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Introduction to the Special Issue

David C. Thompson
Chair, Board of Editors

Faith E. Crampton
Executive Editor
Board of Editors

R. Craig Wood
Board of Editors
Chair, National Education Finance Conference

This special issue of *Educational Considerations* presents a selection of papers from the inaugural National Education Finance Conference held in 2011. These papers were selected via a call for papers and a peer review process. The resulting articles represent a range of fiscal issues critical to the education of all children in the United States. Some issues, such as litigation to achieve social justice in education funding, are longstanding while others, like the funding of vouchers, charter schools, and class size reduction, are newer—and perhaps more controversial. Newest among the topics covered in this issue is the role and funding of virtual schools or online education in elementary and secondary education. It too is not without controversy. The overarching policy values of equity, efficiency, adequacy, accountability, stability, and choice are threads that run throughout, providing a sense of continuity across historical and emerging issues in education finance.

The special issue opens with, "The Growth of Education Revenues from 1998-2006: An Update on What Accounts for Differences among States and the District of Columbia in the Context of Adequacy." In this article, Alexander reminds us of the importance of national data in providing the "big picture" of education finance trends. Her analysis takes us up to the eve of the most severe economic recession in the history of the United States since the Great Depression of the 1930s. In that sense, her study provides a critical prerecession look at public elementary and secondary education revenues across the 50 states and the District of Columbia.[1] This thorough and thoughtful analysis uses both nominal and real dollars, along with controls for regional price differences. One of the major, and perhaps surprising, conclusions of the study is, as follows: "The period of 1998 through 2006 was particularly difficult for states. After brief recoveries from two national economic recessions in the 1980s, states were then faced with shrinking fiscal resources from economic recessions in the early 1990s and early 2000s." This conclusion leads to even greater concern about the adequacy and stability of education funding in the aftermath of the 2008-2009 recession, particularly given the still fragile economies of many states.[2]

In the second article, "When What You Know Ain't Necessarily So: A Comparative Analysis of the Texas School Foundation Program Revenues for Independent and Charter School Districts," Rolle and Wood take a close look at differences in how Texas school districts vs. charter schools are funded. Across the country, charter schools have remained an important education reform for over 20 years, and there is no sign of a waning in their popularity with policymakers. However, funding for charter schools varies by state; as such, the analysis of Rolle and Wood opens a window into one state's practices that may set the stage for analyses in others. Their analysis is based in equity and efficacy, where the latter was defined as, "...the ability or capacity to produce desired outcomes." Among their major policy recommendations is the need to reconceptualize and restructure state funding in Texas to better address differences in fiscal capacity and community complexity in both charter schools and school districts.

In the quest for school finance equity, researchers and policymakers concern themselves with both horizontal and vertical equity where, in straightforward language, horizontal equity is defined as the "equal treatment of equals," and vertical equity as the "unequal treatment of unequals."[3] For over 50 years, school finance litigation has been in the vanguard of seeking to guarantee historically underserved children equality of educational opportunity. In the third article, "English Language Learners and Judicial Oversight: Progeny of *Castañeda*," Sutton, Cornelius, and McDonald-Gordon address a critical vertical equity issue, that of English language learners (ELLs) and related state funding programs. Their legal analysis includes not only the landmark case of *Castañeda v. Pickard*,[4] but also a number of other key court decisions related to the educational rights of ELLs. One of the major conclusions of Sutton and coauthors is that while the history of litigation evidences progress in addressing vertical equity issues related to the provision and funding of an appropriate education for these children, the pattern of progress is uneven, and there is still much room for improvement.

The fourth article, "Indiana's Formula Revisions and *Bonner v. Daniels*: An Analysis of Equity and Implications for School Funding," authored by Hirth and Eiler, also addresses equity and litigation, here within the context of a single state. Given that funding of public education is constitutionally a state responsibility, it is not surprising that the bulk of school finance litigation takes place in state courts. Hirth and Eiler trace the path of plaintiffs to the eventual Indiana Supreme Court decision in *Bonner ex. Rel. Bonner v. Daniels*, 907 N.E. 2d 516 (Ind. 2009) where plaintiffs were ultimately dealt a blow when the Court ruled education was not a fundamental right in Indiana, and the Court further granted wide latitude to the state legislature in matters of school finance. However, at the same time, Hirth and Eiler's analysis indicates Indiana has made progress toward greater horizontal and vertical equity in state

funding. As has been the case in several states, the threat of litigation or the threat of an unfavorable outcome of pending litigation can serve as a powerful incentive for states to voluntarily address inequities.

The next two articles address an emerging educational and fiscal issue, that of virtual or online education. In, "The Funding of Virtual Schools in Public Elementary and Secondary Education," Stedrak, Ortagus, and Wood present a state-by-state overview of virtual education and its funding. The results indicate that almost all states are engaged in the provision and funding of some form of virtual education, of which a number do so through a state virtual school. Of great importance is one of the major findings that almost half of states use a model whereby virtual schools can be funded or authorized by either a state entity or a private organization. Given that elementary and secondary virtual education is estimated to be a "market" of over one-half billion dollars annually, and growing,[5] this is a sector of education research and policy that would benefit from ongoing analysis. Mattox's article, "Utilizing Online Education in Florida to Meet Mandated Class Size Limitations," dovetails with that of Stedrak and coauthors by examining the role of virtual education in a single state. Florida has been one of the nation's leaders in elementary and secondary online education, but its use by some Florida school districts to evade state-mandated class size reduction has proved controversial. At the heart of this story is finance; that is, the state's underfunding of the class size mandate is considered by some to be a driving force with regard to school districts' use of online learning labs as a means to reduce the size of face-to-face classes. Adding to that concern is the dearth of research on the academic effectiveness of virtual education for preK-12 students.

The final article, "A Tale of Two Fiscal Policies: Entrepreneurial and Entropic," reconceptualizes some of the traditional analytic tools of education finance and applies them to Ohio. Sweetland describes what appears to be a fiscal and policy paradox: Facing budget shortfalls, the state reduced funding to public school districts while expanding it for "entrepreneurial" entities like charter schools, virtual schools, homeschooling, and vouchers. According to Sweetland, the political economy of Ohio school finance at present belies the state's progressive history with regard to public education and the far-reaching *DeRolph v. State* decision supporting adequate and equitable funding for public schools.[6] The net result of pitting various sectors of preK-12 education against one another for funding in the legislative budget process is a troubling trend because those who should be allied in providing every student with the best education possible instead find themselves playing a zero sum game for insufficient tax revenues.

Endnotes

[1] It is important to remember that the availability of comprehensive national data related to education finance generally lags three to four years.

[2] Faith E. Crampton and David C. Thompson, "The Road Ahead for School Finance Reform," *Journal of Education Finance* 37 (Fall 2011): 85-104.

[3] David C. Thompson, Faith E. Crampton, and R. Craig Wood, *Money and Schools* (Larchmont, NY: Eye on Education, 2012).

[4] *Castañeda v. Pickard*, 648 F.2d 989 (5th Cir. 1981).

[5] iNACOL (International Association for K-12 Online Learning), "Fast Facts about Online Learning" (Vienna, VA: iNACOL, n.d.), http://www.inacol.org/press/nacol_fast_facts.pdf.

[6] *DeRolph v. State*, 677 N.E.2d 733 (1997).

The Growth of Education Revenues from 1998-2006: An Update on What Accounts for Differences among States and the District of Columbia in the Context of Adequacy

Nicola A. Alexander

This article is an update of a previous study by the author which examined the growth of elementary and public school revenues for school years 1982-1983 through 1991-1992 (Alexander 1997). Using the same framework, this study provides an analysis of the factors accounting for changes in real per-pupil revenues across the 50 states and the District of Columbia for school years 1997-1998 through 2005-2006.[1] The implications of these findings for fiscal adequacy are also explored. Four questions guided the analysis:

(1) Did locales with relatively big enrollment increases tend to have lower growth in per- pupil revenue?
(2) Did levels of revenues per pupil tend to converge?
(3) What effect did economic growth have on increases in per pupil revenues?
(4) Which funding source(s) contributed most to per pupil revenue growth--federal, state, or local?

The results of this study will be of particular interest to state policymakers who often want to know how their state compares with others.

Using descriptive analysis, including rankings and graphical cross tabulations, and regression analysis, this article provides a comprehensive picture of the educational dollars raised at the local, state, and federal levels for 1998-2006. It also explores the regional and political patterns that may be reflected in a state's overall education revenues in 2006; per-pupil revenue growth 1998-2006; and differences between 2006 per-pupil revenue levels and a prescribed adequacy level.[2] To that end, the article is divided into eight sections:

- About the data
- Revenue increases and changes in enrollment
- Convergence of revenue levels
- Economic growth and revenue increases
- Revenue increases and the joint association of key variables
- Source of revenues
- Adequacy across the states and the District of Columbia
- Policy implications and conclusions

The article closes with a comparison of the changes found in this analysis and the previous study, placing that analysis in the context of what adequate education funding means for states and the District of Columbia.

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About the Data

The data used in this article came from the U.S. Department of Education National Center for Education Statistics (NCES) Common Core of Data (CCD), the U.S. Department of Commerce Bureau of Economic Analysis (BEA), and the U.S. Department of Labor Bureau of Labor Statistics (BLS). From the CCD, the study used 1998-2006 public elementary and secondary education revenues and student enrollments.[3] The BEA provided personal income by state which was used as a measure of economic growth; and, from the BLS, the study used the Consumer Price Index (CPI) to adjust education revenues for inflation.

Unlike Alexander (1997), this study included federal sources in addition to state and local government school revenues. The reason for this change was that while state and local governments continue to provide the bulk of revenue to schools, the federal government is playing an increasingly larger role. For example, in the decade spanning 1983-1992, the federal government accounted for approximately 7% of total education revenue. By 2006, the federal contribution had risen to 9.1%, and this was before increased federal contributions through the American Recovery and Reinvestment Act of 2009. Another difference between the data used in this analysis and the previous study is the inclusion of the District of Columbia. The District served about 77,000 students annually over the eight years examined. If this governmental unit is omitted from the analysis, an important facet of changes in per pupil revenues across the nation would be left out.

The 1998-2006 revenue data were adjusted in three ways to facilitate analysis. First, the reported revenue aggregates were divided by the enrollment measure of state student populations to permit comparisons of different size states and to control for fluctuations in enrollment size in measuring revenue change over time.[4] Second, nominal data reported by the states and the District of Columbia were adjusted to permit analysis in constant 2006 dollars, using the Consumer Price Index (CPI) to adjust for inflation. Subsequent discussion and tables are based on inflation-adjusted data,[5] consistent with the method used in Alexander (1997). It should be noted, however, that from 1983 to 1992, the CPI and the implicit price deflator (IPD) measured similar rates of inflation: 41% inflation using CPI versus 40.5% using the IPD. In contrast, in the time period studied here, 1998 through 2006, the CPI showed a 21%

Table 1
Per-Pupil Revenues, 1998

Locale	*Unadjusted ($)*	*Rank*	*Adjusted ($)*	*Rank*	*Difference ($)*	*Change in Rank*
United States	7,067		7,067			
Alabama	5,535	46	6,182	45	-647	1
Alaska	9,222	4	9,168	2	54	2
Arizona	5,812	41	6,274	44	-462	-3
Arkansas	5,697	44	6,797	33	-1,100	11
California	6,572	30	6,058	48	514	-18
Colorado	6,297	35	6,747	36	-450	-1
Connecticut	9,643	3	8,987	5	656	-2
Delaware	8,160	10	8,231	15	-71	-5
District of Columbia	9,168	5	7,724	22	1,444	-17
Florida	6,533	32	7,203	28	-669	4
Georgia	6,571	31	6,579	37	-8	-6
Hawaii	6,755	25	6,876	31	-121	-6
Idaho	5,404	48	6,448	40	-1,044	8
Illinois	7,103	21	6,853	32	250	-11
Indiana	7,614	15	8,448	10	-835	5
Iowa	6,679	27	8,002	18	-1,323	9
Kansas	6,662	28	7,791	21	-1,129	7
Kentucky	5,875	39	6,499	39	-624	0
Louisiana	5,786	42	6,352	41	-566	1
Maine	7,530	16	9,059	4	-1,530	12
Maryland	7,770	13	7,313	25	456	-12
Massachusetts	8,318	7	7,868	19	450	-12
Michigan	8,416	6	8,491	9	-76	-3
Minnesota	7,649	4	8,008	17	-359	-3
Mississippi	4,770	51	5,520	50	-750	1
Missouri	6,595	29	7,272	26	-677	3
Montana	6,345	34	8,250	14	-1,905	20
Nebraska	6,711	26	8,009	16	-1,291	10
Nevada	6,442	33	6,276	43	166	-10
New Hampshire	6,770	24	7,485	24	-715	0
New Jersey	10,550	1	9,083	3	1,466	-2
New Mexico	5,887	38	6,577	38	-691	0
New York	9,708	2	8,674	7	1,034	-5
North Carolina	5,816	40	6,106	47	-291	-7
North Dakota	5,755	43	7,220	27	-1,465	16
Ohio	7,286	18	7, 575	23	-289	-5
Oklahoma	5,478	47	6,325	42	-847	5
Oregon	7,175	20	7,798	20	-623	0
Pennsylvania	8,174	9	8,414	11	-239	-2
Rhode Island	8,245	8	8,407	12	-161	-4
South Carolina	6,151	37	6,758	34	-607	3

continued on next page

Table 1 (continued)
Per-Pupil Revenues, 1998

Locale	*Unadjusted ($)*	*Rank*	*Adjusted ($)*	*Rank*	*Difference ($)*	*Change in Rank*
South Dakota	5,576	45	7,086	29	-1,510	16
Tennessee	5,393	49	5,767	49	-374	0
Texas	6,213	36	6,151	46	61	-10
Utah	4,774	50	5,109	51	-335	-1
Vermont	8,130	11	9,981	1	-1,851	10
Virginia	6,984	22	6,748	35	236	-13
Washington	6,957	23	6,950	30	7	-7
West Virginia	7,355	17	8,385	13	-1,030	4
Wisconsin	8,006	12	8,571	8	-565	4
Wyoming	7,229	19	8,876	6	-1,648	13

increase in inflation while the IPD for state and local governments was much higher, at 37.9%. To facilitate comparison with the previous analysis and because federal dollars were also included, inflation was accounted for using the CPI.[6] Third, to have a better understanding of the relative standing of states and the District in terms of the revenues raised for schools at the start of the series, this study adjusted for price differences across states and the District of Columbia using the Comparable Wage Index (CWI) developed by Taylor and Fowler (2006).[7]

The CWI and other cost-of-living adjustments are irrelevant for most of the questions discussed in this study because they do not affect the percentage increase in per-pupil revenues. They do, however, affect one part of the analysis: Rankings of states and the District of Columbia in 1998 revenue levels, and relative changes that occurred during the following eight years.

Inflation-adjusted per-pupil revenues for 1998 are reported in Table 1. The first numerical column lists per-pupil revenues that have not been adjusted for price level differences across states and the District of Columbia, while revenues in the third numerical column have been adjusted for price level differences using the CWI for 1998. States are ranked from high (1) to low (51) for both the unadjusted and adjusted figures. One of the biggest differences was found for Montana, which ranked 34th in unadjusted revenues but 14th based on the CWI. Seven other states had a ranking that was at least 10 places higher after revenues were adjusted: Arkansas (11), Maine (12), Nebraska (10), North Dakota (16), South Dakota (16), Vermont (10), and Wyoming (13). In contrast, seven states and the District of Columbia had rankings that were at least 10 places lower after revenues were adjusted: California (-18), District of Columbia (-17), Illinois (-11), Maryland (-12), Massachusetts (-12), Nevada (-10), Texas (-10), and Virginia (-13). These findings are in stark contrast with those of the previous study where many states had similar rankings before and after adjustment with the CWI. The disparities are important when considering the right amount of dollars to provide children with an adequate education. The findings imply that, now more than before, regional variation in prices matter and that there is no magical dollar amount that will meet the needs of children across the nation. Notwithstanding the rising importance of regional variations in price, three of the states in the top five remained in the top five even after revenues were adjusted–Alaska, Connecticut, and New Jersey. Mississippi and Utah alternated in being ranked 50th and 51st based on whether adjusted or unadjusted numbers were used.

The bivariate relationship between the growth of per pupil revenues and enrollment growth, 1998 per pupil revenues, and per pupil personal income growth will be examined in the next three sections. Because these variables are related, bivariate analysis may overstate the association of any one factor. To address this issue, the joint association of these variables with revenue growth between 1998 and 2006 will be examined in the section following the individual analyses. Next, the source of revenue growth is examined along with the relative levels of education adequacy achieved by states. In the final section, policy implications, comparisons with the Alexander (1997) study, and conclusions are discussed.

Revenue Increases and Changes in Enrollment

Table 2 compares growth in real revenues, total and per-pupil, as well as changes in student enrollment. All three have to be considered to obtain a complete picture of how revenues changed in the period studied. For example, in Arizona, real total education revenues rose 54.28%, considerably more than the U.S. average of 31.99%, although Arizona's per-pupil revenues rose only 14.76%, ranking it 45th in the nation. At the same time, Arizona's student enrollment rose by 34.44%, second only to Nevada. Consequently, although Arizona's total education revenues rose much faster than the national average, they did not keep pace with the substantial increase in enrollment numbers. In contrast, Louisiana's total revenues rose only 24.31%, but per-pupil revenue increased by 47.53%, ranking the state third in the nation. However, Louisiana's student enrollments fell 15.74% during this time period.[8]

The five states with the biggest increases in per-pupil revenues were Hawaii (80.92%), Wyoming (55.64%), Louisiana (47.53%), Mississippi (44.64%), and Vermont (41.8%). Conversely, the five states with the smallest increases were Michigan (6.96%), North Carolina (11.73%), Idaho (11.47%), Washington (12.35%), and Oregon (13.21%). Unlike the previous study, no state saw a decline in per-pupil revenues.

Table 2
Revenue Growth, Total and Per Pupil, and Student Enrollment Growth, 1998-2006

Locale	*Total Revenue Growth (%)*	*Rank*	*Per-Pupil Revenue Growth (%)*	*Rank*	*Enrollment Growth (%)*	*Rank*
United States	31.99		23.96		6.47	
Alabama	26.47	29	27.74	23	-0.99	36
Alaska	16.16	44	15.14	43	0.88	28
Arizona	54.28	3	14.76	45	34.44	2
Arkansas	36.08	19	31.00	16	3.88	20
California	38.20	14	24.60	28	10.91	9
Colorado	38.83	12	22.33	31	13.48	7
Connecticut	39.50	10	29.82	19	7.45	12
Delaware	38.70	13	28.40	21	8.02	11
District of Columbia	40.40	9	40.83	8	-0.30	33
Florida	36.83	16	17.34	38	16.61	3
Georgia	47.31	4	26.81	25	16.17	5
Hawaii	74.19	1	80.92	1	-3.72	43
Idaho	19.49	39	11.47	49	7.19	13
Illinois	30.09	25	23.10	29	5.68	16
Indiana	23.31	36	17.56	36	4.89	18
Iowa	16.93	42	21.18	34	-3.51	42
Kansas	30.61	24	30.94	17	-0.25	32
Kentucky	24.21	34	22.28	32	1.58	27
Louisiana	24.31	33	47.53	3	-15.74	50
Maine	22.47	38	33.17	13	-8.04	45
Maryland	36.74	17	32.09	15	3.52	21
Massachusetts	45.01	5	41.59	6	2.41	22
Michigan	9.45	50	6.96	51	2.32	23
Minnesota	16.33	43	18.32	35	-1.68	39
Mississippi	41.82	8	44.64	4	-1.95	40
Missouri	22.59	37	21.64	33	0.78	30
Montana	10.13	49	22.94	30	-10.42	47
Nebraska	25.04	32	27.67	24	-2.06	41
Nevada	59.89	2	15.00	44	39.03	1
New Hampshire	43.12	6	40.25	9	2.05	24
New Jersey	42.85	7	27.97	22	11.62	8
New Mexico	33.27	23	35.28	11	-1.48	37
New York	39.14	11	41.42	7	-1.62	38
North Carolina	28.03	28	11.73	50	14.59	6
North Dakota	16.02	45	39.98	10	-17.11	51
Ohio	29.60	26	30.13	18	-0.40	34
Oklahoma	17.55	40	15.50	42	1.77	26
Oregon	15.48	46	13.21	47	2.00	25
Pennsylvania	26.34	30	25.26	27	0.86	29
Rhode Island	33.82	22	33.73	12	0.07	31
South Carolina	36.67	18	28.43	20	6.41	15

continued on next page

Table 2 (continued)
Revenue Growth, Total and Per Pupil, and Student Enrollment Growth, 1998-2006

Locale	Total Revenue Growth (%)	Rank	Per-Pupil Revenue Growth (%)	Rank	Enrollment-Growth (%)	Rank
South Dakota	13.83	48	32.89	14	-14.34	49
Tennessee	25.39	31	17.39	37	6.82	14
Texas	35.66	20	16.67	40	16.28	4
Utah	23.37	35	17.19	39	5.27	17
Vermont	29.36	27	41.88	5	-8.82	46
Virginia	37.65	15	25.99	26	9.25	10
Washington	16.96	41	12.35	48	4.11	19
West Virginia	8.51	51	16.45	41	-6.82	44
Wisconsin	13.86	47	14.72	46	-0.75	35
Wyoming	35.28	21	55.64	2	-13.08	48

Table 3
Relation Between Growth of Per-Pupil Revenue and Student Enrollment, by Rank, 1998-2006

		Enrollment Growth				
	Rank	High 1-10	11-20	21-30	31-40	Low 41-51
Per-Pupil Revenue Growth	High 1-10			Massachusetts New Hampshire New York	District of Columbia Mississippi	Hawaii Louisiana North Dakota Vermont Wyoming
	11-20		Arkansas Connecticut South carolina	Maryland	Kansas Maine New Mexico Ohio Rhode Island South Dakota	
	21-30	New Jersey	Delaware	California Georgia Illinois Pennsylvania Virginia	Alabama	Montana Nebraska
	31-40	Colorado		Kentucky	Florida Indiana Iowa Minnesota Missouri Tennessee Texas Utah	
	Low 41-51	Arizona Nevada North Carolina	Idaho Washington	Alaska Michigan Oklahoma Oregon	Wisconsin	West Virginia

Note: This is a graphical representation of data presented in Table 2. Inflation adjustment is based on the Consumer Price Index (CPI).

Student enrollment increased in 30 states and fell in 20, as well as in the District of Columbia. The five states with the biggest increases in enrollment were Nevada (39.0%), Arizona (34.4%), Florida (16.6%), Texas (16.3%), and Georgia (16.2%). Those with the largest decreases were North Dakota (-17.1%), Louisiana (-15.7%), South Dakota (-14.3%), Wyoming (-13.1%), and Montana (-10.4%).

Examined in Table 3 is the relationship between increases in revenue per pupil and enrollment growth. In 19 states, the tradeoff between enrollment increases and per-pupil revenue growth was particularly marked. In 6 states, there were large enrollment increases and low per-pupil revenue growth, while in 13 states, there were declines or low growth in enrollment and big revenue increases.

Following the methodology of Alexander (1997), states and the District of Columbia were classified as having big increases if they were in the top two quintiles of per-pupil revenue increases or enrollment growth. Those locales in the bottom two quintiles were defined as having small increases in the corresponding categories.[9] The quintile analysis is summarized below:

- Big increases in per-pupil revenues and decreases or small increases in enrollment: District of Columbia, Hawaii, Kansas, Louisiana, Maine, Mississippi, New Mexico, North Dakota, Ohio, Rhode Island, South Dakota, Vermont, and Wyoming.
- Small increases in per-pupil revenue and big increases in enrollment: Arizona, Colorado, Idaho, Nevada, North Carolina, and Washington.

Surprisingly, 13 states had either relatively large or small per-pupil revenue changes despite enrollment patterns that would be expected to result in changes of the opposite direction:

- Big per-pupil revenue increases despite big enrollment increases: Arkansas, Connecticut, and South Carolina.
- Small per-pupil revenue increases despite enrollment decreases or small increases: Florida, Indiana, Iowa, Minnesota, Missouri, Tennessee, Texas, Utah, Wisconsin, and West Virginia.

During much of the period analyzed, all ten states that had smaller than anticipated per-pupil revenue increases were led by governors who campaigned for small government. Their terms in office were often marked by a commitment to holding down the size of government and not raising taxes. Since schools tend to consume the largest share of a state's budget, this commitment placed significant fiscal pressures on resources devoted to schools.

Convergence of Revenue Levels

Convergence of per-pupil revenues can occur for a variety of reasons, including intergovernmental competition, educational reform efforts, and regression to the mean. Intergovernmental competition often pits states against each other in attracting business investments. Historically, states with relatively low per-pupil revenues have often been associated with poorly educated students (Gold 1990; Darling-Hammond 2007). In the previous period studied (1983-1992), state policymakers often considered that they would be better able to compete for economic investment if their educational revenues did not lag too far behind those of neighboring states or the national average. Consequently, in order to "catch up" with their more generous counterparts, initially low-spending states tended to have higher than average increases in revenues per pupil. However, this strategy has been replaced with one that tries to attract businesses by holding taxes down. This frequently results in a reversal of roles where lower-spending states do not look toward their more generous neighbors. Rather, the opposite occurs; that is, formerly higher spending states try to keep public revenues, including those spent on education, in line with less generous states. Exceptions often include those states that have long been characterized as having high pupil revenues, whether because of having a taste for education or having relatively higher costs of living.

The convergence hypothesis can be tested by comparing per-pupil revenues in 1998 and subsequent revenue growth. This relationship is examined in Table 4 using inflation-adjusted revenue. The data reported in Table 4 generally support the hypothesis that while a catch-up phenomenon occurred, it was less significant than in the previous period. The seven states in the upper right hand corner of the table had relatively low per-pupil revenue in 1998 followed by significant increases, while the seven states in the lower left hand corner had high per-pupil revenue in 1998 but experienced low revenue growth in the subsequent eight years. In the previous study, 10 states had relatively low 1998 per-pupil revenues followed by big increases, and 12 states had high 1998 per-pupil revenues but low increases subsequently. The lack of convergence is further exemplified by the 10 states in the upper left hand corner; these had both high 1998 per-pupil revenues and high growth. The 11 states in the lower right hand corner had low 1998 per-pupil revenues followed by low growth. By contrast, in the previous study, only five states that initially had low per-pupil revenues in 1983 had low growth in the subsequent ten years. The described patterns for 1998-2006 are summarized below:

- Low per-pupil revenue and large subsequent increases: Arkansas, Louisiana, Mississippi, North Dakota, New Mexico, South Carolina, and South Dakota.
- High per-pupil revenue and small subsequent increases: Alaska, Indiana, Michigan, Minnesota, Oregon, West Virginia, and Wisconsin.
- Low per-pupil revenue and small subsequent increases: Arizona, Colorado, Florida, Idaho, Kentucky, Nevada, North Carolina, Oklahoma, Tennessee, Texas, and Utah.
- High per-pupil revenue and large subsequent increases: Connecticut, District of Columbia, Maine, Massachusetts, Maryland, New York, Ohio, Rhode Island, Vermont, and Wyoming.

Regional tendencies were still pronounced. Of the seven states with relatively low per-pupil revenues and subsequent large increases, four were in the Southeast. Of the seven states with relatively high per-pupil revenues and small subsequent increases, six were in the West or Midwest. Of the 11 states with low per-pupil revenue and small subsequent increase, seven were in the West. Of the 10 locales with relatively high per-pupil revenues and subsequent large increases, eight were in the East, primarily in New England or the Mid-Atlantic region.

The places that sparked the most concern were those states that had low 1998 per-pupil revenue and lower than average revenue growth. Those states also tended to favor market-driven approaches to funding education. For example, early in his term, in 2008, Florida Governor Scott proposed the expanded use of private school vouchers to private schools and all families, regardless of household income (Sherman 2011; Klas 2010). In a similar reliance on competition and market mechanisms to address perceived public

Table 4
Relation Between Per-Pupil Revenue Growth and 1998 Revenue per Pupil, by Rank

	Revenue Per Pupil					
	Rank	**High 1-10**	**11-20**	**21-30**	**31-40**	**Low 41-51**
Per-Pupil Revenue Growth	**High 1-10**	Massachusetts New York District of Columbia	Vermont Wyoming	Hawaii New Hampshire		Louisiana Mississippi North Dakota
	11-20	Connecticut Rhode Island	Maine Maryland Ohio	Kansas	New Mexico South Carolina	Arkansas South Dakota
	21-30	Delaware New Jersey Pennsylvania		California Illinois Nebraska Virginia	Georgia Montana	Alabama
	31-40		Indiana Minnesota	Iowa Missouri	Colorado Florida Kentucky Texas	Tennessee Utah
	Low 41-51	Alaska Michigan	Oregon West Virginia Wisconsin	Washington	Nevada North Carolina	Arizona Idaho Oklahoma

Note: This is a graphical representation data presented in Tables 1 and 2. Inflation adjustment is based on the Consumer Price Index. The 1998 per pupil revenues are not adjusted for differences in the cost of living among states and the District of Columbia.

ills, Arizona policymakers advocated the increased use of charter schools (Anderson 2009). A third example is Utah. In the previous study, Utah's exceptionally high enrollment growth often made it difficult for its leaders to sustain large increases in per-pupil revenue. In the more recent period covered in this analysis, Utah's rate of growth of its student population slowed to 17th, but growth in per-pupil revenues lagged, ranking 39th in the nation.

Economic Growth and Revenue Increases

The growth of education revenues depends heavily on the health of a state's economy. It would be expected that states with strong economies would provide large increases in per-pupil revenues. In the United States, indicators of state fiscal capacity are often grounded in measures of personal income. A limitation of these measures is their inability to reflect the diversity of tax and revenue sources as well as their failure to capture the ability of states to export taxes. Notwithstanding these shortcomings, measures of personal income are often more up-to-date and more readily available than other indicators. Further, states generally do not vary significantly in their rankings among the various fiscal capacity measures, except in the case of energy-rich states like Alaska and tourist-rich states like Florida.

The growth of real personal income per pupil is a good measure of how much a state's economy expanded in relation to the growth of demand for education. Between 1998 and 2006, this measure rose 17.76% nationally, but there were wide variations across states and the District of Columbia as indicated in Table 5. In the previous study, states in New England, the Mid-Atlantic, and the Southeast dominated the top ten rankings. In contrast, for 1998-2006, the highest rates of economic growth as measured by the change in personal income per pupil was found in Wyoming (79.68%), Montana (48.14%), South Dakota (46.43), North Dakota (44.27%), and Louisiana (44.03%). The five states with the smallest increases were largely in the Great Lakes region of the Midwest: Michigan (2.19%), Illinois (8.99%), Indiana (9.06%), New Jersey (9.41%) and Ohio (10.49%).

