

One state, two state, red state, blue state: Education funding accounts for outcome differences.

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Abstract

Using publically available data, states coded as “blue” based upon results from the 2004 presidential election were significantly higher in education funding than were states coded as “red.” Students in blue states scored significantly higher on outcome measures of math and reading in grades four and eight in 2004 and 2007 than did students in red states. The difference in per-student funding accounted for the significantly higher performance on outcome measures.

Introduction

School funding is a politicized issue that impacts all citizens of the United States. Using publically available data, the current study compared per-student spending in states that voted democratic in the 2004 presidential election (often referred to as “blue” states by the media) with states that voted republican in the 2004 presidential election (referred to as “red” states by the media). Differences in attitudes towards educational spending are reflected in the platforms of these two parties, with the democrats focusing on the need to provide educational services, and the republicans stressing the need for accountability and measurement of outcomes. Therefore, it was hypothesized that per-student spending would be higher in blue states than in red. In addition, educational outcome measures were compared between the two groups of states. It was hypothesized that the higher per-student spending in blue states would be reflected in higher scores on measures of academic outcomes.

Measures

Based upon election result data from the 2004 presidential election, states were classified as either blue (voting majority democratic, $n = 19$) or red (voting majority republican, $n = 31$). State level mean scores on 2004 and 2007 reading and mathematics achievement test during the fourth and eighth grade were obtained using data publically available from the U.S. Department of Education. Per-student funding and other state-level descriptive variables also were obtained from publically available data from the U.S. Department of Education.

Results

As hypothesized, blue states spent more per student (mean = \$10318.58) than red states (mean = \$7737.56) in 2004, and this difference was significant ($t = 6.04$, $p < .01$). Red states serviced a higher percentage of students coded as economically disadvantaged (38.61%) than did blue states (31.93%; $t = -2.18$, $p < .05$).

In 2004, students in blue states scored significantly higher than students in red states on outcome tests of fourth-grade reading ($t = 2.67, p < .05$), fourth-grade math ($t = 2.75, p < .05$), eighth-grade reading ($t = 2.49, p < .05$) and eighth-grade math ($t = 2.42, p < .05$).

Students in blue states continued to score higher than students in red states on 2007 outcome tests of fourth-grade reading ($t = 2.32, p < .05$), fourth-grade math ($t = 2.25, p < .05$), and eighth-grade reading ($t = 2.11, p < .05$). Based upon two-tailed levels of significance, the difference in 2007 eighth-grade math scores was not significant ($t = 1.65, p = .10$).

In order to determine if differences in education funding accounted for differences in outcome test scores, a series of ANCOVA analyses were conducted to compare the two groups of states with per-student funding as a covariate. For each of the ANCOVA models, a significant effect of per-student spending as a covariate was obtained. In each case, the main effect of the outcome measurement was reduced to non-significant when spending was entered as a covariate (see Table 2).

Table 2

ANCOVA for student outcome measures between “red” and “blue” states including per-student spending as covariate.

	<i>df</i>	<i>F</i>	η	<i>p</i>
2004				
4th grade reading	20	1.81	.18	.11
Spending	1	25.75**	2.84	.001
4th grade math	20	.73	.12	.76
Spending	1	24.28**	3.81	.001
8th grade reading	19	1.36	.17	.22
Spending	1	15.99**	1.95	.001
8th grade math	22	.46	.09	.96
Spending	1	11.87**	2.19	.001
2007				
4th grade reading	24	.51	.09	.95
Spending	1	11.63**	2.15	.001
4th grade math	21	.49	.09	.95
Spending	1	7.69**	1.38	.01
8th grade reading	19	.68	.11	.81
Spending	1	14.67**	2.34	.001
8th grade math	25	.33	.07	.99
Spending	1	8.19**	1.75	.01

Conclusions

The findings reported support the hypotheses of the study. First, states that were coded as blue based upon results from the 2004 presidential election were significantly higher in education funding than were states coded as red. Students in blue states scored significantly higher on outcome measures of math and reading in grades four and eight than did students in red states. The difference in per-student funding accounted for the significantly higher performance on outcome measures.

Table 1

State-level mean scores on 2007 reading and mathematics tests.

	Grade 4 Read	Grade 4 Math	Grade 8 Read	Grade 8 Math
Mississippi	208.00	228.00	250.00	265.00
New Mexico	212.00	228.00	251.00	268.00
Alabama	216.00	229.00	252.00	266.00
Louisiana	207.00	230.00	253.00	272.00
California	209.00	230.00	251.00	270.00
Hawaii	213.00	234.00	251.00	269.00
Nevada	211.00	232.00	252.00	271.00
Arizona	210.00	232.00	255.00	276.00
West Virginia	215.00	236.00	255.00	270.00
Tennessee	216.00	233.00	259.00	274.00
Arkansas	217.00	238.00	258.00	274.00
Oklahoma	217.00	237.00	260.00	275.00
Georgia	219.00	235.00	259.00	275.00
South Carolina	214.00	237.00	257.00	282.00
Rhode Island	219.00	236.00	258.00	275.00
Alaska	214.00	237.00	259.00	283.00
Kentucky	222.00	235.00	262.00	279.00
Florida	224.00	242.00	260.00	277.00
Texas	220.00	242.00	261.00	286.00
Michigan	220.00	238.00	260.00	277.00
Illinois	219.00	237.00	263.00	280.00
Utah	221.00	239.00	262.00	281.00
Missouri	221.00	239.00	263.00	281.00
Oregon	215.00	236.00	266.00	284.00
Idaho	223.00	241.00	265.00	284.00
Delaware	225.00	242.00	265.00	283.00
North Carolina	218.00	242.00	259.00	284.00
Maryland	225.00	240.00	265.00	286.00
Nebraska	223.00	238.00	267.00	284.00
New York	224.00	243.00	264.00	280.00
Indiana	222.00	245.00	264.00	285.00
Washington	224.00	243.00	265.00	285.00
Pennsylvania	226.00	244.00	268.00	286.00
Colorado	224.00	240.00	266.00	286.00
Wisconsin	223.00	244.00	264.00	286.00
Ohio	226.00	245.00	268.00	285.00
Iowa	225.00	243.00	267.00	285.00
Maine	226.00	242.00	270.00	286.00
Wyoming	225.00	244.00	266.00	287.00
South Dakota	223.00	241.00	270.00	288.00
Virginia	227.00	244.00	267.00	288.00
Montana	227.00	244.00	271.00	287.00
North Dakota	226.00	245.00	268.00	292.00
Kansas	225.00	248.00	267.00	290.00
Connecticut	227.00	243.00	267.00	282.00
New Jersey	231.00	249.00	270.00	289.00
Vermont	228.00	246.00	273.00	291.00
Minnesota	225.00	247.00	268.00	292.00
New Hampshire	229.00	249.00	270.00	288.00
Massachusetts	236.00	252.00	273.00	298.00