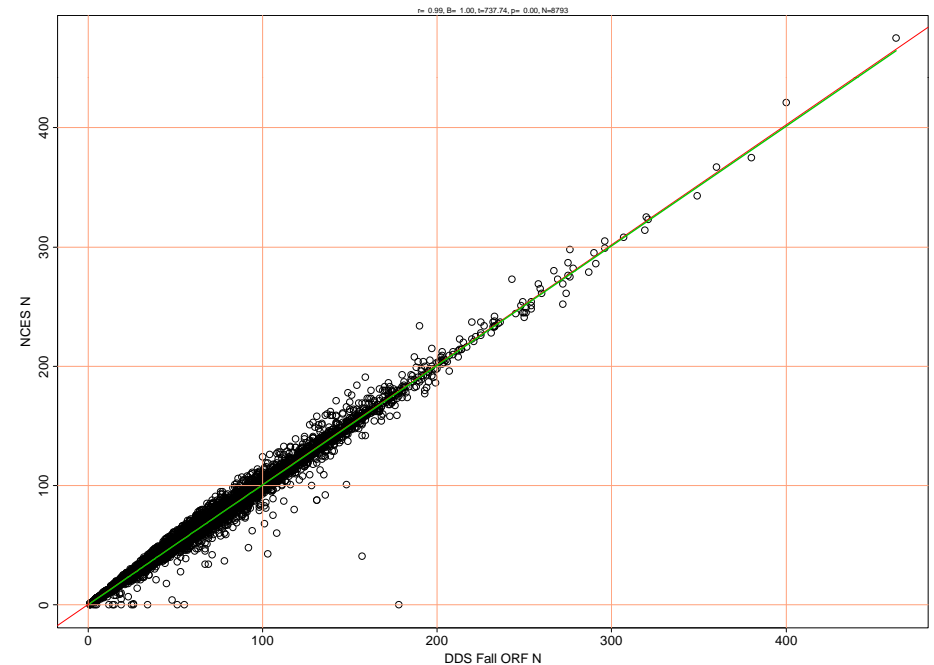
### Verification of Random Sample

Year	Selected	Total Corrections		Matched to incorrect NCES ID		Previously unmatched	
		<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
2003-04*							
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*							
2008-09	487	9	1.8	5	1.0	4	0.8
2009-10*	494	12	2.4	6	1.2	6	1.2

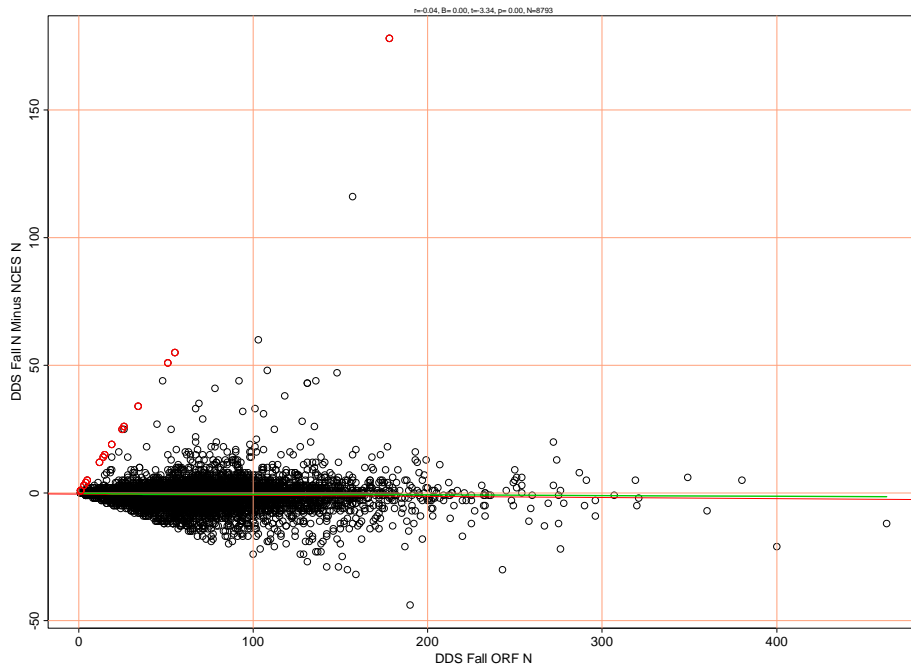
\*Years for which private school data is or will be available.