Table 6 examines the relationship between growth in personal income per pupil and school revenue per pupil. In general, the pattern of association between these two variables supports the notion that a strong economy leads to increased funding for schools. However, the relationship between per-pupil revenue increases and the growth of personal income per pupil is not as pronounced as that noted in Alexander (1997). For 1998-2006, ten states and the District of Columbia are in the upper left hand corner, indicating relatively big increases in personal income per pupil and per-pupil revenues. Eleven states are in the lower right corner, meaning that they had low growth in personal income per pupil and per-pupil revenues. By contrast, there are only four states in the upper right corner, representing those with small increases in personal income per pupil and large growth in per-pupil revenues. The six states located in the lower left corner experienced large increases in personal income per student and low growth in per-pupil revenues. The findings from

Table 5
Growth of Personal Income, Total and Per Pupil, and Student Enrollment, 1998-2006

Locale	*Total Personal Income Growth (%)*	*Rank*	*Per-Pupil Personal Income Growth (%)*	*Rank*	*Enrollment Growth (%)*	*Rank*
United States	25.39		17.76		6.47	
Alabama	23.60	28	24.84	17	-0.99	36
Alaska	26.87	22	25.76	15	0.88	28
Arizona	51.47	3	12.67	43	34.44	2
Arkansas	27.36	21	22.60	22	3.88	20
California	32.66	13	19.61	34	10.91	9
Colorado	35.67	8	19.55	35	13.48	7
Connecticut	21.71	33	13.26	42	7.45	12
Delaware	26.09	23	16.73	38	8.02	11
District of Columbia	43.42	4	43.86	6	-0.30	33
Florida	40.95	6	20.88	29	16.61	3
Georgia	28.74	16	10.82	46	16.17	5
Hawaii	27.44	20	32.37	10	-3.72	43
Idaho	41.15	5	31.68	11	7.19	13
Illinois	15.17	48	8.99	50	5.68	16
Indiana	14.39	49	9.06	49	4.89	18
Iowa	16.73	45	20.97	28	-3.51	42
Kansas	19.90	38	20.20	30	-0.25	32
Kentucky	18.77	43	16.93	37	1.58	27
Louisiana	21.35	37	44.03	5	-15.74	50
Maine	24.31	27	35.17	8	-8.04	45
Maryland	31.62	14	27.14	14	3.52	21
Massachusetts	22.78	31	19.89	33	2.41	22
Michigan	4.56	51	2.19	51	2.32	23
Minnesota	21.54	35	23.62	20	-1.68	39
Mississippi	21.57	34	23.99	18	-1.95	40
Missouri	18.17	44	17.26	36	0.78	30
Montana	32.70	12	48.14	2	-10.42	47
Nebraska	19.76	39	22.28	24	-2.06	41
Nevada	55.40	2	11.77	44	39.03	1
New Hampshire	25.99	24	23.46	21	2.05	24
New Jersey	22.13	32	9.41	48	11.62	8
New Mexico	32.87	11	34.86	9	-1.48	37
New York	19.17	41	21.13	26	-1.62	38
North Carolina	27.70	18	11.44	45	14.59	6
North Dakota	19.59	40	44.27	4	-17.11	51
Ohio	10.05	50	10.49	47	-0.40	34
Oklahoma	31.35	15	29.06	13	1.77	26
Oregon	23.48	29	21.06	27	2.00	25
Pennsylvania	15.61	47	14.63	40	0.86	29
Rhode Island	21.45	36	21.37	25	0.07	31
South Carolina	27.90	17	20.19	31	6.41	15

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Table 5 (continued)
Growth of Personal Income, Total and Per Pupil, and Student Enrollment, 1998-2006

Locale	Total Personal Growth (%)	Rank	Per-Pupil Personal Income Growth (%)	Rank	Emrollment Growth (%)	Rank
South Dakota	25.43	25	46.43	3	-14.34	49
Tennessee	23.22	30	15.36	39	6.82	14
Texas	33.02	10	14.40	41	16.28	4
Utah	38.46	7	31.52	12	5.27	17
Vermont	25.29	26	37.40	7	-8.82	46
Virginia	35.32	9	23.86	19	9.25	10
Washington	27.58	19	22.54	23	4.11	19
West Virginia	16.59	46	25.12	16	-6.82	44
Wisconsin	19.05	42	19.95	32	-0.75	35
Wyoming	56.17	1	79.68	1	-13.08	48

Table 6
Relation between Growth in Per-Pupil Revenues and Per-Pupil Personal Income, by Rank, 1998-2006

		Per-Pupil Personal Income Growth				
	Rank	High 1-10	11-20	21-30	31-40	Low 41-51
Per-Pupil Revenue Growth	High 1-10	Hawaii Wyoming Louisiana Vermont District of Columbia North Dakota	Mississippi	New Hampshire New York	Massachusetts	
	11-20	Maine New Mexico South Dakota	Maryland	Rhode Island Arkansas Kansas	South Carolina	Connecticut Ohio
	21-30	Montana	Alabama Virginia	Nebraska	California Delaware Pennsylvania	Georgia Illinois New Jersey
	31-40		Minnesota Utah	Florida Iowa	Colorado Kentucky Missouri Tennessee	Indiana Texas
	Low 41-51		Alaska Idaho Oklahoma West Virginia	Oregon Washington	Wisconsin	Arizona Michigan Nevada North Carolina

Table 6 can be summarized, as follows:

- Big increases in personal income per pupil and per-pupil revenue: District of Columbia, Hawaii, Louisiana, Maine, Maryland, Mississippi, New Mexico, North Dakota, South Dakota, Vermont, and Wyoming.
- Small increases in personal income per pupil and per-pupil revenue: Arizona, Colorado, Indiana, Kentucky, Michigan, Missouri, Nevada, North Carolina, Tennessee, Texas, and Wisconsin.
- Small increases in personal income per pupil and big increases in per-pupil revenue: Connecticut, Massachusetts, Ohio, and South Carolina.
- Large increases in personal income per pupil and small increases in per-pupil revenue: Alaska, Idaho, Minnesota, Oklahoma, Utah, and West Virginia.

Table 7
Correlation Matrix: 1998 Per-Pupil Revenue and Growth in Per-Pupil Personal Income, Per-Pupil Revenue, and Student Enrollment 1998-2006

	Per-Pupil Revenue	*Per-Pupil Personal Income Growth*	*Enrollment Growth*	*Per-Pupil Revenue Growth*
Per-Pupil Revenues	1.0000			
Per-Pupil Personal Income Growth	-0.1698	1.0000		
Enrollment Growth	-0.0429	-0.6273	1.0000	
Per-Pupil Revenue Growth	0.0927	0.5127	-0.4652	1.0000

Table 8
Per-Pupil Revenue Changes and the Joint Associations of Personal Income per Pupil Growth, Enrollment Growth, and Per-Pupil Revenue

Variables	*Unstandardized Coefficient (Standard Error)*	*T-Ratio*	*Mean*	*Standard Deviation*
Constant	7.0753 (10.8415)	.6526		
Personal Income per Pupil Growth	0.4161* (.1604)	2.5936	24.00	13.15
Enrollment Growth	-0.2501 (.1984)	-1.2605	2.89	10.48
Per-Pupil Revenue	0.0016 (0.0013)	1.2409	6,965.50	1,297.00
R-Squared	0.3191			
Adjusted R Squared	0.2757			
Degrees of Freedom	3, 47			

Note: Asterisk (*) indicates coefficient is statistically significant at the 0.05 level.

Surveyors of the education landscape need to focus on those states that had large increases in personal income per pupil but small increases in per-pupil revenues. In the past, faster growing economies were often associated with more investment in elementary and secondary education. As such, more recent trends suggest changing public policy priorities. Alexander (2011) saw similar patterns in her examination of the evolution of changing political cultures in Minnesota over the past two decades, 1990 through 2010.

Revenue Increases and the Joint Association of Key Variables

Table 7 shows the correlation between 1998 per-pupil revenues and growth in personal income per pupil, student enrollment, and per-pupil revenues. Per-pupil revenue growth was most strongly correlated with personal income growth per pupil (0.5127). However, it was negatively correlated with enrollment growth (-0.4642).

Even after looking at the descriptive relationships and correlations, questions remain regarding the independent role of any one of these factors with regard to the growth of educational revenues. Using a regression model, this study addressed this issue by exploring the relationship between increases in school funding (PPR) and the following three variables: enrollment growth (ENRL), increases in personal income per pupil (PIPP), and real 1998 funding levels (PPR98):

$PPR=\alpha + \beta 1ENRL + \beta 2PIPP + \beta 3PPR98 + e$

where e is the error term.

The results of the regression analysis are shown in Table 8. The model accounted for 31.9% of the variation in the growth of per-pupil school revenues, 1998-2006. As suggested by the earlier findings, the sign of the coefficient for 1998 per pupil revenue was positive. However, the coefficient (0.0016) was not statistically significant. The positive, statistically significant coefficient for strength of the economy as measured by per-pupil personal income growth (0.4161) was as expected. Specifically, for each 10% increase in the growth of per-pupil personal income, per pupil education revenues rose by 4.2%, holding other variables constant. The negative coefficient sign bore out the expected impact of enrollment increases, although the coefficient (-0.2501), was not statistically significant.

Table 9

Per-Pupil Revenue Growth, Total and by Source, Sorted by Total Per-Pupil Revenue Growth

Locale	*Total (%)*	*Rank*	*Federal (%)*	*Rank*	*State (%)*	*Rank*	*Local (%)*	*Rank*
Hawaii	87.6	1	79.7	16	89.7	3	249.9	1
Wyoming	56.6	2	135.6	2	46.8	8	56.0	3
Louisiana	55.0	3	154.4	1	33.3	13	61.1	2
Mississippi	50.5	4	121.4	4	38.7	10	42.6	8
New York	41.5	5	88.0	10	51.2	7	30.1	23
North Dakota	39.2	6	77.7	18	22.8	25	46.6	7
New Mexico	38.0	7	51.0	45	36.1	12	42.0	10
Massachusetts	37.5	8	53.2	39	58.7	5	19.4	41
South Dakota	37.5	9	126.6	3	27.7	19	27.0	27
Vermont	36.6	10	98.7	6	297.5	2	-88.7	51
New Hampshire	36.3	11	97.8	7	471.2	1	-14.1	49
District of Columbia	36.1	12	1.0	51	n.a.		42.4	9
Arkansas	33.4	13	40.0	47	31.4	15	46.6	6
Maine	32.6	14	86.9	12	23.3	23	31.3	20
Kansas	32.3	15	101.1	5	24.7	22	34.3	17
New Jersey	31.6	16	59.8	32	39.9	9	24.0	32
Ohio	30.7	17	70.5	25	38.4	11	21.6	37
Alabama	30.5	18	66.3	29	16.8	29	54.7	4
Rhode Island	29.8	19	83.0	15	32.8	14	22.6	36
Maryland	29.8	20	54.0	38	30.7	16	27.3	26
South Carolina	29.7	21	55.7	34	13.9	35	49.2	5
Georgia	29.0	22	74.6	21	11.9	36	39.5	11
Montana	27.8	23	75.5	20	25.9	21	18.3	43
Pennsylvania	27.7	24	76.9	19	16.9	28	30.1	24
Connecticut	26.7	25	55.2	35	30.6	17	24.7	31
Nebraska	26.5	26	90.1	9	21.6	26	23.5	34
Delaware	25.2	27	36.7	48	23.0	24	28.2	25
Kentucky	25.1	28	52.8	41	16.1	31	37.7	13
Illinois	23.6	29	53.1	40	28.9	18	18.8	42
California	23.3	30	62.8	31	21.5	27	16.7	44
Alaska	22.0	31	68.9	27	15.2	32	23.6	33
Missouri	22.0	32	74.0	22	2.8	44	31.0	22
Iowa	20.8	33	95.9	8	7.4	39	35.9	15
West Virginia	20.6	34	57.2	33	15.0	33	22.7	35
Virginia	20.4	35	54.5	36	52.0	6	3.4	47
Utah	19.5	36	65.4	30	8.0	38	33.9	18
Tennessee	19.4	37	51.0	46	6.3	40	32.4	19
Indiana	19.3	38	69.7	26	14.0	34	20.8	39
Texas	19.1	39	87.7	11	-8.8	50	35.2	16
Colorado	19.0	40	71.2	24	16.5	30	15.3	45
Oklahoma	19.0	41	84.0	14	3.0	43	38.6	12
Nevada	18.6	42	84.7	13	-3.3	48	25.5	30

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Table 9 (continued)
Per-Pupil Revenue Growth, Total and by Source, Sorted by Total Per-Pupil Revenue Growth

Locale	*Total (%)*	*Rank*	*Federal (%)*	*Rank*	*State (%)*	*Rank*	*Local (%)*	*Rank*
Minnesota	16.9	43	54.3	37	59.0	4	-42.5	50
Arizona	16.0	44	33.9	50	26.7	20	0.1	48
Idaho	16.0	45	78.2	17	4.1	42	26.7	28
Florida	15.0	46	51.7	43	-7.0	49	36.4	14
Oregon	14.0	47	73.8	23	1.3	45	26.0	29
Wisconsin	12.9	48	51.7	43	-7.0	49	36.4	14
North Carolina	12.7	49	67.6	28	4.8	41	20.9	38
Michigan	8.6	50	34.6	49	-2.4	47	31.0	21
Washington	8.3	51	51.8	42	-0.2	46	20.1	40

Note: n.a. = not applicable.

Source of Revenues

The fourth issue considered in this updated analysis is somewhat different from those discussed above, but mirrors the analysis offered in Alexander (1997). This discussion of the contribution of the different jurisdictions differs from the earlier analysis in its inclusion of federal contributions, its adjustment for inflation and wage differentials, as well as the inclusion the District of Columbia in the analysis. While the initial portions contributed by each source would not be affected by wage differentials, the growth in these contributions might vary depending on changes in a locale's economy. The rest of this section provides a comprehensive analysis of where the money came from – was it mainly from the federal, state, or local government? Which of these provided the bulk of the increased funding for locales with particularly large or small revenue increases?

The growth of real total per-pupil revenue as well as that of federal, state, and local governments is shown in Table 9. It is organized by the ranking of the states with respect to total per-pupil revenue growth so that trends in those locales with particularly large or small per-pupil growth can readily be seen. In this discussion, states that ranked in the top 15 of per-pupil revenue increases were considered to have particularly large growth. Similarly, those states in the bottom 15 were considered to have particularly small growth.

In most locales with big revenue increases, growth in federal funding exceeded growth from state and local sources. This is not surprising since the federal share of per-pupil revenues increased from 6.8% in 1998 to 9.1% in 2006. In only three of the states with large per-pupil revenue increases did growth in state revenues outpace that of the federal government: Massachusetts, New Hampshire, and Vermont. Arkansas and Hawaii were the only two fast-growing states in which school revenues from local contributions grew faster than the growth in contributions from federal and state sources.

If we look only at the growth in state and local contributions, local governmental units provided the bulk of additional funding. In 9 of the 15 states with big per-pupil revenue increases, growth in local pupil revenues outpaced increases in state aid by an average of 9.6 percentage points. In five of the remaining states with big per-pupil revenue increases, state revenues outpaced local funding by an average of 39.3 percentage points. In South Dakota, the pace of growth of per-pupil revenues coming from state or local sources was fairly even.

In 12 states with particularly low per-pupil revenue growth, the local governmental unit provided the bulk of additional funding, averaging 24.8 percentage points more than state per-pupil revenue increases: Florida, Idaho, Indiana, Michigan, Nevada, North Carolina, Oregon, Tennessee, Texas, Oklahoma, Washington, and Wisconsin. Three states with the smallest revenue increases–Arizona, Colorado, and Minnesota–relied primarily on increases in state per-pupil revenues, which outpaced the growth of local educational funding by an average of 26.5 percentage points.

The remaining states had moderate growth in per-pupil revenues, ranging from 19.5% in Utah to 30.7% in Ohio. All states with moderate growth saw their largest increases come from the federal government. When only state and local contributions were considered, the smallest growth in 12 of the 20 states came from state coffers: Alabama, Alaska, Delaware, Georgia, Iowa, Kentucky, Missouri, Nebraska, Pennsylvania, South Carolina, Utah, and West Virginia. In eight of the states with moderate growth, state contributions outpaced those from the local governmental units: California, Connecticut, Illinois, Maryland, Montana, Ohio, Rhode Island, and Virginia.

These findings on state and local contributions suggest that states were pulling back on per-pupil revenue increases relative to the earlier period studied. In the past, those states with particularly small increases in per-pupil revenues tended to receive more of their additional funding from the state, rather than local governments. Here, all three groups of states, i.e., those with high, moderate, and low rates of per-pupil revenue growth, saw the bulk of their additional funding come from federal and local sources.

Adequacy across the States

In school finance discourse, discussions of adequacy have often been framed as the level of funding that allows all children, or at least a suitable portion of them, to meet the education standards set by federal and state guidelines; that is, adequacy measures how much of an appropriate educational outcome policymakers can achieve with the resources available. Capturing adequacy is a growing concern among many educators and has been the center

of education discourse on developing appropriate school finance mechanisms and formulas. Currently, four approaches have emerged from leaders in education finance on an appropriate working definition of adequacy:

- ♦ Professional judgment (Guthrie 1983)
- ♦ Successful schools (Odden 2000)
- ♦ Cost function (Reschovsky and Imazeki 2001)
- ♦ State-of-the-art methodology (Odden, Fermanich, and Picus (2003) [10]

More recently, Alexander and Schapiro (2009) have argued for the creation of an "adequacy condition index" in the same way that we have indicators of fiscal condition.[11] The search for adequacy is not only a quest for greater effectiveness, but also a pursuit for greater equity.

Using an evidence-based approach developed by Odden, Goetz, and Picus (2010), a comparison was made between per-pupil revenues and a prescribed adequacy level of $9,391.[12] This comparison is appropriate because Odden et al.'s prescribed level is based on 2006 figures. However, because the national average masks large regional cost differentials across states, the proposed level of adequacy and 2006 per-pupil revenues are compared here using both nominal per-pupil revenues and dollars adjusted for cost of living differences. Adjusting for differences in purchasing power is essential. For those states where costs are higher, the funding needed to purchase an adequate level of education resources would be higher than Odden et al.'s prescribed amount. On the other hand, for those states where costs are lower, adequate funding would be lower than the prescribed amount. Table 10 lists the difference between 2006 per-pupil revenues, nominal and adjusted for regional price differences, for the states and the District and Columbia and Odden et al.'s prescribed adequacy level of $9,391. When regional price differences are not accounted for, 15 states are below the prescribed level of per-pupil revenues, ranging from $69 below in Colorado to $2,622 below in Utah. Once regional price differences are accounted for, only nine states are below the prescribed level, and the gap narrowed, ranging from $286 below in Oklahoma to $2,003 below in Utah. California and Washington are the only states whose per pupil revenues are considered adequate before cost of living differences are accounted for, but are considered inadequate once price differentials are calculated. The findings from Table 10 can be summarized as follows:

- States falling below an adequate funding level using nominal per-pupil revenues: Alabama, Arizona, Arkansas, Colorado, Florida, Idaho, Kentucky, Mississippi, Nevada, North Carolina, Oklahoma, South Dakota, Tennessee, Texas, and Utah.
- States falling below an adequate funding level using nominal per-pupil revenues adjusted for regional price differences: Arizona, California, Idaho, Nevada, North Carolina, Oklahoma, Tennessee, Texas, Utah, and Washington.

Policy Implications and Conclusions

Patterns of school revenue growth between 1998 and 2006 have changed since the earlier period studied by the author, 1983-1992, with some of the earlier slowing trends becoming more pronounced. The period of 1998 through 2006 was particularly difficult for states. After brief recoveries from two national economic recessions in the 1980s, states were then faced with shrinking fiscal resources from economic recessions in the early 1990s and early 2000s (National Bureau of Economic Research 2011). Like the decade before, the more recent period saw only slow to modest economic growth where total personal income grew on average by 25.4%, while personal income per pupil grew more slowly, at 17.8%. As before, those states experiencing large student enrollment increases while battling a declining economy were especially hard-pressed. Some states, like Louisiana, were able to rise in the rankings of per-pupil revenue growth only because of precipitous declines in student enrollment coupled with large infusions of federal dollars.

In the 1980s, the pressure to improve student achievement was very strong in the wake of the report, *A Nation at Risk* (National Commission on Excellence in Education 1983). In the decades following, the challenges facing schools intensified with the signing of the No Child Left Behind Act of 2001. No state was immune to the dual pressures of increasingly punitive accountability measures and greater noneducational demands being placed on its resources. The response of state policymakers to these rising pressures also changed. Previously, when state policymakers were faced with the potentially conflicting alternatives of improving schools and reducing public expenditures, they typically increased school funding. However, in the more recent period studied here, many chose to reduce the growth of school revenues and adopted more market-driven models to achieve school improvement.

The period 1998 through 2006 was characterized by the growing importance of the federal government as it related to the funding of schools. While state and local governments combined typically provided 90% of school funding, many of the additional resources came from federal coffers. Indeed, for many locales, there was a marked decline in the role that the state played in raising revenues for schools. In most instances, those states that had the largest revenue increases in per-pupil funding saw the greatest growth coming from the federal government.

States with weak economies generally could not afford large increases in per-pupil revenues. While weak economies generally translated into low growth in per-pupil funding, strong state economies were no longer guarantees of increased investment in public schools. Large increases in personal income per pupil were no longer substantively associated with large increases in per-pupil revenues. In the past, states sought to "catch up" if their school revenues lagged behind those of neighboring states or the national average, but, more recently, policymakers have touted lower public spending, including funds spent on schools, as illustrative of economic competitiveness. In this study, key exceptions included Connecticut, Massachusetts, Ohio, and South Carolina, states that managed to substantially increase per-pupil revenues despite relatively low economic growth as measured by personal income per pupil. The weaker connections between economic growth and subsequent investment in schools suggested that as demand grew for a more skilled workforce, education funds to support these new requirements may have been insufficient.

This pattern is consistent with the observation of Mitchell and Mitchell (2003) that state policymakers tend to view education as a durable product. To that end, the purpose of education is to create better workers that can, in turn, improve the economy and stimulate economic growth. According to Mitchell and Mitchell, if public

Table 10

Per-Pupil Revenue, 2006, Compared to the Prescribed Adequacy Level of $9,391

Locale	*Per-Pupil Revenue Unadjusted for Regional Price Differences ($)*	*Difference from Prescribed Adequacy Level ($)*	*Per-Pupil Revenue Adjusted for Regional Price Differences ($)*	*Difference from Prescribed Adequacy Level ($)*
United States	10,601			
Alabama	8,555	-836	9,764	373
Alaska	12,849	3,458	13,536	4,145
Arizona	8,071	-1,320	8,810	-581
Arkansas	9,031	-360	10,971	1,580
California	9,909	518	9,037	-354
Colorado	9,322	-69	9,718	327
Connecticut	15,149	5,758	13,774	4,383
Delaware	12,679	3,288	12,466	3,075
District of Columbia	15,624	6,233	12,717	3,326
Florida	9,277	-114	10,020	629
Georgia	10,083	692	10,269	878
Hawaii	14,789	5,398	15,612	6,221
Idaho	7,289	-2,102	9,052	-339
Illinois	10,581	1,190	10,251	860
Indiana	10,831	1,440	12,195	2,804
Iowa	9,793	402	11,694	2,303
Kansas	10,555	1,164	12,474	3,083
Kentucky	8,693	-698	9,840	449
Louisiana	10,329	938	11,912	2,521
Maine	12,134	2,743	14,533	5,142
Maryland	12,419	3,028	11,485	2,094
Massachusetts	14,251	4,860	13,096	3,705
Michigan	10,893	1,502	11,157	1,766
Minnesota	10,952	1,561	11,331	1,940
Mississippi	8,349	-1,042	10,051	660
Missouri	9,707	316	10,731	1,340
Montana	9,439	48	12,759	3,368
Nebraska	10,368	977	12,258	2,867
Nevada	8,965	-426	9,010	-381
New Hampshire	11,489	2,098	12,343	2,952
New Jersey	16,337	6,946	14,462	5,071
New Mexico	9,636	245	10,987	1,596
New York	16,613	7,222	14,850	5,459
North Carolina	7,863	-1,528	8,330	-1,061
North Dakota	9,748	357	12,158	2,767
Ohio	11,473	2,082	11,979	2,588
Oklahoma	7,656	-1,735	9,105	-286
Oregon	9,829	438	10,756	1,365
Pennsylvania	12,391	3,000	13,002	3,611
Rhode Island	13,342	3,951	13,205	3,814

continued on next page

Table 10 (continued)
Per-Pupil Revenue, 2006, Compared to the Prescribed Adequacy Level of $9,391

Locale	*Per-Pupil Revenue Unadjusted for Regional Price Differences ($)*	*Difference from Prescribed Adequacy Level ($)*	*Per-Pupil Revenue Adjusted for Regional Price Differences ($)*	*Difference from Prescribed Adequacy Level ($)*
South Carolina	9,559	168	10,605	1,214
South Dakota	8,967	-424	11,789	2,398
Tennessee	7,660	-1,731	8,334	-1,057
Texas	8,771	-620	8,865	-526
Utah	6,769	-2,622	7,388	-2,003
Vermont	13,958	4,567	16,502	7,111
Virginia	10,648	1,257	9,836	445
Washington	9,457	66	9,107	-284
West Virginia	10,364	973	12,241	2,850
Wisconsin	11,114	1,723	11,711	2,320
Wyoming	13,614	4,223	16,816	7,425

investment in education is primarily a means to achieve economic growth, state policymakers may decide that there are more cost-effective options to improve the economy. This calculus was apparent in the emerging patterns of per-pupil revenue growth in this study. As globalization calls for a more skilled workforce, computers and other technology facilitate the transfer and portability of resources and knowledge (Friedman 2007). It is ironic that this portable knowledge has led some state policymakers to conclude that reductions in public expenditures and tax cuts to be better economic investments than additional investments in schools.

The question of what is the appropriate level of education investment that is needed to achieve desired educational outcomes is the focus of adequacy. Odden et al. (2010, 142) defined educational adequacy as most students achieving high standards, and asserted that "...the national average expenditure per pupil comes very close to funding adequacy." However, this study demonstrated that variations in costs, based upon inflation and differences in regional prices, matter and may have profound implications for the level of per-pupil revenues needed to achieve adequacy.

Variations in cost of living and the political culture of states will likely influence whether or not state policymakers consider more education investment a rational decision. Given the present political and economic climate, it is unlikely that those states with inadequate per-pupil revenues in 2006 will garner the political will to achieve adequate funding as defined in this study. By and large, those states with inadequate per-pupil revenues in 2006 tended to have low per-pupil revenues in 1998 and had slower than average revenue growth over the intervening eight years. In many instances, the low growth rate in per-pupil revenues was associated with higher than average rates of growth in enrollment. These patterns were troubling because they suggested that an increasing number of school children would be served in states where investment in education was inadequate.

Endnotes

[1] This time span will be referred to as 1998-2006.

[2] Contemporary educational finance research suggests that the field continues to focus intently on educational adequacy. One strand of that research uses an evidence-based approach to establish the appropriate levels of expenditure to get the student outcomes sought by policymakers. Recent research suggests that state educational systems can produce adequate outcomes by spending what they typically do right now.

[3] With regard to the CCD, NCES annually collects information on the population of public elementary and secondary schools in the United States from the administrative and fiscal records of state departments of education. Each year, states report to NCES the revenues their local education agencies receive from local, intermediate, state and federal sources. Also, it should be noted that NCES data have both advantages and disadvantages. A major advantage is the soundness of the information since it is subject to rigorous scrutiny by NCES. However, the reliability of the data comes at the cost of having up-to-date data. Another limitation is that these data exclude state contributions to teacher pensions, a major source of state support for education.

[4] Previous studies have noted variations in how states calculate and report average daily attendance. See, e.g., Orland (1988).

[5] The terms "real" and "inflation-adjusted" are used interchangeably throughout the article.

[6] Note, however, that if the IPD were used, the real changes in school revenues would be different from that shown in this analysis, i.e., real revenue increases would be smaller, and real revenue decreases would be higher.

[7] The CWI is a measure of the systematic, regional variations in the salaries of college graduates who are not educators. The underlying assumption of this index is that general differences in wages of professionals faced by the state as a whole will be the same as those faced by education organizations. The use of the CWI differs from that of Alexander (1997), which relied on Nelson

(1991) adjustments to address differences in prices among states. One benefit of the CWI is that it provides up-to-date information on price variations for the time period studied while the Nelson index covered only 1989. Having an index that covered the appropriate year was important because the past decade saw considerable variation in the relative price levels among states.

[8] The decline in student enrollments allowed Louisiana to compensate for low growth in total education revenues. This sharp decline in the number of students can be attributed in part to Hurricane Katrina, which severely damaged New Orleans and surrounding parishes in August 2005.

[9] This method of classifying states is maintained in the discussions of changes in revenue per pupil and personal income per student from 1998 to 2006.

[10] "State-of-the-art methodology" as used here is synonymous with evidence-based approaches that rely heavily on research evidence and best practices to frame their recommendations. They often identify school-level programs and educational strategies that are associated with improved student learning in the literature. Moreover, this methodology offers a specific set of strategies for different educational organizations based on prototypical characteristics of its culture, governance, administrative, and organizational structure. A good example of this method of calculating an adequate level of funding is offered by Odden, Fermanich, and Picus (2003).

[11] An adequacy condition index is a series of indicators that documents and estimates appropriately the public and private expenditures aimed at improving outcomes for children. Alexander and Schapiro (2009) used the term "adequacy analysis" similarly to "indicator analysis," a term coined by Groves, Godsey, and Shulman (1981) in describing the financial or fiscal condition of an organization. Groves et al. used indicator analysis to document the trends in key financial, demographic, and economic ratios to assess the fiscal health of an organization. Alexander and Schapiro took some liberties with the term "adequacy." They did not use it in a way often found in education law suits, i.e., establishing a financial minimum associated with reaching a passing score on a standardized test. Rather, they viewed adequacy as a function of a mix of measures of how a community meets the needs of its young. The data proposed for the educational adequacy analysis are mixed with appropriate economic and demographic data, creating a series of indicators that, when plotted over a period of time, can be used to monitor changes in the conditions affecting the cost of providing educational adequacy. Again, it must be emphasized that they were not measuring the adequacy of environmental factors, per se. Rather, they were looking at the intersection of these factors and what facilitates adequate educational outcomes. Alexander and Schapiro used an excerpt from the analysis offered by Groves, et al. on the fiscal condition of local governments to identify six factors that can influence the cost of adequate levels of funding in different communities: (1) budget levels; (2) funding patterns; (3) community needs; (4) external economic conditions; (5) political culture; and (6) children outcomes. For each of these six factors, Alexander and Schapiro developed indicators that may be categorized into three groupings, where appropriate: (1) school-based components; (2) governmental, non-school based components; and (3) not-for-profit based components.

[12] Odden et al. (2010, 156) defined adequacy broadly as the level of funding that creates "...effective and efficient school systems – systems that produce the levels of student achievement that the country needs if it is to remain competitive in the emerging global economy and for each student to be successful in his or her adult life." To calculate what that amount is, they costed out key core education strategies, including small class sizes of about 15 in grades K-3, extensive teacher professional development, development of tailored instruction and formative assessments, use of extra-help strategies, where needed, and the creation of a collaborative professional school culture. With these core recommendations as the foundation of their analysis, they developed a prototypical district comprised of schools reflecting the national average in terms of enrollment size and makeup. The cost of providing adequate funding was based on national average salary data and a defined group of benefits for the personnel resources deemed necessary, as well as the average national costs for instructional materials, technology, professional development and other key educational inputs. By their calculations, general education resources resulted in school level costs of $5,851 per pupil. When extra help resources and district office resources, including transportation, was added to the analysis, the total costs per pupil was calculated to be $9,391, on average, in 2006.

