

## **Grade Span Configuration Research Study**

By Erica Barber for Families for Region 14 Elementary

*This research effort examines the effects of grade span configuration on CT fourth grade CMT test scores. Since the research on grade span configurations is relatively limited, we hope to establish a better understanding of how grade span configurations impact student performance in our state. More specifically, we hope to provide some additional information to help our own school district adopt a positive educational environment for our children. By examining the grade span configurations in question, K-2, 3-5 or K-3, 4-5; K-4; and K-5 and compiling the relevant CMT test score data from those schools, we hope to identify a relationship between grade span configurations and academic success. Our research findings indicate that K-4 and K-5 schools are fairly even in terms of fourth grade CMT test score; whereas, the K-2/3-5 schools score consistently lower in reading, writing, and math than the K-4 and K-5 schools.*

### **Introduction:**

The Region 14 Board of Education and administration have repeatedly suggested that the proposed K-2, 3-5 grade span configuration once implemented at the elementary school level will advance the education and academic success of our children. In our previous newsletter to parents and community members, we presented a number of research studies that seriously question the use of such grade span configurations as a means to achieve educational ends, primarily because they introduce another transition at a “critical point” in our children’s “educational development,” a fact our own school board previously considered to be very important but is now completely disregarding.<sup>1</sup>

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<sup>1</sup> See page 6, “Why should we move the Region 14 5<sup>th</sup> Grade Classes to Woodbury Middle School???” where the board predicted negative impacts resulting from transitions in relation to a reconfiguration scenario. Report is available at the Region 14 Central Office and also available on our Website under related links.

In order to understand the issue more thoroughly, we felt it would be helpful to examine CT schools that practice the grade span configurations in question to try and determine which schools are more effective. Such a study has not been done by the board of education; similarly, Dr. Cronin does not have experience with the proposed configuration as Naugatuck actually has six K-4 configurations at the elementary level. Also, the K-2/3-5 configuration is in fact, one of the least practiced both in CT and the United States as a whole; therefore, this is relatively uncharted territory for all parties concerned, most significantly for our children.

Obviously the best (perhaps only) objective means to determine educational effectiveness and academic success is to examine test scores, as such, we examined the 2005/06 fourth grade CMT test scores of the schools in the state of Connecticut that follow the three grade span configurations in question; the proposed K-2/3-5 option; the K-4 option (currently in place at MES); and the K-5 option (currently in place at BES).

### **Methodology:**

We examined 31 examples of the K-2/3-5 and K-3/ 4-5 configuration. We studied both examples as they both represent elementary schools with an additional transition; The National Center for Education Statistics (NCES) groups these schools in a similar fashion and following their lead enabled us to expand the sample space to include a greater number of schools. We also examined 33 K-4 examples as well as 60 examples of the K-5 configuration. The variable that proved to have a significant impact on test scores, regardless of the configuration in place, was the number of students in each school eligible for free or reduced price school lunches, which is one indicator of the student economic level (or family income level) at a school. Therefore, we chose to categorize the schools according to this statistic. Currently in Woodbury and Bethlehem, less than ten percent of the students are eligible for free or reduced-price school lunch (4% and 3.7% respectively); therefore, in order to properly examine schools with students of comparable income levels; we studied every K-2/3-5, K4, and K5 configuration in the state with less than 10% of Students eligible for the lunch program ; these schools are the primary focus of our study and represent 22 K-2/3-5 (K-3/4-5) schools; 27 K-4 schools; and 51 K-5 schools. The other examples are provided only to provide a comparison in terms of the lower income level schools.

## Results:

The schools with less than ten percent of the students eligible for free or reduced price school lunches are highlighted and are the primary focus of this report. The average CMT scores reflect the percentage of students within these schools meeting or exceeding the state proficiency level in reading, writing, and math. We derived our data from GreatSchools.net and the CT State Department of Education.

