



State Finance Reform Vignettes

Kansas

Bruce Baker (Rutgers University) | Drew Atchison (AIR) | Caitlin Kearns (AIR) | Jesse Levin (AIR)

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Although a number of states have used input-based analysis to set basic education funding levels, very few have engaged in rigorous cost modeling to guide their state school finance formulas (Guthrie & Rothstein, 1999; Picus & Odden, 2011). Even in states where cost models have been developed, they have not necessarily been incorporated into actual finance systems. In the early 2000s, for example, researchers participating in the Texas School Finance Project provided cost model estimates to the Texas Legislature for their consideration, but these estimates had negligible influence on the state school finance system (Gronberg, Jansen, Taylor, & Booker, 2005). Likewise, the first round of Getting Down to Facts in California tested but disregarded cost model estimates (Loeb, Bryk, & Hanushek, 2008), and the eventual reforms adopted years later were not anchored to any input- or outcome-oriented cost estimation.

The Kansas Legislature, however, has sought two separate, independent cost function analyses to guide the design of remedies to ongoing school finance litigation. These studies came about in Kansas, in part, because of the unique constitutional structure of that state. This brief describes the background covering the research efforts used in Kansas to determine education funding levels, including the use of cost modelling and how the results have impacted school finance funding policy in that state.

Background

A unique aspect of the school finance saga in Kansas during the past several decades is the role of empirical evidence in informing the courts and guiding school finance reforms. During the *Mock v. State of Kansas* case of the early 1990s, Governor Joan Finney followed in the footsteps of previous Kansas governors by appointing a citizen task force to establish a framework for spending reforms.¹ The goal of

¹ For example, Governor William Avery (1965) commissioned a task force that set the stage for ratification of the updated education article (Article 6) of the Kansas Constitution.

the task force was to comply with a pre-ruling issued in closed conference session by Judge Terry Bullock, which aimed to resolve vast inequities in school district spending that had arisen under the existing school finance system (Berger, 1998). Finney’s task force preceded the use of cost function analysis to shape school finance reforms around constitutional requirements and legislative mandates. Instead, the task force relied on expert testimony regarding how other states were resolving similar disparities and used that evidence, which was provided in part by John Meyers of the National Conference of State Legislators, to guide the 1992 reforms.

The modern “empirical era” of Kansas school finance reform begins with the next governor’s (Bill Graves) Vision 21st Century Task Force, which was charged with providing guidance on revisions to the school finance formula. That task force arose from concerns that previous reforms adopted and accepted by the courts (*USD 229 v. State*) lacked an empirical basis in the actual cost of fulfilling the legislature’s constitutional obligation to “make suitable provision for finance of the educational interests of the state.” The first recommendation of that task force suggested that the state determine not merely what had previously been spent but also what it would cost to meet the state’s constitutional obligations as follows:

a. The state should conduct a professional evaluation to be initiated in January, 2001, and completed by December 1, 2001, with the following objectives:

i. Determine funding needed to provide a suitable education in typical K-12 schools of various sizes and locations;

ii. Determine additional support needed for special education, at-risk, limited English proficient students and other special circumstances;

iii. Determine funding adjustments to ensure comparable purchasing power for all districts, regardless of size or location; and

iv. Determine an appropriate annual adjustment for inflation.

b. The Governor and the Legislature should create an on-going “School Finance Council” to conduct the evaluation of the cost of a suitable education and then to annually monitor and make recommendations regarding school funding.

The Legislative Coordinating Council, which delegated the responsibility of monitoring the work to the Legislative Education Planning Committee (LEPC), contracted the Colorado-based consulting firm of Augenblick and Myers (A&M) to conduct the study and produce findings by 2002 (John Myers had advised Finney’s task force and was a former Kansas legislator himself).² Although the study was released, it was at first largely ignored by legislators in spite of pending legal challenges (*Montoy v. State*). In December of 2003, however, the study was introduced into evidence by plaintiffs in *Montoy v. Kansas* and cited by Judge Terry Bullock to support his district court ruling regarding funding inadequacy. The state Supreme Court largely upheld Bullock’s lower court ruling in January of 2005, although the Supreme Court placed less weight on the cost study.

² The A&M study used two approaches to estimating the cost of a “suitable” education: a professional judgement (input-based) approach and a successful schools approach, which simply calculates average spending in a subset of schools deemed to be successful (Augenblick, Myers, Silverstein, & Barkis, 2002).