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When What You Know Ain't Necessarily So: A Comparative Analysis of Texas Foundation School Program Revenues for Independent and Charter School Districts[1]

R. Anthony Rolle and R. Craig Wood

Texas charter school districts (CSDs) are accredited and monitored by the Texas Education Agency (TEA) utilizing the various components within the state accountability systems for both state and federal requirements. Yet, Texas CSDs are believed to operate with few regulatory restrictions on administrative, instructional, and pedagogical methods. Texas independent school districts (ISDs) and charter school districts are subject to some TEA-required administrative, instructional, and pedagogical standards. Despite these commonalities, to-date no independent fiscal analysis of ISD-CSD revenue distributions has been conducted. As such, the purpose of this article is to conduct comparative analyses of revenues generated from the Texas Foundation School Program (FSP) for ISDs and CSDs. As part of this analysis, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, levels of equity exhibited by revenue distributions, and demographic and financial data.

An Explanation of the Texas Public School District Funding Mechanism

Public schools in Texas receive state revenue funds based on the average daily attendance of students. The Texas school funding formula, called the Texas Foundation School Program (FSP), is the source of state funding for all Texas school districts.[2,3] In its current form, the FSP is meant to ensure that all school districts, regardless of property wealth, receive "substantially equal access to similar revenue per student at similar tax effort."[4] In fact, the major differences between ISDs and CSDs are that CSDs do not receive funds from local tax revenue sources and do not have access to state facilities allotments.

The FSP funding formula originally was designed to generate substantially equal revenues for school district daily maintenance and operation–not capital or debt servicing–expenses. (See Appendix A.) Comprised of three funding sections, Tier I of the FSP is structured as a basic foundation formula, consisting of a basic allotment per student and a series of weighted adjustments that account for differences in student and district characteristics, e.g., population density or the percentage of students labeled as economically disadvantaged within a district.[5] In addition to these components, each district qualifies for transportation allotments based on the number of students riding buses divided by the approved route miles. As such, the basic allotments plus the district, student, and transportation adjustments sum to provide a district's per student state allocation within Tier I. This amount is adjusted by a district's "Local Fund Assignment," i.e., revenue generated through local taxation at a specific rate. Consequently, adjusted state aid equals the Tier I Entitlement minus the Local Fund Assignment.

Tier II operates as a guaranteed-yield funding mechanism. Unlike Tier I, Tier II state revenue is generated based on the maintenance and operation tax rates set by local districts. For example, every cent of tax the district levies is guaranteed to receive a specified dollar amount per weighted student. (See Appendix B.) Under a third section for facilities, informally known as Tier III, revenues for capital and debt services, i.e., "Interest and Sinking," or I&S, rates, are unadjusted formulaically. However, three state programs–"Existing Debt Allotment" (EDA), "Instructional Facilities Allotment" (IFA), and "New Instructional Facilities Allotment" (NIFA)–are designed to assist districts with these types of costs. Nonetheless, districts bear the primary responsibility for facilities costs that typically are funded through voter-approved property tax assessments.

While the preponderance of education revenues generated by the FSP are represented by this three-part funding system, state revenue generation is affected by one more major feature of the funding mechanism referred to as "Fiscal Recapture." The recapture provision of Texas's school finance program requires districts with property tax wealth per "Weighted Average Daily Attendance" (WADA) above the 88th percentile (known as Chapter 41 districts) to share the local wealth by choosing one of five options:

(1) Consolidate with a poorer school district.
(2) Detach property to another school district for taxation purposes.
(3) Purchase average daily attendance credits from the state.
(4) Contract for the education of nonresident students by partnering with a poorer district.
(5) Consolidate the tax base with one or more other districts.

Most Chapter 41 districts, which comprise less than 15% of all districts, choose either the third or fourth option.

For CSDs, on the other hand, the FSP calculates revenues based on an average adjusted allotment–a value that is ubiquitous to all CSDs–not a specific district-based adjusted allotment. Specifically,

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this statewide average adjusted allotment is applied to all individual CSDs regardless of school size, level of sparsity among students living in the district, and cost of education differentials that vary by CSD. Two more items are important to note: CSDs do not receive I&S fund revenues, and, contrary to popular belief, CSDs may choose to receive transportation funding, though not all choose to do so.[6] It is with the understanding of these differences in revenue generation formulas that forms the context for the analysis in this examination.

Description of Methodological and Data Analysis Techniques

Data analyzed were obtained, defined, calculated, and reported from one primary source–the Public Education Information Management System (PEIMS) managed by the TEA. The data elements were combined state-local revenues from general fund sources (excludes all I&S revenues), combined state-local revenues from all fund sources (includes all I&S revenues), and district and student characteristics defined by specific components within the FSP, e.g., maintenance and operations taxing effort.

Statistical analyses focused on these data elements because the Texas state funding mechanism is in place to distribute resources equitably while reducing the influence of individual district wealth and various student needs. Univariate and multivariate statistical analyses were conducted to examine operationalized variables and equity relationships for Texas ISDs and CSDs for the 2005 to 2009 academic years. Univariate statistics – means, medians, standard deviations, ranges, and percentiles–were used to provide general descriptions of individual variables. Standard equity statistics–percentile ratios and coefficients of variation–were used to determine levels of horizontal equity.[7] Multivariate statistical analyses were conducted to examine operationalized variables and efficacy relationships for Texas school districts over the same period.[8] Standardized beta coefficients from ordinary least squares (OLS) regression analyses were used to make inferences concerning the effects of various district characteristics on spending and their influence on levels of combined state and local expenditures per student.

Equity Outcomes of the Current Utilized FSP Components

From 2005 to 2009, average combined state and local education revenue per weighted student for all ISDs increased from $4,779 to $5,954–an annual average gain of 5.7% over the five-year period. (See Table 1.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation increased throughout the period examined, the coefficient of variation also increased from 0.158 to 0.199–an annual average gain of 7.1%. Analyzing horizontal measures that examine percentile ratios, the 95th to 5th ratio showed an average annual increase of 2.7%; the 90th to 10th ratio showed an average annual increase of 2.9%; and the 75th to 25th ratio showed a slight average annual increase of 0.8%. Even though statistical evidence showed slow degeneration in levels of equity, high expenditure ISDs still spent as much as 1.6 times more than their low expenditure counterparts. Therefore, even the though the average combined state

Table 1
Horizontal Equity Statistics for All Texas Public School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009

Year	General Fund Revenues						All Fund Revenuew					
	2005	2006	2007	2008	2009	Average Annual Percent Change	2005	2006	2007	2008	2009	Average Annual Percent Change
Mean	4,779	4,934	5,111	5,731	5,954	5.71	5,209	5,390	5,595	6,262	6,602	6.16
Median	4,704	4,787	4,954	5,407	5,653	4.74	5,115	5,206	5,425	5,960	6,270	5.26
Standard Deviation	756	1,003	928	1,199	1,185	13.31	897	1,187	1,078	1,335	1,542	15.62
Coefficient of Variation	0.158	0.203	0.182	0.209	0.199	7.04	0.172	0.220	0.193	0.213	0.234	8.90
Percentile:												
95	5,857	6,336	6,446	7,781	7,943	8.18	6809	7106	7280	8768	9024	7.54
90	5,304	5,622	5,811	6,761	7,060	7.53	6150	6431	6611	7597	8039	7.03
75	4,960	5,059	5,267	5,912	6,189	5.76	5505	5662	5869	6598	6919	5.95
25	4,454	4,573	4,747	5,147	5,379	4.85	4719	4844	5018	5546	5827	5.46
10	4,145	4,239	4,479	4,927	4,927	4.48	4364	4473	4736	5204	5510	6.03
5	3,884	3,995	4,228	4,748	4,748	5.25	4044	4205	4457	4954	5233	6.69
Percentile Ratios:												
95/5	1.508	1.586	1.525	1.639	1.673	2.72	1.684	1.690	1.633	1.770	1.724	0.70
90/10	1.280	1.326	1.297	1.372	1.433	2.91	1.409	1.438	1.396	1.460	1.459	0.91
75/25	1.114	1.106	1.110	1.149	1.151	0.83	1.167	1.169	1.170	1.190	1.187	0.45
n	1,037	1,033	1,031	1,031	1,030		1,037	1,033	1,031	1,031	1,030	

Table 2
Horizontal Equity Statistics for All Texas Charter School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009

Year	General Fund Revenues						All Funds Revenue					
	2005	2006	2007	2008	2009	Average Annual Percent Change	2005	2006	2007	2008	2009	Average Annual Percent Change
Mean	4,474	4,776	4,471	4,955	5,269	4.38	4,640	5,023	4,643	5,155	5,475	4.48
Median	4,307	4,455	4,455	4,976	5,285	5.34	4,446	4.624	4.730	5.198	5.437	5.20
Standard Deviation	1,929	4,491	985	872	875	10.90	1,901	4,583	1,018	933	931	13.68
Coefficient of Variation	0.431	0.940	0.220	0.176	0.166	3.94	0.410	0.912	0.219	0.181	0.170	5.81
Percentile:												
95	5,992	5,743	5,777	6,245	6,323	1.45	6,283	6.611	5,898	6,564	6,649	1.76
90	5,243	5,275	5,280	5,866	5,972	3.40	5,510	5,715	5,433	6,099	6,335	3.73
75	4,723	4,810	4,890	5,246	5,532	4.06	4,847	5,015	5,068	5,517	6,731	8.85
25	3,963	4,146	4,220	4,708	5,002	6.05	4,055	4,323	4,394	4,866	5,172	6.32
10	3,512	3,695	3,888	4,264	4,607	7.04	3,607	3,789	4,004	4,348	4,847	7.70
5	3,130	3,402	2,928	3,669	4,138	8.21	3,233	3,457	3,462	3,711	4,239	7.12
Percentile Ratios:												
95/5	1.914	1.688	1.973	1.702	1.528	-4.73	1.943	1.912	1.704	1.769	1.569	-5.00
90/10	1.493	1.428	1.358	1.376	1.296	-3.43	1.528	1.508	1.357	1.403	1.307	-3.69
75/25	1.192	1.160	1.159	1.114	1.106	-1.84	1.195	1.160	1.153	1.134	1.301	2.39
n	86	186	177	187	192		86	186	177	187	192	

and local education revenue per weighted student increased in real terms during the five-year period examined, levels of inequity increased.[9] Examining revenues from all funds yielded similar results.

From 2005 to 2009, average combined state and local education revenue per weighted student for all CSDs increased from $4,474 to $5,269–an annual average gain of 4.4% over the five-year period. (See Table 2.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation decreased throughout the period examined, the coefficient of variation also decreased from 0.431 to 0.166.[10] Analyzing horizontal measures that examine percentile ratios, the 95th to 5th ratio showed an average annual decrease of 4.7%; the 90th to 10th ratio showed an average annual decrease of 3.4%; and, the 75th to 25th ratio showed a slight average annual decrease of 1.8%. Moreover, even though statistical evidence showed slow improvements in levels of equity, high expenditure CSDs still spent as much as 1.5 times more than low expenditure counterparts. Therefore, as average combined state and local education revenue per weighted student increased in real terms during the five-year period examined, levels of equity increased slightly. Examining revenues from all funds yielded similar results.

Table 3 compares mean differences in combined state and local revenues per student–as well as district and student demographic characteristics–between ISDs and CSDs 2005-2009. Traditional ISDs received an average of $601 more in combined state and local general fund revenue per WADA over the five-year period and $1,539 more per ADA (Average Daily Attendance) than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $939 more in combined state and local all fund revenue per WADA over the five-year period and $2,009 more per ADA than CSDs. Concomitantly, ISDs tended to service five percentage points more students receiving gifted/talented services, and nine percentage points more students receiving vocational education services than CSDs. Specifically, from 2005 to 2009, 6.7% of all students in ISDs–compared to 1.7% of all students in charter school districts–received gifted/talented services; and, 24.3% of all students in ISDs–compared to 15.4% of all students in CSDs–received vocational education services.

On the other hand, even while receiving less revenue, CSDs provided educational services to equivalent percentages of students receiving special education services, three percentage points more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged. Specifically, from 2005 to 2009, 12.0% of all students in CSDs–compared to 12.3% of all students in independent school districts–received special education services; 10.3% of all students in CSDs–compared to 7.2% of all students in independent school districts–received bilingual education services; and, 68.6% of all students in CSDs–compared to 53.0% of all students in independent school districts–received additional education services for economically disadvantaged students.

The analyses to this point have compared all ISDs to all CSDs. Accordingly, these analyses also would include high enrollment districts, e.g., Austin ISD, El Paso ISD, Houston ISD, and compare

Table 3

Analysis of Mean Differences in Revenues per Student and Demographic Characterstics: All Texas Public School Districts Minus All Charter School Districts, 2005-2009

Year	General Fund Revenues						All Fund Revenues					
	2005	2006	2007	2008	2009	Average Difference	2005	2006	2007	2008	2009	Average Difference
Combined State and Local WADA	305	---	639	776	685	601	569	---	951	1,107	1,127	939
Combined State and Local ADA	1,347	1,493	1,646	1,712	1,498	1,539	1,755	1,839	2,108	2,195	2,148	2,009
Bilingual (%)	-3.2	-3.3	-3.0	-2.5	-3.6	-3.1	-3.2	-3.3	-3.0	-2.5	-3.6	-3.1
Economically Disadvantaged (%)	-15.2	-15.7	-16.1	-15.4	-15.4	-15.6	-15.2	-15.7	-16.1	-15.4	-15.4	-15.6
Gifted and Talented (%)	6.0	5.6	4.9	4.3	4.3	5.0	6.0	5.6	4.9	4.3	4.3	5.0
Special Education (%)	---	---	---	---	---	---	---	---	---	---	---	---
Vocational Education (%)	5.9	7.2	10.1	10.9	10.8	9.0	5.9	7.2	10.1	10.9	10.8	9.0
n (Charter schools)	185	186	178	187	192		185	1863	178	187	192	
n (School districts)	1,037	1,033	1,031	1,031	1,030		1,037	1,033	1,031	1,031	1,030	

Note: WADA = Weighted Average Daily Attendance. ADA = Average Daily Attendance.

Table 4

Horizontal Equity Statistics for Charter-Size-Equivalent Texas Public School Districts: Combined State and Local Education Revenue per Weighted Student, 2005-2009

Year	General Revenue Fund						All Revenues Fund					
	2005	2006	2007	2008	2009	Average Annual Percent Change	2005	2006	2007	2008	2009	Average Annual Percent Change
Mean	4,733	4,916	5,119	5,804	6,031	6.32	5,066	5,278	5,494	6,218	6,564	6.75
Median	4,638	4,734	4,921	5,424	5,704	5.35	4,911	5,044	5,286	5,824	6,177	5.94
Standard Deviation	881	1,165	1,066	1,385	1,353	12.84	982	1,341	1,193	1,507	1,744	16.89
Coefficient of Variation	0.19	0.24	0.21	0.24	0.22	5.95	0.19	0.25	0.22	0.24	0.27	9.44
Percentile:												
95	6,272	6,756	6,965	8,399	8,433	7.95	6,933	7,445	7,504	9,033	9,348	8.01
90	5,502	5,759	5,997	7,093	7,297	7.49	5,925	6,330	6,562	7,799	8,191	8.59
75	4,910	5,030	5,293	6,037	6,288	6.47	5,327	5,472	5,726	6,493	6,877	6.67
25	4,351	4,484	4,665	5,112	5,362	5.39	4,558	4,696	4,916	5,446	5,731	5.93
10	3,991	4,130	4,370	4,831	5,063	6.16	4,193	4,332	4,632	5,066	5,378	6.44
5	3,708	3,870	4,099	4,633	4,833	6.91	3,935	4,064	4,333	4,808	5,079	6.62
Percentile Ratios:												
95/5	1.69	1.75	1.70	1.81	1.74	0.87	1.76	1.83	1.73	1.88	1.84	1.24
90/10	1.38	1.39	1.37	1.47	1.44	1.18	1.41	1.46	1.42	1.54	1.52	1.99
75/25	1.13	1.12	1.13	1.18	1.17	0.98	1.17	1.17	1.16	1.19	1.20	0.67
n	680	715	708	707	707		680	715	708	707	707	

them to relatively low enrollment charter school districts. Understanding that certain economies of scale may influence comparative analyses, supplemental analyses of "charter equivalent" districts, i.e., ISDs that had enrollment less than or equal to the highest enrollment CSD, also were conducted to support or question the all-inclusive analytical results. The analytical results presented for the charter equivalent districts mirrored the results of the all ISD and all CSD analyses.

From 2005 to 2009, among charter size equivalent ISDs, average combined state and local education revenue per weighted student increased from $4,733 to $6,031–an annual average gain of 6.3% over the five-year period. (See Table 4.) Median combined state and local education revenue per weighted student experienced similar increases. While the standard deviation increased throughout the period examined, the coefficient of variation also increased from 0.186 to 0.224–an annual average gain of almost 6.0%. Analyzing horizontal measures that examined percentile ratios, the 95th to 5th ratio showed an average annual increase of 0.9%; the 90th to 10th ratio showed an average annual increase of 1.2%; and the 75th to 25th ratio showed a slight average annual increase of 1.0%. Even though statistical evidence showed slow degeneration in levels of equity, high expenditure ISDs still spent as much as 1.7 times more than their low expenditure counterparts. Therefore, although the average combined state and local education revenue per weighted student increased in real terms during the five-year period examined, levels of inequity increased. Examining revenues from all funds yielded similar results.

Table 5 compares mean differences in combined state and local revenues per student for charter size equivalent ISDs and CSDs, as well as district and student demographic characteristics, from 2005-2009. Traditional ISDs received an average of $760 more in combined state and local general fund revenue per WADA over the five-year period–and $2,241 more per ADA–than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $862 more in combined state and local all fund revenue per WADA over the five-year period–and $2,625 more per ADA–than CSDs. Concomitantly, ISDs tended to service five percentage points more students receiving gifted/talented services and ten percentage points more student receiving vocational services than CSDs. Specifically, from 2005 to 2009, 6.6% of all students in ISDs–compared to 1.6% of all students in charter school districts–received gifted/talented services; and, 25.6% of all students in ISDs–compared to 15.4% of all students in charter school districts–received vocational education services.

Despite receiving less revenue, CSDs provided educational service to equivalent percentages of students receiving special education services, five percentage points more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged. Specifically, from 2005 to 2009, 12.8% of all students in CSDs–compared to 12.1% of all students in independent school districts–received special education services; 10.2% of all students in CSDs–compared to 5.4% of all students in independent school districts–received bilingual education services; and, 68.6% of all students in CSDs–compared to 53.0% of all students in independent school districts–received additional education services for economically disadvantaged students.

An Efficacy Analysis of FSP Components

From 2005 to 2009, the strongest predictor of combined state and local general fund revenue per pupil was assessed valuation.

Table 5
Analysis of Mean Differences in Revenues per Student and Demographic Characterstics: All Similarly Sized Public School Districts Minus Texas Charter School Districts, 2005-2009

Year	General Fund Revenues						All Fund Revenues					
	2005	2006	2007	2008	2009	Average Difference	2005	2006	2007	2008	2009	Average Difference
Combined State and Local WADA	---	---	650	853	776	---	426	---	851	1,067	1,102	862
Combined State and Local ADA	1,984	2,101	2,312	2,517	2,292	2,241	2,314	2,368	2,679	2,901	2,863	2,625
Bilingual (%)	-4.80	-4.90	-4.60	-4.30	-5.50	-4.82	-4.80	-4.90	-4.60	-4.30	-5.50	-4.82
Economically Disadvantaged (%)	-14.80	-15.40	-16.20	-15.60	-16.00	-15.60	-14.80	-15.40	-16.20	-15.60	-16.00	-15.60
Gifted and Talented (%)	6.10	5.50	4.80	4.10	4.10	4.92	6.10	5.50	4.80	4.10	4.10	4.92
Special Education (%)	---	---	---	---	---	---	---	---	---	---	---	---
Vocational Education (%)	6.8	8.1	11.5	12.2	12.2	10.2	6.8	8.1	11.5	12.2	12.2	10.2
n (Charter schools)	184	186	173	181	185		184	186	173	181	185	
n (School districts)	680	715	708	707	707		680	715	708	707	707	

Note: WADA = Weighted Average Daily Attendance. ADA = Average Daily Attendance.

The full model exhibited an adjusted R-square of 58.5% with 35.3 percentage points solely accounted for by assessed value and M&O rate, i.e., over 60% of the explained variation shown in revenue was caused by changes in assessed valuation. The standardized beta coefficients ranged from 0.450 up to 0.576, and these were statistically significant for all years examined. (See Table 6.) The second strongest predictor–the sparsity adjustment controlling for low enrollment ISDs–reflected coefficients ranging from 0.230 up to 0.309, and these were statistically significant for all years examined. The third strongest predictor–transportation costs–had coefficients ranging from 0.195 up to 0.277, and these were statistically significant for all years examined.

Other significant predictors of combined state and local general fund revenue per pupil were percentage of students receiving vocational education services, the small-mid-size adjustment which also controls for low enrollment districts, and average beginning teacher salary. Here, it is important to note that average beginning teacher salary actually had an inverse relationship to revenue. There were no consistent statistically significant relationships between combined state and local general fund revenue per pupil and district M&O taxing effort nor percentages of gifted/talented, bilingual, or economically disadvantaged students. Overall, the magnitude of the influence for assessed valuation was nearly twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

For charter size equivalent ISDs, the strongest predictor of combined state and local general fund revenue per pupil also was assessed valuation from 2005 to 2009. (See Table 7.) The full model exhibited an adjusted R-square of 53.8% with 35.9 percentage points solely accounted for by assessed value and M&O rate, i.e., approximately 67% of the explained variation shown in revenue is caused by changes in assessed valuation. The standardized beta coefficient ranged from 0.466 up to 0.612, and these were statistically significant for all years. The second strongest predictor–the sparsity adjustment controlling for low enrollment ISDs–had coefficients ranging from 0.223 up to 0.301; and, these were statistically significant for all years examined. The third strongest predictor–transportation costs–had coefficients ranging from 0.201 up to 0.292, and these were statistically significant for all years examined. To a lesser extent, the percentage of students receiving vocational educational services was the only other statistically significant predictor of revenues. Overall, the magnitude of the influence for assessed valuation was more than twice as strong as the second strongest predictor. Examining revenues from all funds yielded similar results.

Table 6

Analysis of Texas FSP Components for All Texas Public School Districts in Predicting Combined State and Local Revenues per Student, 2005-2009

General Fund Revenues: Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education (%)	Economically Disadvantaged (%)	Gifted and Talented (%)	Special Education (%)	Vocational Education (%)	Avg. Beginning Teacher Salary	Transportation	Small-Mid Adjustment	Sparsity Adjustment	F-Score	Adjusted R^2 Full MOdel	Adjusted R^2 Property and M&O
2005	0.096	0.454	0.065	0.077	---	0.140	0.094	-0.150	0.225	0.085	0.309	115.357	0.573	0.291
2006	---	0.483	---	0.083	0.081	0.103	0.106	-0.116	0.195	0.077	0.254	93.413	0.522	0.318
2007	---	0.450	---	---	---	0.058	0.145	-0.061	0.277	0.124	0.244	107.080	0.556	0.323
2008	---	0.576	0.068	---	---	0.062	0.168	-0.140	0.204	0.102	0.240	169.391	0.665	0.444
2009	---	0.507	---	---	---	---	0.168	-0.082	0.267	0.121	0.230	130.774	0.610	0.389
Average	LPP	0.494	LPP	LPP	LPP	0.091	0.136	-0.110	0.234	0.102	0.255	123.203	0.585	0.353

All Funds Revenues: Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education (%)	Economically Disadvantaged (%)	Gifted and Talented (%)	Special Education (%)	Vocational Education. (%)	Avg. Beginning Teacher Salary	Transportation	Small-Mid Adjustment	Sparsity Adjustment	F-Score	Adjusted R^2 Full MOdel	Adjusted R^2 Property and M&O
2005	0.058	0.472	0.075	---	0.053	0.139	0.102	-0.074	0.216	0.068	0.037	105.588	0.551	0.332
2006	---	0.533	---	---	0.081	0.083	0.103	-0.083	0.183	---	0.239	95.433	0.527	0.379
2007	0.056	0.501	---	---	---	0.058	0.131	---	0.273	0.100	0.224	110.678	0.564	0.380
2008	---	0.614	0.090	---	---	0.060	0.150	-0.099	0.201	0.083	0.218	164.055	0.657	0.493
2009	---	0.528	---	---	---	---	0.146	---	0.265	0.076	0.179	103.419	0.552	0.406
Average	LPP	0.530	LPP	LPP	LPP	0.085	0.126	LPP	0.228	0.082	0.179	115.835	0.570	0.398

Note: M&O = Maintenance and Operations.

Table 7

Analysis of Texas FSP Components for Charter-Size-Equivalent Texas Public School Districts in Predicting Combined State and Local Revenues per Student, 2005-2009

General Fund Revenues: Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education (%)	Economically Disadvantaged (%)	Gifted and Talented (%)	Special Education (%)	Vocational Educ. (%)	Avg. Beginning Teacher Salary	Transportation	Small-Mid Adjust	Sparsity Adjustment	F-Score	Adjusted R^2 Full MOdel	Adjusted R^2 Property and M&O
2005	0.126	0.485	---	0.071	---	0.140	0.083	---	0.242	n/a	0.301	65.753	0.526	0.324
2006	---	0.499	---	0.075	0.077	0.105	0.107	-0.064	0.201	n/a	0.254	56.317	0.474	0.260
2007	---	0.466	---	---	---	---	0.133	---	0.292	n/a	0.241	63.248	0.505	0.333
2008	---	0.612	0.071	---	---	0.073	0.166	-0.064	0.217	n/a	0.239	102.654	0.623	0.475
2009	---	0.532	---	---	---	---	0.157	---	0.286	n/a	0.223	77.103	0.562	0.402
Average	LPP	0.519	LPP	LPP	LPP	0.091	0.129	LPP	0.248	n/a	0.252	73.015	0.538	0.359

All Funds Revenues: Standardized Regression Coefficients

Year	Tax Rate	Assessed Value	Bilingual Education (%)	Economically Disadvantaged (%)	Gifted and Talented (%)	Special Education (%)	Vocational Educ. (%)	Avg. Beginning Teacher Salary	Transportation	Small-Mid Adjust	Sparsity Adjustment	F-Score	Adjusted R^2 Full MOdel	Adjusted R^2 Property and M&O
2005	0.088	0.496	---	---	---	0.142	0.089	---	0.221	n/a	0.299	66.024	0.527	0.352
2006	---	0.550	---	---	0.079	0.086	0.104	---	---	n/a	0.146	62.547	0.518	0.384
2007	0.072	0.516	---	---	---	---	0.119	---	0.279	n/a	0.219	71.820	0.538	0.389
2008	---	0.645	0.089	---	---	0.071	0.146	-0.053	0.205	n/a	0.214	108.838	0.637	0.515
2009	---	0.538	---	---	---	---	0.133	---	0.271	n/a	0.169	65.424	0.521	0.400
Average	LPP	0.549	LPP	LPP	LPP	0.085	0.118	LPP	0.244	n/a	0.209	74.931	0.548	0.408

Note: M&O = Maintenance and Operations.

Five findings were of particular note: (1) The strongest predictor of combined state and local general fund revenue per pupil was assessed valuation; (2) The FSP components representing percentages of students receiving bilingual services were an insignificant predictor of expenditures per student; (3) The FSP components representing percentages of students receiving gifted and talented services were an insignificant predictor of expenditures per student; (4) The influence of maintenance and operations taxing effort was a positive *and* negative predictor of expenditures per student; and (5) The influence of average teacher beginning teacher salary was a positive *and* negative predictor of expenditures per student.

Conclusions and Recommendations

In this study, Texas funding formula components for ISDs and CSDs were analyzed to assess and compare overall revenue generation levels, levels of equity exhibited by revenue distributions, and demographic and financial data. Univariate and multivariate statistical analyses were conducted to examine operationalized variables and equity relationships for Texas ISDs and CSDs during the 2005 to 2009 academic years. Univariate statistics–means, medians, standard deviations, ranges, and percentiles–were used to provide general descriptions of individual variables. Standard equity statistics–percentile ratios and coefficients of variation–were used to determine levels of horizontal equity. When examining combined local-state expenditures, levels of inequity remained constant or worsened slightly depending on the measure analyzed. In fact, evidence examined showed that disparities in per-student funding–and ultimately access to a variety of educational services–were driven primarily by the ability of school districts to generate revenues from local property wealth.

Additional analyses showed that traditional ISDs received an average of $601 more in combined state and local general fund revenue per WADA over the five-year period–and $1,539 more per ADA–than CSDs. When examining state and combined educational revenue from all funds, ISDs received an average of $939 more in combined state and local all fund revenue per WADA over the five-year period–and $2,009 more per ADA–than CSDs. Concomitantly, traditional ISDs tended to service five percentage points more students receiving gifted/talented services and nine percentage points more student receiving vocational education services than CSDs. On the other hand, even while receiving less revenue, CSDs provided educational services to equivalent percentages of students receiving special education services, three percentage points

more students receiving bilingual educational services, and over 15 percentage points more students classified as economically disadvantaged.

Consequently, if education finance equity and equality of educational opportunity between traditional ISDs and CSDs were to remain a policy goal, the Texas school funding mechanism needs to be reconceptualized and restructured around two primary policy areas to alleviate inequities currently generated by:

1) Adjustments for fiscal capacity. The major differences between the ISD and CSD funding structures are: CSDs do not receive funds from local tax revenue sources and they do not receive facilities funding. These two items currently are components of the FSP mechanism. Yet, CSDs do not qualify for these revenue generation components.
2) Adjustments for community complexity. For CSDs, the FSP mechanisms generate revenues based on an average adjusted allotment–a value that is ubiquitous to all CSDs. Specifically, this average adjusted allotment is applied to all individual CSDs regardless of school size, level of sparsity among students living in the district, and cost of education differentials that vary by charter school district. The direct result of this averaging is a failure to alleviate negative–or reward positive–community characteristics.

As a result, school districts with differential school climates, i.e., those CSDs that are not represented well by the average are being underfunded (or overfunded) by the state.

In its efforts to improve levels of equity in Texas, the state's distribution formula is failing to counterbalance the effect of local spending efforts. Moreover, given that the magnitude and influence of local expenditures is the primary predictor for expenditure levels across multiple spending categories, it can be inferred that general levels of equity are dictated specifically by levels of local property values. Of particular note is the effect the influence of local expenditures is having on one specific demographic subgroup–students receiving bilingual services. Therefore, if education finance equity and equality of educational opportunity are to remain a policy goal for the state of Texas, the Foundation School Program – and its structural components–needs to be reconceptualized and restructured to alleviate fiscal inequities. The ultimate goal of educational finance and economic research is to improve the quantity and quality of educational opportunities provided to all children. As such, in both a methodological and practical sense, additional comparative examinations of ISD and CSD funding will be necessary to continuously improve academic opportunities for the children of Texas.