### NCES Matching: Additional Verification

Using actual district data to examine reported proportions







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

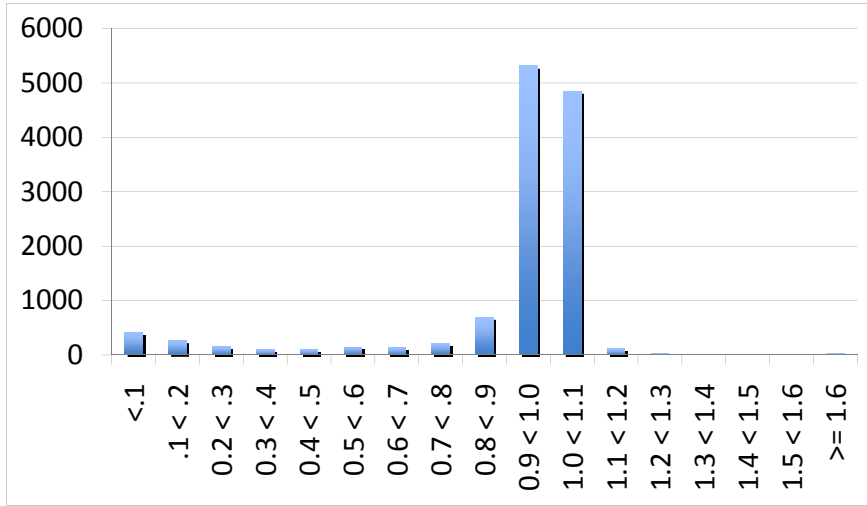


Applications of NCES matched schools to educational reporting.

## 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?"



## 2006-07 DDS Participation Relative to NCES Reported K - 6 Enrollment: Binned Distribution

Median DDS participation	No. of schools at each level of participation	% of schools at each level of participation
< .1	410	3.26
.1 < .2	264	2.10
0.2 < .3	161	1.28
0.3 < .4	96	0.76
0.4 < .5	107	0.85
0.5 < .6	146	1.16
0.6 < .7	131	1.04
0.7 < .8	205	1.63
0.8 < .9	692	5.51
0.9 < 1.0	5314	42.29
1.0 < 1.1	4852	38.62
1.1 < 1.2	119	0.95
1.2 < 1.3	21	0.17
1.3 < 1.4	9	0.07
1.4 < 1.5	9	0.07
1.5 < 1.6	6	0.05
>= 1.6	23	0.18
<b>Total</b>	<b>12565</b>	<b>100.00</b>

Table 1. Descriptive statistics for NCES primary schools with at least 1 student in grade 2, reported by participation status in DDS