Mean is simply average

N is the number of schools

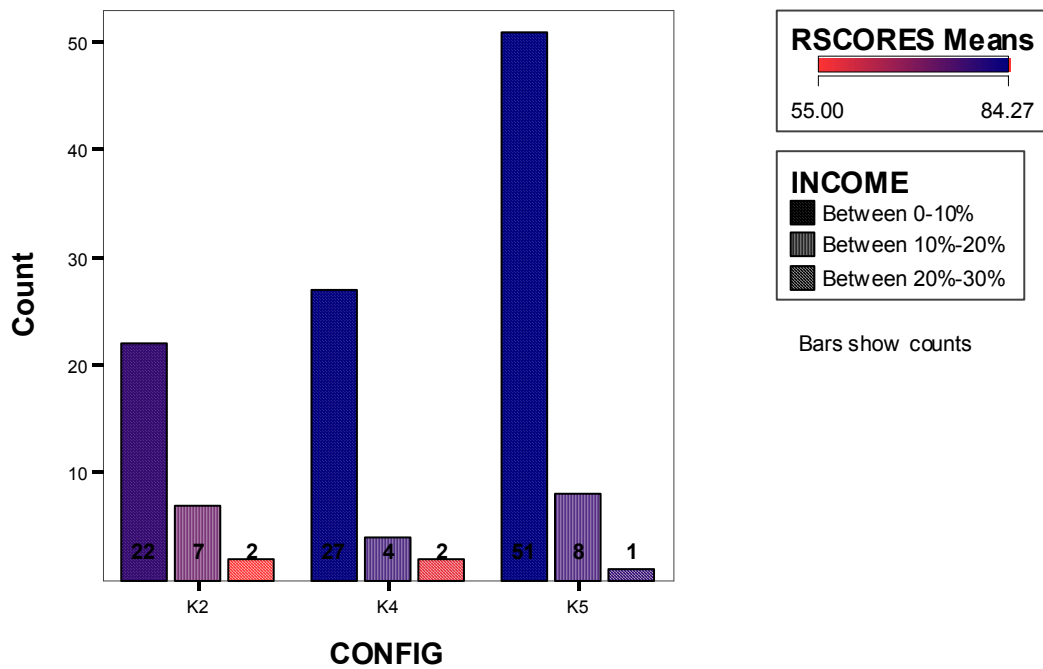
Report			Reading	Writing	Math
CONFIG	INCOME		RSCORES	WSCORES	MSCORES
<b>K2/3-5</b>	<b>Between 0-10%</b>	<b>Mean</b>	<b>78.90%</b>	<b>86.00%</b>	<b>87.36%</b>
		N	22	22	22
	Between 10%-20%	Mean	72.86	86.14	81.29
		N	7	7	7
	Between 20%-30%	Mean	55.00	70.50	76.50
		N	2	2	2
	Total	Mean	76.00	85.03	85.29
N		31	31	31	
<b>K4</b>	<b>Between 0-10%</b>	<b>Mean</b>	<b>84.26%</b>	<b>91.37%</b>	<b>91.07%</b>
		N	27	27	27
	Between 10%-20%	Mean	78.50	85.75	88.75
		N	4	4	4
	Between 20%-30%	Mean	58.00	70.50	69.00
		N	2	2	2
	Total	Mean	81.97	89.42	89.45
N		33	33	33	
<b>K5</b>	<b>Between 0-10%</b>	<b>Mean</b>	<b>84.27%</b>	<b>91.69%</b>	<b>91.84%</b>
		N	51	51	51
	Between 10%-20%	Mean	78.00	89.38	88.75
		N	8	8	8
	Between 20%-30%	Mean	79.00	82.00	81.00
		N	1	1	1
	Total	Mean	83.35	91.22	91.25
N		60	60	60	
Total	Between 0-10%	Mean	82.97	90.42	90.66
		N	100	100	100
	Between 10%-20%	Mean	76.21	87.42	86.00
		N	19	19	19
Between 20%-30%	Mean	61.00	72.80	74.40	