Endnotes

[1] This article was developed by the authors from a policy monograph for the Texas Charter Schools Association, *Comparative Analyses of Revenues Generated from the Texas Foundation School Program for Independent School Districts and Charter School Districts* (February 2011).

[2] For a complete description of the Texas Foundation School Program, go to http://www.tea.state.tx.us/index2.aspx?id=7022.

[3] For further information, go to http://www.tea.state.tx.us/index2.aspx?id=410.

[4] For information on Texas charter school funding, go to http://www.tea.state.tx.us/index2.aspx?id=7721&menu_id=645.

[5] For a more complete description of general funding formulas, see James W. Guthrie, Matthew G. Springer, R. Anthony Rolle, and Eric A. Houck, *Modern Education Finance and Policy* (Boston, MA: Allyn & Bacon, 2007); and David C. Thompson, Faith E. Crampton, and R. Craig Wood, *Money and Schools*, 5th ed. (Larchmont, NY, Eye on Education, 2012).

[6] ISDs and CSDs also receive "Additional State Aid for Tax Reduction" (ASATR) which provides additional funding for revenue decreases due to rate compression changes, teacher salary increases, high school allotment and increases to the minimum per weighted. ASATR revenue provides additional levels of funding to schools to provide relief for tax reduction in Texas House Bill 3646 (H. B. 3646, 2009 Leg., 81st Sess. Tx. 2009). The amount of ASATR funding received is adjusted based upon the local revenue or tax collections for the schools and the per student guarantees set by the state. Again, the adjustments for CSDs are based on state averages.

[7] The coefficient of variation (CoV) is calculated by dividing the standard deviation by the mean; and, the values of the ratio range from 0 to $+\infty$. As the CoV increases, inequities in revenue distributions increase.

[8] For the purposes of this article, "efficacy" is defined as the ability or capacity to produce desired outcomes. Operationally, each individual element measuring a specified district, school, or individual policy-determined characteristic, i.e., tax rate, should have a positive, statistically significant influence on educational revenue generation. In the analysis presented in this article, only components that meet this criteria are detailed. Where information is not detailed, the individual component failed to meet efficacy criteria.

[9] It is important to note that the majority of education finance and economic literature report equity analyses utilizing average daily attendance (ADA), not weighted average daily attendance (WADA). The usage of WADA is unique to Texas. As such, horizontal equity statistics also were calculated using ADA and showed similar results. Contact the authors for details.

[10] Previously, it was mentioned that state averages were used in the calculation of some specific CSD revenues. This reduction in the magnitude of the standard deviation most likely was due to said policy changes.

Appendix A

Texas Foundation School Program Funding Formula Adjustments for District and Student Characteristics

Classification	*Description*	*Weight*
Bilingual/ESL	Based on the number of students who participate in programs, additional funds are used for salaries and instructional resources.	0.1
Career and Technology Education	Based on the amount of time students spend in eligible career technology courses, additional funds pay for salaries and instructional resources.	1.35
Compensatory Education	Based on the number of students who are eligible for free or reduced-price lunch, additional funding assists students performing below grade level.	0.2
	An additional component is utilized for program serving pregnant students.	2.41
Cost of Education Index	Accounts for differences in resource costs that are beyond the control of the district. The five components are: (1) Average beginning salary of teachers in contiguous school districts; (2) percent of economically disadvantaged students; (3) district size; (4) location in a rural county with fewer than 40,000 people; and (5) district classified as independent town or rural.	1.02 to 1.20
Gifted/Talented	Based on individual district requirements, additional funding pays for salaries and instructional resources. State funding is capped at 5% of each district's ADA.	0.12
Small and Mid-Sized Districts	Designed to supplement higher fixed costs of operating districts in less populated areas. Small is less than 1,600 ADA. Mid-sized is between 1,601 to 5,000 ADA.	1.0 to 1.61
Sparsity Adjustment	Based on the number of students in district, range of grade levels available, and distance to a district with a high school if necessary.	Enrollment increased by 60, 75, 0r 130
Special Education	There are 12 special education instructional arrangements with varying weights based on duration of the daily service and location of the instruction.	1.7 to 5.0

Note: Go to http://ritter.tea.state.tx.us/school.finance/index.html for a complete description of the Texas FSP mechanism.

Appendix B

Texas Foundation School Program Funding Formula Outline of Tier I, Tier II, and Facilities Funding Characteristics

TIER I: BASIC ALLOTMENT FUNDING

Local fund assignment: District revenue from property tax of $.0.86 per $100 of assessed value

Basic allotment = $4,765 (for 2009-10) per ADA

Tier I entitlement = Basic allotment + district level adjustments + student level adjustments + transportation allotment

State aid to district = Tier I Entitlement - Local Fund Assignment

TIER II: GUARANTEED YIELD FUNDING

Level 1: Basic equalization

FY 2010 yield: $59.02 per WADA; or the amount of district tax revenue per WADA percent of tax effort generated for this level of guaranteed yield funding for the last school year

Equalization basis: Property tax wealth per WADA in 88th percentile of all school districts

Subject to recapture: Yes

Requires voter approval: No

Level 2: Above enrichment level

FY 2010 yield: $31.95 per penny of M&O tax above enrichment level (maximum M&O tax = $1.17)

Equalization basis: Property tax wealth per WADA in 88th percentile of all school districts

Subject to recapture: Yes

Requires voter approval: Yes

FACILITIES FUNDING

FY 2010 Yield = Property Tax Rate × Assessed Property Value

English Language Learners and Judicial Oversight: Progeny of *Castañeda*

Lenford C. Sutton, Luke Cornelius, and Robyn McDonald-Gordon

Introduction

When the 93rd Congress enacted the Equal Education Opportunity Act of 1974 (EEOA), it required states to take appropriate action to overcome language barriers that inhibited equal education participation by their resident students.[1] An examination of the EEOA legislative testimony suggests elected officials established the law to set forth provisions to secure the legal rights of English Language Learners (ELLs).[2] In 1981, the Fifth Circuit Court in *Castañeda v. Pickard* created a three-pronged, science-based test that required English language assistance programs for ELLs to: (1) be based on sound educational theory; (2) have adequate resources for program implementation; and (3) provide continuous assessment to determine if students' English language deficits are being addressed.[3]

From 1996 to 2006, while the total U.S. school population increased by slightly less than 3%, the ELL population increased more than 60%. The largest increases in ELL students occurred in the Southeast, Midwest, and mountain areas of the West. During the same time period, over 80% of ELLs cited Spanish as their first language, with the remaining 20% citing over 400 different languages as their native tongue.[4]

Given the exponential increase in the number of students enrolled in English language acquisition programs and the education spending priorities required in the aftermath of the global economic recession in 2008, an examination of the state of education provisions for ELLs is appropriate. Moreover, 30 years have passed since the federal court issued the *Castañeda* three-part test as a mechanism to assess the probative value of instructional programs earmarked for ELLs. Therefore, a review of judicial declarations since these principles were established is warranted. Accordingly, this article is divided into four sections. The first section provides an overview of case law and federal statutes which set forth provision for ELLs. This section also reviews civil challenges which asked the courts to interpret the "sound educational theory" tenet of the *Castañeda* test over the last three decades. The second section reviews the United States Supreme Court's most recent ruling *Horne v. Flores*[5] and *Rufo v. Suffolk County*,[6] a leading case which illustrates the pragmatics of Rule 60 (b) (5) of the *Federal Rules of Civil Procedure*[7] as applied in *Horne*. The third section contains a brief description of state funding for ELL programs. The final section of the article discusses implications of the high court's decision to set aside court-imposed sanctions on Arizona lawmakers, remanding the case back to its original jurisdiction; and what this decision means for the future of language acquisition programs three decades after *Castañeda*.

Equal Education Opportunity for English Language Learners

In 1923, the United States Supreme Court ruled in *Meyer v. Nebraska* that when the government attempts to restrict classroom instruction to the English language, parents have a right to influence what their children actually learn.[8] On May 17, 1954, the Court delivered its monumental ruling in *Brown v. Board of Education* which affirmed education as a fundamental right. The Court explained:

> Today education is perhaps the most important function of state and local governments. Compulsory school attendance laws and great expenditures for education both demonstrate our recognition of the importance of education to our democratic society...In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right which must be made available to all on equal terms.[9]

In addition to its impact on school segregation, *Brown* served as the catalyst for revolutionary change in almost every facet of American society. Ultimately, the case would serve as a useful resource for parents seeking equal educational opportunity for ELLs. Accordingly, advocates have a well-documented history of utilizing the American judicial system to secure favorable rulings which support equal educational opportunities for these children.

Hence, the Office for Civil Rights (OCR), the chief agency assigned to enforce Title VI of the Civil Rights Act of 1964 which forbids discrimination based on race, color, or national origin in programs receiving federal dollars, provided a clear mandate to all school districts.[10] On May 25, 1970, J. Stanley Pottinger, Director of the OCR issued a memorandum directing school districts to take steps to help ELLs overcome language barriers to ensure their meaningfully participation in all educational programs.[11] The OCR's directive was bolstered in 1974 when the U.S. Supreme Court declared in *Lau v. Nichols* that meaningful learning opportunities were not established by providing students with similar learning environments; rather, school districts needed to take affirmative steps to

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ensure a meaningful learning experience for all students.[12] In 1985, William A. Smith, Acting Assistant Secretary for Civil Rights of the OCR, issued a second directive to school districts explaining the constructs it would apply to determine if local learning communities were in compliance with the federal laws. These included: (a) whether there is actually a need for the district to provide an alternative program to serve LEP students and (b) whether the program is likely to effectively meet the educational needs of its ELLs.[13] A third OCR directive was issued in 1991 which formally adopted the benchmarks established by the Fifth Circuit Court in *Castañeda v. Pickard*[14] which required language assistance programs for English Language Learners (ELLs) to meet the three-pronged test described earlier.[15]

Shortly after *Lau*, the EEOA, which requires states to take appropriate action to eliminate language barriers which impeded the equal participation of ELLs in educational programs, was enacted.[16] Subsequent legal challenges to existing programs for ELLs and court application of the *Castañeda* test placed the burden on plaintiff-parents to demonstrate the inappropriateness of language assistance programs by proving the lack of sound educational theory to support the program in question.

Later civil challenges to the constitutionality of ELL programs interpreted the sound educational theory aspect of the *Castañeda* three-part test and placed the burden upon plaintiffs to prove the unsoundness of the education theory which served as the foundation for a school districts' language acquisition program. In its deliberations in *U.S. v. Texas*, the Fifth Circuit Court applied the "sound educational theory" element of *Castañeda* test when reviewing the expert testimony provided by both plaintiffs and defendants.[17] The court observed that plaintiff testimony contained a substantial number of expert witnesses who concurred with the court's initial finding that bilingual education program, adopted in 1973, was pedagogically unsound while the state (defendant) provided a single expert witness whose level of expertise remained uncertain throughout the testimony given.[18] Consequently, the court concluded that, at a minimum, some of the programs designed to help students overcome language barriers were deficient; however, the court did not make clear the level or quality of evidence they applied to declare that plaintiffs had in fact demonstrated that an unsound theory was has at the core of program.[19] Moreover, the court refused to explain how defendants might successfully respond to the abundance of testimony provided by plaintiffs.

Fifteen years later in *Gomez v. Illinois State Board of Education*, the Seventh Circuit Court declared, "...courts should accord school districts the same deference that they accord administrative agencies."[20] More specifically, "...under the Administrative Procedures Act, administrative agencies are presumed to possess expertise in their field and to be acting within the scope of their authority."[21] Applying this nuanced level of scrutiny, the court attempted to balance the need to "protect the plaintiffs' interests in obtaining equal educational opportunities (through the elimination of language barriers)" and the requirement that courts not "substitute our suppositions for the expert knowledge of educators or our judgment for the educational and political decisions reserved to the state and local agencies."[22] Because the plaintiffs in *U.S. v. Texas* and *Gomez* believed each language acquisition program to be educationally sound, the soundness of the education theory behind each program was not fully addressed in either case.

In *Teresa P. v. Berkley Unified School District*,[23] the District Court for the Northern District of California embraced the *Castañeda* "sound educational theory" test and acknowledged the decision in *Gomez*. In its nuanced standard of scrutiny, however, the court openly referenced only the second part of the *Gomez* rationale when it declared that "...courts should not substitute their educational values and theories" for those best left to educational authorities and experts.[24] The court's declaration essentially presumed that the school district's language acquisition program was educationally sound. The court concluded:

> After reviewing the evidence presented in this case, this Court concludes that *the plaintiffs have not met their burden to show that the Berkeley Unified School Districts' program is not pedagogically sound* [Italics added]. In fact, the evidence shows that the educational theories, upon which the BUSDs programs are grounded, are manifestly as sound as any theory identified by plaintiffs. Although plaintiffs advocate a program that emphasizes native tongue instruction, they introduced no objective evidence demonstrating that the efficacy of this approach, whatever it may be, for teaching LEP students English, or helping them succeed in a mainstream environment, renders the alternative programs preferred by the Berkley Unified School District pedagogically unsound.[25]

The legal record is uncertain about the quality of testimony provided by the plaintiffs in this case; however, the court did declare that "...the District's special language services were based upon sound theories, were appropriately implemented, and produced positive results in teaching LEP students."[26] The court record indicated that the court relied upon witnesses for the defendant school district, qualified as education experts who provided testimony grounded in their own personal experience with the school cited in the litigation. Even more strikingly, the court did not reveal the facts it utilized to determine the qualification of the experts provided by the school district, nor did it enunciate the actual education theory upon which the school district established its language acquisition program, merely stating that the program was based on sound education theory. However, the court did assert:

> The structure and design of the District's elementary ESL program is based upon factors that include: diversity of language backgrounds; adherence to parental preferences, where possible, either for placement in regular mainstream classrooms, the ESL program, or in bilingual classrooms; and school district educational policies that foster integration and heterogeneity.[27]

The court provided no comments about the quality of the witnesses nor did it make any attempt to weight the value of opposing testimony; rather, it merely offered platitudes which reinforced the presumption of sound theory granted to school district programs.

In *Valeria G. v. Wilson*, the plaintiff ELLs attempted to halt the implementation of state of California's controversial Proposition 227 which declared that language deficient student "...shall be taught English by being taught in English."[28] In effect, ELLs would obtain up to one year of language acquisition services and mainstreamed into classrooms where they would receive their instruction in English only. The plaintiffs asserted the program was not supported by sound educational theory or education experts and claimed it to be an egregious violation of §1703f of the Equal Education Opportunity

Act of 1974 for its failure to meet the three-pronged test outlined in *Castañeda*. The legal record indicates that plaintiffs provided expert testimony to persuade the court that the immersion program under Proposition 227 was not a sound means to provide any instruction to ELLs while the defendant school district provided its own experts who testified that immersion programs were successfully used internationally.[29] The court responded to opposing testimony stating that "...it is apparent that the state of the art in the area of language remediation [is] such that respected authorities legitimately differ as to the best type of educational program for limited English speaking students."[30] For that reason, the court decided it was inappropriate to choose between the divergent points of view concerning language acquisition. The court's inaction in *Valeria G.* signaled to future litigants in similar civil challenges that a school district's language acquisition program could only be declared out of compliance with the EEOA, via *Castañeda*, when plaintiffs could prove that no experts supported the underlying educational theory of the program in question, an extremely high standard for plaintiffs to meet.

U.S. Supreme Court and English Language Learners

The federal No Child Left Behind Act of 2001 (NCLB),[31] and, more specifically, the English Learner Acquisition Act (ELAA)[32] contain provisions which endorse parental participation and expanded education options for program delivery. However, the 30 year progeny of case law associated with the *Castañeda* three-pronged test has reduced the ability of ELL parents to influence the quality of educational opportunities afforded to their children, especially when they are not satisfied with the instructional methods, as was the issue when the U.S. Supreme Court granted certiorari to *Horne v. Flores*.[33]

In 1992, the Nogales school district, situated on the Arizona-Mexico border, served over 6,000 K12 students of whom 30% were ELLs. In that same year, students and parents sued under the EEOA, claiming the state of Arizona was not taking appropriate action to provide English language instruction for ELLs within the Nogales school district. At the heart of the parents' complaint was Nogales' bilingual education program where students not fluent in English were taught to read and speak English; yet a majority of their classes were delivered in their native language. For that reason, the school district's expenditures on teacher salaries increased significantly in order to hire personnel capable of teaching a variety of subjects in Spanish as well as teachers to teach English. In January 2000, the Federal District Court ruled the bilingual education program ineffective because Arizona's funding for English learners was arbitrary and capricious, and ordered the state to come up with a plan to adequately fund the education of ELLs in the state of Arizona. Initially, the court ordered the state to fix this funding problem in Nogales, but upon further examination and at the request of the Arizona attorney general who was concerned with state uniformity law for its school districts, the court later ordered the state to provide additional funding in every other district in the state. When the Arizona legislature refused to make the appropriation in support of ELL programs, the court levied large fines over several years in attempt to enforce the original court order. Entangled in partisan conflict, the Arizona attorney general and governor refused to defend the defiance of its legislature; therefore, the speaker of the house and president of the Arizona senate intervened and moved for relief from the court's judgment in light of newly adopted H.B. 2064[34] and Rule 60(b) (5) under the *Federal Rules of Civil Procedure*.[35]

Federal Rules of Civil Procedure

Rule 60 (b) (5) of the *Federal Rules of Civil Procedure*, which is a vital component of institutional reform litigation, allows a litigant to ask a federal court to grant relief from a decree when:

> ...the judgment has been satisfied, released, or discharged, or a prior judgment upon which it is based has been reversed or otherwise vacated, *or it is no longer equitable that the judgment should have prospective application or simply the when judgment is no longer in the public interest* [emphasis added] or it is no longer equitable that the judgment should have prospective application or simply the when judgment is no longer in the public interest.[36]

Institutional reform litigation involves cases in which a federal court order is issued to remedy past violations of federal law. The orders generally remain in effect for an extended period time and extend deeply into matters traditionally relegated to state control. Moreover, orders issued in such cases often serve a very important purpose but may effectuate problematic circumstances.

For example, one of the leading cases pertaining to Rule 60(b)5 is *Rufo v. Inmates of Suffolk County* in which the inmates of a Boston jail sued state correction officials and local politicians for violation of their constitutional right to be free from cruel and unusual punishment, a manifestation of the sleeping conditions within the correctional facility.[37] The First District Court of Appeals ruled in favor of the inmates, and both parties entered into a consent decree which authorized the construction of a new correctional facility which would provide single sleeping areas for inmates whose cases had not gone to trial. Consistent with the court's judgment, the facility's construction was planned but the project was delayed for several months. In the interim, the number of inmates to be housed grew exponentially and prompted respondents to request an amendment to the original decree permitting double bunking of inmates, effectively expanding the capacity of the correctional facility. The district court denied the motion, and the Circuit Court of Appeals confirmed; however, the U.S. Supreme Court granted certiorari to review the lower court proceedings.

The primary issue before the high court in *Rufo* was the application of the appropriate standard for resolving a disputed request to modify a judgment accepted by officials representing the public interest. Respondents asserted that such judgment should be modified if there is a change in circumstances since the enactment of the judgment which is adversely impacting the functionality of public institutions. For example, Massachusetts state law requires the Suffolk Sherriff and state Commissioner of Correction to agree on intrafacility inmate transfers. However, the single cell provision within the decree obligated both to approve transfers counter to their professional judgment. As a result, Suffolk County inmates were transferred from the newer facility into extremely overcrowded state correctional facilities at a shared cost of one million dollars annually. Secondly, there are instances when the local sheriff may not have a significant number of inmates eligible for transfer to state correctional facilities primarily because Massachusetts law requires transfers only for pretrial detainees who have served a previous sentence for felony convictions. If the number of convicted felons within the jail is minimal and the facility is at capacity, the sheriff must then

submit a list of inmates being held on bail to a superior court judge. The judge will then select inmates from the list and release them on their own recognizance so that they may be transferred to a halfway house; a less secure facility. The net result is a perversion of the Massachusetts bail statutes primarily because it releases inmates on recognizance who would otherwise be forced to post bail to secure their own release, assuring favorable probability for their court appearance at the designated time. As a result, the Suffolk County sheriff requested permission to institute double-bunking in order to minimize the adverse impact on the local public institutions while honoring all other provisions of the initial decree. In its rejection of the sheriff's request, the district court invoked a modified version of the "grievous wrong" standard which states that a court should only modify a consent decree upon a clear showing of a grievous wrong evoked by new and unforeseen conditions.

In its reversal of the lower courts, the U.S. Supreme Court eliminated the application of the grievous wrong standard in modifying consent decrees related to institutional reform litigation. More specifically, the high court in *Rufo* ruled that the "grievous wrong" language of *United States v. Swift* was "...not intended to take on a talismanic quality, warding off virtually all efforts to modify consent decrees."[39] Institutional reforms litigation like *Rufo* Rule 60(b)5 provides respondents with a means to ask a federal court to reconsider an order to determine if it has become archaic or inappropriate due to changed circumstances, such as a change in governing law.[40]

Changed Circumstance in Arizona

Horne hardly stands as an exemplar of institutional reform litigation. Begun in 1992, the case did not proceed to trial and verdict, respectively, until 1999 and 2000.[41] Also, even though the original defendants did not appeal the U.S. District Court's 2000 ruling and order to improve funding, the state of Arizona failed to take any compliance action in the ensuing five years. It was only at the point at which the court began imposing fines, ultimately exceeding $20 million, that the state legislature finally acted, passing House Bill 2064 in 2006.[42] Even then, the state was far from unified in its support for this proposed solution. The governor, who had vetoed similar measures previously, refused to sign the bill, and both the state attorney general and state board of education also declined to support relief from the 2000 court order based on this legislation. In the end, the legislature itself was forced to intervene to seek relief under Rule 60(b)(5). Additionally, the legislature sought relief from the decision of the court to apply its original order statewide, which it had done at the state attorney general's request.[43]

The grounds for the sought-for relief were varied. The respondents argued that between 2000 and 2006 there had been several substantive changes in ELL education in Arizona due to developments at the local, state, and national levels. Locally, a new superintendent had revamped instruction in all areas, including ELL, by promoting greater efficiency and thus allowing for improvements such as reduced class sizes and increased teacher support. At the state level, it was argued that the state had abandoned bilingual education, the system that had been declared to be inadequately funded, with "Structured English Immersion (SEI)." This change was then ratified into law as part of H.B. 2064.[44] This change also followed a significant change in the formulas for funding ELL education in Arizona. Yet another key change was passage of the No Child Left Behind Act of 2001 (NCLB). NCLB provided significant increases in Title III funding for ELL programs, which Arizona then used to meet the court-mandated increases in state funding. Additionally, NCLB strengthened the EEOA's preference for greater state control over all aspects of the educational program, including ELL programs. NCLB also stated a belief of the Congress and the President that improved educational outcomes could be based on improved educational methods as opposed to additional funding. Finally, it was argued that the Nogales school district, at the heart of the original litigation, had experienced a significant increase in funding over the intervening years. Although the incremental funding at issue in the original court order had not increased at the rate envisioned in the order, the respondents argued that this overall increase in funding for the school district, coupled with local reforms, had created a sufficiently funded and educationally sound ELL program.

Both the district court and the ninth circuit rejected the legislature's motion for relief. In interpreting Rule 60(b)(5), they relied on the previous doctrines in *Rufo* and *Swift* to determine when a court order may be modified or dismissed by "changed circumstances." In noting that the state had not significantly increased incremental funding for ELL instruction, but had merely used federal funds under NCLB to supplant state funding, these courts concluded that there had been no substantial change in state funding of ELL as prescribed in the original order. These courts also placed great reliance on the fact that the original order had been uncontested by the state and that neither the legislature nor the current state superintendent were among the named parties in the original case, thus raising issues of their standing to challenge the 2000 order.

On appeal, the U.S. Supreme Court reversed these rulings and directed the lower courts to reconsider the state's request for relief under Rule 60(b)(5).[45] Although the Court did not directly order any relief from the 2000 order, it did find that both the district and circuit courts had failed to appropriately address the respondents' contention of changed circumstances. It argued that, especially in the context of institutional reform at the state level, concerns regarding federalism and the intrusion of federal courts into state functions argued for a more flexible application of the changed circumstances of Rule 60(b)(5). The Court was especially critical of the lower courts' focus on the state's incremental funding of ELL education in Nogales to the exclusion of other factors and considerations that might indicate changed circumstances. It noted that the respondents had provided persuasive evidence that the ELL situation in Nogales, and the rest of the state, was substantially different from that in 2000. Justice Alito, writing for the majority, asserted that each of the changes cited by the respondents could be taken as substantially changed circumstances in their own right as well as collectively. The Court found that the changes in local school policies, coupled with the adoption of SEI, meant that the ELL program in the Nogales school district in 2009 was significantly different from that in 1992 or 2000. It also found that NCLB/ELAA had constituted a change in law that inherently placed a greater emphasis on state control of ELL programs and a reduced emphasis on funding in educational improvement. The Court considered the substantial increase in funding available for ELL programs in Nogales, regardless of source, to be a significant change in circumstance. In making its ruling, the Court found that the lower courts had taken a far too narrow view of changed circumstances, focusing more on the state's limited response to the district court's 2000

decree order than the circumstances that had led to the decree in the first place.[46]

With regard to the other matters raised in *Horne*, the Court accepted the intervention of the state superintendent of public instruction as sufficient to establish standing for the challenge to the court order.[47] In this, the Court may have established an important precedent, if one somewhat peripheral to this analysis, regarding the growing trend of specific executive officers at the state level refusing to affirmatively defend legislative enactments with which they personally and politically disagree. Additionally, the Court ruled that the failure of the state to appeal the initial district court order in 2000 had no effect on the respondent's ability to invoke the rules of civil procedure to seek relief from that order. The Court found the trial court had erred when it, with the acquiescence of the state attorney general, extended its order to every school district in the state despite a lack of any evidence showing similar violation elsewhere and the fact the all of the plaintiffs were residents solely of Nogales.

State Provisions for English Language Learners

Additional costs for educational programs are generally related to legitimate differences based on district characteristics, type of program in which a student is enrolled, or characteristics of student populations such as those with disabilities, students with English as a second language (ELLs), and the poor. For nearly 40 years, most state school funding programs have recognized the need for

Table
States with Funding for English Language Learner Programs: 1999 and 2009

State	State Funding for ELL Programs	
	1999	2009
Alabama		x
Alaska	x	x
Arizona	x	x
Arkansas	x	x
California	x	x
Colorado	x	
Connecticut	x	x
Delaware	x	
Florida	x	x
Georgia	x	
Hawaii		x
Idaho	x	x
Illinois	x	x
Indiana	x	x
Iowa	x	x
Kansas	x	x
Kentucky		
Louisiana		x
Maine	x	x
Maryland	x	x
Massachusetts	x	x
Michigan	x	x
Minnesota	x	x
Mississippi		
Missouri	x	x
Montana		
Nebraska	x	x
Nevada	x	
New Hampshire	x	x
New Jersey	x	x
New Mexico	x	x
New York	x	x
North Carolina	x	x
North Dakota	x	x
Ohio		
Oklahoma	x	x
Oregon	x	x
Pennsylvania		
Rhode Island	x	x
South Carolina		
South Dakota		
Tennessee		x
Texas	x	x
Utah	x	x
Vermont	x	x
Virginia	x	
Washington	x	x
West Virginia		
Wisconsin	x	x
Wyoming	x	x
Total	37	37

Sources: Andrew McKnight and Beth Antunez, *State Survey of Legislative Requirements for Educating Limited English Proficient Students* (Washington, DC: The George Washington University, National Clearinghouse for Bilingual Education, 1999), http://www.ncela.gwu.edu/files/rcd/BE020932/State_Survey_of_Legislative_Re.pdf.; and Deborah A. Verstegen and Teresa S. Jordan, "State Public Education Finance Systems and Funding Mechanisms for Special Populations," a paper presented at the Annual Conference of the American Education Finance Association, March 2010, Richmond, VA.

additional resources to meet minimum education goals for these children.[48] Typically, state funding for these programs takes one of three forms: (1) categorical aid; (2) weighting of the general aid formula; or (3) inclusion of ELL funding in the general aid formula. Some states use more than one approach. The table compares states that provided funding ELL programs in 1999 with those that did so in 2009, the latter representing the latest data available. Although the same number of states (37) provided funding for ELL programs in both years, these do not necessarily represent the same states. For example, three states—Alabama, Hawaii, Louisiana—which did not provide funding for ELLs in 1999 now do so. On the other hand, Nevada and Virginia, followed the opposite trend, and now offer no funding for ELL programs. Finally, eight states had no funding for ELL programs in either year. These include: Kentucky, Mississippi, Montana, Ohio, Pennsylvania, South Carolina, South Dakota, and West Virginia. Also, it is important to remember that while almost three-fourths of states provide funding for ELL programs, we do not know if the levels of funding are sufficient or equitably distributed.

Conclusion and Policy Implications

Given the recent calls for national immigration policy reforms, the defeat of the Development, Relief and Education for Alien Minors Act (DREAM) Act by the 111th U.S. Congress,[49] the extended downturn in the American economy, and the focus of current ELL research on financial burdens assumed by state lawmakers, the U.S. Supreme Court's recent ruling in *Horne v. Flores* may have significant implications for subsequent enforcement of ELL statutory provisions. The primary question before the high court was whether the funding remedy originally ordered by the district court should stand or whether Arizona school officials should be granted relief from the original order if they had demonstrated significant, changed circumstances in the Nogales school district. In a 6-3 decision, the U.S. Supreme Court reversed the decision of the Ninth Circuit Court. Writing for the majority, Justice Alito, joined by Chief Justice Roberts and Justices Kennedy, Scalia, and Thomas remanded the case back to the district court for the appropriate application of Rule 60 (b) (5) for compliance within the guidelines of the EEOA. A byproduct of the legal proceeding was an issue of whether or not federal court orders, established specifically for the Nogales school district, could be extended to all Arizona school districts at the request of state's attorney general. The Court declared that if the issue were to be raised on remand, then the district court would have to determine if there was a basis in federal statutes or in the evidence of the case to support such an extension. In addition, the Court declared that state officials should not simply ignore court rulings in an attempt to use the federal courts as a conduit for enacting state policy changes in lieu of the legislature and the will of state voters. Joined by Justices Ginsburg, Souter, and Stevens, Justice Breyer's dissent was of the view that the majority utilized new standards to rule in cases pertaining to so-called institutional reform litigation, effectuating a more difficult environment for the courts to secure enforcement of federal laws which set forth education provisions for English Language Learners.

At first impression, there can be little dispute that the U.S. Supreme Court decision in *Horne* remedied certain serious oversights by the district and circuit courts. Critical among these was the obvious oversight in the lower courts focusing their changed circumstance analysis under Rule 60(b)(5) solely on the state's direct response, or lack thereof, to the district court order without regard to the larger question of the current status of ELL education in Nogales and the rest of the state. Likewise, there is no logic in the petitioners' argument that a party, especially a state, to an institutional reform order cannot claim relief from that order based on new and changed circumstances simply because they failed to appeal the initial order when it was imposed. Finally, it would appear that other than the convenience of the state attorney general and other officials, the district court had no basis on which to extend its order to the entire state.