This ruling was not the end of the story, however. After failing to comply with the January 2005 ruling by the spring of that year, the legislature was forced back into special session to resolve inequities and inadequacies in school funding, which were in part measured against the findings of the A&M study. Hoping for a less expensive remedy, the legislature proposed conducting a new input-oriented cost analysis, which would determine the costs of delivering only the bare bones requirements laid out in the state board's core curriculum with no consideration of outcomes. State board attorney Dan Biles objected to this proposal and urged the court (on which he now sits) to rule that any new cost analysis must consider the outcome standards based on those stemming from the 1989 Kentucky Supreme Court case *Rose v. Council for Better Education* adopted under the state board's independent constitutional authority. The court agreed, and the legislature tasked their Legislative Division of Post Audit (LDPA) with conducting both versions of the study: one of bare bones core curricular inputs and another of the cost of achieving the state board's outcome standards. To accomplish the latter, LDPA subcontracted researchers from Syracuse University to estimate cost models for Kansas school districts, which in the end delivered overall cost estimates (and distributions of costs) very similar to those of the A&M study.

Because the LDPA study wasn't introduced into evidence at trial and thus had not been subjected to thorough vetting and fact finding, it could not formally guide the Supreme Court's subsequent rulings in *Montoy v. Kansas* (eventually dismissed in July 2006). However, this report did influence the funding formula adopted by the legislature. In *Gannon v. Kansas* (2011), this study would have its turn to influence yet another court ruling finding that Kansas legislators had not fulfilled their constitutional duty to suitably fund the state's schools.

Facing high court rulings in *Gannon*, the legislature decided in 2018 that they needed yet another updated study of the cost of providing an adequate education. To begin with, the LDPA study was now more than a decade old, suggesting that its estimates needed to be modified to reflect the state's current context. In addition, the costs of complying with the LDPA study were also high, and at least some legislators may have been hopeful that a new study would ultimately yield a lower cost estimate. Through an external consultant, the legislature contracted Lori Taylor of Texas A&M University in collaboration with WestEd to conduct the study and Jesse Levin of the American Institutes for Research to provide external evaluation of all three reports by A&M (Augenblick et al., 2002), LDPA (Kansas Legislative Division of Post Audit, 2006), and Taylor/WestEd (Taylor, Willis, Berg-Jacobson, Jaquet, & Caparas, 2018).³ To the legislature's surprise, and perhaps dismay, the Taylor/WestEd study came in with even higher cost estimates, in part because the outcome goals for their study were based on new and higher state standards for proficiency.

The following sections detail the analysis and findings of Kansas's two cost modeling studies: the 2006 LDPA study and the 2018 Taylor/WestEd study.

³ Levin's evaluation of the A&M and LDPA studies (Levin, 2018a) can be found online at <https://kasb.org/wp-content/uploads/2018/03/3.7-Report-1-APA-and-LPA-Studies-from-Dr.-Levin.pdf>, while the evaluation of the Taylor/WestEd study (Levin, 2018b) can be found at <https://kasb.org/wp-content/uploads/2018/03/3.29DrLevinEdCostStudies02.pdf>.

Legislative Division of Post Audit Study (2006)

The LDPA study consisted of several independent pieces. Some components were conducted directly by staff from LDPA, while others were conducted by William Duncombe and John Yinger of the Maxwell School of Citizenship and Public Affairs at Syracuse University. The study and eventual report included three basic components:

1. Input-based analysis (LDPA staff)
2. Cost function model analysis (Duncombe and Yinger)
3. Cost compilation and remedy estimate simulation (LDPA staff)

Staff in LDPA created estimates of the costs of providing the basic programs and services required under the state board's core curricular standards (Duncombe & Yinger, 2005; Kansas Legislative Division of Post Audit, 2006).

Separately, Duncombe and Yinger estimated a model of the costs associated with achieving the state board's outcome standards for state assessments and graduation rates. Although Duncombe and Yinger's model included only general fund expenditures, it was able to reveal some complex relationships, showing, for example, that costs associated with child poverty escalated as population density increased. LDPA took a number of steps to combine Duncombe and Yinger's model with their own findings, which accounted for spending not included in the Duncombe and Yinger model and subtracted federal dollars. Using these two sets of findings, LDPA created a table of projected per-pupil costs for each district to meet input and outcome standards.

Taylor/WestEd Study (2018)