30%	N	5	5	5
Total	Mean	81.05	89.25	89.29
	N	124	124	124

Relevant Bar Graphs:

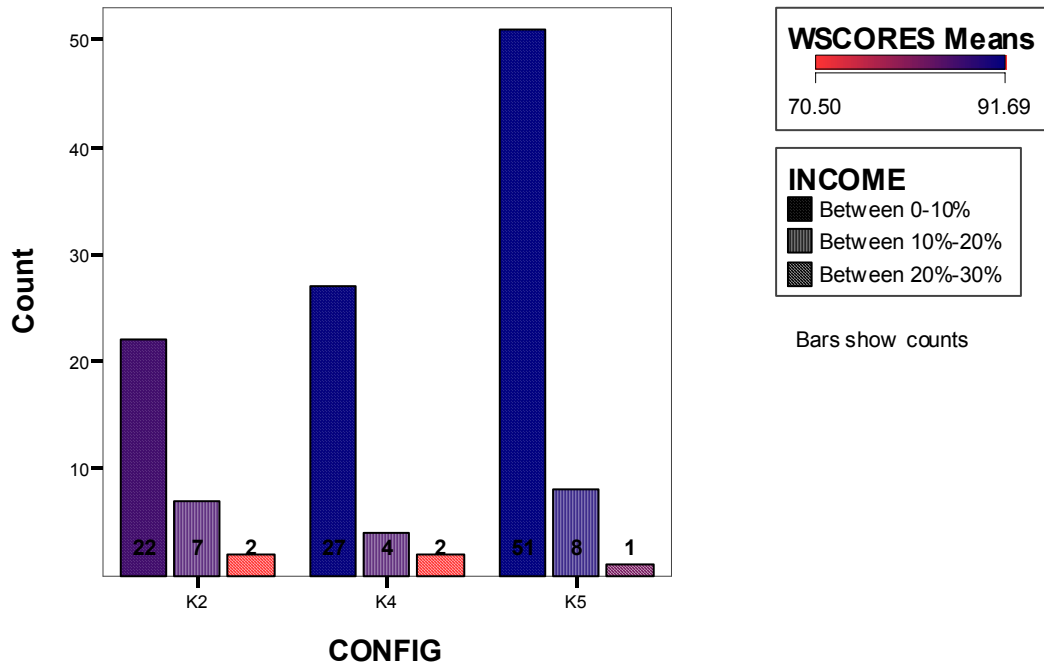
2005/06 CMT Reading Scores for K-2, 3-5/ K-4/ K-5 Schools

The solid bars represent the number of schools (i.e. count) with less than 10% percent of the students eligible for free or reduced price school lunches:



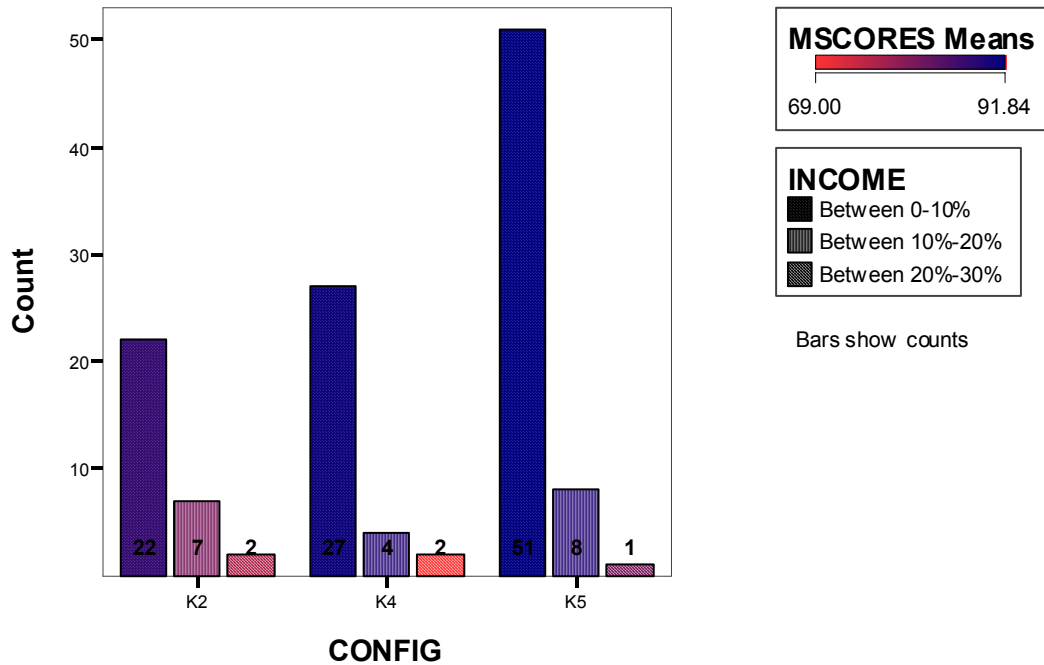
## 2005/06 CMT Writing Scores for K-2, 3-5/ K-4/ K-5 Schools