Variable	Sample	Mean	Sd	Skew	Kurt	Min	Q25	Q50	Q75	Max	Min%	Max%	N
Proportion Female	DDS	0.48	0.09	-0.19	6.65	0.00	0.43	0.48	0.52	1.00	0.41	0.21	8777
	Non-DDS	0.47	0.11	-0.52	8.21	0.00	0.43	0.48	0.52	1.00	1.44	0.59	43824
Proportion Male	DDS	0.51	0.09	0.23	6.54	0.00	0.46	0.51	0.55	1.00	0.23	0.39	8777
	Non-DDS	0.51	0.11	0.60	8.30	0.00	0.46	0.51	0.55	1.00	0.65	1.36	43837
Proportion American Indian/Alaska Nati	DDS	0.03	0.11	6.79	50.41	0.00	0.00	0.00	0.01	1.00	70.33	0.51	8777
	Non-DDS	0.02	0.09	8.62	81.79	0.00	0.00	0.00	0.00	1.00	75.11	0.45	42845
Proportion Asian/Pacific Islander	DDS	0.03	0.09	7.15	61.72	0.00	0.00	0.00	0.03	1.00	54.31	0.03	8777
	Non-DDS	0.04	0.10	5.00	33.15	0.00	0.00	0.01	0.04	1.00	45.76	0.11	43162
Proportion Hispanic	DDS	0.14	0.22	2.09	3.72	0.00	0.00	0.04	0.16	1.00	28.51	0.25	8777
	Non-DDS	0.21	0.29	1.50	1.02	0.00	0.01	0.07	0.30	1.00	22.51	3.18	43637
Proportion Black	DDS	0.20	0.31	1.57	1.06	0.00	0.00	0.04	0.25	1.00	29.29	3.82	8777
	Non-DDS	0.16	0.25	2.09	3.53	0.00	0.00	0.04	0.18	1.00	29.13	1.60	43667
Proportion White	DDS	0.59	0.35	-0.49	-1.24	0.00	0.26	0.69	0.90	1.00	8.28	7.25	8777
	Non-DDS	0.56	0.36	-0.34	-1.39	0.00	0.20	0.64	0.89	1.00	8.84	7.72	43785
Proportion Free/Reduced Lunch	DDS	0.52	0.29	-0.07	-1.03	0.00	0.30	0.52	0.76	1.00	2.93	0.92	8734
	Non-DDS	0.47	0.30	0.06	-1.18	0.00	0.21	0.46	0.72	1.00	5.34	0.37	43309
Pupil to Teacher Ratio	DDS	15.97	9.90	28.78	1132.30	0.00	13.30	15.40	17.90	508.80	0.05	0.01	8443
	Non-DDS	16.09	18.12	58.36	5378.57	0.00	12.90	15.30	18.00	2145.00	0.00	0.00	41123
Pupil to Teacher Ratio Trimmed	DDS	15.63	3.69	0.10	0.29	0.00	13.30	15.40	17.90	25.26	0.05	0.01	8443
	Non-DDS	15.47	3.98	0.06	0.34	0.00	12.90	15.30	18.00	26.68	0.00	1.00	41123

Note. Proportion Free/Reduced Lunch and Pupil to Teacher Ratio are based on school-level N's. Min% and Max% are the percentages of the sample at the minimum and maximum score respectively. Q25, Q50 and Q75 are the 25th, 50th (median) and 75th quantiles. Skew and Kurt are skewness and kurtosis respectively. Pupil to teacher ratio was trimmed (values exceeding the 99th percentile were recoded back to the 99th percentile value) to avoid distortion due to extreme outliers.

Final Sample for schools serving 2<sup>nd</sup> grade students during 2006-2007  
 86% (n = 8793) of all 10200 public schools in the DDS are able to be matched.

## School-level demographic data from NCES for public schools with at least 1 student in grades K - 6 in 2006-07, reported by DDS participation

Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
<u>Total Enrollment K - 6</u>	ALL	354.70	238.23	0.84	2.06	0	177	331	498	3854	2.870	0.001	172,855
Enrollment > 0	DDS	365.19	233.67	0.89	2.30	1	192	340	505	3854	0.776	0.001	170,764
	Non-DDS	357.87	238.19	0.92	2.32	1	179	329	500	3854	0.947	0.002	57,873
	DDS	392.23	205.80	0.78	2.15	2	248	375	513	2705	0.009	0.009	11,097
<u>Total Enrollment K - 6 Trimmed</u>	ALL	353.05	231.85	0.56	-0.05	0	177	331	498	1026	2.870	1.006	72,855
Enrollment > 0	DDS	363.48	227.05	0.59	0.00	1	192	340	505	1026	0.776	1.036	70,764
	Non-DDS	356.07	231.25	0.62	-0.02	1	179	329	500	1026	0.947	1.096	57,873
	DDS	391.33	201.97	0.55	0.21	2	248	375	513	1026	0.009	0.586	11,097

Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
<b>Proportion</b>													
Male	Enrollment > 0	0.51	0.08	2.16	21.02	0.00	0.49	0.51	0.53	1.00	0.32	1.16	70,737
	Non-DDS	0.52	0.09	2.07	18.41	0.00	0.49	0.51	0.53	1.00	0.38	1.41	57,846
	DDS	0.51	0.04	1.09	26.03	0.00	0.49	0.51	0.53	1.00	0.01	0.06	11,097
Female	Enrollment > 0	0.47	0.08	-2.02	20.95	0.00	0.46	0.48	0.50	1.00	1.17	0.30	70,688
	Non-DDS	0.47	0.09	-1.91	18.35	0.00	0.46	0.48	0.50	1.00	1.41	0.37	57,797
	DDS	0.48	0.04	-1.33	25.41	0.00	0.46	0.48	0.50	0.99	0.07	0.02	11,097
Gender unknown/not reported	Enrollment > 0	0.01	0.04	10.86	237.02	0.00	0.00	0.00	0.01	1.00	64.79	0.04	70,763
	Non-DDS	0.01	0.04	11.05	233.58	0.00	0.00	0.00	0.02	1.00	63.91	0.04	57,872
	DDS	0.01	0.03	7.20	165.79	0.00	0.00	0.00	0.01	0.98	71.06	0.01	11,097
Native American	Enrollment > 0	0.02	0.09	8.48	79.70	0.00	0.00	0.00	0.01	1.00	46.77	0.25	69,842
	Non-DDS	0.02	0.08	8.84	87.06	0.00	0.00	0.00	0.01	1.00	47.81	0.24	56,984
	DDS	0.03	0.11	6.91	51.71	0.00	0.00	0.00	0.01	1.00	42.04	0.36	11,069
Asian	Enrollment > 0	0.04	0.09	5.64	41.84	0.00	0.00	0.01	0.04	1.00	27.06	0.06	70,183
	Non-DDS	0.04	0.09	5.35	37.95	0.00	0.00	0.01	0.04	1.00	27.02	0.07	57,316
	DDS	0.03	0.08	7.69	71.84	0.00	0.00	0.01	0.03	0.95	27.68	0.01	11,081
Hispanic	Enrollment > 0	0.19	0.27	1.70	1.77	0.00	0.02	0.06	0.25	1.00	11.21	1.89	70,594
	Non-DDS	0.20	0.28	1.63	1.51	0.00	0.02	0.06	0.26	1.00	11.30	2.31	57,705
	DDS	0.14	0.22	2.13	3.87	0.00	0.01	0.04	0.16	1.00	11.40	0.04	11,096
Black	Enrollment > 0	0.17	0.26	1.97	2.90	0.00	0.01	0.04	0.20	1.00	13.94	0.86	70,575
	Non-DDS	0.16	0.25	2.02	3.22	0.00	0.01	0.04	0.19	1.00	14.52	0.79	57,688
	DDS	0.19	0.30	1.68	1.43	0.00	0.01	0.04	0.23	1.00	11.80	1.20	11,094
White	Enrollment > 0	0.57	0.35	-0.43	-1.30	0.00	0.24	0.67	0.90	1.00	4.79	2.72	70,689
	Non-DDS	0.57	0.35	-0.41	-1.32	0.00	0.24	0.66	0.90	1.00	4.98	2.93	57,802
	DDS	0.60	0.34	-0.57	-1.15	0.00	0.30	0.72	0.91	1.00	3.91	1.90	11,095
Race/ethnicity unknown/not reported	Enrollment > 0	0.01	0.03	8.80	180.67	0.00	0.00	0.00	0.01	1.00	64.81	0.02	70,763
	Non-DDS	0.01	0.03	8.98	180.27	0.00	0.00	0.00	0.02	1.00	63.94	0.02	57,872
	DDS	0.01	0.03	7.20	165.79	0.00	0.00	0.00	0.01	0.98	71.06	0.01	11,097