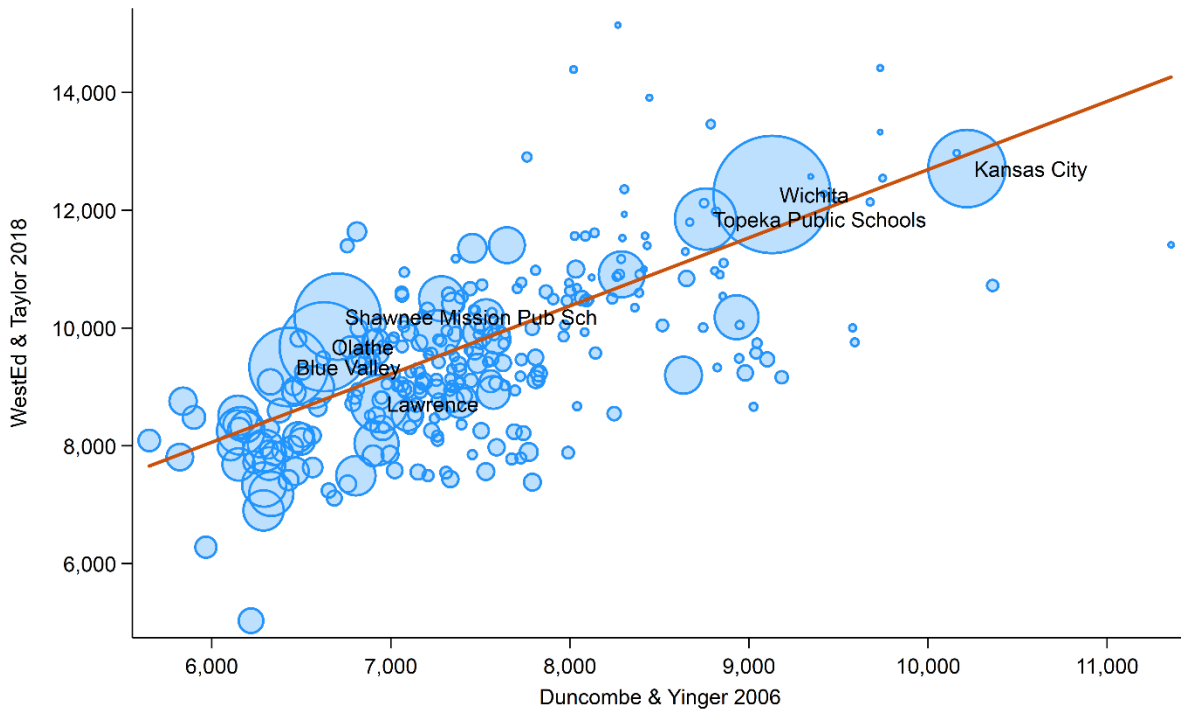
Twelve years later, the Kansas Legislature contracted another study of education costs, this time conducted by a team including researchers from WestEd along with Lori Taylor of Texas A&M (Taylor et al., 2018). The WestEd/Taylor model echoed Duncombe and Yinger's conclusion with new and different outcome measures and even higher goals:

"...the analysis finds a strong, positive relationship between educational outcomes and educational costs, once differences in scale, need and price are taken into account. Consider first the Condition NCE scores. The estimation indicates that a one percentage point increase in academic performance is associated with a 5 percent increase in cost. Similarly, a one percentage point increase in the graduation rate is associated with a 1.2 percent increase in cost at lower grades and a 1.9 percent increase in cost at the high school level." (Taylor et al., 2018, p. 61)

These two studies, 12 years apart, provided similar estimates of which districts within the state faced higher or lower costs of achieving target outcomes. Figure 1 compares the cost estimates from the two studies after adjusting for inflation. In general, districts with higher costs of achieving common outcomes in 2006 also faced higher costs in 2018. Kansas City, the state's poorest urban district, had per-pupil costs among the highest in the state in both years. To achieve the 2006 modeled outcome goals, Kansas

City's costs were estimated to be more than 60% higher than many lower cost districts (more than \$8,000 per pupil compared to \$5,000 per pupil in nominal dollars). By 2018, Kansas City had estimated costs of around \$13,000 per pupil, double that of the lowest cost districts.

Figure 1. Comparing Estimated Costs From Two Kansas Cost Studies



Notes: Dollars are adjusted for inflation to 2019 dollars using the Bureau of Labor Statistics Consumer Price Index. Circles represent Kansas districts with their size scaled to their enrollment. The orange line is a linear best-fit line weighted by district enrollment. District names are included for districts with enrollments of at least 10,000 students.

Influence on Policy

Many elements of the 2006 LDPA report appeared to influence what became SB549, a three-year school finance plan adopted in 2006. However, the funding formula that was ultimately adopted included a number of differences from the cost estimates. The translation of empirical evidence to policy is a complex and challenging process, particularly when deliberated among legislators. But here, many of the changes occurred within the modeling process overseen by LDPA. At the time, expert witnesses for Plaintiffs argued that steps taken by LDPA staff to combine their work with the cost model estimates undercut the cost predictions, especially for higher need districts. Specifically, the following differences between the LDPA combined model and Duncombe and Yinger's cost estimates were noted:

- LDPA included a larger weight for low-income children in certain population-dense districts. Rather than allowing the weight variable to vary by population density, a handful of population-dense districts were identified as eligible for this separate weight.