The solid bars represent the number of schools (i.e. count) with less than 10% percent of the students eligible for free or reduced price school lunches:



## 2005/06 CMT Math Scores for K-2, 3-5/ K-4/ K-5 Schools

The solid bars represent the number of schools (i.e. count) with less than ten percent of the students eligible for free or reduced price school lunches:



## Findings:

According to the data, the K-4 and K-5 schools are almost exactly even in terms of CMT test scores, whereas the K-2/3-5 schools are four to five percentage points lower on average in each category.

Configuration	Income	Number	Reading CMT	Writing CMT	Math CMT
K2/3-5	Between 0-10%	N 22	78.90%	86.00%	87.36%
K4	Between 0-10%	N 29	84.26%	91.37%	91.07%
K5	Between 0-10%	N 51	84.27%	91.69%	91.84%

We found that CT schools of the K-2/3-5 configuration have consistently lower CMT test scores in reading, writing, and math than either the K-4 or K-5 configurations at similar income levels.

## Summary:

Considering the information we have gathered and studied, Families for Region 14 Elementary questions the adoption of the K-2, 3-5 configuration in the Region 14 school district, at least as it pertains to the educational benefits that have been asserted by the Region 14 Superintendent and board. The results of this study are consistent with our previous research and previous assertions by the Region 14 Board of Education which both suggest that transitions between grade span configurations are likely to be harmful to academic performance. It appears to us that the adoption of the proposed K-2/3-5 configuration is likely to result in no meaningful educational benefit, and may perhaps even impair our students' academic performance as a whole.

Appendix:

I. Code Terms

CONFIG	Configuration 1: K-2/3-5(K-3/4-5) 2: K-4 3: K-5
SIZE	1: 100-300 students 2: 300-500 students 3: 500-700 students 4: 700-900 students
RSCORE	% of students meeting or exceeding state proficiency level in Reading
WSCORE	% of students meeting or exceeding state proficiency level in Writing
MSCORE	% of students meeting or exceeding state proficiency level in Math
STRATIO	Student/Teacher ratio: the number of students per full time equivalent faculty member (this is not the same as class sizes)
INCOME	% of students eligible for free or reduced price lunches 1: Between 0-10% 2: Between 10%-20% 3: Between 30%-40%