That said, the application of Rule 60(b)(5) to the ELL court order in *Horne* raises several troubling issues. Through delays of litigation and deliberate avoidance of the eventual court order, the Arizona legislature evaded its obligation to address ELL deficiencies in the Nogales school district and the rest of the state for over 13 years. When finally confronted with court fines for failure to enforce the order, the legislature passed a new law that carried no significant guarantees of improved ELL education, and then, by stringing together a series of apparently fortunate externally changed circumstances, has now been allowed to seek to vacate the original order altogether under the rubric of the *Federal Rules of Civil Procedure*. To be certain, the respondents have made considerable arguments that the condition of ELL education in the Nogales school district today may be significantly better than it was in 1992. Nonetheless, it cannot be disputed that the legislature has essentially used the *Federal Rules of Civil Procedure* to argue that evolutionary changes over time, as opposed to the specific changes cited in *Rufo*, caused largely without significant state action, along with the passage of a single piece of legislation that did not directly address the issues in the original litigation, constituted changed circumstances sufficient to allow it to challenge a court order it never even attempted to comply with.

As such, *Horne v. Flores* may have established a troubling precedent found nowhere in the actual ruling. While using Rule 60(b)(5) to evade federal court orders may require more than simple delay and obfuscation, this ruling does suggest that states facing court-ordered institutional reform may be able to apply an increasingly flexible standard of changed circumstances to challenge such orders, even when the states themselves make no affirmative efforts to remedy the deficiencies identified in these orders. In a worst case scenario, state legislatures could continue to claim that an endless succession of new statutes and school leaders would constitute changed circumstances sufficient to defeat, or at the very least indefinitely delay, court-ordered remedies for state failures to adequately implement federal programs or uphold the constitutionally protected rights of school children.

The ruling in *Horne* has numerous and mixed policy implications for securing equal educational opportunity for ELLs. In permitting an exemption from funding remedies handed down by federal courts in the wake of changed circumstance, the decision inherently re-emphasized the need for policymakers and educators to apply educationally sound instructional strategies to appropriately serve students who do not speak English. Conversely, the Arizona legislature's failure to respond to or appeal the federal court rulings, with little or no consequences, may establish a precedent that clearly contravenes the foundation of the rule of law within the American

judicial system. On the other hand, one may view the Arizona legislature's contempt for the federal court as a reaffirmation of our nation's federalist framework whereby the reserved powers principles established under the 10th Amendment of the U.S. Constitution were applied as intended by its authors. Nevertheless, the mere mention of states' rights juxtaposed to the enforcement of federal statutes designed to secure equal opportunity for suspect classes of Americans evokes images of national guardsmen, political discord, protest, and social unrest against the backdrop of the impotence of "with all deliberate speed." Moreover, recent court applications of the *Castañeda* standards, approving any instructional practice for ELLs grounded in a single educational theory, creates a significant legal burden for parents who disagree with the education provided to their children.[50] Consequently, *Horne* has raised questions about the future of federal courts and their ability to provide relief for dissenting parents, especially when state lawmakers are in violation of federal law pertaining to English Language Learners.

Endnotes

[1] 20 U.S.C. § 1701 et seq.

[2] See, Sandra Del Valle, *Language Rights and the Law in the United States* (Clevedon, UK: Multilingual Matters, 2003), 243, 270. Del Valle noted that the EEOA was passed as a floor amendment to the Education Amendments of 1974 and had no legislative history that year; however, there is a legislative history attached to the identical bill introduced in 1972. This bill failed to receive Senate approval.

[3] *Castañeda v. Pickard*, 648 F.2d 989 (5th Cir. 1981).

[4] U.S. Department of Education, *The Biennial Report to Congress on the Implementation of the Title III State Formula Grant Program School Years 2004-06* (Washington, DC: Office of Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students, 2008).

[5] *Horne v. Flores*, 129 S. Ct. 2579 (2009).

[6] *Rufo v. Inmates of the Suffolk Co. Jail*, 502 U.S. 367 (1992).

[7] U.S. House of Representatives, The Committee on the Judiciary of the House of Representatives, *Federal Rules of Civil Procedure* (Washington, DC: U.S. Government Printing Office, December 1, 2010).

[8] *Meyer v. Nebraska*, 262 U.S. 390 (1923).

[9] *Brown v. Bd. of Educ.*, 347 U.S. 483, 493 (1954).

[10] 42 U.S.C. §§ 2000(d)-2000(d)(7).

[11] Memorandum from J. Stanley Pottinger, Director, Office for Civil Rights, to selected school districts with students of national origin-minority groups, "Identification of Discrimination and Denial of Services on the Basis of National Origin," May 25, 1970, http://www2.ed.gov/about/offices/list/ocr/docs/nationaloriginmemo.html.

[12] *Lau v. Nichols*, 414 U.S. 56 (1974). Id. at 566.

[13] Memorandum from William A. Smith, Acting Assistant Secretary for Civil Rights, Office for Civil Rights, United States Department of Education, to Senior OCR Staff, "Office for Civil Rights Policy Regarding the Treatment of National Origin Minority Students Who Are Limited English Proficient," April 6, 1990, http://www2.ed.gov/about/offices/list/ocr/docs/lau1990_and_1985.html.

[14] *Lau*, *supra* note 12.

[15] Memorandum from Michael L. Williams, Assistant Secretary for Civil Rights, Office for Civil Rights, United States Department of Education, to Senior OCR Staff, "Policy Update on Schools' Obligations toward National Origin Minority Students with Limited-English Proficiency (LEP students)," September 27, 1991, http://www2.ed.gov/about/offices/list/ocr/docs/lau1991.html.

[16] 20 U.S.C. § 1701 et seq.

[17] *United States v. Texas*, 680 F.2d 356 (1982).

[18] *Id*. at 371.

[19] *Id*.

[20] *Gomez v. Ill. St. Bd. of Educ.*, 811 F.2d 1030 (7th Cir. 1987).

[21] *Administrative Procedures Act*, 5 U.S.C.

[22] *Gomez*, *supra* note 20, at 1041.

[23] *Teresa P. v. Berkeley Unified School District*, 724 F. Supp. 698, 713 (N.D. Cal. 1989).

[24] *Id*.

[25] *Id*. at 713-14.

[26] *Id*. at 771.

[27] *Id*. at 712.

[28] *Valeria G. v. Wilson*, 12 F Supp. 2d. 1007 – Dist. Ct., N.D. Cal. 1998.

[29] *Id*. at 1018.

[30] *Id*. at 1018-19.

[31] P.L. 107-110; 20 U.S.C. § 6311, *et. Seq*.

[32] 20 U.S.C. § 6812(1).

[33] *Horne v. Flores*, 129 S. Ct. 2579 (2009).

[34] H.B. 2064, 2006 Leg., 47th Sess., 2nd reg. Sess. (Az., 2006).

[35] U.S. House of Representatives, *Federal Rules of Civil Procedure*, 79.

[36] Ibid.

[37] *Rufo v. Inmates of the Suffolk Co. Jail*, 502 U.S. 367 (1992).

[38] *United States v. Swift & Co.*, 286 U.S. 106, 119 (1932).

[39] *Rufo, supra* note 35, at 381.

[40] *Id*., 383.

[41] *Horne, supra* note 33, 2589-90.

[42] H.B. 2064, 2006 Leg., 47th Sess., 2nd reg. Sess. (Az., 2006).

[43] *Id*. The attorney general had argued that the state constitution required a uniform application of all laws and rules affecting school funding.

[44] H.B. 2064, 2006 Leg., 47th Sess., 2nd reg. Sess. (Az., 2006).

[45] *Id*., 1307.

[46] *Id*., 2593-2608.

[47] *Id*., 2592-3.

[48] Robert Berne and Leanna Stiefel, *The Measurement of Equity in School Finance* (Baltimore, MD: Johns Hopkins University Press, 1984), 14-16.

[49] S. 729, 111th Cong. (2009).

[50] Eden Davis, "Unhappy Parents of Limited English Proficiency Students: What Can They Really Do?" *Journal of Law and Education* 35 (2006): 277-287.

Indiana's Formula Revisions and Bonner v. Daniels: An Analysis of Equity and Implications for School Funding

Marilyn Hirth and Edward Eiler

Indiana has a long history of school funding issues and distribution formula revisions. The most recent modifications to the formula were made between 2005 and 2009. One of the more controversial revisions was the removal of the minimum guarantee from the formula. As a result of these changes, three school districts filed a lawsuit challenging the adequacy of school funding in the state.[1] The purpose of this article is to analyze the impact of changes in the state's distribution formula, review the 2009 ruling of the Indiana Supreme Court in the case of *Bonner ex rel. Bonner v. Daniels*,[2] and assess their significance for the future of public school funding in Indiana.

In order to examine the impact of these formula changes and litigation, this study sought to answer the following questions:

(1) What impact have recent formula changes had on the horizontal and vertical equity of Indiana's distribution formula?
(2) How effective is the use of the free and reduced-price lunch count as a proxy for other factors previously included in the complexity index?
(3) What is the impact on horizontal and vertical equity when selected additional state and local funds are considered in addition to the funds distributed through the state tuition support formula?
(4) How might the *Bonner* decision impact future adequacy and funding arguments?

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The article is divided into four sections. The first provides background on Indiana's distribution formula and a history of school finance litigation while the second presents an analysis of the distribution formula using traditional school finance equity statistics. In the third section, the implications of the 2009 *Bonner* decision for Indiana school funding are discussed. The fourth, and final, section presents conclusions drawn from the study and legal analysis.

Background on the Distribution Formula and School Finance Litigation

Since 1949, Indiana's school funding has been based on a minimum foundation program. The legislature has enacted many modifications to the basic foundation formula since its inception, significantly reducing the amount of required local revenue and increasing state contributions. Toutkoushian and Michael offered four reasons for these changes: (1) to eliminate reliance on property wealth in per-pupil funding; (2) to reduce variability in per-pupil funding across districts; (3) to increase per-pupil funding; and (4) to reduce variability in property tax rates across districts.[3] Over time, these changes have transformed the school funding formula and have been positive in direction. However, as Michael, Spradlin, and Carson pointed out, even though progress has been documented on the more equitable distribution of funds over time, school leaders still criticize the funding system.[4] As a consequence, several growing suburban school corporations[5] filed a law suit in 2010.[6]

The Foundation Formula

Although there are several elements included in the formula calculation, the three essential elements of the foundation program are student count or average daily membership (ADM); the "complexity index," which is based on the percentage of students receiving free or reduced-price lunch in a district; and the foundation level.[7] The foundation level, which represents the minimum amount of revenue that can be generated for each student, is established by the Indiana General Assembly during their biennial budget sessions. In turn, the complexity index, designed to provide vertical equity, may adjust the foundation level higher depending on the number of students in the district receiving free or reduced-price lunch.[8] In 2009, foundation level funding increased for 292 of 293 school corporations due to the complexity index.

Although there is a long history of Indiana formula revisions and studies of their consequences, for the purpose of this article, the review will begin with changes made beginning in 1993. These changes were the result of school finance litigation initiated in 1987 by Lake Central School District based on the inequities in funding being unconstitutional.[9] In 1993, an agreement was reached between the plaintiffs and the governor who promised to have the state legislature make changes to the funding formula if they dropped the litigation. As a result, what has been termed the "reward-for-effort" formula was phased in over a six year period.

Several researchers have evaluated the equity and adequacy of the reward-for-effort formula revisions. In 2001, Theobald and Taylor concluded that horizontal equity showed marginal improvement and vertical equity continued to gain strength.[10] Their analysis also concluded that the formula revisions substantially improved adequacy. In 2005, Hirth and Eiler evaluated the 2001 reward-for-effort formula concluding that revisions to the school finance formula improved equity overall.[11] They examined English limited language and at-risk students as a measure of vertical equity, and found that changes in

the 2002 distribution formula allowed greater disparities. Some districts gained revenues to address vertical equity issues while others received very little or no additional funding. They concluded the formula revisions did not adequately address vertical equity.

In 2006, the legislature adopted a "money follows the child" formula. This meant the amount of state money available for each regular education student would be the same, and the school corporation educating the student would receive the money for that student. Prior to 2006, the formula had contained a minimum guarantee, where a school district was assured of receiving at least the amount of money distributed through the formula the previous year, plus a fixed percentage increase of that amount. The new formula eliminated the minimum guarantee. Lawmakers believed the formula needed to be changed because school districts that were experiencing declines in enrollment continued to be paid for students who were no longer there, i.e., "ghost" students. Prior to and after this change, the formula contained what was termed a "deghoster," whose purpose was to phase out over a four year period payments for students no longer in attendance. The elimination of the minimum guarantee provisions in the formula resulted in an increasing downward trend in revenue for school corporations with declining enrollments.[12]

One of the most recent changes occurred in 2008 when the legislature passed Public Law 146, which eliminated property tax levies as a general fund revenue source for school districts.[13] Instead, sales tax revenue is now the principal source of funding for schools. When this legislation was being considered, school officials expressed several concerns: The volatility of the sales tax; the need for the stability of the property tax; the fact that the property tax relief was aimed solely at the school corporation's general fund which provides funding for teachers and educational programming; and the lack of a reserve for an extended economic downturn. In response to the last concern, the legislature created a reserve equal to approximate 4.5% of state tuition support, but school officials expressed concern that the amount was inadequate. With the national economic crisis in the fall of 2008, the reasons for these concerns were underscored. Due to the economic recession and lower-than-projected sales tax revenues in 2010, the state cut $300 million from public education, and school corporations were forced to make significant reductions in force and cuts in other areas of their budgets.[14]

At the same time the property tax was eliminated as a general fund revenue source, a change was made in the manner in which the complexity index was calculated. Prior to 2008, the complexity index was based upon five factors: (1) the percentage of the school corporation population 25 years old with less than a 12th grade education per the 2000 U.S. Census; (2) the percentage of students receiving a free lunch in the school year three years previous; (3) the percentage of limited English proficient students in the school year three years previous; (4) the percentage of families with a single parent counted per the 2000 U.S. Census; and (5) the percentage of families in the school corporation with children under 18 years of age who lived with a single parent per the 2000 U.S. Census. Beginning with the 2008 distribution, the complexity index consisted of only one factor--the percentage of students who received free and reduced-price lunch—which was to serve as a proxy for the other factors.[15] In addition, the use of a single factor simplified the calculation of the index. This series of formula changes led to legal challenges of the constitutionality of the school finance system, one of which went to the Indiana Supreme Court.

History of School Finance Litigation in Indiana

In 2007, Indiana was one of only seven states without a court ruling on the constitutionality of school funding.[16] That distinction changed in 2009 when the Indiana Supreme Court issued their ruling in *Bonner et al. v. Daniels et al.* where the Court granted the defendants' motion to dismiss the case.[17] The plaintiffs had argued that the finance system provided an adequate education to some students and denied it to others, violating the Equal Privileges and Immunities Clause, Article 1, Section 23 of the state constitution.[18] They based their argument on the premise that the state guarantees the right to an adequate education, but the Court found that "... absent such a constitutional right, these other constitutional claims lack merit."[19]

In February 2010, another school funding lawsuit, *Hamilton Southeastern et al. v. Daniels*,[20] was filed by three suburban school corporations on the grounds that the state system of funding disproportionately affected their school corporations and favored urban districts, thereby denying students a uniform education as required by the state constitution.[21] In November 2010, a Hamilton County judge denied a motion to dismiss. In a January 2011 update on school funding litigation, the National Access Network reported on the status of *Hamilton*, as follows:

> The court's decision focuses on the justiciability of the current case in relation to *Bonner v. Daniels*. The decision by Superior Court Judge Steven Nation states that in Bonner, "the Supreme Court did not have before it whether the same Constitutional language... the issue in this case is not equality of educational outcomes, as it was in Bonner. The issue here is uniformity of funding."
>
> Before the judge could determine the merits of the case, however, the plaintiff school districts dropped the lawsuit in May 2011. They decided to do so in response to changes in the school funding formula made by the state legislature. The new changes adjust the formula by paying schools only for students actually enrolled, eliminating the phase-out of funding received by districts with declining enrollments.[22]

The next section describes the methods, data, and results of the analysis.

Analysis of Indiana's Distribution Formula

In order to examine the effects of the elimination of the minimum guarantee and the use of the free and reduced-price lunch proxy on the formula distribution, 2009 formula data from the Indiana Department of Education were used. Until 2010, school corporations had the following funds: general, debt service, capital projects, transportation, school bus fund, pension/severance fund, and preschool special education. The state distribution formula addressed only the general fund. This study examined the equity of funding with the inclusion of all state and local funds, not just the district's general fund. In order to complete this portion of the analysis, 2007 funding levels, the most recent year for which data for all funds were available, were used.[23] Traditional horizontal equity measures and vertical equity statistics[24] were calculated using the data described in the previous section. Comparisons of results were made to those of Hirth and Eiler's 2001 findings,[25] where appropriate.

Table 1
Regular Distribution Formula Equity Statistics Comparisons

Statistic	*Year*		
	2001	*2009*	
		Nominal $	*Constant $*
Mean	$4,988	$5,810	$4,962
Median	4,830	5,607	4,789
Range	6,440 2,540[a]	8,364 3,996[b]	7,144 3,413[c]
Restricted Range	1,153	1,485	1,268
Federal Range Ratio	0.2497	0.2722	
Coefficient of Variation	0.1106	0.1392 0.1068[c]	
Gini Coefficient	0.0992	0.0606	
McLoone Index	0.9769	0.9350	

[a] Without Prairie Township Schools.
[b] Without Prairie, Dewey, and LaCrosse Township Schools.
[c] Without two outliers, Dewey and LaCrosse Township Schools.

Table 1 presents horizontal equity statistics for the regular distribution formula in 2001 and 2009, the latter in both nominal and constant 2001 dollars. The regular distribution formula, which is intended to serve as foundation funding for all students, is the state distribution formula in support of the general fund and excludes categorical funding such as that for special and vocational programs. After being adjusted to 2001 dollars, the mean and median per pupil distribution were very similar. In 2001, the mean was $4,988 while in 2009 it was $4,962. The median was $4,830 in 2001, and $4,789 in 2009. However, the range, restricted range, and the federal range ratio all increased over this time period. The range increased from $2,540 to $3,431 while the restricted range rose from $1,153 to $1,268. The federal range ratio increased from .2497 to .2722.

With the exclusion of outliers, the coefficient of variation for per-pupil revenues decreased from 0.1106 in 2001 to 0.1068 in 2009. A coefficient of variation below 10% (0.10) is generally accepted as a difficult standard to meet. In Indiana's case, the changes in the formula appeared to move the state closer to meeting that standard. The Gini coefficient is another commonly used horizontal equity statistic in school finance that measures inequalities in the distribution of education funding. The Gini coefficient decreased from 0.0992 in 2001 to 0.0606 in 2009. A Gini coefficient of less than 0.10 is considered desirable. In both years, the Gini coefficient met this standard, and it improved in 2009. The McLoone Index takes a slightly different approach in that it measures equity in the bottom half of the distribution. Because Indiana's formula changes attempted to establish the same amount of funding for each student, one could hypothesize that these changes should have had the effect of providing a more equitable distribution of revenues in the bottom half. Between 2001 and 2009, the McLoone Index decreased from 0.9769 to 0.953. A McLoone index value of greater than 0.90 is considered desirable. In both years, the McLoone Index met this standard although it decreased somewhat in 2009.[26]

Table 2
2007 Equity Statistics All Funds

Coefficient of Variation	0.1356 0.1230[a]
Gini Coefficient	0.0668
McLoone Index	0.9302
Fiscal Neutrality	0.1857 0.1888[b]
Elasticity	0.0215 0.0213[b]

[a] Without two outliers: Dewey and Prairie Township School Districts.
[b] Excludes seven districts where data were reconstructed using 2008 assessed valuations.

To answer second research question, a correlation coefficient was calculated for the relationship between the pre-2008 and post-2008 complexity indices to determine whether free and reduced-price lunch counts represented an adequate proxy for the pre-2008 complexity index which included additional student and demographic factors. The complexity index represents a measure of vertical equity. The correlation between the pre-2008 and post-2008 complexity indices was 0.9506, indicating the proxy was a very similar measure.[27]

To answer the third research question, 2007 data for all state and local funds were used. The results of the horizontal equity analysis are found in Table 2. Excluding outliers, the coefficient of variation was 0.1230. The Gini coefficient was .0668, and the McLoone index was 0.9302. These results demonstrated that even when all funds were considered, horizontal equity as measured by the Gini coefficient and McLoone index still fared well.

Table 2 also contains two results for fiscal neutrality and elasticity, where each result represents a different method of addressing missing data. The first result includes all school districts, but seven of them used 2008 assessed valuation because 2007 data were unavailable. The second result excludes these districts from the analysis. The results for fiscal neutrality, expressed as correlation coefficients, were very similar, 0.1857 and 0.1888, respectively. Fiscal neutrality is a common school finance equity statistic that refers to the magnitude of the relationship between school district wealth (or fiscal capacity) and per-pupil expenditure. Ideally, there should be no relationship between wealth and expenditure. The modest positive correlations indicate the relationship between capacity, here defined as per-pupil property value, and per-pupil operating expenditures was fairly neutral. Elasticity is also a traditional school finance equity statistic that measures the percent change in per-pupil expenditures relative to the percent change in property value per student by means of simple linear regression. The results for elasticity were 0.0215 and 0.0213. Elasticity values under 0.05 normally indicate property wealth is not a major factor in spending differences. However, Indiana's results for elasticity may be due to state-imposed tax caps and state control of major portions of the funding.

The final set of observations deals with the complexity index. Using 2009 data for the regular distribution formula, the correlation between the complexity index and revenue per student was .7001.

Using the 2007 data for all funds, the correlation was .2211.[28] This suggests that while total funding was equitable, communities with higher complexity indexes did not fare as well as they did under the state distribution.

In summation, the distribution formula, before and after changes, fared well using traditional statistical measures of horizontal and vertical equity. In contrast, Toutkoushian and Michael took a different or "alternative" approach to the measurement of horizontal and vertical equity using multivariate statistical analysis.[29] Their results also showed gains in horizontal equity, and were larger than the ones reported here. For vertical equity, their results also indicated only modest gains.

Implications of *Bonner v. Daniels* for Indiana School Funding

The fourth research question asks how the *Bonner* decision might impact future adequacy and funding arguments in the state? In 2009, the Indiana Supreme Court made a ruling in a suit filed on behalf of several Indiana public school students that argued "...[T]he Indiana Constitution imposes an enforceable duty on state government to provide a standard of quality education to public school students and that such duty is not being satisfied."[30] The Court ruled the plaintiffs/appellants were not entitled to relief.

Justice Dickson wrote the majority opinion which reads as follows [italics are added for emphasis unless otherwise noted; underlining is from the original]:

> Although recognizing the Indiana Constitution directs the General Assembly to establish a general and uniform system of public schools, we hold that it does not mandate any judicially enforceable standard of quality, and to *the extent that an individual student has a right, entitlement, or privilege to pursue public education, this derives from the enactments of the General Assembly, not from the Indiana Constitution.*[31]
>
> The plaintiffs' complaint, and their appellants' brief do not allege violation of the "general and uniform system" or the "equally open to all" requirements, nor of any other specific provision of the Education Clause.[32]
>
> ...[T]he education Clause expresses two duties of the General Assembly. The first is the duty to *encourage* [Italics in original] moral, intellectual, scientific, and agricultural improvement. The second is the duty to *provide* [Italics in original] for a general and uniform system of open common schools without tuition. The first is general and aspirational; the second is more concrete–the assessment of a specific task with performance standards ("general and uniform," "tuition without charge," and "equally open to all"). *Judicial enforceability is more plausible as to the second duty than the first.*[33]
>
> Determining the components of a *public education is left within the authority of the legislative branch* of government. Article 8, Section 1 imperatively places upon the legislature, "by all suitable means...to provide, by law, for a general and uniform system of Common Schools." But this imperative leaves to *that branch considerable discretion in determining what will and what will not come within the meaning of a public education system.* The duty rests on the legislature to adopt the best [school] system that can be framed; but they, and not the courts, are to judge what is the best system. *There is this limitation on legislative power: the system must be "a general and uniform one," and tuition must be free and open to all; but the extent of this limitation is this, and nothing more.*[34]
>
> ...[A]rguments that Indiana's public school financing system violates the Indiana Constitution's Equal Privileges and Immunities Clause and its Due Course of Law Clause...are predicated on the plaintiffs assertion the Indiana Constitution grants them a fundamental constitutional right to receive an adequate public education. ...Absent such a constitutional right, these other constitutional claims of the plaintiffs lack merit.[35]
>
> Significantly, the drafters of our Constitution did not include any reference to education in Article 1, the Bill of Rights, which declares the rights of individuals in relation to government. ...Education is not among the enumerated individual rights. To the extent that an individual student may have a right, entitlement, or privilege to pursue public education, any such right derives from the enactments of the General Assembly, not from the Indiana Constitution.[36]
>
> The last sentence is restated in the opinion:
>
> We conclude that the framers and ratifiers certainly sought to establish a state system of free common schools but not to create a constitutional right to be educated to a certain quality or other output standard. In the absence of such a constitutional right to receive an adequate public education, the plaintiffs are not entitled to the declaratory relief sought...[37]

The Court made it clear that education is not a right under the Indiana constitution. The Court also made it quite clear that education is a duty of the legislature, and, in exercising that duty, the legislature has considerable discretion in how it carries out that duty. The Court restricts its role to enforcing a general and uniform system of schools equally open to all and free of tuition.

The degree of control granted to the state and the current uniformity of state funding would seem to preclude future legal challenges. The results of the research presented in this article affirm that Indiana's present system of education funding satisfies or comes very close to satisfying current equity measures. Furthermore, under current state law, Indiana schools appear to be equally open to all, and tuition is not charged. If inequities exist for a specific, identified group such as special education, minority, or limited English language students, perhaps a challenge could be made to the federal courts. However, a word of caution may need to be expressed to those considering such a course. The federal courts could enter a favorable decision, but such a ruling would not necessarily result in additional state funding. Given the Indiana Supreme Court decision, state legislators might take the position that local school corporations merely needed to reallocate existing funds.

Conclusion

The results of this study, when added to the weight of the ruling by the Indiana Supreme Court in *Bonner v. Daniels*, lead to four conclusions:

- Indiana's current system of funding education satisfies or comes very close to satisfying traditional, statistical measures of equity.

- Education is not a fundamental right in Indiana.
- The Court has determined that the legislature has great latitude in carrying out the duty to provide a general and uniform system of schools.
- Under the current system of funding schools, there is likely little basis for legal action challenging the adequacy or distribution of funding.

One possible exception is charter school funding. Indiana charter schools appear to receive approximately 16% more funding per pupil than schools in reorganized school districts. However, as the legislature has considerable latitude in carrying out their constitutional duty, such variance may still be within what is viewed as general and uniform. Nonetheless, charter school funding in Indiana is an area which needs further analysis.

The remaining issue which bears examination is the issue of traditional tools in the statistical analysis of funding equity. If one were to discuss the issue of funding equity with school superintendents, school business officials, and school boards in Indiana and ask if the current system of funding is equitable, one would hear a resounding, "No." While much of the disgruntlement might be removed with a higher foundation amount and a bottom-up equalization effort, those measures, at least in part, are arguments about adequacy which are now closed to judicial review. Toutkoushian and Michael offered an alternative, multivariate approach to measuring horizontal and vertical equity, using Indiana data to analyze the relationship between a school district's per pupil revenues and the various factors the state uses to determine per-pupil funding.[38] While acknowledging the use of multiple regression analysis will increase the difficulty in explaining findings to a general audience, they argued such an approach would provide for a better analysis of the issues involved in determining equity.

Still, there is clearly a gap between the statistical analysis of the data and the perceptions of Indiana school personnel and lawmakers. We agree with Toutkoushian and Michael that other methods need to be found to examine the critical question of equity in school funding.[39] In addition to quantitative measures, perhaps qualitative measures should also be considered. In sum, greater effort needs to be made to develop measures that are more easily understood and accepted by policymakers and school personnel.

Endnotes

[1] *Hamilton Southeastern Schools et al. v. Daniels*, Hamilton Superior Court. Cause No. 29 D01 1002 PL 198, filed February 10, 2010.

[2] *Bonner ex. Rel. Bonner v. Daniels* 907 N.E. 2d 516 (Ind. 2009).

[3] Robert K. Toutkoushian and Robert A. Michael, "Demystifying School Funding in Indiana," *Education Policy Brief* 3 (Winter 2005): 1-17 (Bloomington, IN: Center for Evaluation and Education Policy).

[4] Robert S. Michael, Terry E. Spradlin, and Fatima R. Carson, *Study of Educational Adequacy: How Much Money is Enough?* (Bloomington, IN: Center for Evaluation and Education Policy, 2010).

[5] In Indiana, schools districts are referred to as "school corporations."

[6] *Hamilton*, *supra* note 1.

[7] Robert, S. Michael,, Terry E. Spradlin, and Fatima R. Carson, "Changes in Indiana School Funding," *Education Policy Brief* 7:2:1 (Bloomington, IN: Center for Evaluation and Education Policy, 2009).

[8] The formula contains additional funding specifically for special education and vocational education.

[9] *Lake Central School District et al. v. State of Indiana et al.*, Newton County Circuit Court, Indiana Cause No. 56 Col-8703-CP-81

[10] Neil Theobald and Laura Taylor, "Indiana Public School Finance Programs," in *Public School Finance Programs of the United States and Canada 1998-99*, edited by Catherine Sielke, John Dayton, C. Thomas Holmes, and Anne L. Jefferson (Washington, D.C.: U.S. Department of Education, 2001).

[11] Marilyn A. Hirth and Edward Eiler, "Horizontal and Vertical Equity Analysis of Indiana's 2001 Reward-For-Effort Formula," *Journal of Education Finance* 30 (Spring 2005): 382-398.

[12] Michael et al. (2009) tracked ADM changes 1993-2009 using 1990 census demographic groupings and found a large, negative percentage change in student count in urban districts of 10.1%. Rural districts experienced a slight increase of 1.7%, while towns had an increase of 11.5%, the largest cumulative percentage increase, and suburban districts, 39.5%. Based on this analysis, they predicted that if these trends continued, urban districts would lose funding while suburban districts would experience increases.

[13] Ibid.

[14] This topic is the subject of another study yet to be completed

[15] In a 2006 report to the K-12 subcommittee of the Indiana Government Efficiency Commission, Toutkoushian and Michael reported free and reduced-price lunch count accounted for close to 57% of the variation in student performance across school districts. They also found that the poverty indicator was strongly correlated with free lunch count, at 0.81 (p. 5). They concluded that free and reduced-price lunch count was the most important of the five previous complexity index factors and, hence, an appropriate measure to adopt. See, Robert, K. Toutkoushian and Robert A. Michael, *Effects of Background and Policy Variables on School Performance in Indiana*, prepared for the K-12 Education Subcommittee (Indianapolis, IN: Indiana Government Efficiency Commission, 2006), as cited in Michael et al., "Changes in Indiana School Funding," 4.

[16] Michael et al., *Study of Educational Adequacy*.

[17] *Bonner ex. Rel. Bonner v. Daniels*.