- In Duncombe and Yinger’s original cost estimates, each district had its own distinct English language learner (ELL) weight and poverty weight, which varied across districts based on district size and population density. LDPA staff simplified those weights to apply a single weight for each factor across all districts. Simplifying complex cost models into more easily understood weights is often necessary so that formulas are understandable and transparent. However, the simplification of weights in this instance ignored variation in ELL and poverty weights by district size and location (urbanicity), which captured important differences in overall costs.
- Duncombe and Yinger’s cost model was based on general fund expenditures and included expenditures of federal funds, which may influence measured student outcomes. In its adjustments, LDPA backed out all of the federal funds from the district-level adequacy projections generated by the Duncombe and Yinger model by downwardly adjusting the estimated base per-pupil funding and the weights for poverty and bilingual education.⁴ The largest share of federal funds was provided through the Title I program, which targets funding primarily with respect to child poverty concentrations. Because of this, a reduction of the poverty weight was used to account for a majority of the federal funding that was backed out.
- LDPA staff added back into their model vocational education, transportation, and special education costs, based on historical spending data.

Although simplification is often important when translating cost model findings into digestible policy, measures should be taken to ensure that the simplified model is in line with the more complex estimates of cost. The end result of LDPA’s decisions, however, was to generate predicted needs that deviated significantly from the original cost model estimates. Table 1 shows the predicted costs per pupil from the Duncombe and Yinger model alongside the simulated LDPA costs, excluding special education, vocational education, and transportation. High-need districts saw their cost estimates reduced, while low-need districts saw their estimates increased. In Kansas City, the state’s highest poverty district, the LDPA adjustments lowered estimated per-pupil costs by \$630, while estimated cost per pupil for Maize, one of the state’s lowest poverty districts, increased by \$261.

In addition to the limitations already described, the SB549 funding formula was never fully phased in, and funding was further eroded during the Great Recession by tax cuts under Governor Sam Brownback’s administration. The updated 2018 model provided legislators with consistent estimates for recalibrating the formula to new, higher outcome goals and the changing demographics of many Kansas districts. It remains to be seen whether these adjustments to the formula will impact school spending on a broad scale. Still, the most recent estimates have at least played some role in guiding the level and distribution of new aid.

⁴ Specifically, LDPA identified the amounts of federal funding that supported students in the following categories: all students (\$71 million), poverty (\$130 million), and bilingual education (\$4 million). The model-estimated base per-pupil funding was “dialed” down until the aggregate funding generated by the base equaled the corresponding amount of federal funding identified as supporting all students. Similarly, the weights for poverty and bilingual education were adjusted downward, respectively, until the aggregate funding generated for each no longer accounted for the identified federal dollars devoted to supporting these two student groups.

Table 1. Costs of Outcomes From the Duncombe and Yinger Cost Model Compared to the Legislative Division of Post Audit Version

District	Percent Free Lunch	Duncombe & Yinger Costs Per Pupil	LDPA Costs Per Pupil	Unmet Obligation (Difference)
Dodge City	60%	\$7,215	\$6,451	\$764
Kansas City	66%	\$8,254	\$7,624	\$630
Garden City	48%	\$6,697	\$6,186	\$511
Derby	23%	\$5,590	\$5,429	\$161
Shawnee Mission	12%	\$5,415	\$5,260	\$155
Lawrence	22%	\$5,604	\$5,452	\$152
Salina	36%	\$5,884	\$5,736	\$148
Wichita	59%	\$7,375	\$7,257	\$118
Auburn Washburn	16%	\$5,084	\$5,082	\$2
Blue Valley	2%	\$5,194	\$5,202	-\$8
Topeka	56%	\$7,075	\$7,269	-\$194
Junction City	35%	\$5,867	\$6,126	-\$259
Maize	7%	\$5,084	\$5,345	-\$261
Olathe	12%	\$5,354	\$5,828	-\$474

Note: Cost estimates exclude special education, transportation, and vocational spending.

Lessons Learned

The Kansas experience using cost analysis, and cost modeling in particular, provides two important lessons for other states:

- First and foremost, cost modeling can provide useful guidance for judicial evaluation of state school finance systems with respect to constitutional obligations.
- Second, translation of complex cost model estimates to legislation is a complex and challenging process in which enacted funding formulas may not perfectly replicate distributions of cost from cost models.

However, the possibility that imperfections will arise is no reason to abandon cost modeling. Even in the Kansas case, the resulting formula was likely more equitable than would otherwise have occurred in the absence of cost model evidence. Further, steps can be taken to reduce the problems experienced in translating evidence into policy. Researchers engaged in the cost modeling process can themselves take steps to produce simplified pupil weights that accurately reflect the differences in cost across districts estimated from the original cost estimates. Producing simplified weights that retain the important cost factors that affect educational costs is important for translating complex cost models into recommended funding formulas that can more directly influence state school finance formula design.

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