II. Data: This data is derived for GreatSchools.net and the Connecticut Department of Education.

SCHOOLS	TOWNS	CONFIG	SIZE	RSCORE	WSCORES	MSCORE	STRATIO	INCOME
Meeting House	New Fairfield	1	3	82	92	87	2	1
Huckleberry Hill	Brookfield	1	5	81	89	90	2	1
Main St. School	Plymouth	1	1	58	74	72	1	3
Litchfield Intermediate	Litchfield	1	2	83	86	82	1	1
Canton Intermediate	Canton	1	2	66	84	83	1	1
Kelly Lane	Granby	1	2	82	90	95	2	1
R. Dudley Seymour	East Granby	1	1	74	84	87	2	1
George Hersey	Coventry	1	3	76	84	90	2	2
Sarah Noble	New Milford	1	6	72	84	81	2	2
Thomaston Center	Thomaston	1	2	62	79	73	2	2
Fletcher Judson	Watertown	1	2	79	93	84	2	2
Hebron Elementary	Hebron	1	3	83	93	92	2	1
Francis Korn	Durham	1	1	74	87	84	1	1
Groton Heights	Groton	1	1	52	67	81	1	3
Gildersleeves Colchester Intermediate	Portland Colchester	1	1 3	75 64	87 70	74 76	1 2	2 1

Abraham Pierson	Clinton	1	2	70	81	79	1	1
Center School	East Hampton	1	2	76	83	84	2	1
Oxford Center	Oxford	1	2	73	79	84	2	1
Woodbridge	Woodbridge	1	3	85	92	95	1	1
Ralph MT Johnson	Bethel	1	3	74	87	87	1	1
Juliet Long	Gales Ferry	1	2	74	84	84	2	1
Hall Memorial	Willington	1	2	77	88	94	1	1
Earl m. Whittle	Stafford	1	2	61	86	78	1	2
George Hersey								
Robert	Coventry	1	3	76	84	90	2	1
Ann Antolinin	New Hartford	1	2	89	98	97	1	1
Parker Memorial	Tolland	1	3	85	85	86	1	1
Cider Mill	Wilton	1	5	88	92	94	1	1
King's Street Intern	Danbury	1	2	96	72	89	2	1
Community School	Prospect	1	1	85	90	89	1	2
Center School	Old Lyme	1	1	84	92	83	2	1
Melissa Jones	Guilford	2	2	86	95	96	2	1
Calvin Leete	Guilford	2	2	93	94	86	2	1
Aw Cox	Guilford	2	2	81	89	90	2	1
West District	Unionville	2	1	84	88	94	1	1
Lebanon Elementary	Lebanon	2	3	80	87	99	1	2
John Lyman	Middlefield	2	2	78	91	90	1	1
Head O' Meadow	Newtown	2	2	90	94	98	2	1
Union School	Union	2	2	92	92	93	1	1
Redding Elementary	Redding	2	4	87	92	87	1	1
Monroe Elementary	Monroe	2	2	86	95	92	2	1
Union School	Union	2	2	92	92	93	1	1
Mary R. Fisher	Thompson	2	3	64	85	75	2	2
Center School	Ellington	2	1	80	91	89	1	1
Annie E. Vinton	Mansfield	2	1	86	87	90	1	2
Deans Mill	Stonington	2	3	70	83	80	2	1
Niantic Center	Niantic	2	1	88	95	93	1	1
E. Haddam								
Elementary	East Hadaam	2	2	77	85	92	2	1
Flanders School	East Lyme	2	2	71	92	91	1	1
J. Milton Jeffrey	Madison	2	3	90	96	91	1	1
East School	New Canaan	2	3	90	95	92	1	1
Prospect St. School	Prospect	2	2	51	66	62	2	3
Guilford lakes	Guilford	2	2	82	85	86	2	1
Sam Staples	Easton	2	3	84	86	84	1	1
Hurlbutt	Weston	2	5	95	94	90	1	1
Andrew Avenue	Naugatuck	2	1	65	75	76	1	3
Woodstock								
Elementary	Woodstock	2	3	76	88	85	1	1
Mary T. Murphy	Branford	2	2	84	84	91	1	2
Mary R. Tisko	Branford	2	2	81	91	99	2	1
Middlegate	Newtown	2	3	84	93	92	2	1
Hawley	Newtown	2	2	85	87	93	1	1
Pine Grove	Avon	2	3	88	97	91	2	1
Crystal Lake	Ellington	2	1	74	92	97	1	1
West School	New Canaan	2	3	91	95	95	1	1