[18] Michael et al., "Changes in Indiana School Funding."

[19] *Bonner ex. Rel. Bonner v. Daniels*, as quoted in Michael et al., "Changes in Indiana School Funding," 10.

[20] *Hamilton Southeastern Schools et al. v. Daniels*.

[21] Michael et al., *Study of Educational Adequacy*.

[22] National Access Network, "Indiana: Recent Events," January 2011, http://www.schoolfunding.info/states/in/lit_in.php3.

[23] The data selected for use were those from reorganized public school districts, and charter school data were not included. See the Appendix for a detailed description of the data.

[24] Robert Berne and Leanna Stiefel, *The Measurement of Equity in School Finance: Conceptual, Methodological and Empirical Dimensions* (Baltimore, MD: Johns Hopkins University Press, 1984).

[25] Hirth and Eiler, "Horizontal and Vertical Equity Analysis."

[26] Initially, the formula contained a calculation that provided a transition to the foundation. This could possibly help explain the slight decline in the index.

[27] Some have wondered about the nature of the correlation if free lunch count alone were used as a proxy. The result is a slightly higher correlation of .9621. The small difference in the degree of correlation is most likely due to the fact that the free lunch count made up 79.2% of the total free and reduced price lunch count in the state.

[28] If Perry Township is excluded as an outlier, the correlation is somewhat higher, .2551.

[29] Toutkoushian and Michael's alternative assessment of vertical equity was based on how close the partial linear relationships between per-pupil funding and vertical equity factors were to the weights used by the state. They used the same regression model to measure horizontal equity by looking at the variation in per-pupil funding that was not explained by the state's vertical equity and cost-related factors such as district size and geographic location. A multivariate model removes the effects of student and district characteristics often used to determine per-pupil funding in a given state. Their alternative measures of horizontal and vertical equity resulted in an improved measurement of the equal treatment of equals without the assumption that all school districts have comparable funding needs. See, Robert, K. Toutkoushian and Robert A. Michael, "An Alternative Approach to Measuring Horizontal and Vertical Equity in School Funding," *Journal of Education Finance*, 32 (Spring 2007): 399.

[30] *Bonner ex rel. Bonner v. Daniels*, 2.

[31] *Id*.

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Appendix
Further Information on Data Used in the Study

Prior to the School Reorganization Act of 1959, Indiana had a system of schools organized through the township trustees. This system was replaced by a system of reorganized school districts under the control of a local school board. However, communities varied in the extent to which schools were consolidated, with a few communities choosing to remain township schools, e.g. Prairie Township (enrollment = 36.5) and Dewey Township (enrollment = 126). Because these two districts were considered outliers for the purposes of the study, the 2009 range in constant dollars in Table 1 was reported with and without them. These two districts were also excluded in the calculation of coefficient of variation in Table 1, and in the examination of the correlation between the complexity index and the dollars available per student in the 2009 regular formula distribution. Prairie Township was excluded in the examination of the same correlation used to examine all 2007 funds because of what appeared to be an irregularity in the computation of the complexity index. In the examination of 2009 data, LaCrosse Township School District (enrollment = 168) was not included because data were not available.

For 2007, data were either unavailable or incomplete for Brown County Community Schools (enrollment = 2,130); Cannelton City (enrollment = 25); and Union County/College Corner Joint Schools (enrollment = 1,543). Efforts made to contact Brown County Schools for data were unsuccessful, and there was no way to construct the data. Data for Union County/College Corner Joint Schools were incomplete.

There was also a problem of reassessment in Marion and Posey Counties. As a result, complete data were not available for 14 school districts. As the school districts contained nearly 20% of students in the state, an effort was made to secure the missing data. All school districts were contacted. Seven of the 14 districts provided the information requested. Enrollment in the seven districts that did not respond totaled 43,338 or 4.1% of Indiana's 2008-2009 total enrollment of 1,046,263. For these seven districts, it was possible to reconstruct data with the exception that for calculation of fiscal neutrality and elasticity, 2008 assessed valuations were used instead of 2007 assessed valuations. The results are reported using reconstructed data for these seven school districts.

The Funding of Virtual Schools in Public Elementary and Secondary Education

Luke J. Stedrak, Justin C. Ortagus, and R. Craig Wood

Introduction

The advent of information technology throughout the United States has revolutionized the educational process and sparked the rapid growth of virtual education at the K-12 level in almost every state such that courses in every imaginable subject can now be offered outside the geographic constraints of school districts and traditional brick-and-mortar buildings. Virtual education for elementary and secondary students has grown into a $507 million market and continues to grow at an estimated annual pace of 30%.[1] In 2000, there were approximately 40,000 to 50,000 enrollments in elementary and secondary online education courses.[2] By 2006, the Sloan Consortium reported approximately 700,000 enrollments.[3] The overall number of elementary and secondary students enrolled in virtual education courses in the 2007-2008 school year was estimated at approximately 1,030,000—a 47% increase over two years.[4] Currently, there are an estimated 3,000,000 enrollments in online and blended courses in elementary and secondary education.[5] With the dramatic growth of virtual education, state policy and funding issues related to virtual schools have become increasingly important. Such issues include, but are not limited to, equity, access, choice, and cost-effectiveness. Yet, little systematic research exists to assist state policymakers in their decision-making. To that end, this article presents an overview of the type and funding of virtual education by state as a first step in providing policymakers with much needed information.

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State Virtual Education Models

Virtual education and its funding can be classified into three models: (1) centralized; (2) publicly-funded; and (3) privately/publicly-funded. This section describes each of these and places states into the appropriate model. Summary tables provide additional information as to the types of virtual schools and online learning programs available by state, when these were established, and primary funding sources. In addition, examples of each of these models in selected states are described in greater detail.

The Centralized Virtual School Model

The centralized virtual school model is defined as a unified virtual school option for public elementary and secondary education students within a given state—no matter the school district or local authority. Whether full-time or supplemental, state virtual schools are authorized and funded by a state legislature, state education agency, or state board of education. Thirteen states use the centralized virtual school model. Of these, three states—Florida, Michigan, Missouri—also permit private/for-profit and nonprofit alternatives. (See Table 1.) Further detail on the centralized virtual school model in Florida, Idaho, and Alabama is provided in this subsection.

In 1997, the state of Florida created the Florida Virtual School (FLVS),[6] which has become the largest virtual school in the United States.[7] FLVS operations are overseen by a governor-appointed board of trustees.[8] Although the state accommodates private/for-profit and nonprofit alternatives, this is a highly centralized model. Florida statute requires school districts to make virtual education accessible to full-time virtual students from kindergarten through grade 8, or to full-time or part-time students in grades 9-12.[9, 10] As a method of dropout prevention for high school students who struggle in a traditional classroom setting, the legislature amended the statute to expand virtual instruction coverage to grades 9-12.[11] However, state legislators recently reduced per-pupil funding for virtual education by 10%.[12]

Since its inception in 2002, the Idaho Digital Learning Academy, which is the state virtual school, has used a highly centralized model for virtual education.[13, 14] In 2009, Idaho established new funding provisions, incorporating a blend of virtual and traditional instruction, and allowing school districts to use up to 5% of the funding for teacher salaries through the "total support units" formula to afford teachers the opportunity to offer virtual instruction or blended learning options to their students.[15] The state of Idaho defines a virtual school as "...a full-time, sequential program of synchronous and/or asynchronous instruction primarily through the use of technology via the Internet in a distributed environment. Schools classified as virtual must have an online component to the school with online lessons and tools for student and data management."[16]

Since 2004, all online education activity in Alabama has been mandated through the state virtual school—Alabama Connecting Classrooms, Educators, & Students Statewide (ACCESS).[17] An annual state appropriation comprises the majority of ACCESS

Table 1
States Using a Centralized Virtual School Model

State	*Name of State Virtual School*	*Year Established*	*Primary Funding Source*	*Alternatives to State Virtual School*
Alabama	ACCESS	2004	State appropriation	None
Florida	Florida Virtual School	1997	State appropriation	Allows prvate/for profit and nonprofit
Idaho	Idaho Digital Learning Academy	2002	State appropriation	None
Illinois	Illinois Virtual School	2009	State appropriation	None
Kentucky	Kentucky Virtual Schools	2000	State appropriation	None
Louisiana	Louisiana Virtual School	2000	State Board of Elementary and Secondary Education	None
Maine	Maine Online Learning Program	2009	State Department of Education	None
Michigan	Michigan Virtual School	2000	State appropriation	Allows private/for-profit and nonprofit
Mississippi	Mississippi Virtual Public School	2006	State appropriation	None
Missouri	Missouri Virtual Instruction Program	2007	State appropriation	Allows private/for-profit and nonprofit
Montana	Montana Virtual Academy	2009	State appropriation	None
North Carolina	North Carolina Virtual Public School	2002	State Board of Education	None
Wyoming	Wyoming Switchboard Network	2008	State Department of Edcation	None

Sources: See Appendix A.

funding. For fiscal year (FY) 2009-2010, the state appropriated $22.5 million, a decrease from the previous year. However, in 2008, ACCESS became eligible for $11 million in state education bonds for expansion. [18]

The Publicly Funded Virtual School Model

Like centralized virtual schools, publicly funded virtual schools are authorized and funded by a state legislature, state education agency, or state board of education. However, this model differs from the centralized approach in that school districts are afforded the option of choosing from multiple, publicly funded virtual schools as opposed to a single state virtual school. Of the nine states that use the publicly funded model, seven allow both private/for-profit alternatives, while two permit only nonprofit approaches. (See Table 2.) Further detail on publicly funded virtual school models in Arkansas, Ohio, and New Hampshire is provided in Table 2.

Since 2000, the Arkansas Virtual High School (AVHS) has served as the state virtual school.[19] Additionally, the Arkansas Virtual Academy is a full-time, statewide charter school.[20, 21] The Arkansas Department of Education is the funding source for virtual schools and oversees governance and accountability pertaining to virtual education throughout the state.

From 2007 to 2009, AVHS received funding through an annual state department of education grant of $740,000. Funding for the 2009-2010 academic year was reduced to $590,000, which resulted in decreased enrollment.[22] The Arkansas Virtual Academy serves grades K-8, but is limited by legislation to 500 students. As a charter school, it receives funds "...equal to the amount apportioned by the district from state and local revenue per average daily membership."[23] This means it is funded through the same student full-time equivalent (FTE) formula as a physical school—$5,905 per student—but it does not receive any funding from local property taxes.[24]

Ohio enrolls virtual students through 27 eCommunity schools.[25] In Ohio, a "community school" is similar to a charter school. An eCommunity school is a charter school which is computer-based, allowing students to work from home.[26] Since 1997, the state of Ohio has supported the inception and expansion of community schools as an alternative to the traditional model of public elementary and secondary education school programs.[27]

Community schools in Ohio, including eCommunity schools. receive the same state per-pupil foundation formula payments as students in face-to-face programs within a school district. In Ohio, the funding allocation for community schools is set at $5,718 per pupil.[28] Like all other public schools, community schools may seek

Table 2
Publicly-Funded Virtual School Model

State	*Centralized Model*	*Name of State Virtual School*	*Year Established*	*Primary Funding Source*	*Alternatives to State Virtual School*
Alaska	No	None	2008	State Department of Education and Early Development	Allows private/for-profit and nonprofit
Arkansas	Yes	Arkansas Virtual High School	2000	State Department of Education Grant	Allows nonprofit
Georgia	Yes	Georgia Virtual School	2005	State Appropriation	Allows private/for-profit and nonprofit
Kansas	No	None	2008	State Department of Education	Allows private/for-profit and nonprofit
Minnesota	No	None	2003	State Department of Education	Allows private/for-profit and nonprofit
New Hampshire	No	None	2007	State Board of Education	Allows private/for-profit and nonprofit
Ohio	No	None	2003	State Department of Education	Allows private/for-profit and nonprofit
South Carolina	Yes	South Carolina Virtual School Program	2007	State Appropriation	Allows private/for-profit and nonprofit
South Dakota	Yes	South Dakota Virtual School	2006	State Department of Education	Allows nonprofit

Sources: See Appendix B.

additional funds from grants, as well as government and private sources. In addition, as charter schools, they may be eligible for state start-up grants and federal planning grants.

Approved in 2007 by the New Hampshire Board of Education, the Virtual Learning Academy Charter School (VLACS) is the sole statewide online-learning program,[29] although there is a regional online charter school along with 30 high schools that offer online courses.[30] Funding for VLACS is provided by the state board of education and was increased from $3,830 per full-time pupil in 2008-2009 to $5,450 in 2009-2010.[31] In accordance with the New Hampshire General Court, funding for online students follows the student from the resident district to the open enrollment district, and "...[the] pupil's resident district shall pay to such school an amount equal to not less than 80 percent of that district's average cost per pupil as determined by the department of education...."[32]

The Privately/Publicly-Funded Virtual School Model

For this model, virtual schools can be funded or authorized by a state legislature, state education agency, state board of education, or private organization. In contrast to the previous two models, this one allows school districts to choose between a publicly funded or privately funded virtual school. Twenty-six states use this virtual school model. Of these, 18 also have a state virtual school. (See Table 3.) Further detail on privately/publicly funded virtual schools in California, Connecticut, and New Mexico is provided in this subsection.

In 1999, University of California College Prep, the state virtual school, was established.[33] Many California virtual schools are supplemental and receive funding based upon average daily attendance (ADA). Charter school law and independent study provisions govern online charter schools in California. In addition, California has a variety of private virtual school options available to public elementary and secondary education students, e.g., Halstrom High School Online, Laurel Springs School, and Sycamore Academy.

In 2008, the Connecticut Department of Education created the Connecticut Virtual Learning Center which functions as the state's virtual school.[34] Initially, the Connecticut Virtual Learning Center received two academic years of funding (2007-2008 and 2008-2009), but the second year of funding was subsequently retracted due to state budget constraints.[35] As a consequence, the Connecticut Virtual Learning Center charged $295 per semester course for public school students, and $320 per semester for private school and home-schooled students.[36]

In 2010, the Connecticut legislature passed Public Act 10-111, which served as the state's first piece of legislation related to online learning.[37] Alternatives to the Connecticut Virtual Learning Center include the Connecticut Adult Virtual High School, a statewide online program, and a variety of supplementary private school options.

In 2007, the New Mexico legislature passed the Cyber Academy Act creating the state virtual school, Innovative Digital Education and Learning New Mexico (IDEAL-NM).[38] In addition to IDEAL-NM, which is funded through the legislature, private virtual schools like Dora Cyber Academy and New Mexico Virtual School serve public elementary and secondary education students throughout the state. [39]

In 2009, "Graduate New Mexico," an initiative intended "...to sustain New Mexico's growing economy and work force" through the expansion of IDEAL-NM, was created.[40] Specifically, "...the Public Education Department will make online courses available to up to 10,000 students that need to make up credits to graduate,"[41] to assist in lowering the state's high school drop-out rate.

Table 3
Privately/Publicly-Funded Virtual School Model

State	*Centralized Model*	*Name of State Virtual School*	*Year Established*	*Primary Funding Source*
Arizona	No	None	2009	State Board of Education
California	Yes	University of California College Prep	1999	State Academic Preparation Program
Colorado	Yes	Colorado Online Learning	1998	State Department of Education
Connecticut	Yes	The Connecticut Virtual Learning Center	2008	State appropriation
Hawaii	Yes	Hawaii Virtual Learning Network	1996	State Department of Education
Indiana	No	None	2005	State Department of Education
Iowa	No	Iowa Online AP Academy Iowa Learning Online	2001 2004	State Department of Education
Maryland	Yes	Maryland Virtual School	2002	State Department of Education
Massachusetts	Yes	Massachusetts Online Network for Education (MassONE)	2003	NCLB Tittle II-D Competitive Grant
Nebraska	No	None	2006	State appropriation
Nevada	No	None	2007	State Board of Education
New Jersey	No	None	2002	State Department of Education
New Mexico	Yes	IDEAL-NM (Innovative Digital Education and Learning New Mexico)	2001	Legislature
North Dakota	Yes	North Dakota Center for Distance Education	2000	State appropriation and course fees
Oklahoma	No	None	2000	State Board of Education
Oregon	Yes	Oregon Virtiual School District	2005	Oregon Virtual School Disrict Fund
Pennsylvania	No	None	2000	State Department of Education
Rhode Island	No	None	2010	State Department of Education
Tennessee	Yes	e4TN	2006	Annually Renewable Federal Grant
Texas	No	Texas Virtual School Network and Electronic Course Program	2007	Legislature
Utah	Yes	Utah Electronic High School	1994	State Office of Education Funds
Vermont	Yes	Vermont Virtual Learning Cooperative	2009	State Board of Education
Virginia	Yes	Virtual Virginia	2005	State Appropriation

Sources: See Appendix C.

Table 3 (continued)
Privately/Publicly-Funded Virtual School Model

State	*Centralized Model*	*Name of State Virtual School*	*Year Established*	*Primary Funding Source*
Washington	Yes	Digital Learning Department, Office of Superintendent of Public Instruction	2009	State Board of Education
West Virginia	Yes	West Virginia Virtual School	2000	State Department of Education
Wisconsin	Yes	Wisconsin Virtual School	2008	State Department of Public Instruction Cooperative Education Service Agency

Sources: See Appendix C.

Public school students, including those enrolled in IDEAL-NM and Graduate New Mexico, are funded through the State Equalization Guarantee.[42] Local school districts receive funding based upon the number of full-time students who attend each school.[43] Graduate New Mexico students who enroll in IDEAL-NM courses are students of the local enrolling school district, but IDEAL-NM provides the course content and the eTeacher. The sole cost incurred by a given school or district is a per-student course fee of $200, which is subsequently applied toward eTeacher compensation.[44]

Other State Virtual School Models

Delaware and New York are classified as states that have virtual school models that do not fit with the three previously discussed in this section. Delaware does not have a state virtual school, a statewide online program, or an online charter school. As a result, no legislation covers virtual schools in the state.[45] However, in 2008, Delaware established online public elementary and secondary education programs designed primarily for credit recovery, but budget issues have stifled the implementation and growth of virtual schools in the state. Specifically, the Delaware Virtual School was launched as a pilot program, offering six online courses through 27 high schools, serving nearly 300 students.[46] Due to an $800 million state budget deficit, the pilot program did not receive funding for 2009-2010.[47] At present, some districts use vendor courses on a limited basis, and certain high schools participate in the University of Delaware's Online High School—which serves to provide dual enrollment courses for high school students across the state.[48]

Currently, there is no state statute in New York regarding virtual schools. However, a public virtual school exists, as does a private virtual school called the Francis School.[49] In 2010, the state of New York issued several requests for proposals through legislation that would provide an emphasis on online coursework for public elementary and secondary education students, e.g., student support, professional development, online learning assessment, and the future of online education.[50]

Summary and Conclusions

The purpose of this study was to provide an overview of virtual education and its funding by states. The results indicated that all states are engaged in the provision and funding of some form of virtual education for public elementary and secondary education students. Some states, like Utah, provided a virtual education option, an "electronic high school," as early as 1994, while others, like Illinois and Maine, created a state virtual school or online learning program as recently as 2009. To provide further clarification, the authors developed a typology of three virtual school models—centralized, publicly-funded, or both privately and publicly-funded. Over half of states use the privately/publicly funded option where virtual schools can be funded or authorized by either a state entity or a private organization. Thirteen states use the centralized virtual school model, which represents a unified virtual school option for public elementary and secondary education students within a given state. Nine states currently use the publicly funded model, one which gives school districts the option of choosing from multiple, publicly funded virtual schools as opposed to a single state virtual school.

The rapid growth of virtual education presents unique challenges to education policymakers throughout the United States. Due to widespread concerns related to access and equity in public elementary and secondary education, educators have continued to seek funding, through legislation, for virtual schools. Whether a state selects a centralized model or allows each student to choose a public or private virtual school option, the promotion and development of virtual schools in the United States has proven to be a primary issue for public education policymakers.

The cost-effectiveness of virtual schools compared to traditional, brick-and-mortar schools is an ongoing issue for state policymakers and school administrators. Given limited data, financial analysis related to long-term return on investment is difficult. The average startup costs for an elementary and secondary virtual school is approximately $1.6 million.[51] Although these costs are significant, the potential for long-term savings is greater than with a brick-and-mortar school because a virtual school does not have the same operational costs—maintenance, utilities, security— and virtual schools typically have fewer teachers and administrators. At the same time, local school districts face additional overhead costs associated with the rapid growth of virtual education. Second, virtual schools that receive payment from school districts for each student enrolled could add to districts' overhead costs and result in a reduction in efficiency. In addition, when families opt for virtual schools instead of home-schooling, the financial burden shifts to school districts and taxpayers.

One could argue that the unrestricted school choice represented by virtual schools has diluted local political control.[52] By affording parents and students the opportunity to choose between a virtual school or a traditional brick-and-mortar school, virtual schools have become the *de facto* educational vouchers of the 21st century, ensuring ongoing competition and education reform. However, with the inherent inequity of the digital divide, virtual schools could become the great equalizer, ensuring all students are afforded the same educational opportunities—regardless of socioeconomic status or geographical barriers.

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Utilizing Online Education in Florida to Meet Mandated Class Size Limitations

Kari Ann Mattox

Introduction

With the passage of a state constitutional amendment in 2002, Florida school districts faced the challenge of meeting class size mandates in core subjects, such as mathematics, English, and science by the 2010-2011 school year, or face financial penalties.[1] Underpinning the amendment's goals was the argument that smaller classes are more effective because teachers have more time for one-to-one interaction with students which in turn leads to greater academic success. Although the state has appropriated more than $20 billion since 2002 to assist school districts in compliance,[2] opponents have argued that the amendment is not funded adequately. As a result, some school districts have recently sought alternatives like online or virtual education to reduce class size in traditional brick-and-mortar schools.[3]

Instead of admonishing school districts for what would appear to be an evasion of the spirit of the class size amendment, the state permits and even promotes online education as a means to attain mandated class sizes and create greater public school choice. The purpose of this analysis is to look at the history, role, and use of online education in Florida in general and specifically with regard to its use in meeting the class size constitutional mandate.

Online Education in Florida

Florida led the way in the use and expansion of online education with the creation of the Florida Virtual School (FLVS) in 1997, the country's first statewide Internet-based public high school.[4] In 2000, the Florida legislature established the FLVS as an independent education entity with its own board of trustees who had the authority to enter into agreements with distance learning providers and to establish rules, policies, procedures, and numerous other responsibilities.[5]

FLVS is an online educational program that uses the Internet to provide course instruction to K-12 students. As part of the Florida public school system, FLVS serves students in all 67 school districts in addition to students in 49 other states and 46 countries.[6] Enrollment for FLVS is open to public, private, and home-schooled students; and students outside of Florida can enroll on a tuition basis. FLVS offers more than 100 courses including core courses, electives, honors courses, and advanced placement courses, which are taught by over 1,200 staff members who hold a valid Florida teaching certificate and are certified in the subject matter they teach. When first opened in 1997, FLVS had 77 enrollments in five courses;[7] in 2010-2011, FLVS served over 122,000 students within 259,928 course enrollments.[8] Students may open enroll in courses at FLVS, which means they do not have to wait until the start of a new semester to begin course work.[9] This feature allows students to catch up on academic requirements they may be lacking and to accelerate their studies, if they wish, to earn a high school diploma earlier.

FLVS is accredited by the Southern Associate of Colleges and Schools (SACS). When schools are accredited by SACS, school districts agree to accept credits from other SACS-accredited or regionally-accredited schools.[10] Initially, FLVS was not a high school diploma-granting entity. School districts accepted credits earned by the student through FLVS which were then applied to the diploma requirements for the individual school district. However, beginning in the 2012-2013 school year, a diploma option will be available through the FLVS full-time (FT) program in collaboration with Connections Academy, a for-profit company.[11] (Prior to the creation of FLVS-FT, Connections Academy was a full-time K-8 program operated through the Florida Department of Education.) FLVS-FT will be available for all public school students (K-12) and home-schooled students, grades 6-12. Under this option, FLVS-FT will be the school district of record rather the student's residential district.

In addition, all Florida school districts offer a full-time online education option for their students through the District Virtual Instructional Program (VIP).[12] Eligibility for school district VIP programs is limited to students in grades K-12 living in the district's attendance area under specific criteria. Further, according to state statute:

> To be eligible, students must show that they (a) were enrolled in and attended a public school in Florida the prior year and were reported for funding during the preceding October and February, (b) are dependent children of a member of the military who was transferred within the last 12 months to Florida pursuant to the parent's permanent change of station orders, (c) were enrolled during the prior school year in a school district online instruction program or a state-level K-8 online school program under Section 1002.415, F.S., or (d) have a sibling who is currently enrolled in a district online instruction program and that sibling was enrolled in such program at the end of the prior school year.[13]

School districts are allowed to deliver the VIP in several ways: "... contract with FLVS to provide instruction, establish a franchise of FLVS, contract with online learning providers approved by the Florida Department of Education (FLDOE), enter into an agreement with another school district for the services, enter into a multidistrict agreement, contract with community colleges, enter into an agreement with a virtual charter school, or operate their own programs."[14]

As of fall 2010, thirty-nine school districts operated franchises of FLVS, offering FLVS courses to public, private and home-schooled middle and high school students (grades 6-12).[15] School districts

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operated the franchises, and district teachers provided the instruction, while FLVS provided curriculum, learning resources, and tools, in addition to professional development and mentoring for district teachers and administrators. However, with FLVS-PT's new stature as a school district of record, it remains to be seen how school districts that continue to offer the FLVS-FT program through VIP will be affected.

State Funding for Online Education in Florida

From 1997 to 2003, FLVS was funded through a legislative appropriation.[16] In 1997, FLVS received an appropriation of $1.3 million.[17] In the next year, the appropriation increased to $4.3 million, and funding multiplied over the next several years as FLVS became the first online school funded by state public education FTE (full-time equivalent) moneys.[18] However, since 2003-2004, its funding source has been the Florida Education Finance Program (FEFP),[19] and funding is based on the successful completion of courses, either passed or credits earned.[20] Each half-credit course that a student successfully completes generates 0.0834 unweighted FTE, while a student taking six courses per semester generates a 1.0 FTE, i.e., full-time funding.[21] This approach contrasts with more traditional funding of brick-and-mortar schools with face-to-face instruction where districts receive state aid based upon full-time equivalent (FTE) students or "seat time," as defined by statute.[22]

In the 2009-2010 school year, FLVS received approximately $101.3 million in funding, based upon $469 per student per semester course.[23] Although FLVS is a public school, it does not receive funding for some services that a school district receives through the FEFP, such as Exceptional Student Education and Supplemental Academic Instruction aid.[24] Therefore, some students with disabilities or English language learners may not find FLVS their best education choice.[25] Also, as a virtual school, FLVS does not receive state transportation or capital outlay funding. However, it does receive state aid for instructional materials, teacher training, class size reduction, and costs associated with student withdrawals.

Like FLVS, the VIP program is also funded through the FEFP,[26] and funding is based upon successful completion of courses or credits.[27] For elementary students (K-5), funding is based upon by promotion to the next grade; and, in middle school (grades 6-8), funding is tied to course completion with a passing grade. In high school (grades 9-12), funding is linked to the number of credits earned.[28] Since funding is based upon successful completion a grade level, courses, or credits rather than FTE, school districts receive funding throughout the year for VIP programs.

Accountability

FLVS courses are designed to meet Florida's Sunshine State Standards,[29] and FLVS courses have the same course numbers and descriptions as courses offered in traditional public schools in Florida.[30] Successful completion of an FLVS course confirms mastery of the standards that are tested on the Florida Comprehensive Assessment Test (FCAT).[31] The Florida Department of Education provides the following information on the FCAT:

> The FCAT began in 1998 as part of Florida's overall plan to increase student achievement by implementing higher standards. The FCAT, administered to students in Grades 3-11, consists of criterion-referenced tests (CRT) in mathematics, reading, science, and writing, which measure student progress toward meeting the Sunshine State Standards (SSS) benchmarks. During the 2010-11 school year, Florida began the transition from the FCAT to the FCAT 2.0 and Florida End-of-Course Assessments to assess the understanding of the Next Generation Sunshine State Standards adopted in 2007.[32]

FLVS teachers, who guide the lessons, evaluate student work, and provide constructive feedback and grades for the students as well as communicate with students and parents by telephone,[33] hold Florida teaching certificates and are certified in the subjects they teach.[34] Many also hold national certification through the National Board of Professional Teaching Standards.[35] Teachers in VIP programs also meet Florida teaching requirements.

Using Online Learning to Meet Class Size Mandates

Despite Florida's well-developed and recognized online education system, it had not been widely used until recently when it became attractive to some school districts as a means to meet state class size mandates in core courses. The constitutional amendment required full implementation beginning in 2010 with the following maximum class sizes in core courses: 18 students in pre-kindergarten through grade 3; 22 students in grades 4 through 8; and 25 students in grades 9 through 12. The case of the Miami-Dade County Schools described in this section presents the approach of one school district to meet these mandates through online learning.

As background, the Miami-Dade County Public School system is large and diverse. According to the district website, "Miami-Dade County Public Schools is the fourth largest school district in the United States, comprised of 392 schools, 345,000 students and over 40,000 employees... [T]he school district stretches over 2,000 square miles ...ranging from rural and suburban to urban cities and municipalities...[D]istrict students speak 56 different languages and represent 160 countries."[36] In the fall of 2010, the Miami-Dade County Schools enrolled over 7,000 students in online classrooms dubbed "e-learning labs" in order to meet requirements of Florida's class size mandate.[37] Because the state places no limits on class sizes for virtual courses, the school district could move unlimited numbers of students to e-learning labs to reduce the size of face-to-face classes. However, there was a backlash. Despite most schools holding orientations for e-learning labs, many parents and students asserted that they had not been informed.[38] Also, a controversial feature of the e-learning labs was their use of on-site "facilitators" rather than certified teachers to guide students and ensure they were making progress.[39] Although a certified teacher in the course content was available online, the effectiveness of the e-learning labs was questioned by some, particularly since there was no face-to-face inter-action with a teacher to supplement the computer lab experience.[40] The president of the United Teachers of Dade County challenged the use of e-learning labs, arguing that they constituted "cheap
education."[41] She also argued that online education was not the right fit for all students because it required a certain amount of maturity, and many students would simply stop and give up if a teacher is not present and readily available for assistance.[42] Even advocates of online learning, like Michael G. Moore, professor of education at Pennsylvania State University, tend to agree, stating that a "blended learning concept" which combines face-to-face interaction with online learning has benefits and can be just as effective as complete face-to-face classroom instruction particularly when

coupled with proper curriculum design and teacher instruction within the classroom. Moore noted also that much of the success of online learning stems from the maturity and sophistication of the student and his or her ability to remain on task.[43]

In 2011, the Miami Dade Schools contracted with an outside organization to evaluate and suggest improvements to the e-learning lab concept, which the contractor referred to as "online learning labs," as well as to develop a guide for other schools and districts interested in this approach.[44] The results captured many of the early concerns expressed by parents and students, and suggested limiting the size of labs to 30 to 40 students. However, the report was generally supportive of the use of facilitators and the lack of face-to-face instruction, both major concerns of parents.[45]

The Miami-Dade County Public School system is currently in its second year of using e-learning labs, and the district has expanded enrollment in them to approximately 10,000 students.[46] The Florida Department of Education now maintains a web site to tout this approach, renamed "virtual learning labs" (VLLs), and repackaged as "blended learning," using the Miami-Dade approach as an exemplar. It is important to note that there is no single authoritative definition of "blended learning." In general, it is used to describe an approach that contains both traditional face-to-face instruction and online education. The only face-to-face component of e-learning labs was the presence of a facilitator, which would seem to stretch the boundaries of how blended learning is generally defined. However, in all fairness, the two other examples of blended learning on the FLDOE web site include face-to-face instruction, e.g., an AP (Advanced Placement) Learning Lab in Palm Beach County and a World Languages Learning Lab in Holmes County.[47]

Discussion and Conclusions

Prior to the enactment of the class size reduction amendment in 2002, Florida had a well-established statewide online education system that dated back to 1997. As such, when some school districts experienced difficulty in meeting the class size mandates due to financial constraints, it is not surprising that they might turn to online education as a solution, in large part because there were no stated limits on the size of virtual classes. As such, a school district's "overflow" of students in face-to-face classes could be diverted to online courses. Furthermore, school districts had a strong incentive to do so because the state levied fines for noncompliance with the class size mandate.