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Variable	Sample	Mean	SD	Skew	Kurt	Min	Q25	Q50	Q75	Max	%Min	%Max	N
Free/Reduced lunch*	Enrollment > 0	0.48	0.29	0.06	-1.10	0.00	0.24	0.47	0.71	1.00	2.68	0.00	68,745
	Non-DDS	0.47	0.29	0.08	-1.11	0.00	0.23	0.46	0.71	1.00	2.96	0.01	56,077
	DDS	0.52	0.28	-0.01	-1.03	0.00	0.30	0.51	0.75	1.00	1.43	0.03	10,906
Pupil to Teacher Ratio*	Enrollment > 0	15.98	15.44	60.29	6322.27	0.00	12.90	15.20	17.90	2145.00	0.00	0.00	66,830
	Non-DDS	15.92	16.16	62.00	6393.65	0.00	12.80	15.10	17.90	2145.00	0.00	0.00	54,530
	DDS	16.01	10.41	27.22	987.67	1.00	13.30	15.40	17.90	508.80	0.01	0.83	10,653
Pupil to Teacher Ratio* Trimmed*	Enrollment > 0	15.45	4.13	0.16	0.71	0.00	12.90	15.20	17.90	27.90	0.00	1.01	66,830
	Non-DDS	15.38	4.19	0.16	0.72	0.00	12.80	15.10	17.90	27.90	0.00	1.09	54,530
	DDS	15.65	3.75	0.22	0.57	1.00	13.30	15.40	17.90	27.90	0.01	0.57	10,653

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# DIBELS Data System

Using data to make decisions for students, **EACH** and **ALL**

## Advanced Applications of School-Level NCES Matching

Estimating School-Level Student Achievement

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# DIBELS Data System

Using data to make decisions for students, **EACH** and **ALL**

### Goals:

- To establish *school-level population normative levels for ORF gains* from fall to spring in second grade, adjusted for initial level of ORF performance, and
- To *illustrate how a school could use* the population normative information as one source of information to inform them regarding how well they are doing compared to other schools in effective reading instruction to second grade students.

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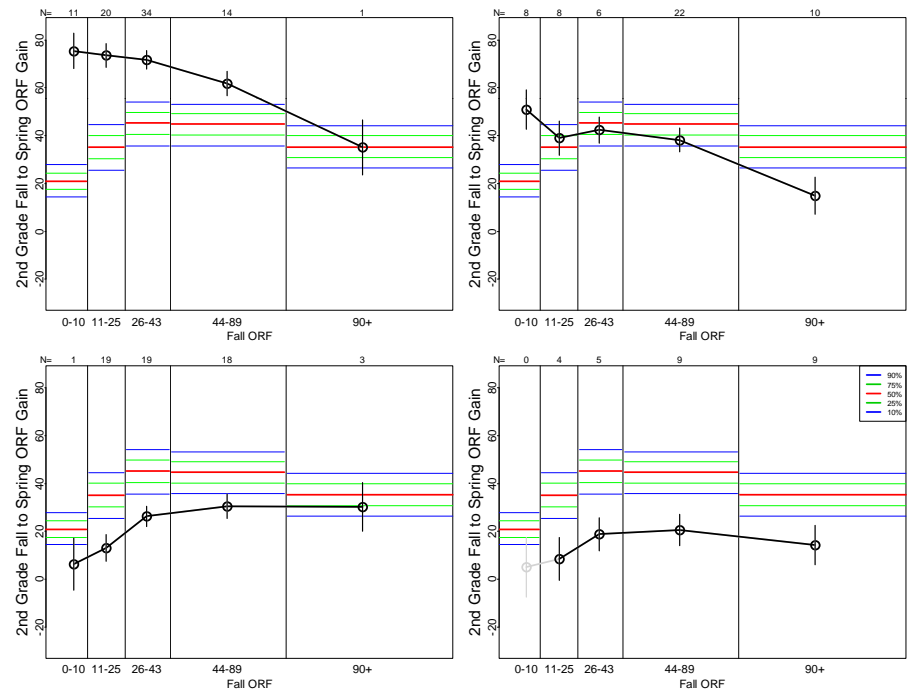
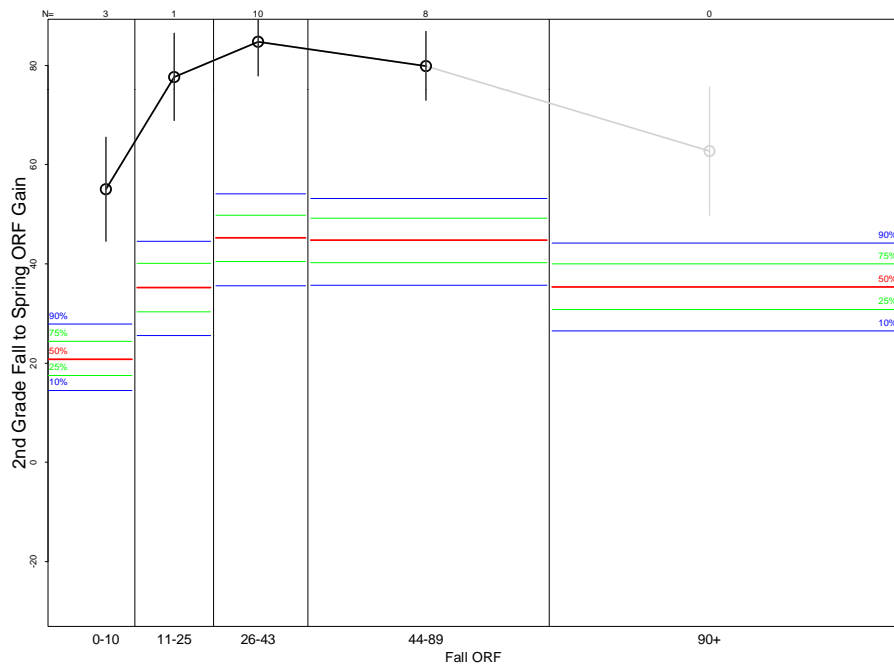
# Practical and Legislative Basis for Schools as Unit of Analysis