Jennings	Fairfield	3	2	91	92	90	1	1
Mitchell	Woodbury	3	3	76	84	88	1	1
Bethlehem Elementary	Bethlehem	3	2	85	95	98	1	1
Pomperaug Middlebury Elementary	Southbury	3	3	84	90	83	2	1
Rowayton	Middlebury	3	2	89	98	91	2	1
Veteran's Memorial	Norwalk	3	2	79	82	81	2	3
Killingworth Elementary	Preston	3	2	77	88	84	1	2
Booth Free	Killingworth	3	3	77	88	84	1	2
Burnnham	Roxbury	3	1	80	96	96	2	1
Washington primary	Bridgewater	3	1	79	80	80	1	1
Glenville	Washington	3	1	76	80	92	1	1
Frisbie	Greenwich	3	2	90	88	87	1	1
Somers Elementary	Wolcott	3	2	87	92	94	1	2
North Stonington	Somers	3	4	77	86	84	2	1
Noank School	North Stonington	3	2	64	74	90	1	2
Green's Farms	Noank	3	2	77	83	84	1	1
Ox Ridge	Westport	3	3	86	94	95	1	1
Tashua	Darien	3	3	90	94	95	1	1
East School	Trumbull	3	2	88	93	96	2	1
Farmingville	Torrington	3	2	82	91	89	2	2
Stratfield	Ridgefield	3	2	93	97	92	2	1
Wakelee	Fairfield	3	2	91	97	98	1	1
Martin	Wolcott	3	2	84	97	96	1	2
Riverfield	Manchester	3	2	84	93	87	2	2
AikenSchool	Fairfield	3	2	93	90	98	1	1
Braeburn	West Hartford	3	2	81	86	88	1	1
Bugbee	West Hartford	3	2	92	97	99	1	1
Duffy School	West Hartford	3	2	90	91	93	1	1
Eastbury School	West Hartford	3	3	82	89	91	1	1
Buttonball Lane	Glastonbury	3	3	90	94	94	2	1
Mohegan	Glastonbury	3	3	89	96	96	2	1
Cohanzie	Uncasville	3	2	69	92	86	1	2
Southwest	Waterford	3	1	83	89	87	1	1
Great Neck	Waterford	3	1	85	90	91	1	1
Gainfield	Waterford	3	1	72	91	88	1	1
Mathewson	Southbury	3	2	85	94	82	1	1
Flanders	Milford	3	2	77	94	93	1	1
Dernoyski	Southington	3	2	72	89	85	1	1
Plantsville School	Southington	3	3	76	83	86	1	1
South End school	Plantsville	3	1	75	87	85	2	1
Strong School	Plantsville	3	1	78	96	96	2	1
Royle school	Plantsville	3	1	66	80	88	2	1
Tokeneke	Darien	3	2	91	96	100	1	1
Holmes Elementary	Darien	3	2	93	96	96	1	1
Middlebrook	Darien	3	2	94	97	99	1	1
Booth Hill	Trumbull	3	3	75	92	87	1	1
	Trumbull	3	2	75	89	92	2	1

Jane Ryan	Trumbull	3	2	83	93	96	2	1
Frenchtown	Trumbull	3	3	77	85	84	2	1
Saugatuck	Westport	3	2	84	93	89	1	1
Long Lots	Westport	3	3	93	98	94	1	1
King's Highway	Westport	3	2	87	93	97	1	1
Jennings	Fairfield	3	3	91	92	90	1	1
Riverfield	Fairfield	3	2	93	100	98	1	1
Sherman	Fairfield	3	2	83	92	93	1	1
Stratfield	Fairfield	3	2	91	97	98	1	1
Dwight Elementary	Fairfield	3	3	89	88	98	1	1
Mill Hill	Fairfield	3	3	91	98	95	1	1
North Stratfield	Fairfield	3	2	82	95	91	1	1
Osborn Hill	Fairifeld	3	3	88	99	98	1	1

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