The case of the Miami-Dade County Public Schools is illustrative of the economies of scale e-learning labs offered. The two major financial issues associated with class size reduction are personnel costs and capital costs. Class size reduction requires additional teachers and additional classrooms. The hiring of professional personnel is a major financial investment for any school district. Also, unless the school district has excess capacity, i.e., empty classrooms, it must acquire more either through the lease/purchase of temporary/portable structures or through construction. In contrast, the set-up of e-learning labs is generally less costly in terms of both personnel and capital costs. In addition, in the Miami-Dade example, the school district further reduced personnel and capital costs; that is, not only was the size (in terms of numbers of students) of an e-learning lab much larger than what the state permitted for face-to-face classrooms, but also labs were staffed by facilitators—a less expensive alternative than certified teachers. To be fair, it should be noted that certified teachers in the relevant content areas were accessible online. However, an important caveat is that online teachers usually had many more virtual students than would have been allowed in a face-to-face classroom. If a school already had a computer lab, costs associated with its conversion to an e-learning lab might be minimal.[48] Even if a traditional classroom had to be fitted as an e-learning lab, it is likely the labor and equipment costs would be far below new construction or the lease/purchase of temporary classrooms.

Although the state permitted this type of end run around class size mandates, and even promoted it, Miami-Dade's first year experience with e-learning labs was not all smooth sailing. Some parents rebelled against their children being placed in e-learning labs without notification, much less permission. Also, there was push back against the facilitator model because it lacked face-to-face interaction with teachers in the subject area. Relatedly, some parents and classroom teachers objected to the lack of screening of students prior to their placement in e-learning labs, asserting that not all students do well in an online learning environment. In response, the school district contracted with an outside organization to conduct an evaluation of the first year experience and has addressed some of the concerns.[49] However, the facilitator model remains intact.

Florida's class size mandate, while well-intentioned, may be a cautionary tale to other states. Looking to small class size research,[50] a number of states have sought to lower class size in the hopes of improving student achievement. However, across-the-board class size reduction requires a significant, long-term financial investment by the state in order to ensure that school districts have adequate financial resources for added personnel and capital costs. That can prove to be challenging during difficult economic times, and, if insufficient state funding results, unintended consequences are likely.

While online learning has exploded in popularity in higher education, it is less prevalent and less studied in elementary and secondary education.[51] Parents of school-aged children generally have less experience with it, and hence they may be less supportive of its substitution for traditional face-to-face instruction. They may also be concerned that an online course is not as comprehensive or rigorous unless, like Florida, their state holds online education providers accountable by requiring that online courses meet all of the same academic standards as those offered face-to-face. Regardless of parental doubts, part-time or full-time online learning is now a reality in 48 of the 50 states, including Washington, D.C.[52]

In addition, in Florida, online education is viewed by state policymakers as an important venue for public school choice either through the state virtual school, the school district of residence, or a virtual charter school. Florida policymakers' focus on online education was further reinforced by the 2011 passage of the Digital Learning Now Act, which requires all students to have at least one online course for high school graduation.[53]

Undoubtedly, online learning has a number of potential positive impacts, such as providing students with access to expanded curricular offerings, including acceleration opportunities as well as credit recovery. In particular, smaller school districts may have insufficient students or resources to offer face-to-face classes in

multiple foreign languages or advanced sciences and mathematics. In general, online education offers greater flexibility that may appeal to students and their families for a number of reasons. Online coursework may be a viable option for students with medical or behavioral issues who have difficulty in traditional classroom settings. Others advocate online learning, at least in high schools, as a means to prepare students for postsecondary education where online courses have become common, or as a means to be more comfortable with technology in the workplace. Nonetheless, student equity concerns, often referred to as the "digital divide," remain; that is, students from poor and low income families may be less likely to have access to a home computer and Internet access that is essential for full-time virtual study, an important adjunct to approaches like Miami-Dade's e-learning labs.[54]

In sum, in Florida, what began as a state initiative to reduce the size of face-to-face classes to optimize student achievement consistent with education research findings morphed into an expansion of online learning due to insufficient state funding. To comply with the state mandate, school districts took advantage of a loophole in state law that places no limits on the size of virtual classes. At the same time, the state backed away from its commitment to smaller class size not only by permitting the use of online education to evade the intent of the 2002 constitutional amendment, but also by encouraging it. In essence, what began as state-mandated class size reduction became an expansion of K-12 online learning accompanied by a shift in state policy to promote it as a strategy to evade compliance with the class size amendment and as a means to expand school choice. Legislators then took the additional step of mandating that every high school graduate must have taken at least one online course. Ironically, while there is a body of research supporting improved achievement with small class size, little systematic research of the impact of online education on K-12 student achievement exists.

The Florida experience with class size reduction described in this article is a case study in the law of unintended consequences, but it is not rare. Class size reduction is one of the most expensive of education reforms because it requires increased personnel and capital expenditures. It requires considerable start-up expenses, as well as a sustained financial investment of state resources, to maintain smaller class sizes. As the partisan make-up of legislatures and governors' offices ebbs and flows, this commitment may waiver. When state economies suffer setbacks, as in the recent recession and its aftermath, budget cuts may ensue that affect the ability of school districts to implement and maintain smaller class sizes. In some states, this has led to modification of state laws to back away from class size reduction initiatives,[55] but in Florida, class size reduction is enshrined in the state constitution, and modification of a state constitution is generally far more difficult than modification of state legislation. Given Florida's well-developed online education system with unlimited class size, the state was uniquely situated to avoid the arduous task of repealing or modifying a constitutional amendment by expanding online education as the Miami-Dade County Public School system did through creative approaches like e-learning labs, also referred to as online or virtual learning labs.

The central policy question is how does the expansion of online learning in Florida at the expense of reduction in the size of face-to-face classes affect student achievement? This is a policy question that demands further study. The effectiveness of online education in terms of academic success for elementary and secondary students is largely unexplored while the research literature on class size reduction is not unanimous in it support.[56]

Endnotes

[1] FL. CONST. art. IX, §1.

[2] Florida Department of Education, "Class Size Amendment," http://www.fldoe.org/classsize.

[3] For the purposes of this article, the terms online and virtual education are used interchangeably.

[4] Florida Virtual School, "Quick Facts," http://www.flvs.net/areas/aboutus/Pages/QuickFactsaboutFLVS.aspx.

[5] Ibid.

[6] Ibid.

[7] Florida TaxWatch Center, *Final Report: A Comprehensive Assessment of Florida Online School* (Tallahassee, FL: Florida TaxWatch Center for Educational Performance and Accountability), 9, http://www.inacol.org/research/docs/FLVS_Final_Final_Report(10-15-07).pdf.

[8] Florida Virtual School, "Quick Facts."

[9] Florida TaxWatch Center, *Final Report*, 5.

[10] See, Florida Department of Education, "Florida Online School as School Choice Option," Memorandum from Dr. Eric J. Smith to District School Superintendents and others, January 8, 2009, http://info.fldoe.org/docushare/dsweb/Get/Document-5250/dps-2009-007.pdf.

[11] Connections Academy, "Florida Virtual School Full Time Enrollment," http://www.connectionsacademy.com/florida-school/enroll.aspx.

[12] Evergreen Education Group, "Keeping Pace with K-12 Online Learning: Data and Information," http://kpk12.com/states/florida; and Florida Department of Education, "Florida Public Virtual Schools: District Virtual Instruction Programs," http://www.fldoe.org/schools/virtual-schools/districtVIP.asp

[13] FLA. STAT. §1002.45(5) (2010).

[14] Evergreen Education Group, "Keeping Pace with K-12 Online Learning."

[15] Florida Department of Education, "Florida Public Online Schools: District Franchises of Florida Online School (FLVS)," http://www.fldoe.org/schools/online-schools/district-franchises.asp.

[16] Florida TaxWatch Center, *Final Report*, 28.

[17] Ibid., 27.

[18] Ibid.

[19] According to *2010-11 Funding for Florida School Districts*, a statistical report of the Florida Department of Education (http://www.fldoe.org/fefp/pdf/fefpdist.pdf): "The FEFP was established in 1973 by the Florida Legislature and is the state policy on equalized funding to guarantee to each student in the Florida public education system the availability of programs and services appropriate to his

or her educational needs that are substantially equal to those available to any similar student notwithstanding geographic differences and varying local economic factors. The FEFP is the main method for funding the operating costs of Florida school districts and is the basis for financing Florida's K-12 educational programs. A key feature of the FEFP is that it bases financial support for education upon the individual student participating in a particular educational program rather than upon the number of teachers or classrooms. FEFP funds are mainly determined by multiplying the number of full-time equivalent (FTE) students in each of the funded education programs by cost factors to obtain weighted FTE students. Weighted FTE students are then multiplied by a base student allocation and by a district cost differential in the major calculation to determine the base funding from state and local FEFP funds. Program cost factors are determined by the Legislature and represent fundamental cost differences among the FEFP programs. To provide equalization of educational opportunity, the FEFP formula recognizes: (1) varying local property tax bases; (2) varying education program costs; (3) varying costs of living; and (4) varying costs for equivalent educational programs due to sparsity and dispersion of the student population" (p. 1). Traditional public schools are funded according to the number of students enrolled (FTE). In addition to state revenues, property taxes per district are used.

[20] Florida Department of Education, "Florida Online School as School Choice Option."

[21] Florida TaxWatch Center, *Final Report*, 7.

[22] FLA. STAT. §1011.62 (2010).

[23] Evergreen Education Group, "Keeping Pace with K-12 Online Learning."

[24] Florida TaxWatch Center, *Final Report*, 7.

[25] Ibid., 12.

[26] FLA. STAT. §1002.45 (2010).

[27] Evergreen Education Group, "Keeping Pace with K-12 Online Learning."

[28] Sally Roberts, "Online Education Reporting," PowerPoint presentation for the Florida Department of Education, slide 8, http://www.fldoe.org/schools/online-schools/pdf/district-reporting-franchise.pdf.

[29] According to Education.com: "The Sunshine State Standards were approved by the State Board of Education in 1996 to provide expectations for student achievement in Florida. The Standards approved in 1996 were written in seven subject areas: Language Arts, Mathematics, Science, Social Studies, Foreign Languages, the Arts, and Health and Physical Education. Each subject was then divided into four separate grade clusters (PreK-2, 3-5, 6-8, and 9-12)." See, State of Florida Academic Standards, "What are the Florida Academic Standards?" http://www.education.com/reference/article/Ref_State_Florida/?page=2.

[30] According to a January 8, 2009, Florida Department of Education memorandum, "Florida Online School as School Choice Option," from Dr. Eric J. Smith [boldface and italics in original]: "SBE Rule 6A-1.09441, FAC, requires that courses which are funded through the FEFP and courses for which students may earn credit toward high school graduation must be listed in the ***Course Code Directory***. The ***Course Code Directory***, which is incorporated into the rule, also states that districts must use course numbers and official abbreviated titles as listed in this directory on permanent records and report cards. All FLVS courses are based on the state standards and are listed in the ***Course Code Directory***" (p. 4).

[31] Florida TaxWatch, *Final Report*, 5.

[32] Florida Department of Education, "The Florida Comprehensive Assessment Test (FCAT)," http://fcat.fldoe.org/fcat.

[33] Florida Department of Education, "Florida Online School as School Choice Option."

[34] Evergreen Education Group, "Keeping Pace with K-12 Online Learning."

[35] Florida Department of Education, "Florida Online School as School Choice Option."

[36] See, http://www.dadeschools.net.

[37] Laura Herrera, "In Florida, Online Classrooms with No Teachers," *New York Times*, January 17, 2011, http://www.nytimes.com/2011/01/18/education/18classrooms.html?_r=4&emc=eta1 we.

[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] Cited in Trip Gabriel, "More Pupils Are Learning Online, Fueling Debate on Quality," *New York Times*, April 5, 2011, http://www.nytimes.com/2011/04/06/education/06online.html?pagewanted=1&_r=2&hp.

[42] Ibid.

[43] Moore, cited in Herrera, "In Florida, Online Classrooms with No Teachers."

[44] Marianne Bakia, Kea Anderson, Eryn Heying, Kaeli Keating, and Jessica Mislevy, *Implementing Online Learning Labs in Schools and Districts: Lessons from Miami-Dade's First Year* (Menlo Park, CA: SRI International, November 2011).

[45] Ibid., 3.

[46] Florida Virtual School, "Virtual Learning Lab," http://www.flvs.net/educators/Pages/Virtual-Learning-Lab.aspx.

[47] Florida Virtual School, "Models for Virtual Learning Labs across Florida," http://www.flvs.net/educators/VLL/VLL%20Models.pdf.

[48] For a discussion of functional requirements and associated costs for online learning labs, see Marianne Bakia, Kea Anderson, Eryn Heying, Kaeli Keating, and Jessica Mislevy, *Implementing Online Learning Labs in Schools and Districts: Lessons from Miami-Dade's First Year* (Menlo Park, CA: SRI International, November 2011).

[49] See, Bakia et al., *Implementing Online Learning Labs in Schools and Districts*.

[50] See, for example, C.M. Achilles, B.A. Nye, J.B. Zaharias, and B.D. Fulton, "The Lasting Benefits Study (LBS) in Grades 4 and 5 (1990–1991): A Legacy from Tennessee's Four-year (K–3) Class-size Study (1985–1989)," Project STAR, a paper presented at the North Carolina Association for Research in Education, Greensboro, North Carolina, January 14, 1993.

[51] U.S. Department of Education, *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies* (Washington, DC: Office of Planning, Evaluation, and Policy Development, 2010).

[52] iNACOL (International Association for K-12 Online Learning), "Fast Facts about Online Learning," 1, accessed September 29, 2011, http://www.inacol.org/press/docs/nacol_fast_facts.pdf.

[53] FLA STAT §1002.321, (2011).

[54] Dave Breitenstein, "Online School in Session This Year in Florida," News-Press.com, September 7, 2011, http://www.news-press.com/article/20110908/NEWS0104/110907051/0/LIFESTYLES/Online-school-session-year-Florida?odyssey=nav%7chead.

[55] Grover J. Whitehurst and Matthew M. Chingos, *Class Size Research and What It Means for State Policy* (Washington, DC: Brown Center on Education Policy, Brookings Institute, 2011).

[56] See, for example, the Spring 2012 special issue (Vol. 40, no.1) of *Educational Considerations* on class size reduction research. http://coe.ksu.edu/edconsiderations/current.html.

A Tale of Two Fiscal Policies: Entrepreneurial and Entropic

Scott R. Sweetland

Introduction

Ohio's school finance history can be characterized as progressive. Early state funding for school libraries was apportioned from state property tax receipts and distributed to local schools on a per-pupil basis. When equalization funding was invented to help poorer school systems, Ohio adopted that model of funding. Later, when policymakers placed greater emphasis on teaching, Ohio distributed state funds based on teacher units. Throughout the 1990s, Ohio grappled with the elusive concept of adequacy of school funding. The new millennium ushered in an era of data collection, evaluation, and assessment.

While the aforementioned educational progressions were evolving, the economy was demonstrating its cyclical nature. Tax receipts increased during economic expansions, and tax receipts decreased during economic contractions. Optimism for school funding ensued during expansions, and demands for increased productivity were characterized during contractions. Although this pattern of optimism and demand for productivity has been difficult to empirically address, we can learn much about schooling by studying this tension in political economy.

Superintendents and other school administrators live with tensions in political economy. The voting public believes school funding is fixed when the economy expands and new state programs are introduced. Administrators are publicly criticized when, strained for resources, their schools cannot perform within the "do more with less" paradigm. This research begins to trace patterns of political economy in schooling. I emphasize the last economic recession along with funding for schools to describe challenges for school administrators. I also emphasize entrepreneurial movements in schooling to describe competition that public school administrators face. A jaundiced viewpoint asserts that public school funding suffers entropy while entrepreneurial school funding expands.

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Litigation Background

The most controversial and definitive Ohio school finance reform judicial decisions began and ended with *DeRolph v. State* (1997, 2003). Although relevant court decisions occurred before 1997, just as others will occur afterward, these two-of-five *DeRolph* decisions encompassed the spirit, intent, and outcomes of school finance reform litigation in Ohio.

The 1997 *DeRolph* decision declared Ohio's school funding system unconstitutional. Fundamentally, the Ohio constitution was interpreted to mandate a thorough and efficient system of common schools throughout the state. After elaborate presentations of evidence by both plaintiffs and defendants, in addition to diverse deliberations among Ohio Supreme Court justices, Ohio's school funding system failed; that is, the system was found to fail tests of being thorough and efficient. Underlying this judgmental test of thoroughness and efficiency, the following rationales were expressed:

(1) A "thorough" system is not starved for funds.
(2) An "efficient" system does not lack teachers, buildings, and equipment (*DeRolph v. State*, 1997, 741).

The 1997 *DeRolph* decision furthermore dictated that the state supreme court would retain jurisdiction over the case's final resolution. Ohio plaintiffs were supported by this dictation. In other states, when supreme court justices declared school funding systems unconstitutional, they did not retain oversight. Lack of judicial oversight was one explanation for why school finance reforms waned (Walter and Sweetland 2003).

Although three other *DeRolph* decisions followed the 1997 Ohio Supreme Court decision, the 2003 *DeRolph* decision stipulated that the high court no longer retained jurisdiction over the case's final resolution and outcomes (Maxwell and Sweetland 2004). For plaintiffs, the good news was that Ohio's school funding system was, as reiterated by the court, unconstitutional. The bad news was that, barring judicial oversight, perceived gains in winning an unconstitutional ruling could result in null financial outcomes.

Throughout the same period of time, entrepreneurial activities in education were supported. For example, a charter school program was authorized in 1997; that program's enrollment climbed to approximately 94,000 by 2010, more than 5% of statewide enrollment (Ohio Department of Education 2010a). The blatant irony was that entrepreneurial schooling was funded while traditional schooling was underfunded.

Recessionary Impact

Throughout litigated reforms, the economy was expressing typical ups and downs. Economic expansions made possible greater amounts of funding for schools. Economic contractions foreclosed additional funding and threatened already established school funding. The reality was that without substantial increases in state tax receipts, school finance reform would stall. Table 1 presents major tax receipts for the state of Ohio, 1997 2003.

As revealed in Table 1, the rate of change in tax collections was positive and substantial during the first four years of *DeRolph* decisions. The next three years, however, as the Ohio Supreme Court was attempting to finalize *DeRolph* proceedings, the overall rate of change in tax collections became stagnant. The state simply did not have additional money to put into the school funding system. This economic reality should have impacted entrepreneurial activities in

Table 1
Major Tax Receipts for the State of Ohio, 1997-2003

Type of Tax	Tax Receipts by Year (in millions of dollars)						
	1997	1998	1999	2000	2001	2002	2003
Income	6,018.5	6,946.2	7,173.8	8,084.6	8,119.3	8,157.1	8,256.5
Sales	5,223.0	5,535.1	5,827.4	6,214.0	6,237.1	6,435.0	6,701.4
Corporate	1,220.3	1,268.7	1,150.3	1,029.9	973.0	774.4	808.3
Utility	672.9	708.0	670.6	675.3	674.3	300.0	255.5
Total	13,134.7	14,458.0	14,822.1	16,003.8	16,003.7	15,666.5	16,021.7
Change (%)		10%	3%	8%	0%	-2%	2%

Source: Ohio Department of Taxation (2003).

education as well as traditional schooling. Nonetheless entrepreneurial activities expanded.

Meanwhile, Ohio law required that public school districts calculate and report five-year financial projections. The projections included total revenue and other financing sources, and total expenditure and other financing uses to illustrate the financial position of each district. The projections were used to forecast potential school district deficits and to guide the adjustment of spending patterns as well as the pursuit of additional revenues. The Ohio Department of Education analyzed five-year forecasts to determine whether a district was likely to encounter a deficit during a three-year period. Table 2 presents school district projected deficits, 2002-2004.

The growth in the number of school districts that were projected to incur deficits was alarming, with 2002 as the year when state tax collections were most impacted by recession. As revealed in Table 2, the percentage of school districts that were projected to incur deficit financial positions more than doubled in just two years. The magnitude of this doubling was immense as well, impacting more than one in four public school districts in Ohio. Given the historical pattern of state tax collections, it was more than likely that the affected districts' administrators would need to ask voters to approve additional school tax levies. Asking voters for more money was particularly daunting during a recessionary period. Also, the task would be an uphill battle because many citizens had been led to believe that the school funding system was fixed.

Table 2
School District Projected Deficits, 2002-2004

Projected Deficits	Number of Districts by Year		
	2002	2003	2004
Deficit in Current Year	9	21	35
Deficit in Second Year	14	27	50
Deficit in Third Year	50	69	78
Total Deficit Forecast	73	117	163
Proportion of All Districts (%)	12%	19%	27%
Cumulative Change Rate (%)		60%	123%

Source: Ohio Department of Education, 2003.

The alternative to raising local tax revenues was for the 27% of Ohio's school districts that forecasted deficits to cut school programs and services. This action would have directly countered stepped-up academic requirements that coincided with the *DeRolph* litigation as well as the federal No Child Left Behind Act requirements. Academic gains would have been jeopardized, and new standards of achievement would have been doomed. Moreover, if pre-*DeRolph* patterns of educational investment continued to hold true, then the school districts that would have been forced to embark on educational program reductions would have been those districts most in need of their current, and perhaps expanded, educational programs.

It is interesting to note that throughout 1997 to 2004, state foundation funding increased; that is, the nominal foundation amount increased. Unfortunately, foundation funding in Ohio suffered technical flaws. The most infamous technical flaw involved the foundation program "charge-off." The charge-off was the amount of the foundation program that each school district was responsible for funding locally. Set at 23 mills of the local tax base, the charge-off facilitated fiscal equalization in that wealthier school districts ended up being responsible for greater proportions of their foundation funding. This arrangement appeared to be reasonable until valuation and taxation aspects of the local tax base were considered. For example, as property valuations increased statewide, the charge-off calculus at the state level captured 23 mills of the increase. In many instances, however, the local level of taxation did not capture additional revenue owing to the same increase in tax base. Property tax limitations prevented some local tax revenues from increasing automatically when tax base property valuations increased. Because the state calculus operated as though local revenues automatically rose, the technical effect was dubbed "phantom revenue." Many school district administrators complained that they could only capture this revenue by asking local voters to approve new school tax levies.

Phantom revenue and other technical flaws in Ohio's school funding system were associated with lever and pulley effects. Those effects occurred among the foundation program funding amount, the foundation program charge-off, and property tax limitation

Table 3
Hypothetical Illustration of Charge-Off Shift

	Base Year per Pupil	*Growth Rate*	*Next Year per Pupil*	*Change per Pupil*
Foundation Amount	$5,000	3%	$5,150	$150
Charge-Off Millage	23		23	
Local Property Valuation	$110,000	6%	$116,600	$6,600
Local Tax Burden	$2,530		$2,682	$152
State Funding	$2,470		$2,682	-$2

operands. Yet another systemic flaw involved charge-off shift. This technical flaw occurred when property valuations increased at a greater rate than foundation program funding. The net result was a shift in fiscal burden from state to local tax bases, owing specifically to the foundation program charge-off. Table 3 presents a hypothetical illustration of charge-off shift.

As revealed by Table 3, charge-off shift occurred when local property valuations increased by 6% while the foundation amount increased by 3%. When legislated increases in foundation funding were modest, the state inadvertently leveraged its commitment to school funding against the local property tax base. As illustrated by example, the local property valuation increase ($6,600) was sufficient to generate the full foundation amount increase ($150) as well as additional funds that actually replaced a very small amount of base year state funding (-$2). Charge-off shift increased the local tax burden by $152; that is, the full amount of the increase in state foundation program funding for the period as well as a portion of the state's historical commitment to school funding. School district administrators once again found themselves fighting an uphill battle.

In summary, traditional schooling was promised relief. That relief was symbolized by extensive litigation that resulted in a unconstitutional state supreme court ruling that the system of funding schools in Ohio failed to meet the thorough and efficient clause of the state constitution. The major problem was that the economy faltered and state coffers were stretched thin. Associated problems were technical flaws in the funding formula that were not fixed. School administrators suffered uncertainty and projected deficits.

Entrepreneurial Schooling

While funding for traditional schooling stalled, entrepreneurial schooling, i.e., schooling outside traditional public schools, expanded. Such alternatives in Ohio included vouchers, charter schools, Internet schools, and home schooling.

Vouchers

While adequate funding for traditional schooling was pursued, the economy turned downward, and the availability of funding diminished. One might have then expected entrepreneurial schooling to suffer funding reductions as well. The opposite outcome occurred. Even though there was not enough funding available for traditional schooling, entrepreneurial schooling expanded. Proponents of vouchers were early beneficiaries of the entrepreneurial schooling movement. Ohio's school voucher program, as well as its development, has been described by Sweetland (2000a; 2002b). The Ohio voucher program was established in 1995. This program was one of the contemporary, but early voucher "experiments," and was initially limited to the city of Cleveland. By fiscal year 2000, total authorized enrollment in the voucher program was 4,000 schoolchildren. The cost to taxpayers was originally $2,250 per pupil, but later the cost grew to $3,450 (Ohio Department of Education 2010b). The measured cost to the public school district was zero. The voucher program was named "The Cleveland Scholarship and Tutoring Grant Program." By 2009, there were 5,388 students and 39 schools participating in the program (Ohio Department of Education 2009).

Since the advent of the Cleveland voucher program, other voucher programs were created across Ohio. Litigation ensued and, together with political persuasion, the expansion of Ohio vouchers was dampened temporarily. Eventually, however, a new voucher program was developed. The Educational Choice Scholarship Pilot Program was established for fiscal year 2007 to accommodate 14,000 schoolchildren. Under this voucher program arrangement, families from low performing schools statewide were permitted to apply for vouchers to attend private schools. Eighty-one public schools were impacted as of August 15th, 2007. The new voucher amounts were $4,250 for grades K-8 and $5,000 for grades 9-12 (Ohio Department of Education 2006a). As of October 2009, there were 11,722 students enrolled in the voucher program (Ohio Department of Education 2009). By 2011, the program was still limited to 14,000 students statewide, and the funding remained the same (Ohio Department of Education 2010c).

Charter Schools

Charter schools in Ohio were conceptualized as "community schools." Funding for community schools consisted of the foundation amount plus other adjustments that were awarded to the public school district of pupil residence. This funding flowed to the community schools. The Ohio Department of Education (2006b) described Ohio's community schools as public, nonsectarian units that operated independently from traditional public school districts.

Community schools were authorized in 1997, the same year that the *DeRolph* decision was rendered. Fiscal year 1999 marked the initial implementation of Ohio's community schools program. During that year, the program had 15 schools that served 2,245 children. Table 4 presents community schools and enrollment, 1999-2010.

Since inception, the number of community schools has grown to 323 and the number of children served by community schools to 94,269. Growth rates from 2001 through 2006 were phenomenal. The number of community schools grew at a rate exceeding 36%, or more than 42 schools per year. Community school enrollment was growing at an annualized rate that exceeded 43%, or more than 10,548 students per year. By 2010, growth in the number of

Table 4
Community Schools and Enrollment, 1999-2010

Fiscal Year	*Number of Community Schools*	*Growth (Number)*	*Growth (%)*	*Number of Children Served*	*Growth (Number)*	*Growth (%)*
1999	15					
2000	48	33	220%	9,032	6,787	302%
2001	68	20	42%	16,717	7,685	85%
2002	93	25	37%	23,628	6,911	41%
2003	133	40	43%	33,978	10,350	44%
2004	179	46	35%	46,938	12,960	38%
2005	266	87	49%	62,603	15,665	33%
2006	297	31	12%	72,318	9,715	16%
2007	313	16	5%	77,094	4,776	7%
2008	326	13	4%	82,868	5,774	7%
2009	332	6	2%	88,757	5,889	7%
2010	323	-9	-3%	94,269	5,512	6%

Sources: Jewell (2006); Ohio Alliance for Public Charter Schools (2011); Ohio Department of Education (2010a).

community schools slowed and actually became negative. The number of children served, however, continued to grow substantially.

Conclusion

While comprehensive public information about entrepreneurial schooling as well as data required for educated analysis were difficult to obtain, the pattern of policy administration was clear. Entrepreneurial, private-sector-centered activities such as voucher programs and charter schools expanded. At least in the case of charter schools, public funding that once went to traditional public schools was transferred directly to nontraditional, alternative schools. Meanwhile, growth in school funding resources for traditional public schools slowed substantially.

The old system was characterized by an inadequate school foundation program and dilapidated school facilities (Moyers 1996; Sweetland 2000b). Litigation promulgated remedies to increase foundation and facilities funding (Sweetland 2002a). Funding in both categories progressed substantially for roughly five years. Then, foundation funding stagnated in 2003-2004, and facilities funding slowed in 2005-2006. A new system emerged, cautiously maintaining traditional public schools while increasingly encouraging alternatives like vouchers and charter schools. A dual system of providing government sanctioned schooling was created.

On the surface, these changes seemed positive and progressive. Traditional schooling received the benefit of examination and improvement. The system of funding public schools officially adopted a methodology of adequacy that would eventually lead to resources for adequate student achievement. Entrepreneurial schooling was allowed, and its existence promised to provide new insights about education, organization, and achievement. The duality of the system made sense. The dual system did however espouse a major shortcoming: Lack of funding.

School district administrators were led to believe that their schools would receive more funding. That funding was provided for a while but then diminished. Entrepreneurial schooling may not have initially taken money away from school districts. Inevitably, though, entrepreneurial schooling would compete with traditional schooling for funding through the state budgeting process. Perhaps most overlooked were indirect costs to public school districts, e.g., costs associated with school administrators having to explain publicly what entrepreneurial schooling was available in the community. Moreover, there were direct costs associated with school districts having to compete with entrepreneurial schooling. In order to compete effectively, should school districts reallocate public funds to pay for marketing departments, salespeople, and advertising?

The unmeasured costs of entrepreneurial schooling that burdened traditional schooling were considerable. Many school districts also incurred direct costs such as transfer payments when children enrolled in entrepreneurial programs. By and large, these costs were not recognized, let alone reimbursed. School districts already faced an uphill battle to fight for funding new regulations and standards. Entrepreneurial schooling created an additional financial burden quite possibly canceling out the gains that were made toward achieving adequacy.