- It is critical to distinguish between school factors and individual student characteristics that account for variation in academic achievement (Raudenbush & Bryk, 2002; Teddlie & Reynolds, 2000).
- Variation in early reading achievement is associated with factors that children experience prior to school entry (e.g., range of preschool opportunities, exposure to language at home, pre-literacy experiences; Adams, 1991; Senechal & Lefevre, 2002).
- Recent initiatives like Response to Intervention and Multi-tiered instruction models invoke school-wide solutions and *high quality systems of instruction and intervention supports*.

# Practical and Legislative Basis for Schools as Unit of Analysis

- When using RTI to determine SLD, an essential first step is to *rule out poor instruction or implementation* as a probable cause of insufficient progress (Clements & Kratochwill, 2009; Fuchs, et al., 2003).
- In fact, IDEA states “a child shall not be determined to be a child with a disability if the determinant factor is-- (A) *lack of appropriate instruction in reading*, including in the essential components of reading instruction (as defined in section 1208(3) of the Elementary and Secondary Education Act of 1965; Page 118 STAT. 2706).

*How do we ensure “adequate instruction?” How do we measure “adequate instruction?”*



School EB ORF Gain Means by Fall ORF Range

0-10	11-25	26-43	44-89	90+
75.4	73.6	71.8	61.8	35.1
59.0	50.7	53.5	49.1	30.8
55.0	77.7	84.7	79.9	62.7
52.5	64.8	69.4	64.3	49.4
51.3	56.4	61.5	57.8	43.7
51.0	39.0	42.3	38.2	14.8
48.5	58.9	62.2	56.5	42.9
46.4	45.9	50.7	47.4	32.4
46.1	56.1	59.6	53.9	39.6
45.8	51.9	58.2	55.6	44.2
6.9	13.1	21.0	20.5	14.2
6.7	13.6	22.9	23.2	16.1
6.3	13.1	26.3	30.6	30.2
6.2	10.9	21.5	23.8	21.3
6.2	19.5	34.1	37.9	32.9
5.9	10.6	21.7	24.3	21.2
5.6	8.4	16.2	16.1	11.0
5.3	8.4	16.4	16.4	11.1
5.2	12.7	26.0	30.3	30.5
5.1	8.4	18.9	20.6	14.2

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Lingering Questions ...

- How does NCES assign ID numbers? What rules do they have for giving schools new ID numbers?
  - A school that changes names, but is in the same location.
  - A school that changes address, but keeps the same name and continues to offer the same grades.
  - A school that changes the grades that are offered.
  - Two schools that merge into one

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Lingering Questions ...

- What is the definition of a "school" and what changes constitute a "new" school?

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