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Commentary:

Measuring Colorado Superintendents' Perceptions of Principal Preparation Programs

Spencer C. Weiler and Martha Cray

Because leadership for school improvement is now becoming essential for future principals, educational leadership preparation programs must adequately prepare administrators for this important role.[1]

Introduction

Over the years, many scholars have criticized traditional leadership preparation programs for failing to produce qualified educational leaders capable of moving public education into the 21st century.[2] As a result, many university-based principal preparation programs have introduced reforms aimed at better preparing future school leaders. Many of these focus either on the needs of students by establishing more convenient schedules with greater accessibility or on the needs of the universities by creating more stable groups of students. Unaddressed in these reform efforts is attention to the needs of aspiring educational leaders as identified by school superintendents. Failure to include superintendents' voices creates a disconnect between public schools and university-based principal preparation programs that needs to be remedied if America's children are to receive a quality education that will genuinely prepare them for the challenges of the 21st century.

In this article, the results of a survey of Colorado superintendents are presented as a means to begin the process of documenting superintendents' perceptions of principal preparation programs. The study was guided by four research questions, as follows:

- What are superintendents' perceptions of delivery models related to principal preparation?
- Is there a relationship between the size of a school district's student population and superintendents' perceptions of principal preparation programs?
- Is there a relationship between the geographic location of a school district and superintendents' perceptions of principal preparation programs?
- Is there a relationship between the type of school district and superintendents' perceptions of principal preparation programs?

The article is divided into four sections. It begins with a review of literature on principal preparation delivery models. The second section describes the research design of the study while the third presents the analysis of results. The article closes with implications of the findings and conclusions.

Review of Literature

Leak, Petersen, and Patzkowsky defined educational leadership as "...initiating, implementing, and institutionalizing school-wide change that results in continuous improvement of student learning outcomes."[3] To meet such demands, aspiring principals must receive quality training in educational leadership preparation programs.[4] Alsbury and Whitaker identified three waves of reform for principal preparation programs beginning in the 1980s aimed at improving the traditional approach.[5] However, in the end, they concluded that each of these approaches was a reaction to a trend or event, such as the publication of *A Nation at Risk*, as opposed to designing an optimal program to develop educational leaders.[6]

Reform efforts aimed at improving traditional principal preparation programs have included the introduction of cohorts, partnerships, and online delivery. In this section, the strengths and weaknesses of these delivery models are reviewed along with a discussion of the vital skills all principal preparation programs, regardless of delivery model, ought to develop in their graduates.

Traditional Principal Preparation Programs

The traditional approach consists of a series of required courses that students take at their convenience. Quinn wrote that traditional principal preparation programs lack "...a common, cohesive, framework that defines knowledge, skills, and disposition leaders are expected to possess and apply."[7] Levine concurred describing university training for aspiring principals as a series of seemingly unrelated courses taken on campus.[8] Problems attributed to the traditional approach include an inability on the university's part to adjust to current trends in educational leadership,[9] an overemphasis on theoretical knowledge that is lacking practical application,[10] and the exclusion of the school district in the training process.[11] Most telling of all is the fact that 47% of surveyed school principals considered their academic training outdated and irrelevant to their development as educational leaders.[12] However, this is not to say that the traditional approach is without merits. Jackson and Kelley identified skills that graduates of a traditional preparation program can acquire, including the ability to develop a school wide vision, promote a healthy school culture, manage a large organization, and involve the greater community in the educational process.[13]

Cohort Principal Preparation Programs

The cohort model typically consists of sequential coursework where enrollment in courses is restricted to those individuals admitted into the cohort. As a result, a group of students takes the same courses together as they complete the desired degree. The cohort model has been studied extensively, and many advantages have been identified. First, the cohort approach positively impacts

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the overall learning as measured by students' abilities to transfer concepts from the classroom to the school building.[14] Milstein and Krueger identified "...accelerated learning, more productive dialogues, enhanced opportunities to learn from the expertise of others, and closer relationships with professors."[15] In addition to increased learning, cohorts benefit students socially. Students receive greater support in cohorts and develop professional networks that continue after the program is completed.[16] These social benefits extend to individual students who experience "stronger social and interpersonal relationships" as a result of the overall experience.[17]

This is not to suggest that the cohort model will ensure that all future graduates will be prepared to lead in the 21st century. According to Levine, universities rely too heavily on the strengths of the cohort model as they offer an excessive number of off-campus programs.[18] The benefits of the cohort approach are predicated upon a stable faculty and access to the resources a university offers its students.[19] In addition, some cohort groups develop a negative disposition that results in "tension and adversarial relationships."[20]

According to Jackson and Kelley, for the cohort model to become and remain a successful approach to preparing principals, certain factors must be in place. First, a clear vision is vital, and that vision must guide key decisions related to the cohort.[21] In addition to a clear vision, the university must commit itself to an ongoing evaluation of the cohort process by exploring the best ways to serve the needs of students and school districts.[22] If a clear vision and a commitment to revisiting the cohort's design exist, the cohort model appears to be superior to the traditional approach.

Partnership Principal Preparation Programs

One of the more recent efforts at reforming the principal preparation programs has seen universities entering into partnerships with local school districts. The partnership approach takes into account the difficulties associated with adequately preparing school leaders and shares those challenges between the university and the school district.[23] According to Whitaker, these partnerships are mutually beneficial, and the end results are graduates who are well prepared to lead schools.[24]

In addition to all of the benefits associated with a cohort model,[25] the partnership offers added advantages including the development of highly qualified administrators who are prepared to enter into leadership positions upon graduation and involvement of district personnel in the instruction process.[26] The partnership benefits the university by significantly increasing the overall quality of applicants seeking admission into the principal preparation program.[27]

Whitaker pointed out that a successful partnership requires the university and the school district to commit time and resources to making the partnership successful. He noted: "The organizations must have adequate resources, financial and human, to address the complex needs of the program."[28] In other words, partnerships should not be entered into lightly because they require a significant commitment from all involved.

Online Principal Preparation Programs

Brown and Green defined online delivery as instruction "delivered using the Internet as a medium of communication."[29] Some critics contend that principal preparation programs fail to adapt to the needs of the students.[30] Online delivery addresses this issue by providing students, regardless of location, with greater access through increased opportunities and convenience.[31] As DeMoulin stated, "People are able to attend college at their time and location using the Internet 24 hours seven days a week. They are able to receive the same content and instruction online as on ground."[32] In addition to convenience and access, some researchers claim that online instruction provides those students who might remain quiet in a traditional, face-to-face classroom with the opportunity to "speak out" in an online course,[33] and that the overall quality of instruction is enhanced through the use of technology.[34]

A number of concerns related to online instruction have been identified. According to Chen, the instructor's commitment to careful planning is a prerequisite for successful online instruction, and such planning is not a guarantee.[35] A component of careful planning is purposefully working to help all students feel comfortable with the technology being used.[36] Also, despite planning, Card and Horton found that online instruction fails to replicate the same student-to-student interaction that is typically found in a classroom.[37] Finally, Levine suggested that efforts to enhance access and convenience have resulted in developing "...an army of unmotivated students seeking to acquire credits in the easiest way possible."[38]

Conclusions

Regardless of the delivery model, principal preparation programs cannot lose sight of their charge, which is to prepare educational leaders for the 21st century. Upon graduation from a principal preparation program, successful candidates should be able to "...make sense of programs, provide instructional leadership, keep buildings safe and functional, manage and develop a mix of students, parents, and classified and non-classified staff, and allocate and administer shrinking budgets while sharing decision making authority."[39] This daunting task requires a significant commitment from universities.

If universities want to demonstrate a strong commitment to developing capable educational leaders, they will need examine their recruitment progress.[40] According to Milstein and Krueger, current recruitment practices far too often focus on filling seats and not on identifying potential leaders.[41] Whitaker asserts that partnerships generally have the most successful recruitment process as a result of the close relationship universities develop with local school districts.[42] Regardless of the delivery model, Whitaker and Vogel assert, "...it is imperative that leadership preparation programs recruit and train candidates who have the skills and the desire to assume administrative positions in schools."[43] The importance of a proper recruitment process is illustrated by the fact that school districts have reported a shortage of qualified applicants for administrative positions.[44]

In addition to recruitment, universities must ensure a proper amount of academic rigor that will adequately support aspiring educational leaders.[45] Hess and Kelly argued that academic rigor emerges as principal preparation programs ensure curriculum, instruction, and mission complement one another.[46] Levine referred to this process as a "systematic self-assessment" and contended that too few programs actually engage in such an improvement process.[47] Rigor includes providing students time to reflect on current practices and look for ways to improve public education.[48] Finally, principal preparation programs committed to providing students with a rigorous delivery model will examine the quality of the internship experience afforded aspiring principals.[49]

To ensure that principal preparation programs genuinely meet the needs of local school districts requires more than a committed

search for best practices. It ultimately requires feedback from those who are hiring and further development of graduates of the principal preparation programs. For that reason, superintendents' perceptions of principal preparation programs are important.

Research Design

To answer the research questions posed in this study, the authors designed a survey instrument[50] which was mailed with a return envelope to the population of Colorado school superintendents (n=178). Subsequently, a second mailing, consisting of an email and an electronic copy of the survey, was sent to those nonrespondent superintendents for whom an email address was available. Finally, a third mailing, consisting of the original letter, was sent to a selected group of superintendents to ensure a sufficient response rate overall and across subcategories. The goal was an overall response rate of 35% or more of the population as well as the categories, and associated subcategories, of size (student enrollment), geographic location, and type of school district.[51]

Table 1 lists the seven subcategories of student enrollment and the number of school districts which fall within each subcategory. Colorado is a vast state geographically, and, as a result, the Colorado Department of Education has developed eight subcategories which were used in this study to identify school districts by geographic location (See Table 2). Table 3 breaks out Colorado school districts by five subcategories, ranging from urban metropolitan to rural, as follows:

- Denver Metro: Districts located within the Denver-Boulder standard metropolitan statistical area which compete economically for the same staff pool and reflect the regional economy of the area.
- Urban-Suburban: Districts which comprise the state's major population centers outside the Denver metropolitan area and their immediate surrounding suburbs.
- Outlying City: Districts in which most pupils live in population centers of 7,000 persons but less than 30,000 persons.
- Outlying Town: Districts in which most pupils live in population centers in excess of 1,000 persons but less than 7,000 persons.
- Rural: Districts with no population centers in excess of 1,000 persons and characterized by sparse widespread populations.[52]

Analysis of Results

This section begins with an analysis of the response rate to the survey, which is then followed by analyses of superintendents' responses to the survey items as they relate to the research questions. In addition to analysis of general results, analyses of disaggregated data based upon the school district's student population, geographic location, and type are presented to determine if there were variations in superintendents' responses based upon these variables.

Survey Response Rate

In response to the first mailing, 49 of 178 surveys were completed and returned, a 27% response rate.[53] Of the 59 superintendents receiving the second mailing (email), ten completed the survey. The third mailing yielded 18 additional responses. In all, 77 superintendents completed the survey for a response rate of 43%. (See Table 4.) Response rates for district size (student population) ranged from 37% to 54%. For type of district, they ranged from 36% to 50%; and for geographic location, response rates ranged from 25% to 60%. Responses from two areas of the state did not meet the 35% threshold: West Central (25%) and Southwest (32%).

Table 1
Breakout of Colorado School District Size by Student Enrollment

Student Enrollment	*Number of School Districts*
25,000 +	8
10,001 – 24,999	11
6, 001 – 10,000	4
1,201 – 6,000	43
601– 1,200	31
301 – 600	34
1 – 300	47
Total	178

Table 2
Breakout of Colorado School Districts by Geographic Location

Geographic Location	*Number of School Districts*
Metro	19
North Central	20
Pikes Peak	26
Northwest	19
West Central	12
Southwest	22
Southeast	28
Northeast	32
Total	178

Note: "Metro" refers to school districts within the Denver-Boulder standard metropolitan statistical area.

Table 3
Breakout of Colorado School Districts by Type

Student District Type	*Number of School Districts*
Denver Metro	14
Outlying City	14
Urban-Suburban	15
Outlying Town	49
Rural	86
Total	178

Table 4
Survey Return Rates by School District Student Population, Location, and Type

	Number of Surveys Mailed	Number Returned	Return Rate (%)
Total	178	77	43
Student Population			
25,000 +	8	4	50
10,001 – 24,999	11	6	54
6,001 – 10,000	4	2	50
1,201 – 6,000	43	16	37
601 – 1,200	31	13	42
301 – 600	34	16	47
1 – 300	47	20	42
Location			
Metro	19	8	42
North Central	20	12	60
Pikes Peak	26	11	42
Northwest	19	7	37
West Central	12	3	25
Southwest	22	7	32
Southeast	28	16	58
Northeast	32	13	41
Type			
Denver Metro	14	7	50
Outlying City	14	5	36
Urban-Suburban	15	6	40
Outlying Town	49	20	41
Rural	86	39	45

Superintendent's Overall Perceptions

Superintendents were asked to identify the ideal principal preparation delivery model, the most common principal preparation delivery model, and the least effective principal preparation delivery model. (See Table 5.) For the ideal delivery model, 39% of Colorado superintendents selected university cohort programs offered in their district, with university-district partnership cohort courses their second choice at 22%. Thirty-four percent (34%) of superintendents identified individual enrollment in a university program as the most common delivery model, followed by university cohort programs offered at universities with 25%. Over half (51%) of Colorado superintendents selected individual enrollment in an exclusively online program as the least effective delivery model. Second were state-approved alternative certification programs at 22%.

The results indicated that over 60% of superintendent identified the ideal delivery model for principal preparation as either a university cohort program offered in the district or a university-district partnership arrangement to offer courses. However, neither of these models was cited by superintendents as the most common. Instead, more traditional university-based approaches of individual enrollment or university cohorts were cited by over half (59%) of superintendents as the most common delivery models. Interestingly, as more universities embrace online principal preparation programs, a majority of superintendents in this survey found them to be the least effective approach. In addition, almost a quarter of respondents judged state-approved alternative certification programs to be the least effective. Overall, superintendents valued university-based programs if their district was directly involved in the delivery model.

Disaggregating Superintendents' Perceptions

Table 6 presents results related to how superintendents rated principal preparation delivery models when disaggregated by district size as measured by student population. Although the results disaggregated by size were in general agreement with overall superintendent ratings of ideal, most common, and least effective delivery models, the percentages of support varied across districts. For

Table 5
Superintendent Ratings of Delivery Models

Type of Delivery Model	Delivery Model Rating					
	Ideal		Most Common		Least Effective	
	n	%	n	%	n	%
University cohort program offered at district	30	**39**	13	16	1	1
University cohort program offered at university	7	9	20	**25**	2	3
Individual enrollment in a university program	9	13	26	**34**	5	6
Individual enrollment in a campus-based program with some online	5	6	4	5	0	0
Individual enrollment in an exclusively online program	1	1	5	6	39	**51**
State-approved alternative certification program	1	1	1	1	17	**22**
University-district partnership cohort courses	17	**22**	3	4	3	4
No response	7	9	7	9	10	13

Note: The two most frequent responses (%) in each category are in boldface.

Table 6
Superintendent Rating of Delivery Models by District Student Population

Student Population	Ideal Delivery				Most Common Delivery				Least Effective Delivery			
	University Cohort Program Offered at District		University-District Partnership Cohort		University Cohort Program at University		Individual Enrollment in University Program		Individual Enrollment in Exclusively Online Program		State-Approved Alternative Certification Program	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
25,000 +	2	50	2	50	0	0	2	50	2	50	1	25
10,001 – 24,999	4	67	2	33	0	0	2	33	2	33	2	33
6,001 – 10,000	2	100	0	0	1	50	1	50	2	100	0	0
1,201 – 6,000	7	44	2	12	2	12	6	37	8	50	5	31
601 – 1,200	3	23	5	38	4	31	4	31	9	69	2	23
301 – 600	7	44	2	12	4	25	6	37	9	56	4	25
1 – 300	5	25	4	20	7	35	4	20	7	35	3	15

Table 7
Superintendent Ratings by Location

Location	Ideal Delivery				Most Common Delivery				Least Effective Delivery			
	University Cohort Program Offered at District		University-District Partnership Cohort		University Cohort Program at University		Individual Enrollment in University Program		Individual Enrollment in Exclusively Online Program		State-Approved Alternative Certification Program	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Metro	2	25	3	37	0	0	5	62	5	62	1	12
North Central	5	42	4	33	4	33	4	33	7	58	3	25
Pikes Peak	5	45	2	18	3	27	3	27	6	54	3	27
Northwest	4	57	1	14	0	0	4	57	2	28	2	28
West Central	2	67	0	0	1	33	0	0	0	0	2	67
Southwest	3	27	1	14	4	57	2	18	6	86	0	0
Southeast	8	50	1	6	4	25	6	37	6	37	4	25
Northeast	1	8	5	38	3	23	1	8	8	61	2	15

example, a higher percentage of large school district superintendents rated university cohort programs offered at their districts ideal as opposed to those representing smaller districts. On the other hand, a higher percentage of superintendents serving smaller school districts selected university cohort programs at universities as the most common delivery method. However, there was general agreement among superintendents, regardless of district size, that individual enrollment in exclusively online programs represented the least effective delivery approach.

Table 7 presents results related to geographical location of school districts. Although the results disaggregated by location were in general agreement with overall superintendent ratings of ideal, most common, and least effective delivery models, the percentages of support varied across districts. For example, 67% of West Central superintendents identified university cohort programs offered in their district as ideal while only 8% of Northeast superintendents agreed. These results were similar for identification of individual enrollment in university programs as the most common delivery model. Regional variations also appeared with regard to the least effective delivery models. While 62% of metro area superintendents judged exclusively one line programs least effective, only 28% of Northwest superintendents agreed. It is possible that there is less objection to online programs in more sparsely populated areas due to fewer nearby universities.

Table 8 presents result related to school district type, ranging from the Denver metropolitan area to rural school districts. Although the responses disaggregated by type of school district were in general agreement with overall superintendent ratings of ideal,

Table 8
Superintendent Ratings by School District Type

School District Type	Ideal Delivery				Most Common Delivery				Least Effective Delivery			
	University Cohort Program Offered at District		University-District Partnership Cohort		University Cohort Program at University		Individual Enrollment in University Program		Individual Enrollment in Exclusively Online Program		State-Approved Alternative Certification Program	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Denver/Metro	2	28	4	57	0	0	5	71	3	27	1	14
Outlying City	3	60	1	20	0	0	1	20	1	20	4	80
Urban-Suburban	6	100	0	0	1	16	1	17	3	50	2	33
Outlying Town	6	30	4	20	4	20	8	40	14	70	3	15
Rural	12	31	8	20	14	36	10	26	17	43	7	18

most common, and least effective delivery models, the percentages of support varied across type of district. For example, urban-suburban superintendents were in universal agreement (100%) that university cohort programs offered at their school district was the ideal delivery while only 28% of Denver/metro area superintendents agreed. With regard to the most common delivery model, 71% of Denver/metro area superintendents chose individual enrollment in university programs in contrast to 17% of urban-suburban superintendents. For the least effective delivery model, 70% of outlying town superintendents selected exclusively online programs while only 20% of outlying city superintendents did so. In addition, 80% of outlying city superintendents judged state-approved alternative certification programs to be the least effective delivery model in contrast to Denver/metro and outlying town superintendents at 14% and 15%, respectively.

Implications of the Findings

The implications of the results of this study are threefold. First, the most common delivery model employed by Colorado universities for principal preparation, individual enrollment in university programs, was not selected as ideal by superintendents, who overwhelmingly preferred university cohort programs offered in their district or university-district partnership programs. However, even though they found individual enrollment in university programs less than ideal, it was not judged as the least effective—online and alternative certification programs were. Nonetheless, there were some differences among respondents when disaggregated by size of school district, region, and type that should be kept in mind. Overall, these results indicate that superintendents want to play an active role in universities' principal preparation programs and, as a result, universities would be well-advised to actively seek out their input and support.

Secondly, because superintendents have direct knowledge of the skills and abilities new principals must possess to be successful, their input is critical to the quality of principal preparation programs. Failure to include them as stakeholders in the development and improvement of principal preparation programs is detrimental to all involved. Inadequately prepared principals are less effective in their respective schools, and universities risk alienating superintendents, potentially leading them to look more favorably upon preparation programs offered outside traditional brick-and-mortar universities. Recall that disaggregated results indicated that in some regions of the state and in some types of school districts, superintendents were not strongly opposed to alternative certification programs.

Third, Colorado universities may want to re-examine the role of online delivery models for principal preparation in light of superintendents' perception of them as one of the least effective delivery models. Although student convenience and access are important considerations, universities cannot lose sight of their mission to prepare leaders who will play a significant role in improving the quality of education for all children in America. The research related to the impact an effective, or ineffective, administrator has on student achievement is clear,[54] and for that reason alone universities cannot settle for convenience or access as their benchmark for success. Rather, the benchmark has to be a commitment to providing those who seek principal licensure with the best preparation possible to ensure K-12 students will have access to the benefits associated with strong school leadership.

In conclusion, as Mulstein and Krueger stated, "Readiness for program change...means a general sense of doubt about the effectiveness of current practices has to exist."[55] Those involved in principal preparation programs need to constantly look for ways to improve their effectiveness. A key voice in this continual improvement process is that of local school district superintendents. Failure to heed this voice is risky, at best.

Endnotes

[1] Bruce G. Barnett, "Transferring Learning from the Classroom to the Workplace: Challenges and Implications for Education Leadership Preparation," *Educational Considerations* 32 (Spring 2005): 6.

[2] See, for example, Charles M. Achilles, "Searching for the Golden Fleece: The Epic Struggle Continues," *Educational Administration Quarterly* 30 (February 1994): 6; Frederick M. Hess and Andrew P. Kelly, "An Innovative Look, a Recalcitrant Reality: The Politics of Principal Preparation Reform," *Educational Policy* 19 (January and March 2005): 156; Arthur Levine, *Educating School Leaders*, The Education Schools Project (March 2005), 5, http://www.edschools.org/pdf/Final313.pdf; Mike M. Milstein and Jo Ann Krueger,

"Improving Educational Administration Preparation Programs: What We Have Learned over the Past Decade," *Peabody Journal of Education* 72, no. 2 (1997): 100-101.

[3] Lawrence E. Leak, Wesley O. Petersen, and Lyle R. Patzkowsky, "Developing Leaders for Urban Schools: The Baltimore Experience," *Urban Education* 31 (January 1997): 511.

[4] Barnett, "Transferring Learning from the Classroom to the Workplace," 6; Mary Devin, "Save a Place for Leadership in the Debate on Adequacy : A New Model for Developing Leadership for Schools," *Educational Considerations* 70 (Fall 2004).

[5] Thomas L. Alsbury and Kathryn S. Whitaker, "Superintendent Perspectives and Practice of Accountability, Democratic Voice and Social Justice," *Journal of Educational Administration* 45, no. 2 (2007): 155.

[6] Ibid., 155.

[7] Terrence Quinn, "Leadership Development: The Principal-University Connection," *Principal* 84 (May/June 2005): 13.

[8] Levine, *Educating School Leaders*, 18.

[9] Ibid., 43-46.

[10] Quinn, "Leadership Development," 12.

[11] Milstein and Krueger, "Improving Educational Administration Preparation Programs," 100.

[12] Levine, *Educating School Leaders*, 30.

[13] Barbara L. Jackson and Carolyn Kelley, "Exceptional and Innovative Programs in Educational Leadership," *Educational Administration Quarterly* 38 (April 2002): 195.

[14] Barnett, "Transferring Learning from the Classroom to the Workplace," 10.

[15] Milstein and Krueger, "Improving Educational Administration Preparation Programs," 105-106.

[16] Ibid., 106.

[17] Jackson and Kelley, "Exceptional and Innovative Programs in Educational Leadership," 196.

[18] Levine, *Educating School Leaders,* 23.

[19] Katherine C. Reynolds and F. Ted Hebert, "Learning Achievements of Students in Cohort Groups," *The Journal of Continuing Higher Education* 46 (Fall 1998): 36.

[20] Jackson and Kelley, "Exceptional and Innovative Programs in Educational Leadership," 196.

[21] Ibid., 207.

[22] Ibid., 208.

[23] Tricia Browne-Ferrigno and Lawrence W. Allen, "Preparing Principals for High-Need Rural Schools: A Central Office Perspective about Collaborative Efforts to Transform School Leadership," *Journal of Research in Rural Education* 21, no. 1 (2006): 3; Quinn, "Leadership Development," 15.

[24] Kathryn Whitaker, "Preparing Future Principals," *Principal Leadership* 7, no. 3 (2006): 39.

[25] A vast majority of partnerships follow the cohort model as the school district(s) and university enter into a mutually beneficial partnership.

[26] Whitaker, "Preparing Future Principals," 39.

[27] Browne-Ferrigno and Allen, "Preparing Principals for High-Need Rural Schools," 3.

[28] Whitaker, "Preparing Future Principals," 38.

[29] Abbie Brown and Tim Green, "Showing up to Class in Pajamas (or Less!): The Fantasies and Realities of On-Line Professional Development Courses for Teachers," *Clearing House* 76 (January/February 2003), 149.

[30] Hess and Kelly, "An Innovative Look, a Recalcitrant Reality," 156.

[31] Brown and Green, "Showing up to Class in Pajamas," 149. See also, Karen A. Card and Laura Horton, "Providing Access to Graduate Education Using Computer-Mediated Communication" *International Journal of Instructional Media* 27, no. 3 (2000): 235.

[32] Donald F. DeMoulin, "Tennessee's Regents On-Line Degree Program: A Success Story" *Education* 126 (Fall 2005): 55-56.

[33] Brown and Green, "Showing up to Class in Pajamas," 149.

[34] Teresa Chen, "Recommendations for Creating and Maintaining Effective Networked Learning Communities: A Review of the Literature," *International Journal of Instructional Media* 30, no. 1 (2003): 37.

[35] Ibid.

[36] Ibid., 37-38.

[37] Card and Horton, "Providing Access to Graduate Education Using Computer-Mediated Communication," 235.

[38] Levine, *Educating School Leaders*, 24.

[39] Leak et al., "Developing Leaders for Urban Schools," 512.

[40] Levine, *Educating School Leaders*, 31.

[41] Milstein and Krueger, "Improving Educational Administration Preparation Programs," 102.

[42] Whitaker, "Preparing Future Principals," 45.

[43] Kathryn Whitaker and Linda Vogel, "Joining the Ranks: Opportunities and Obstacles in Obtaining Principal Positions," *Journal of Personnel Evaluation in Education* 18 (2005): 8.

[44] Hess and Kelly, "An Innovative Look, a Recalcitrant Reality," 161. See also, Lora Cohen-Vogel and Carolyn D. Herrington, "Teacher and Leadership Preparation and Development: No Strangers to Politics," *Educational Policy* 19 (March 2005): 9.

[45] Levine, *Educating School Leaders*, 24.

[46] Hess and Kelly, "An Innovative Look, a Recalcitrant Reality," 156, 158.

[47] Levine, *Educating School Leaders*, 23.

[48] Milstein and Krueger, "Improving Educational Administration Preparation Programs," 110.

[49] Tricia Browne-Ferrigno, "Becoming a Principal: Role Conception, Initial Socialization, Role-Identity Transformation, Purposeful Engagement," *Educational Administration Quarterly* 39 (October

2003): 470. See also, Hess and Kelly, "An Innovative Look, A Recalcitrant Reality," 170-171.

[50] See Appendix for a copy of the survey instrument.

[51] Vockell and Asher established a minimum requisite response rate of 35% for subcategories. See, Edward L. Vockell and J. William Asher, *Educational Research*, 2nd ed. (Upper Saddle River, NJ: Prentice Hall, 1995), 182-183.

[52] Colorado Department of Education, "Colorado Education Statistics: Setting Categories," http://www.cde.state.co.us/cdereval/rvdefine.htm.

[53] An email address could not be obtained for 70 nonrespondent superintendents.

[54] Barnett, "Transferring Learning from the Classroom to the Workplace," 6. See also, Devin, "Save a Place for Leadership," 70.

[55] Milstein and Krueger, "Improving Educational Administration Preparation Programs," 101.

Appendix
Superintendent Perceptions on Leadership Training Programs Survey

Name: School District:

Address: Student Population:

The purpose of this survey is to measure superintendents' attitudes towards various educational leadership preparation programs for principals. As you answer the following questions please consider the principals you have hired and the training they came to your district with.

1. **Ideal Preparation**: Read over the following list of various program models and select the three (3) most effective models in developing educational leaders.

Delivery Model	*Most Effective*	*Second Most Effective*	*Third Most Effective*
University Cohort Program-Courses offered in School District			
University Cohort Program-Courses offered at University			
Staff Member Individually Enrolled in a University Program			
Staff Member Individually Enrolled in a Campus-based Program with some online Courses			
Staff Member Individually Enrolled in an Exclusively Online University Program			
State Approved Alternative Certification Program			
University-District Partnership Cohort Courses offered in District			
University-District Partnership Cohort Courses offered at University			

Please continue to the next page.

Appendix continued
Superintendent Perceptions on Leadership Training Programs Survey

2. **Practical**: For this section you are to select the three most common principal preparation models you find in your administrative candidate pools.

Delivery Model	*Most Common*	*Second Most Common*	*Third Most Common*
University Cohort Program – Courses offered in School District			
University Cohort Program – Courses offered at University			
Staff Member Individually Enrolled in a University Program			
Staff Member Individually Enrolled in a Campus-based Program with some online Courses			
Staff Member Individually Enrolled in an Exclusively Online University Program			
State Approved Alternative Certification Program			
University-District Partnership Cohort Courses offered in District			
University-District Partnership Cohort Courses offered at University			

3. **Red Flag**: Finally, select the three (3) least effective approaches to educational leadership in preparing principals in your school district.

Delivery Model	*The Worst Preparation Model*	*The Next Least Effective Model*	*The Third Least Effective Model*
University Cohort Program – Courses offered in School District			
University Cohort Program – Courses offered at University			
Staff Member Individually Enrolled in a University Program			
Staff Member Individually Enrolled in a Campus-based Program with some online Courses			
Staff Member Individually Enrolled in an Exclusively Online University Program			
State Approved Alternative Certification Program			
University-District Partnership Cohort Courses offered in District			
University-District Partnership Cohort Courses offered at University			

4. Read over the list of Institutions offering principal preparation programs in the state of Colorado and indicate your initial perception of an applicant from each ("negative" means you think poorly of the institution and its graduates; "indifferent" is that you have no strong opinions; "positive" means you think highly of the institution and its graduates; "don't know" means you are unaware of this institution).

Institution	***Positive***	***Negative***	***Indifferent***	***Don't Know***
Adams State University				
Colorado Christian University				
Colorado College				
Colorado State University				
Denver Seminary				
Fort Lewis College				
Johnson & Wales University				
Jones International University				
Mesa State University				
Metropolitan State College of Denver				
Regis University				
Rocky Mountain College of Art and Design				
University of Colorado				
University of Denver				
University of Northern Colorado				
University of Phoenix				
Western State College				

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